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[◀ Development Board Integrates Snapdragon 845 SoC And Runs Android 8.0](#)
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Advanced View Arduino Projects List

List of Projects using arduino with advance view:

1. [Arduino PID Motor Controller](#)



INTRODUCTION : The development of high performance motor drives is very important in industrial as well as other purpose applications. Generally all high performance motor drives use quadrature encoders and PID control because of its simplicity and precise control. The quadrature encoder acts as a..... Listed under: [Motor Projects](#)

2. [ZIF socket Arduino-compatible board](#)

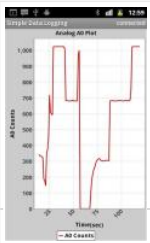


In this tutorial we make an Arduino-compatible board that holds the microcontroller in a ZIF socket. Updated 18/03/2013 Today we are going to make a different type of Arduino-compatible board, one that has a ZIF ("zero insertion force") socket. Our reason for making this is..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

3. [Bootload an ATmega Microcontroller & Build Your Own Arduino – 2](#)

- ☐ Since you lacked the USB interface in your own Arduino board, it becomes necessary to use a homemade/ready-made USB to Serial Converter Module as an efficient and economical solution. Inexpensive and easy-to-use USB to Serial Converter modules are now widely available, such as one shown..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

4. [Simple Remote Data Plotting using Android / Arduino / pfodApp](#)



Simple Remote Data Plotting using Android / Arduino / pfodApp This Instructable shows you how to plot Arduino sensor data on your Android mobile and capture it for later downloading to your computer. These instructions are also available at www.pfod.com.au No Android programming is required..... Listed under: [Arduino Android](#), [Arduino Programmer Projects](#), [Phone Projects](#)

5. [How To Make a Simple Variable Frequency Generator Using Arduino](#)



A frequency generator is a very handy device in electronic design, development, testing and trouble shooting. It is such a kind of device which can generate the required frequencies which can be then applied directly to the target device for testing it. There are frequency..... Listed under: [Development Board – Kits Projects](#)

6. [Fun Hackable Speaker Timer](#)



This is a fun speaker timer I made for some upcoming conferences. It uses a 4-digit charlieplexed LED (pseudo 7-segment) display and is driven by a AVR ATmega328 or an Arduino. It allows a default time to be set, can be paused, and will put..... Listed under: [Clock – Timer Projects](#)

7. [How to Build a Vibration Detector Circuit](#)



In this project, we will go over how to build a vibration detector circuit. This is a circuit which can detect and measure flex, touch, vibration, and shock. The sensor we will use to detect these movements is a piezo vibration sensor from Measurement Specialists (MEAS). The..... Listed under: [Sensor – Transducer – Detector Projects](#)

8. [Control an iPod with the Arduino](#)



This tutorial will describe a way of controlling an iPod remote, and thus, an easy way of getting some music and sound out of your Arduino project. The remote we used was an unofficial remote I found on the worldwide auction site for around 10..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)

9. [DIY: Arduino Based Ohmmeter](#)



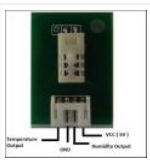
This is a project based on Arduino board which can measure the unknown resistance values and perform diode test and continuity testing. When we connect the unknown resistor on the breadboard circuit, the 16x2 LCD displays the resistor value and when we connect a diode..... Listed under: [LED Projects](#)

10. [Arduino Powered Four Letter Word Generator](#)



Build an Arduino-powered version of the “Four Letter Word Generator” (FLW). This version generates “words” on the fly – it does not use a list. The “original” version from the 1970's used B7971 nixie alphanumeric tubes. These tubes are getting hard to find and they're..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

11. [HSM-20G Interface with Arduino Uno](#)



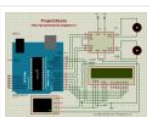
The HSM-20G is an analog humidity and temperature sensor that outputs analog voltage respects to relative humidity and temperature. However from this sensor relative humidity is found along with temperature. Relative humidity is the percentage of moistures of airs for a particular temperature [1]. Feature:..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

12. [Real-time room temperature on your Website using Arduino](#)



This is how to push high resolution real-time data from Arduino-based temperature sensor to your web page without any server-side coding. Arduino is a great device for collecting, storing and transferring data from various sensors but there are times you need to make your data..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)

13. [How To Make a PC Control Robot](#)



Do you ever tried to control your robot using your PC or laptop? Controlling a robot using PC or laptop is often being a fun for the student or hobbyist. Thus during this article you will be tend to learn how to control your robot..... Listed under: [Robotics – Automation Projects](#)

14. [PSoC 4 Pioneer Kit Community Project#042 – Hangman Game](#)

Hello! It has been our Friday tradition for the past few weeks to end with a game. This week we have the Hangman game. In this game the user will be using two Pmod boards, an LCD and Button board to display outputs and generate..... Listed under: [Game – Entertainment Projects](#)

15. [Build a big crane game using Arduino](#)



How to build a whole room crane game. Based on the arcade style 'Crane Game' or 'Claw Machine'. This is a continuation of a previous instructable titled CRANE GAME in which we built a 2-axis crane game in a door frame. We have now added a third axis and..... Listed under: [Game – Entertainment Projects, Projects](#)

16. [Battery powered device hardware design tips](#)



I'm working on a prototype product(Wifi motion sensor) that will be powered from a battery source, it has a mega328(arduino bootloader, with sleep mode on and wake on interrupt,and WDT in case it hangs up), a PIR motion sensor , and a CC3000 break out..... Listed under: [Wireless Projects](#)

17. [Accelerometer powered LED dress](#)



Let's be honest for a moment, doesn't everyone want a dress that lights up at your very whim? No? Alright, well I do. It's pretty straightforward, though the programming gets a wee bit tricky. So pick up your pencil, sketch out a design and then we'll..... Listed under: [LED Projects, Metering – Instrument Projects](#)

18. [Beacon](#)



In this tutorial you will learn how to turn any conductive surface into a capacitive touch sensor. This project illustrates how to use capacitive touch to turn on a motor (fan) and neopixel. In this example, all of the components were custom designed and built..... Listed under: [Sensor – Transducer – Detector Projects](#)

19. [Digital thermometer using arduino](#)



Digital thermometer using arduino and LM35. This article is about a simple three digit digital thermometer using arduino. Range of this thermometer is from 0°C to 99.9°C. There is also a provision for displaying the temperature in °F scale. Three terminal analog temperature sensor LM35..... Listed under: [Metering – Instrument Projects](#)

20. [Making sound \(noise\) machines using Arduino](#)



As a part of being an artist in residence at Instructables, I took it upon myself to build of couple of noise machines / music boxes. My interest lies in designing objects that would enable people to explore the world of sound synthesis and for..... Listed under: [Game – Entertainment Projects, Home Automation Projects, Projects, Sound – Audio Projects](#)

21. [Arduino powered voltmeter and temp gauge](#)



For a while I have been looking for a way of getting a reading of main and leisure battery voltage, and inside and outside temperature in the van. I spent ages on researching and found some bits here and there that might help, but nothing..... Listed under: [Sensor – Transducer – Detector Projects](#)

22. [Play Music using Arduino Esplora](#)



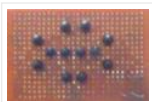
This example shows how to play notes on the buzzer mounted on the Arduino Esplora. Buzzers can generate different audio signals in audible frequency ranges. A note is an audio signal at a specific frequency. If you know the frequency of the notes you want..... Listed under: [Projects, Sound – Audio Projects](#)

23. [Servo Feedback Hack \(free\)](#)



This Instructable brought to you by the kind folks a Rachel's Electronics Visit www.rachelselectronics.com for cool electronics kits and breadouts! This hobby servo hack will add shaft position feedback by tapping into the servo's own internal potentiometer. The only parts that need are wire and..... Listed under: [Sensor – Transducer – Detector Projects](#)

24. [Object Tracking Robot](#)



In this tutorial I am going to post the step-by-step procedure to make a simple Object Tracking Bot. The main aim of this Bot is to follow the objects which are shown to it in 3D space i.e., x, y and z – axis (horizontal,..... Listed under: [Robotics – Automation Projects](#)

25. [How to Send Message from GSM Module using Arduino](#)



The GSM stands for Global System for Mobile communications. This is a global standard which is followed by the GSM modules inside the cellular phones which enables them to be connected with any mobile network around the globe. In certain applications the microcontroller based systems..... Listed under: [Phone Projects](#)

26. [MultiMovEDIA – Description of my Project](#)



The title "MultiMovEDIA" does not mean much – if anything – at first sight. However, looking at more carefully, we can see it is a composition of two words: "Multimedia", referring to the information content and the channels it uses (text, image, sound), and "Move",..... Listed under: [Video – Camera – Imaging Projects](#)

27. [Servo Motor Simulation via Arduino UNO](#)



Hey everyone. I hope you will be fine. As you know that last time, we had started Arduino UNO course and given you a brief introduction how to simulate the LED blinking via Arduino UNO and its implementation in proteus ISIS. Now, today we are..... Listed under: [Motor Projects](#)

28. [Web Client Repeating using Arduino](#)



This example shows you how to make repeated HTTP requests using an Ethernet shield. This example uses DNS, by assigning the Ethernet client with a MAC address, IP address, and DNS address. It connects to <http://www.arduino.cc/latest.txt>. The content of the page is viewable through your..... Listed under: [Internet – Ethernet – LAN Projects, Projects](#)

29. [Temperature Display Using LCD](#)



Here is a Simple Temperature Display Circuit using LCD (Liquid Crystal Display). For Heat Sensor we have used IC LM35 (Precision Centigrade Temperature Sensors) whose Output voltage is linearly proportional to the Celsius (Centigrade) temperature. Output of LM35 IC is 10mv/degree centigrade for eg if..... Listed under: [LCD Projects](#)

30. [Arduino Based Lie Detector](#)



We have previously posted the the project lie detector, now here is is also a lie detector using arduino. Here is a simple tutorial to build a simple lie detector which will give visual indication through LED arrangement whether the person speaks lie or truth. The project uses a..... Listed under: [LED Projects](#)

31. [Easy Home Surveillance](#)



Everyone wants to keep their home secure. If zombies have swarmed your house, you want to know it's not safe to return, RIGHT? What better way to do this than to set up a surveillance system? Now it's easier than ever to have. And, you don't..... Listed under: [Home Automation Projects](#), [Security – Safety Project Ideas](#), [Video – Camera – Imaging Projects](#)

32. [Lambda Calculus in a Can using Arduino](#)



You can get soup in a can. You can get bread in a can (*). Now the long wait is over! You can finally get Lambda Calculus in a can. Project LambdaCan is an amusing exercise in absurdity. It implements a reducer (interpreter) for the..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

33. [Fritzing – The Ultimate Tool For Sketching Out Electronics Projects \[Cross Platform\]](#)



Despite sounding like an alcopop, Fritzing is actually an incredible bit of free software you can use to create circuit and component diagrams for use with rapid-prototyping electronics boards such as the fantastic open-source Arduino. As such, it's open source too, entirely cross platform and..... Listed under: [Development Board – Kits Projects](#)

34. [LCD Shifter for Arduino](#)



The original idea was to create a library that simplify the use of IC 74HC595 between Arduino and other hardware. In this Instructable I will share this to you using as example the control of a 16x2 LCD. The example will show on the LCD..... Listed under: [LCD Projects](#)

35. [Arduino 7 Segment LED Display and Counter – Tutorial #8](#)



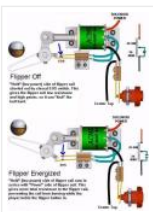
This is a simple 0 to 9 counter circuit constructed using Arduino! Here, a common cathode 7-segment LED display is connected to Arduino for displaying the digits. The code (Arduino sketch) allows push button increment of the counter from 0 to 9. The whole circuit..... Listed under: [LED Projects](#)

36. [Temperature Sensor DS18B20](#)



Electronic Brick, Waterproof and other Versions NOTE: There are different-appearing versions but they work the same. This is an electronic thermometer which has high accuracy over a wide range (accurate to $\pm 0.5^{\circ}\text{C}$ over the range of -10°C to $+85^{\circ}\text{C}$) (Workable from -55°C to $+125^{\circ}\text{C}$). You..... Listed under: [Metering – Instrument Projects](#)

37. [Playfield :: Hardware :: Flippers](#)



If you are contemplating building your own machine, then you probably already know a good bit about how pinball machines work. It's basically series of electro-mechanical events where a steel ball activates a switch, which in turn fires a solenoid that drives a mechanism, sending the ball off in some other..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

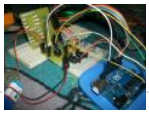
38. [StrobeDuino – Computer-controlled RGB strobe/lamp](#)



After experimenting with Arduino and Processing serial communication i wanted to do something cool. I had some RGB LEDs lying around so i thought about making something with them. I ended up with a strobe/lamp controlled by a Processing sketch that receives the commands from..... Listed under: [LED Projects](#)

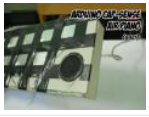
39. [Arduino – Theremin with 7 Segment LED Display](#)

In this instructable, I will show you how to make a simple toy that combination of the LEDs flash and Theremin. We're gonna using some basic electronics built on top of an Arduino. The basic idea of 7 Segment LED Display was from Enjoying Electronics..... Listed



under: [LED Projects](#)

40. [Arduino Air Cap-Sense Piano](#)



I recently got my shipment of 10 buzzers I ordered about a month ago, so as soon as I got them I was eager to make something fun with them, so I looked around a bit and searched for what to do with them, and..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Sound – Audio Project Ideas](#)

41. [Arduino multi-mode lamp with soft touch switch](#)



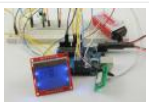
In this Arduino-based project, we will build a lamp with multiple light displays: color sequencer, dimming light, color chaser, firelight – all selected by a touch bar on the circuit board. All the functions are done in software, including the touch sensor, which is a..... Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)

42. [The Transistor Menace – Questions regarding an Arduino rgb LED project](#)



I've been browsing this forum and the internet now for a couple of days and what I thought would be an easy side project turned into a (for me) quite complicated matter. I'm planning to build a mood light that consists of 12 common cathode..... Listed under: [LED Projects](#)

43. [HSM-20G temperature & humidity analog sensor + Nokia5110 LCD](#)



Temperature and humidity measurement are always a nice addition to hobbyist projects. In my previous post, I've discussed the DHT11 sensor, which is capable of measuring both temperature and humidity. They are digital sensor and provide calibrated outputs with temperature and relative humidity. I've also..... Listed under: [LED Projects](#), [Phone Projects](#)

44. [Arduino Binary Clock \(hours, minutes and seconds\)](#)



Hello everyone; I was looking for this project for a long time. Finally I it it together with a lot of effort. For this project you will need: [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14" radius="20" border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] 1- Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

45. [Remote Controlled lunaring with Arduino](#)



Nothing puts the fun back into coding like watching your very own creations come to life in the physical world. Luckily, with the current glut of high-tech toys and electronic gadgets on the market, it's never been easier to experience the thrill of designing your..... Listed under: [Wireless Projects](#)

46. [PC-350: Arduino Synthesiser](#)



Contents 1 Aim 2 Research 2.1 Experimental Musical Instruments 2.2 Interfaces 2.2.1 Arduino and Nintendo Wii Nunchuck 2.2.2 Arduino and Nintendo DS Touchscreen 2.3 Sound Out 3 User Scenario 4 Development 4.1 Requirements & Analysis 4.1.1 Components 4.1.2 What I Need to Do 4.1.3 The..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

47. [Compact Protoboard Arduino type thing.yea](#)

This ible is for the building of my small, almost matchbox size, arduino compatible board. As seen in this ible..

<http://www.instructables.com/id/Pocket-Ardiuno-kit/> I experemented with the one in this ible to see how it can be imprevoved, but the



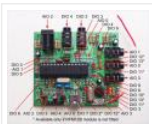
concept is the same and so is..... Listed under: [Development Board – Kits Projects](#)

48. [Solar powered wireless Arduino based Geiger counter project.](#)



Hello, I have plans to build myself a solar powered wireless Geiger counter using a RH Electronics Arduino IDE Geiger counter connected via a serial connection through a logic level converter to a 3.3V ATmega328P-AU Pro MCU with an ESP8266 serial WiFi transceiver to send..... Listed under: [Solar energy projects](#), [Wireless Projects](#)

49. [Diverting surplus PV Power](#)



As mentioned on the Contents page, two different hardware platforms have been successfully used to support Mk2 PV Routers. [Update at 7/3/14: Since writing this article, I have developed a new hardware platform which has been specifically designed for this product. The main board has..... Listed under: [Development Board – Kits Projects](#)

50. [RS-232](#)



In this tutorial you will learn how to communicate with a computer using a MAX3232 single channel RS-232 driver/receiver and a software serial connection on the Arduino. A general purpose software serial tutorial can be found here. Materials needed: Computer with a terminal program installed..... Listed under: [Development Board – Kits Projects](#)

51. [Arduino \(optic fibre\)](#)



I just brought a new lamp and after a week, I'm tired of looking at it randomly change colours between red, blue, green. What can you expect from a cheap lamp brought at 5\$. Looking at the lamp I realized that I could make..... Listed under: [Home Automation Projects](#), [LED Projects](#)

52. [Arduino 2.4 GHz Spectrum Analyser](#)



This article describes a simple spectrum analyser for the 2.4 to 2.5 GHz Wi-Fi band. It's based on the Cypress CYWM6935 Wireless Radio Module. Although the manufacturer doesn't recommend it for new commercial projects, it is still widely available from eBay suppliers and Farnell here..... Listed under: [LCD Projects](#)

53. [Arduino Laser Show \(adapted from NothingLabs' Instructable\)](#)



This project uses an Arduino, a pair of speakers, and a laser pointer to create a laser projector able to trace out designs in a dark room. To power it, I've cannibalized a PC ATX power supply capable of delivering plenty of current for the..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

54. [Daox's diy arduino thermal differential controller](#)



We have a great thread that contains lots of info on thermal differential controllers here. However, I wanted to start a thread dedicated to my own development of a thermal differential controller that I'll be using for my attic heat reclamation project. Tonight I setup..... Listed under: [Sensor – Transducer – Detector Projects](#)

55. [A Simple Bat Detector based shield for the Arduino Uno](#)



I've built a number of projects that have interfaced the output of the Simple Bat Detector with a microprocessor. The most recent was the BatLogger II. But I hadn't come up with an easy way for others to experiment with this idea ... until now..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

56. [How to make \(and connect\) a soft potentiometer](#)



This instructable will tell you how to make and connect a soft potentiometer to a microcontroller, in particular we will connect it to a Lilypad Arduino. In our case soft potentiometer means a potentiometer made of a textile conductive ribbon. What you need: 1. soft..... Listed under: [Metering – Instrument Projects](#)

57. [Arduino UNO Tutorial 8 – NightLight](#)



In this Arduino UNO tutorial, we are going to use a Light Dependent Resistor (LDR) to create a simple childrens bedroom nightlight which turns on automatically when it gets dark and turns off when it gets light. An LDR's resistance changes depending upon the amount..... Listed under: [Sensor – Transducer – Detector Projects](#)

58. [1 LED Game with Arduino Uno and an RGB LED](#)



Sometimes I just have those days where I really want to make something neat with the Arduino I have lying around, but I know I don't have the patience for a more involved project that'll take more than a day or so. This is for..... Listed under: [LED Projects](#)

59. [LED aquarium lighting with an Arduino based PWM timer](#)



I bought a small aquarium (54l) as an impulse buy and I needed some lights for it, so naturally I wanted to use LEDs. I also needed a timer for the lights. I also wanted the lights to fade in and out when they were..... Listed under: [LED Projects](#)

60. [Ground Tracking LED Longboard Mod](#)



This mod uses a custom designed encoder on one of the wheels to track where the longboard is on the ground and light up the LEDs so that the light pattern remains stationary on the ground as the board moves over it. To make doing..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)

61. [Arduino Clock using Standard Clock Display](#)



This is a relatively simple clock to build, in terms of the hardware required and in terms of hooking up all the wires. The complexity lies in the software, which I've conveniently included as part of this instructable □ This instructable illustrates a few things:..... Listed under: [Clock – Timer Projects](#), [Projects](#)

62. [Getting Things to Talk: Arduino + LCDs](#)



I spent the better part of the day on Saturday doing some more basic research into connecting an Arduino and LCD for this ongoing project. For the most part, it's pretty basic and following the wiring diagrams and tutorials online is fine. I ran into..... Listed under: [LCD Projects](#)

63. [Arduino ISP – LOG](#)



Arduino ISP – LOG So this Lazy Old Geek (LOG) has had a lot of trouble getting Arduino bootloader on Atmega chips. I couldn't get either of these to work with Arduino UNO Rev3. <http://arduino.cc/en/Tutorial/ArduinoISP> <http://letsmakerobots.com/node/35649> So I developed a couple that worked for me:..... Listed under: [Arduino Programmer Projects](#)

64. [Home Automation with Android and Arduino Yún](#)



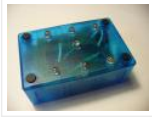
The Arduino Yún is a WLAN capable development board featuring an ATmega microcontroller, as well as a separate chip running a small Linux distribution, making it a perfect candidate for home automation projects like in the picture below! This basic tutorial will show you how..... Listed under: [Home Automation Projects](#)

65. [Make an Atom Synchronised Clock from a 1950's Slave Dial using Arduino](#)



One day while exploring the bric-a-brac at the markets, I stumbled across an old, Bakelite slave dial from the 1950's. Slave Dials are clock movements without the actual time keeping circuit. All they contain is the mechanism to drive the hour and minute hands, which..... Listed under: [Clock – Timer Projects](#), [Projects](#)

66. [Make Electronic Dice using Arduino](#)



In this project we make electronic dice. Updated 18/03/2013 In this article you can learn how to make an electronic die (die is the singular of dice), using an ATmega328 with Arduino bootloader and a few inexpensive components. The reason for doing this is to introduce another..... Listed under: [Other Projects](#), [Projects](#)

67. [Knob](#)



Control the position of a RC (hobby) servo motor with your Arduino and a potentiometer. This example makes use of the Arduino servo library. Hardware Required Arduino Board (1) Servo Motor (1) Potentiometer hook-up wire Circuit Servo motors have three wires: power, ground, and signal..... Listed under: [Motor Projects](#)

68. [Prototyping shield for Arduino Mega](#)



This is a down and dirty prototyping shield that will work for Arduino Mega's and there pin compatible clones. This is the first time i have made this board, but i have other projects i think this would be handy for. [box color="#985D00" bg="#FFF8CB" font="verdana"..... Listed under: [Development Board – Kits Projects](#)

69. [LED Sun rise/set Arduino Proj](#)



I've been slowly working on this project for the past month or so. I finally have some time to share and post-up what I'm working on. I know there are commercial products available, but then what's the fun in that! What I want is a..... Listed under: [LED Projects](#)

70. [Orange mePod](#)



Firstly, why would I make a music player when one can be purchased for so little and Apple iPods are so great? Well, I'll tell you. After several cheap MP3 clones have died due to their Lipo batteries and my cracked, inoperable screen on my..... Listed under: [Sound – Audio Projects](#)

71. [Remotely Controlled VGA Camera – Overview](#)



The idea behind this project was very straightforward: design an inexpensive remotely controlled system capable of taking still pictures and uploading them to a remote file storage with a camera to be activated by either remote commands or sensor events. And after numerous brain storms..... Listed under: [Wireless Projects](#)

72. [Introduction: T.A.B.U. A Robot using Arduino](#)



To all other teens (I'm 16) who have begun to pick up an interest in robotics and electronics the following project will give you a great user-system to get started with. This is not for complete beginners, but after only 6 months of teaching myself..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

73. [DIY Thermal Differential Controller – Part 4: Building Your Own](#)

In our last episode, I explained how I redesigned the controller from what I first thought I was going to do. Now, I am going to explain how to make your own thermal differential controller based on mine. As it is, this setup will only..... Listed under: [How To – DIY –](#)



[Projects](#)

74. [CustomKeys using an Arduino](#)



CustomKeys is a customizable, Arduino-based, polyphonic synthesizer. The CustomKeys keyboard uses capacitive touch sensing – each key is made of a conductive material which, when touched, signals the synthesizer to emit a tone from the speaker. The CustomKeys library allows the user to choose an..... Listed under: [Projects](#), [Sound – Audio Projects](#)

75. [Nerd++: Controlling Diode RGB LED Strips with Arduino, Pt. 1 – Getting Started](#)



A few weeks ago, it came to my attention that IKEA do a set of colour-changeable LED strips. I've been looking for a decent way of providing some lighting behind my computer to reduce eye-strain for a long time, and these seemed perfect: I was..... Listed under: [LED Projects](#)

76. [DIY- G-force measurement system](#)



So this time around, it's another fun and functional microcontroller based DIY, a g-force measurement system with data logging to SD card. HARDWARE USED: 1) Arduino UNO w/ATmega328P 2) 3-axis accelerometer breakout 3) SD card 4) SD card breakout w/level shifting circuit 5) LED HOW..... Listed under: [Game – Entertainment Projects](#), [How To – DIY – Projects](#)

77. [Autonomous Robot Part 3: Ghosty](#)



Introduction Ghosty is an autonomous little robot who is adventurous and loves to explore his surroundings. However, unlike a normal ghost, he doesn't like to scare people. Instead they actually scare him! In our most current version of Ghosty, his vision line is based on..... Listed under: [Motor Projects](#)

78. [Animatronic Stargate helmet using Arduino](#)



I love the movie Stargate and when I first saw it I immediately knew I wanted to make one of the super cool Horus guard helmets. I had sketched multiple designs over the years and figured out several different methods for building it but rejected..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

79. [Arduino BiCMOS Curve Tracer](#)



Draw curve traces for both Bipolar and CMOS transistors using this hardware and free online software. Step 1: UpLoad and Plot Curve for NPN, PNP, NMOS, and PMOS The data for the transistor curves gets uploaded into any computer and can be plotted using SciLab..... Listed under: [Sensor – Transducer – Detector Projects](#)

80. [Making a Vibrator That Listens to Your Body](#)



This project has been an astonishing little journey. Many of my previous projects were characterized by an amazing outpouring of effort to build something highly intricate and ultimately invisible. This is the opposite kind of project. A little bit of work and a little custom..... Listed under: [Arduino Programmer Projects](#)

81. [Arduino Laser Security Shield](#)



*** I AM THIRTEEN. I REALLY ENJOY PUTTING TOGETHER THESE INSTRUCTABLES. PLEASE SHOW SUPPORT BY VOTING FOR ME IN THE LASER CUTTER CONTEST – <http://www.instructables.com/contest/epilog3/>*** I started thinking about this project a couple of months ago now. A laser tripwire that can log when the..... Listed under: [Projects](#), [Security – Safety Projects](#)

82. [Arduino-based AVR High Voltage Programmer](#)



Update 01/02/09: A PCB version of this circuit is in the design stages – some preliminary information is here. Update 03/11/09: Kits based on this design are now for sale! Update 12/14/10: The original AVR HV Rescue Shield kit has been replaced by the new..... Listed under: [Arduino Programmer Projects](#)

83. [SP0256-AL2 Speech With Arduino](#)



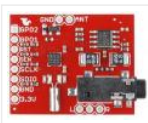
Here's the Arduino version of a project to use the General Instruments (GI) SP0256-AL2 vintage speech synthesis chip to say "hello world". I'd previously shown how to do this with a Basic Stamp 2. Here's what it sounds like saying, "hello world" 20101215_164333.mp3 How it..... Listed under: [Development Board – Kits Projects](#)

84. [Robot shield for Arduino. Part 1 – Hardware and Schematic](#)



The idea behind this post is to bring together some robot designs and transform them in a new device with new hardware and standard software (arduino of course) and so easier to use. These robots have three things in common: a mechanical structure, the hardware..... Listed under: [Robotics – Automation Projects](#)

85. [Si4707 Hookup Guide](#)



Introduction Weather-band radio is an awesome public service provided in the US, Canada, and Bermuda. With hundreds of transmitting stations dotting the country, weather radio acts as the "voice of NOAA" (National Oceanic and Atmospheric Administration). In addition to spouting out weather forecasts, weather radio..... Listed under: [Development Board – Kits Projects](#)

86. [Arduino UNO Tutorial 6 – Rotary Encoder](#)



We have written a tutorial for Rotary Encoders using a Microchip microcontroller but now would be a good time to make an Arduino UNO version. With a rotary encoder we have two square wave outputs (A and B) which are 90 degrees out of phase..... Listed under: [Other Projects](#)

87. [Arduino LEDs](#)



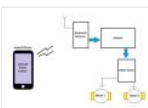
Description In this tutorial you will set up and turn on a single LED. Note that this code can actually be executed with just the Arduino and no other components as in Figure 5. If you notice, next to pin 13 is a tiny LED..... Listed under: [LED Projects](#)

88. [Arduino Leonardo AVR Development Board](#)



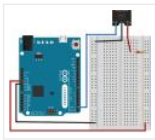
Arduino Leonardo AVR Development Board is a microcontroller board based on the Atmel ATmega32u4. It offers 20 digital I/Os (of which 7 can be used as PWM outputs and 12 as analog inputs), a 16MHz crystal oscillator, a micro USB connection, a power jack, an..... Listed under: [Development Board – Kits Projects](#)

89. [Android Phone Controlled Robot using Arduino](#)



The Android phone that stays in your hand most of the time is useful in many other applications apart from Whatsapp, Facebook; appliances; monitor your health parameters. How it would be if it can control a Robot, which can assist in your daily work. With..... Listed under: [Phone Projects](#), [Robotics – Automation Projects](#)

90. [Sending MIDI Messages](#)



Introduction If you completed any of the buzzer projects, you will know by now that there is much fun to be had in making the Arduino create noises. The only issue you might have had is with the quality of the sound. Since MIDI is..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

91. [Servo powered peristaltic pump controlled by Arduino](#)



This instructable shows you how to make a pump using a servo motor and an Arduino Uno to transfer small amounts of liquids. The pump is a peristaltic pump which consists mainly of a motor, flexible tubing and a circular pump casing. Two rollers attached..... Listed under: [Motor Projects](#)

92. [DIY Microscope](#)



This Project Is A Part Of The Afrimakers Event <http://www.afrimakers.org/> Introduction We used a simple cheap webcam to make a microscope. In short, a small hack to the optics of a standard webcam with an adjustable focus-lens, allows to create video data, with a magnification..... Listed under: [Video – Camera – Imaging Projects](#)

93. [Temperature Sensor 2 0](#)



Overview This board allows you to use a thermistor to measure the temperature of something. It is designed to be used to measure things in the range of 100C – 300C, but with the proper calibration and resistors, it can be adapted to any temperature..... Listed under: [Temperature Measurement Projects](#)

94. [PhysComp: Mid-term Project – Instagram TUI – prototyping the interactive elements using Arduino](#)



The physical interface will consist of a 3×3 grid of push buttons that will correspond to a 3×3 grid of images in the Processing program. Instead of a creating a 2D array of variables to correspond to the buttons' positions in the grid, each location..... Listed under: [Other Projects](#)

95. [Perfboard Hackduino \(\\$8 Arduino-compatible circuit\)](#)



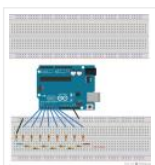
Never again will you have to dismantle a finished project just to reuse an Arduino board! This tutorial will go through the steps involved in fabricating your own Arduino-compatible circuit using just ~\$8 of parts (this includes the ATmega chip!). This is perfect for installing..... Listed under: [Development Board – Kits Projects](#)

96. [Brushless DC \(BLDC\) motor with Arduino – Part 2. Circuit and Software](#)



In this post I will describe the hardware and the software part of a project involving the use of BLDC (Brushless DC) motor salvaged from a broken Xbox 360. This is a second installment in the series of posts related to Arduino and brushless DC..... Listed under: [Motor Projects](#)

97. [Digital to Analogue Converter \(DAC\) DAC Theory](#)



A digital to analogue converter takes a series of digital inputs (a string of 1s and 0s, in our case there will be 8 of them like 10011001) and converts it into an analogue output. You see DACs in every digital audio device (MP3 players,..... Listed under: [Sound – Audio Projects](#)

98. [The DIY Arduino Telescope GOTO control project](#)

Why make your own Arduino control system? After completing my homemade telescope mount it was powered by a Meade DS motor kit. This system was extremely slow, underpowered and unreliable. It was also impossible for me to change the programming or



maintain the system. I..... Listed under: [How To – DIY – Projects](#)

99. [Remote Controlled Switching](#)



Vision The aim of our project is to be able to control a electrical switching process using a remote. The idea is to come up with an alternative to the conventional electric switch boards, using a wireless control mechanism, in an economic way. In other words, an..... Listed under: [Wireless Projects](#)

100. [Arduino Motor Shield](#)



We are not the first to make an Motor Shield for Arduino. But could be that we are the first that make a Motor Shield with a minimum of flexibility. We are studying a WiFi robot with camera controlled by Arduino. The robot will be..... Listed under: [Motor Projects](#)

101. [Mobile Controlled Automation Using Arduino](#)



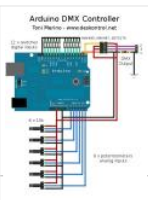
By this mobile controlled automation using Arduino you can perform switching operation of any load or device which is connected with the circuit. Before some days I posted about DTMF tone in mobile communication. Here I am using DTMF tone in this project. Visit following..... Listed under: [Phone Projects](#)

102. [Toaster Oven Reflow Technique](#)



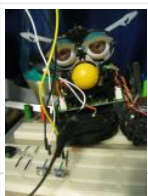
Introduction This page describes how to reflow solder surface mount printed circuits using a cheap toaster oven. It owes a great deal to Nophead's Cooking with Hydraraptor blog post. The picture shows Sally Bowyer (Director, RepRapPro Ltd) preparing components for soldering in the oven. For..... Listed under: [Sensor – Transducer – Detector Projects](#)

103. [Small Arduino DMX controller](#)



In this post we show you how to make a small and useful Arduino DMX512 controller, which can be used by example to handle a smoke machine with DMX, or as test equipment, etc... We can use Arduino Mega, Arduino UNO, and other with small changes..... Listed under: [Sensor – Transducer – Detector Projects](#)

104. [Control a Furby with Arduino \(or other microcontroller\)](#)



The Million Dollar Furby: We can rebuild him. We have the technology. Continued from the previous Instructable where we excised Furby's primitive brain, it's now time to replace it with something greater. This Instructable will detail how to install a new microcontroller in place..... Listed under: [Robotics – Automation Projects](#)

105. [Arduino Tri-colour LED Flasher Circuit](#)



This simple tri-colour LED flasher circuit is great for beginners. The three pin tri-colour LED is controlled by an Arduino Uno and changed between three colours. This video shows the Arduino running a sketch that controls the tri-colour LED. Circuit Diagram for the Arduino Tri-colour..... Listed under: [LED Projects](#)

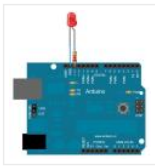
106. [Tutorial 19: Arduino Dice](#)



In this tutorial you will build a dice that is shaken by holding the button in and thrown by releasing the button. The shake, throw and number thrown are animated and displayed on a seven segment display. A 74HC595 IC is used to

interface the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

107. [Blink](#)



This example shows the simplest thing you can do with an Arduino to see physical output: it blinks an LED. Hardware Required Arduino Board LED Resistor, anything between 220 ohm to 1K ohm Circuit To build the circuit, connect one end of the resistor to..... Listed under: [LED Projects](#)

108. [Tutorial 4: Arduino Knight Rider](#)



In this tutorial, eight LEDs are interfaced to the Arduino Uno board. This is not complicated – it is just like interfacing a single LED to the Arduino as done in tutorial 3, but eight times over. A program is then loaded to the Arduino..... Listed under: [LED Projects](#)

109. [Tutorial 16: Arduino Clock](#)



In this tutorial, the Arduino displays the time and date on a LCD (optional) and in the Arduino IDE serial monitor window. A PCF8563 real time clock (RTC) IC is used to generate the time and date. The time and date can be set using..... Listed under: [Clock – Timer Projects](#)

110. [The Arduino Microprocessor Miniterm Project Pages: keatts](#)



Navigation LCD_driver.c LCD_driver.h LCD_driver.h.out ball12d.php bojia.c bojia.c.out chenb.php doyer.php ellwangerk.php foo.txt frickd.php gamblec.php hurleyg.php keatts.php littletonj.php panuskip.php parsonstc.php schrodere.php Here is keatts Bluetooth SNES Controller Supplies I used the following supplies for my mini-term project: Arduino Uno microcontroller RN-42 bluetooth module USB A to B..... Listed under: [Bluetooth Projects](#), [LED](#)

[Projects](#)

111. [Magic Light \(Capacitance Sensor, First Arduino Project\)](#)



This was my very first arduino project. Its great for beginners. Fade the color or the lights my moving your hands near it. It fades from a pretty purple blue to a firey red-orange. Its was SUPER easy to build, not to hard to write..... Listed under: [Sensor – Transducer – Detector Projects](#)

112. [Temperature Sensing using DS18B20 Digital Sensors](#)



Note: When referring to Arduino below, this works in the same way on the emonTx which is arduino-based. The DS18B20 is a small thermometer with a built in 12bit ADC; it can be easily connected to Arduino digital input. The sensor communicates over a one-wire..... Listed under: [Sensor – Transducer – Detector Projects](#)

113. [Arduino Tiny Relay Shield Project](#)



In this Arduino project, you will build a small relay shield from stripboard. The shield can have one or two relays fitted to it. Connect the Arduino and relay shield to your PC via a USB cable. Download the PC software and use it to.....

Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

114. [Arduino Platform – Interrupts Introduction](#)

Introduction This is my second article relating to the Arduino Microprocessor Platform. The first one was a simple implementation of the SIMON game using the Arduino. The article can be found here. For an introduction to the Arduino Hardware, see jeffb42's excellent



articles, as there..... Listed under: [Development Board – Kits Projects](#)

115. [Open Source Home Automation Project using Arduino UNO + Ethernet Shield](#)



This is Open Source Home Automation Project based on Arduino Uno and Arduino Wiznet based Ethernet shield. How Does it Work The main brain for this project is Arduino UNO Board along with Arduino Ethernet Shield to give it a wireless connectivity. Arduino runs a code..... Listed under: [Home Automation Projects](#)

116. [Arduino Buzzer Circuit](#)



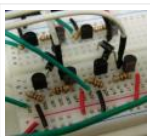
This article and circuit diagram show how to connect a buzzer to an Arduino when the buzzer operates at a different voltage to the Arduino. The buzzer may operate at 9V, 12V or some other voltage. Arduinos such as the Arduino Uno operate from 5V..... Listed under: [Arduino Programmer Projects](#)

117. [Thermal Camera: Arduino UNO + MLX90614 IR Thermometer](#)



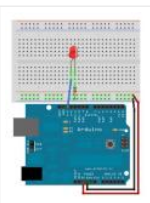
I did the following steps: 1) Hardware: Connect the MLX90614 (refer to the datasheet) as follows: Pin 1 on MLX (SCL) connect to ANALOG pin 5 on Arduino Pin 2 on MLX (SDA) connect to ANALOG pin 4 on Arduino Pin 3 on MLX (VDD)..... Listed under: [Video – Camera – Imaging Projects](#)

118. [Arduino MicroBot Project](#)



Steps On the breadboard, build two bi-directional motor control circuits (also known as “H-bridge”) circuits. These circuits will control the two DC motors that drive the wheels. Each circuit will have two wires from the Arduino (one for forward, one for backward) to control the..... Listed under: [Robotics – Automation Projects](#)

119. [Blinkenlights](#)



Topics: Overview Hardware A Basic Schematic Diagram Resistors Reading Resistor Values Putting it Together Trying it out! More on Resistors and LEDs Software Comments Variables Procedures References Project 1. Overview As mentioned earlier, Arduino consists of two major parts: the hardware (the Arduino board) and the..... Listed under: [LED Projects](#)

120. [GPS and GSM based Vehicle Tracking System Using Arduino](#)



This circuit is designed for tracking the location of vehicles. Most of tracking systems are made by using GPS. This is very simple and cheap. Tracking systems are mostly used by fleet operators for tracking a vehicle location, routing and others. This is a very good..... Listed under: [GPS Based Projects](#)

121. [Real Time GPS Tracker with Integrated Google Maps](#)



This project describes how you can build a mobile real time GPS tracker with integrated Google Maps. I began this project mainly to see if I can integrate all the different pieces of hardware and software to make a workable solution, and it took some..... Listed under: [GPS Based Projects](#)

122. [ArduDroid: A Simple 2-Way Bluetooth-based Android Controller for Arduino](#)



UPDATES October 30, 2013 – 7PM (GMT+2) The new official name for this app is ArduDroid and it can be installed from Google Play. I changed the name to avoid a naming conflict with another app. September 15, 2013: I Have won a Nexus..... Listed under: [Bluetooth Projects](#)

123. [Build An Audible Memory Chest \[Instructables How-To\]](#)



If you're a fan of the Harry Potter series then we also bet you were pretty taken with Hogwarts headmaster Dumbledore's pensive—the magical object that could not only store memories, but actually let people fall into and re-experience the events. This week's Instructables How-To from..... Listed under: [LED Projects](#)

124. [General Purpose Input Output Arduino Shield](#)



This example shows technique for calibrating sensor input and shows the sensor outputs by controlling LEDs and SSD, also shows how to monitor the state of a switch. Hardware Required 8 LEDs 2 push button switches 2 sliding switches 4-SSD with MAX7221/7219 LM35 Speaker Circuit..... Listed under: [LED Projects](#)

125. [Stage 4: Complete Beginner's Guide For Arduino Hardware Platform For DIY](#)



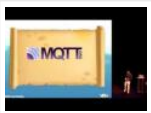
Contents 1. Background 2. Setting up Arduino Development Environment 3. Arduino Power Management 3.1 Powering Up Arduino Board 3.2 Output Power of Arduino 4. Indicators And Switches 4.1 LED 4.1.1 Working With Onboard LED 4.1.2 Connecting and Controlling External LED 4.2 Buzzer 4.3 Switches 5..... Listed under: [How To – DIY – Projects](#)

126. [Arduino project: USB foot-operated mouse switch](#)



This foot pedal plugs into the Arduino case which plugs into your PC via microUSB cable. Arduino microcontrollers can easily be used to power fun projects like robots and even sending tweets to Twitter but they're versatile enough to turn up in the strangest of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

127. [Stream support for the Arduino MQTT library](#)



MQTT is a lightweight messaging protocol for the Internet of Things. This post details the use of Stream support for large payload storage in the Arduino MQTT library. MQTT is a lightweight protocol, but that doesn't mean that the payloads have to be small. The..... Listed under: [Other Projects](#)

128. [Technical Details of Logging Seawater Temperature](#)



Block Diagram This diagram shows the basic components required for collecting temperature readings from seawater and transmitting the data to a base station where it can be collated into a database for analysis. To the left is a schematic of 10 temperature sensors, spaced 1..... Listed under: [Temperature Measurement Projects](#)

129. [Modifying an Arduino Mega and chipKIT Max32 for 5V Operation](#)



Max's Arduino Mega and chipKIT Max32 both require 9V external supplies, but he really wishes to power them from a single 5V supply. Well, nothing is simple, is it? I ran into a minor "gotcha" with regard to my Bodacious Acoustic Diagnostic Astoundingly Superior Spectromatic..... Listed under: [Development Board – Kits Projects](#)

130. [Arduino Projects: Wireless Arduino](#)



Long-time readers will know I'm not one to promote trendy marketing phrases and certainly 'Internet of Things' or 'IoT' is right up there with the best (worst) of them. But the concept behind the phrase is worth understanding as it drives the next generation of..... Listed under: [Wireless Projects](#)

131. [Making a RFID Card Reader with Arduino Yún](#)



Surya Mattu is a creative technologist who loves to make things. He's based in NYC and working at ITP, a two-year graduate program exploring the imaginative use of communications technologies. Today he's sharing with us how feasible it could be to

build an RFID-controlled entry..... Listed under: [RFID – NFC projects](#)

132. [Arduino Project 6: Web-controlled music player](#)



Our NetPlay project is built on a standard breadboard. In our previous Arduino masterclass we briefly introduced the Ethernet Shield an Arduino expansion board that adds Ethernet connectivity plus microSD card storage. We used that storage as the basis of a simple one-button digital audio..... Listed under: [Other Projects](#)

133. [Simulating and controlling GE Color Effects Lights with Arduino](#)



Overview This project builds a Christmas lights controller for the GE Color Effects lights allowing programmed control of up to 8 sets of Christmas lights. Furthermore, it provides a function specific language for programming patterns for these lights and an emulation environment for testing the..... Listed under: [LED Projects](#)

134. [Arduino Project 8: Stompy the robot \(part 1\)](#)



Our first Arduino robot called Rolly in our February issue proved to be a popular project. Powered by an Arduino Uno board it was easy to put together and cost very little. In this project we upped the ante again with our first walking robot..... Listed under: [Robotics – Automation Projects](#)

135. [Tutorial: Arduino Motor/Stepper/Servo Shield – Part 1: Servos](#)



This post starts a small (or larger?) series of tutorials using the Arduino Motor/Stepper/Servo Shield with the FRDM-KL25Z board.

That motor shield is probably one of the most versatile on the market, and features 2 servo and 4 motor connectors for DC or stepper motors..... Listed under: [Motor Projects](#)

136. [Communication between a USB/serial device and an AVR \(atmega/Arduino\) microcontroller](#)



I have a device which provides a USB port. If I attach it to a Windows PC it is recognized as a “CP2103 USB to UART Bridge Controller”. According to the device documentation, it should communicate in serial format at 38400bps. I have to talk to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

137. [Store Arduino data to Firebase database \[Howto\]](#)



The last few weeks I was playing with Firebase mostly because I wanted to get familiar with this technology. So at some point I thought that it will be a great idea to connect Arduino with Firebase. Imagine that you have a simple temperature sensor..... Listed under: [Temperature Measurement Projects](#)

138. [New Arduino Project: Spectrum Analyzer?](#)



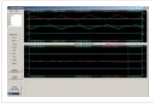
I've been reading a lot about receivers, and it sounds like one important thing is filtering. It makes sense too – simple receivers can suffer from front end overload due to a strong signal. And when on the ham bands, you never know where that..... Listed under: [Development Board – Kits Projects](#)

139. [Arduino Projects: Digital Audio Recorder](#)



Being able to capture sound, store it and play it over and over again never fails to leave me in awe of its pioneers, from Thomas Edison to Alan Blumlein, the British electrical engineer who, in 1931, invented ‘binaural recording’ – what we now call..... Listed under: [Sound – Audio Projects](#)

140. [Indoor Weather Station using Arduino](#)



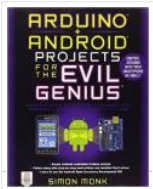
Introduction In my first article using the Arduino 2009 board, I described a simple temperature sensor interfaced using Visual Basic. I have developed the board and Visual Basic code to give a fairly usable indoor weather station. Overall Operation The Arduino 2009 acts as a..... Listed under: [Sensor – Transducer – Detector Projects](#)

141. [Arduino Weatherstation](#)



At University, Alexander Zenger and I decided to realise a weatherstation with an Arduino Microcontroller. We wanted to measure temperatur, pressure and humidity. It should be also possible to get every 5 min a value update on an external server. Our basic idea was to develop..... Listed under: [Temperature Measurement Projects](#)

142. [Arduino and Android Projects for the Evil Genius](#)



Since this book was written, Arduino 1.0 was released and Google has changed the Open Accessory standard a lot. At the start of December 2011 Arduino 1.0 was released. This changed a few things, requiring all third-party libraries to be updated. This hasn't happened yet..... Listed under: [Phone Projects](#)

143. [1B – Arduino Project – Perry the Predator Pillow](#)



The Team Kaitlin Schaer as scribe; Bryan Gardiner as tutor; Ruben Markowitz as designer; Anna Failla as integrator Introduction In a time where the logistics of sleep can be all too much to handle, there is a solution! There is a smarter pillow, a pillow that.....

Listed under: [Home Automation Projects](#)

144. [Add a TFT Display to your Arduino projects \(1.8 TFT SPI 128×160\)](#)



In all my arduino projects I was using cheap 1602 LCDs mostly because... they are cheap but also of the libraries flexibility.

Recently I found a nice TFT 1.8 inch 128×160 in a very competitive price and i thought to give it a go. Just..... Listed under: [LCD Projects](#)

145. [The E-Taster Assistance System with Lab-on-Spoon and Lab-on Fork as 'Electronic Tongues'](#)



Subject: Daily life activities of food preparation can be challenging for consumers due to restricted skills and experience, loss of perceptive abilities (accident/aging) or due to product fraud and contaminations, commonly summarized under the term of food adulteration, which are exceeding human perceptive abilities in..... Listed under:

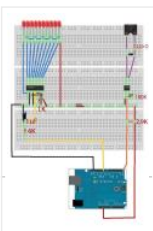
[Wireless Projects](#)

146. [Interfacing an Arduino with LCDs](#)



Introduction This is the second article in a three part series I am writing on the Arduino hardware platform. This article focuses on wiring an Arduino to a character LCD and a graphic LCD, and includes static and animated demos to show off the capabilities..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#)

147. [Midi VU meter, LM3914, Arduino, PWM](#)



Hello everybody, I've been working on a midi controller for some time now, Midi OUT hasn't been a problem, but for Midi IN i had to take some more time. i've used this circuit for midi input but i've used a 4n25: original thread @.....

Listed under: [Metering – Instrument Projects](#)

148. [Arduino Event-Driven Universal AV Remote](#)



TL;DR – I wanted all of my AV components to turn on and change inputs as soon as I started Airplaying music to my Apple TV from my iPhone, so I popped open the Apple TV, wired up a photocell sensor to an Arduino Uno,..... Listed under: [Wireless Projects](#)

149. [Android Arduino Communication through Modbus and Rs485](#)



In this post I'd like to describe you a project I'm working on that consists of connecting an Android development board to one (or more) Arduino slave(s) using modbus protocol and rs485. Even though the idea of this project could be applied in many fields,..... Listed under: [Development Board – Kits Projects](#)

150. [Safe and simple AC PWM Dimmer for arduino / Raspberry pi](#)



Dimmer With MOSFET This circuit shows that dimmers intended for use at mains voltage do not always have to contain a triac. Here, a MOSFET (BUZ41A, 500 V/4.5A) in a diode bridge is used to control the voltage across an incandescent bulb with pulse-width modulation. Listed under: [PWM Projects](#)

151. [Arduino Distance Detector with a Buzzer and LED's](#)



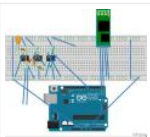
This is a simple guide on how to make a distance detector using an Arduino, a HC-SR04 Ultrasonic Sensor, a Buzzer, and some LED's. The ultimate goal of this tutorial is to use the buzzer and LED's to display how far the object is from..... Listed under: [LED Projects](#)

152. [Displaying Arduino data](#)



Arduino temperature display I've had an Arduino-based weather station since June 2009, but one problem with it has been that there hasn't been any easy way to display the data in real time without going to the database (or the raw import files) to see..... Listed under: [LCD Projects](#)

153. [Arduino – Cannot get ECG readings from heart, but I do when I poke at the leads](#)



down vote favorite I have a minor issue with my ECG. When I poke at the leads, I get a reading. But when I hold the leads or place it near my heart, I don't get anything. I'm pretty sure this is hardware related, but..... Listed under: [Medical – Health based Projects](#)

154. [Pololu Wixel Shield for Arduino User's Guide](#)



1. Overview The Wixel shield seamlessly enables a wireless link (with a typical range of ~50 feet) to replace your Arduino's USB interface, which means you can use the standard Arduino computer software to: wirelessly program the Arduino (this feature is not available with the Arduino..... Listed under: [Wireless Projects](#)

155. [Stepper Motor Control System Based On Arduino With ULN2003 Chip](#)



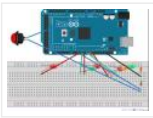
Project Summary: This project uses ULN2003 chip to drive. The working voltage is DC5V. It is widely used on ATM machine, inkjet printer, cutting plotter, fax machine, spraying equipment, medical instruments and equipments, PC peripheral, and USB Mass Storage ,precise instrument, industrial control system, office automation, robot areas, etc. Bill of..... Listed under: [Motor Projects](#)

156. [How to make a Arduino LED Scroll Bar](#)



Today I want to make a LED Scroll Bar as the above picture showed. Ten LED strips can flash in different effects by using a control board. Required Components LED strip, Arduino Nano, Dupont line and a control board. So, how to make a LED..... Listed under: [LED Projects](#)

157. [Traffic light and pedestrian crossing implemented with an Arduino](#)



This video shows the Traffic light and pedestrian crossing I've implemented with an Arduino. It's a reproduction of the crossing near my home, timings taken from a video of it. Incidentally, I produced the diagrams for this using a product called Fritzing. It's a nifty piece of..... Listed under: [Development Board – Kits Projects](#)

158. [Rain Alarm Project](#)



Water is basic need in every one's life. Saving and proper usage of water is very important. Here is an easy project which will give the alarm when there is rain, so that we can make some actions and save the rain water. As a..... Listed under: [Home Automation Projects](#)

159. [RC Quadrotor Helicopter](#)



This project is a RC quadrotor helicopter (quadcopter, quadcopter, quadcopter, etc). It's a RC helicopter that uses 4 rotors. You need some pre-requisite skills: How to use Arduino, enough to get started Soldering, wiring, basic electronic skills Basic hand tool operation A quadrotor helicopter flies..... Listed under: [How To – DIY – Projects](#)

160. [A Voice Shield for Arduino – Give Voice to your Ideas!](#)



The objective of this project is to build an Arduino voice shield to empower thousands of voice related applications! All this mostly thanks to an integrated ISD1790PY chip. This particular voice/TTS feature can be useful to integrate voice messages in alarm systems, to implement generic..... Listed under: [Home Automation Projects](#)

161. [\[ETC\] Open Feathercoin ATM](#)



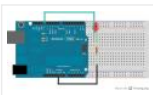
Open Fethercoin ATM is an open-source automated teller machine for education and experimentation. Based on John Mayo Smith's OpenBitcoinATM which can be seen in action here A “voucher” is printed containing a private key QR Code that has been pre-loaded with the correct value of..... Listed under: [Other Projects](#)

162. [Scooterputer](#)



I spend a fair amount of time zipping around town on my scooter, and thought it would be cool to add a voltage monitor to warn when the battery might need recharging. Waiting until the electric starter no longer works is somehow lacking. So after..... Listed under: [LED Projects](#)

163. [Arduino Tutorial – Chapter 2.3: Schematic and Breadboard Diagrams](#)



Schematic Diagram You may remember, if you studied electronics as part of your science course at school, that there is a specific way of drawing circuit diagrams. Each component has a particular symbol (which may vary slightly depending where in the world you live) that..... Listed under: [Development Board – Kits Projects](#), [LED Projects](#)

164. [The LCDuino-1 I/O processor](#)



News – April 25, 2010: All future announcements and updates for the LCDuino-1 and related app modules (δ1 relay-based attenuator, δ2 relay-based input/output selector, and others) have moved to the new AMB DIY audio forum. We have an entire forum category dedicated to the LCDuino..... Listed under: [LCD Projects](#)

165. [Web Server with Two Temperature Gauges](#)



This project consists of two temperatures that are measured by the Arduino using two MCP9700 temperature sensors An Arduino Uno and Ethernet shield are set up as a web server that hosts a web page to display the two temperatures on two gauges. The web..... Listed under: [Temperature Measurement Projects](#)

166. [How to Text Yourself when your DSC PC1550 Home Security System Alarms](#)



I have a home security system that was installed when my home was built in the early 1990's. It is, or was until I modified it, a wired perimeter system with a single wired motion detector. The system is a DSC PC1550 and originally was..... Listed under: [Security – Safety Projects](#)

167. [A lightning flash counter](#)



Many years ago, I think it was in 1997, I stepped into an interesting circuit on a book about high voltage [1]. It was the diagram of a simple "lightning flash counter" intended to help in designing lightning protections on power lines. The description was..... Listed under: [Other Projects](#)

168. [Using an Arduino as a garage car parking sensor](#)



"M-my lord, it-it's impossible to locate the ship. It's out of our range." – Nute Gunray We recently moved into a new house and as always the first problem to address was finding the optimal place to park cars in the garage. Ideally, we wanted..... Listed under: [Sensor – Transducer – Detector Projects](#)

169. [Gesture control car\(robot\) with Arduino and Android\(bluetooth\)](#)



Hi folks, Here's an interesting project for all you creative minds out there. We are going to build an android phone controlled RC car. Nothing could be more fascinating than remote controlled cars. This one uses Bluetooth for communication and accelerometer of the mobile device..... Listed under: [Bluetooth Projects](#), [Robotics – Automation Projects](#)

170. [GSM Home Security Alarm System with Arduino](#)



This project deals with the design & development of a theft control system for home, which is being used to prevent/control any theft attempt. The developed system makes use of an embedded system (comprises an open hardware microcontroller and a gsm modem) based on Global..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)

171. [Arduino RFID Reader RC522 + Access Control System](#)



I just received my RC522 RFID reader and made this simple Arduino access control system that uses the reader, a buzzer for the alarm and a relay shield for the security system. The relay can be used to open a door lock and if you..... Listed under: [RFID – NFC projects](#)

172. [Fun With The Arduino Esplora: A Digital Picture Frame](#)



With this article I kick off my series on the Arduino Esplora board. Today's project is a nice (and cheap!) little digital picture frame that uses the Esplora's TFT Screen add-on. Materials Needed In this section you will find the materials that you need to..... Listed under: [LED Projects](#)

173. [Rotary Encoder & Arduino](#)

I am not sure, but it was in year 1999, a non-stop (360 degree rotation) potentiometer found in a stereo music system confused me a lot. At that time, I failed to keyed out the strange potentiometer manufactured by ALPS. Later, I learned that it's..... Listed under: [Other Projects](#)



174. [Arduino based Bi-color LED Matrix Flappy Bird Game](#)



We have built quite a few projects using the Bi-color (Red and Green) LED Matrix Driver Module kits from jolliFactory and have published them as instructables here. Each of these modules uses two MAX7219 Display Driver ICs to drive a Bi-color LED Matrix. These ICs..... Listed under: [LED Projects](#)

175. [Arduino based Electronic Queuing System](#)



This is a Queuing System project requested by a clinic assistant which allows the doctor enter number from a keyboard and display it on a 32x16 LED panel. This project uses two Arduino, the first Arduino functioned as a SENDER which included a PS2 keyboard..... Listed under: [LED Projects](#)

176. [Digital Arduino Voltmeter with Temperature](#)



Step 1: The case I dug out an appropriate case from the dumpster, milled out a rectangular hole for the lcd, and drilled holes to mount the LCD and the Arduino. I used brass standoffs and fiber washers to prevent shorts. Then I gave the..... Listed under: [Metering – Instrument Projects](#)

177. [Learning Sequential Logic Design for a Digital Clock](#)



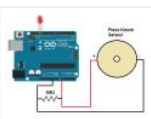
This instructable is for two purposes 1) to understand and learn the fundamentals of sequential logic 2) use that knowledge to create a digital clock. Digital clocks have been built by countless electronics hobbyists over the world. So why have I chosen to implement that?..... Listed under: [Clock – Timer Projects](#)

178. [Homebrew Arduino Pulse Monitor \(Visualize Your Heartbeat\)](#)



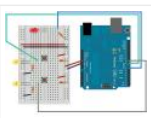
Movies look cool with those EKG (electrocardiogram), the one that beeps and detects heart activities. A few months ago, we had to shoot a hospital scene for our school project. We needed an EKG instrument. To keep the movie authentic, we didn't want to fake..... Listed under: [Medical – Health based Projects](#)

179. [How to Build a \(Piezo\) Knock Sensor Circuit](#)



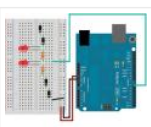
In this article, we go over how to build a piezo knock sensor circuit. A knock sensor is a sensor which produces a voltage in response to some type of physical stress such as a knock or vibration. This is why it's called a knock..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)

180. [Simulating Logic Gates](#)



Introduction This project is a simple way of using the Arduino to simulate the behaviour of logic gates. Logic gates are explained on this page. The project does not actually carry out the function of the logic gate, just turns a light on or off..... Listed under: [LED Projects](#)

181. [Tri-State Logic](#)



Introduction So far we have sent one of two values to any Arduino output pin, either HIGH or LOW. This project shows how we can exploit a third state of the Arduino pins to reduce the number of pins needed to control LEDs. In the..... Listed under: [LED Projects](#)

182. [Coin slot detector](#)



when your coin slot is exposed, this wearable hip-pack vibrates that area to make you aware of it. you decide to cover up, or let it all hang out. the coin slot detector is a simple way to tackle the complicated modern problem low-rise jeans..... Listed under: [Sensor – Transducer – Detector Projects](#)

183. [Polargraph Drawing Machine](#)



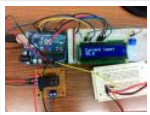
This machine, a variation on the hanging-pen plotter is a conspicuous and wilfully naive attempt to break out of the pristine, pixel perfect, colour-corrected space that exists inside our computers. It's a drawing machine, that takes a pen (a human tool) and uses it to..... Listed under: [Robotics – Automation Projects](#)

184. [Turn your Arduino into a Magnetic Card Reader!](#)



Everyone has used a magnetic card reader, I believe. I mean, who carries cash these days? They're not difficult to get your hands on, either, and during a trip to my favorite local electronics shop, I found a bin full of these guys. So....of course,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

185. [Arduino Sous-Vide Cooker](#)



Sous-vide cooking allows you to precisely control the temperature of cooked food (how “doneness” is measured) by immersing it in a carefully controlled water bath. It's possible, but seriously difficult, to do this just with a thermometer and a pot on the stove... but if..... Listed under: [Temperature Measurement Projects](#)

186. [Basic Projects using chipKIT Uno32](#)



Happy Tuesday, everyone! I tend to get excited about products that enable beginners to be really creative, and today's product highlight is one I think is worth getting excited about! [video width="380" height="285" id="_63Mq6QMxxM&" type="youtube"] A few things that I really like about the shield:..... Listed under: [How To – DIY – Projects](#)

187. [Arduino Laser Tag – Duino Tag](#)



Duino tagger- General introduction Duino tag is a laser tag system based around the arduino. Finally a laser tag system that can be tweaked modded and hacked until you have the perfect laser tag system for office ordnance, woodland wars and suburban skirmishes. Laser tag..... Listed under: [Game – Entertainment Projects](#)

188. [Wii Nunchuck Adapter](#)



This tutorial is for all those people who have an arduino and want to use there Wii nunchuck as an input device, but dont really feel like cutting open the cord and ruining the nunchuck FOREVER!!!!!!well youve come to the right place! Step 1: Supplies..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

189. [Flamethrowing Jack-O'-Lantern](#)



A flamethrowing jack-o'-lantern keeps the trick-or-treaters a safe distance from your house and is a fine addition to any anti-Halloween arsenal. At the first sign of any sugar-obsessed imp, simply press the trigger button and wirelessly shoot a one-second burst of flames out of the..... Listed under: [Other Projects](#)

190. [Make a swimming Robo-Snake](#)



Sneel is the name of my snake / eel swimming robot. This is documentation of hardware, software and mechanical design of Sneel_003. urethane flex tubing, microcontrollers, Zigbee wireless radio, hose clamps, wires, servo motors, titanium servo brackets, silicon, marine grease, epoxy, pond pump Sneel is..... Listed under: [Robotics – Automation Projects](#)

191. [The EyeWriter 2.0](#)



The EyeWriter is a low-cost eye-tracking apparatus + custom software that allows graffiti writers and artists with paralysis resulting from Amyotrophic Lateral Sclerosis to draw using only their eyes. The original design, as shown here, featured a pair of glasses as the basis for the..... Listed under: [Development Board – Kits Projects](#)

192. [N: how to make a multi-layered acrylic and LED sculpture with variable lighting levels](#)



Here you can find out how to make you very own n as made for the exhibition www.laplandscape.co.uk curated by art/design group Lapland. More images can be seen at flickr This exhibition runs from Wednesday 26 November – Friday 12 December 2008 inclusive, and had a..... Listed under: [LED Projects](#)

193. [Arduino-Controlled Robotic Drum](#)



For years I have been telling anyone who listens that I was going to build a robotic drum. Most people kind of shrugged indifferently. Even as I built it, most people kind of glanced over at it and conveyed doubtfulness. It seemed like no one..... Listed under: [Robotics – Automation Projects](#)

194. [SITWAY](#)



You are never too old to learn and try new things. I think one of the best days in my life was the day I discovered the Instructables web site. It opened up a whole new world to me. This is my third instructable Listed under: [Robotics – Automation Projects](#)

195. [Arduino R/C Lawnmower \(painted\)](#)



What this is: This instructable will show you how to make your Arduino into an R/C interface that you can use for just about anything requiring remote control. I will also show you how I built an R/C lawnmower using my Arduino, a cheap R/C transmitter and..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

196. [Power Laces- the Auto lacing shoe](#)



Also, check out Power Laces: Version 2.0 Why wait until 2015? Inspired by 'Back to The Future II', this project is less 'Practical' than 'Proof of Concept', but hopefully it'll tide you over until Nike comes out with something more polished. This was also the..... Listed under: [Other Projects](#)

197. [Sigh Collector](#)



Sigh v. i. [imp. & p. p. {Sighed}; p. pr. & vb. n. {Sighing}.] 1. To inhale a larger quantity of air than usual, and immediately expel it; to make a deep single audible respiration, especially as the result or involuntary expression of fatigue, exhaustion,..... Listed under: [Other Projects](#), [Phone Projects](#)

198. [On The Fly – Prototype II Final Report: Home Automation Framework](#)



Introduction: The Home Automation Framework project is a web application that can remotely control the electronic devices in one's home using a web interface on a smartphone, tablet or desktop computer. The project facilitates ease of access and remote control of electronic devices for those..... Listed under: [Home Automation Projects](#)

199. [LED Cube 8x8x8](#)



Create your own 8x8x8 LED Cube 3-dimensional display! We believe this Instructable is the most comprehensive step-by-step guide to build an 8x8x8 LED Cube ever published on the intertubes. It will teach you everything from theory of operation, how to build the cube, to the..... Listed under: [LED Projects](#)

200. [Cloud Sensor Base-Station](#)



What I want to do I want to create a platform with the capacity to control a large number of sensors and actuators necessary for the hydronponics system outlined in this wiki, and to serve as the central gateway to a cloud-enabled dashboard. The basis..... Listed under: [Sensor – Transducer – Detector Projects](#)

201. [Drawing on a 7x5 LED matrix with Arduino in C](#)



In my component drawers I have a LTP-7357AG, which is a matrix of 35 green LEDs conveniently packaged in a 12-pin display. I wanted to play with it so I began to hook it with my Arduino Uno. This post is part of a series about programming Arduino.....

Listed under: [LED Projects](#)

202. [DIY wattmeter with an Arduino](#)



DIY wattmeter with an Arduino It is difficult or sometimes even impossible to measure power and energy with ordinary multimeters. To carry out such a measurement reliable and accurate, a special wattmeter is required. Because these meters are very expensive, a cheaper solution is presented..... Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)

203. [The Viciously Simple Clap-ON Clap-OFF Circuit For Arduino](#)



Hi Everyone! I've had a few people ask about creating a simple clap-on/clap-off circuit using Arduino. Well those who are interested are now in luck. The software in this instructable is simple and well commented. The schematic is simple, and the components are easy and..... Listed under: [LED Projects](#)

204. [Arduino car LCD display](#)



Here is a project I made a couple of years ago for my father's car. The original dashboard's info-panel which displayed current time, date and temperature was working only partly – and that only after a good cleaning and connector fastening. In other words –..... Listed under: [Car Projects](#), [LCD Projects](#)

205. [Automatic Home surveillance system using arduino\(simple and cheap\)](#)



The goal of my project is to achieve Automatic home surveillance system without any manual interference. In general other surveillance system it is necessary to power ON TV and camera receiver every time. And also it needs to any user input to view who is..... Listed under: [Home Automation Projects](#)

206. [GESTURE VOCALIZER FOR DUMB PEOPLE INTERACTIn ION](#)



To establish a communication or interaction with Deaf and Mute people is of utter importance nowadays. These people interact through hand gestures or signs. Gestures are basically the physical action form performed by a person to convey some meaningful information. Gestures are a powerful means..... Listed under: [Other Projects](#)

207. [Solar Panel Battery Charge Controller Using Arduino](#)



This is an updated version of Solar Panel Charge Controller Using Arduino. Solar Panel Battery Charge Controller Using Arduino Pictures of Power box and Arduino solar charge regulator: Charge Regulator with Power Box Connections to Regulator Inside the Box The output voltage of the ACS712..... Listed under: [Solar energy projects](#)

208. [LED firefly Jars](#)



There's a nice charm to fireflies in a jar—except for, you know, all the dead bugs afterwards. I decided to make a bunch of fake fireflies in real jars for decoration at an outdoor event. The fireflies are yellow LEDs controlled by a small ATtiny45..... Listed under: [LED Projects](#)

209. [Accelerometer Controlled Robot](#)



Most of industrial robots are still programmed using the typical teaching process, through the use of the robot teach pendant. In this paper is proposed an accelerometer-based system to control an industrial robot using two low-cost and small 3-axis wireless accelerometers. These accelerometers are attached..... Listed under: [Robotics – Automation Projects](#)

210. [Bluetooth Controlled Robot](#)



In this proposed system we going to construct a basic DC motored robot which we are going to control with android app easily available on google play store named bluecontrol. With Basic mobility of robot like forward, Reverse, left, right we try to implement four..... Listed under: [Bluetooth Projects](#), [Robotics – Automation Projects](#)

211. [Arduino Project: Intervalometer for Fuji cameras](#)



This post is about an arduino-based intervalometer I built for my camera, a Fuji S9600 dSLR. I decided to go for a very simple interface: a rotary switch in the middle of a plastic box which would allow me to select 12 pre-defined intervals. I..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Video – Camera – Imaging Projects](#)

212. [Automatic Garden Watering Device – Arduino](#)



As part of the Content Creation course for my MLIS degree (Our class blog: <http://scumakers.wordpress.com/>), I needed to come up with a final project and wanted to learn to use an Arduino. In the end I came up with this device to automatically sense..... Listed under: [Home Automation Projects](#)

213. [Arduino Hygrometer](#)



I am building an automated irrigation system for my vegetable patch. This will be a system that monitors the soil moisture level and then turns on a pump to send water to my garden according to the detected moisture level. The water is coming from..... Listed under: [LED Projects](#)

214. [Make a Web Connected Robot \(for about \\$500\) \(using an Arduino and Netbook\)](#)



This Instructable will show you how to build your own Web Connected Robot (using an Arduino micro-controller and Asus eee pc). Why would you want a Web Connected Robot? To play with of course. Drive your robot from across the room or across the country,..... Listed under: [Robotics – Automation Projects](#)

215. [Arduino Motor Party](#)



In this instructable I will show you how to throw an Arduino motor party. I will also be giving away an Arduino Mega, Arduino Uno, and an Arduino Pro Mini. (Details at the end) Step 1: Assembly + Code You'll need a handful of motors..... Listed under: [Motor Projects](#)

216. [Send SMS from Arduino over the Internet using ENC28J60 and Thingspeak](#)

This Instructable explains how to send an SMS from an Arduino using the Internet. There are many ways to approach this and I will explain one of the different methods used to accomplish this task. Some major points needed for my project: I have a..... Listed under:



[Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

217. [Washer Dryer Laundry Alarm using Arudino & SMS Text Messaging Alerts](#)



Have you ever wished there was a better way to be notified when your laundry was done? Have you ever forgotten a load in the washer because you couldn't hear the buzzer and your clothes became smelly and moldy from sitting there for too long?..... Listed under: [Home Automation Projects](#), [Wireless Projects](#)

218. [Converting infrared to RF signals with Arduino](#)



In this project we will show you how to switch on and off the power sockets box with an IR remote. Not only the power sockets box, but other RF receivers can be switched on and off with the same IR remote as well. We..... Listed under: [Wireless Projects](#)

219. [How to Make a Wireless Path Tracking System Using Mouse, XBee and Arduino](#)



The applications of microcontroller are not limited to control simple electrical or electronic device but they are widely used in robotics and automotive industries nowadays. From simple rear view mirror control to complex engine control functions are done by the microcontroller. The microcontroller can even..... Listed under: [Wireless Projects](#)

220. [How to Transmit Mouse Data Using Xbee with Arduino](#)



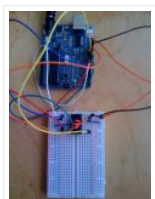
The PS2 mouse is an input device which can communicate with a host device using the PS2 protocol. It can be connected to a host device using the 6 pin mini DIN connector. The mouse will continuously give output which can be decoded to get..... Listed under: [Development Board – Kits Projects](#)

221. [How To Save a Text In The EEPROM of The Arduino](#)



A microcontroller might need to store its data like sensor value, or a particular count or image data for a long period of time. The most common type of memory used with the microcontroller based systems is EEPROM. The EEPROM stands for Electrically Erasable Programmable..... Listed under: [LED Projects](#)

222. [Drawing an Arduino Circuit Diagram](#)



I've had an Arduino Duemilanove now for a couple of weeks. If you're not familiar with the Arduino, it is "an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software". It has a small microcontroller, a USB port to connect to your computer..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

223. [Generate Random Number using Arduino](#)



A random number generation is very important in computing devices which helps them to do task in random manner. The applications of random number generation can be found in shuffling the audio files in an audio player, in almost all kind of digital games, generating..... Listed under: [Development Board – Kits Projects](#)

224. [Augment a Moog Etherwave Theremin](#)



I'm going to go through my process of hacking a Moog Etherwave Theremin. I created a new acrylic top, partially sanded to be translucent in certain areas, and created my own circuit around an ATmega168 Arduino Bootloaded microcontroller which is stealing a control voltage from..... Listed under: [LED Projects](#)

225. [Project Suite Bros: Voice Activated LED Friendship Photoset \(Arduino, Bluetooth, Crafts\)](#)



(and partner-in-crime, Abbie). Now, I'm off to the next stage of my life, so I decided to build this friendship photoset for Kevin and Briton to remember our golden era. We called ourselves: "The Suite Bros". This project is actually an extension of the "Voice..... Listed under: [LED Projects](#)

226. [Arduino Garage Controller](#)



Although there are many garage door projects on Instructables using Arduinos, I needed/wanted something different. Last year, we had a warm summer and when I would come home after work, I would leave the garage door open about 1 foot so it could cool off..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

227. [Arduino based Drone Quadricopter](#)



[gallery ids="19920,19921,19922,19923,19924,19925,19926,19927"] arduino based Drone Quadricopter It's a tiny quadrotor helicopter! Update Feb 25 2012: Warning, I may have discovered a bug inside the CadSoft EAGLE 6.1.0 software that may make the PCB look slightly different. My design files are meant for 5.11 so use..... Listed under: [Drone](#)

228. [Project: Cleaner robot using Magician Chassis, Arduino, distance sensor and hand sweeper](#)



This is a cleaner robot so you can give to your mommy or just use to clean your bedroom =P. Material List: 1x Arduino UNO R3 1x Magician Chassis 1x Shield Motor Driver (Shield 4Power) 1x Distance Sensor 1x Servomotor 1x Hand Sweeper 1x Battery 1..... Listed under: [Robotics – Automation Projects](#)

229. [Arduino-Based Shadow Alarm](#)



Shadow alarms are usually used for protection against theft. A shadow alarm is a device that sounds an alarm when a shadow falls on it. Described here is a simple circuit of an arduino based shadow alarm. This compact shadow alarm unit is capable of sensing a..... Listed under: [Security – Safety Projects](#)

230. [Arduino Bicycle Alarm and Lights](#)



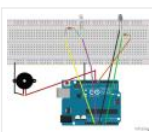
This alarm is a good way to alert you if somebody messes with your bike. I had a bicycle stolen a while back and decided there had to be a better way to keep my bike secure. When I searched for bicycle alarms, all I..... Listed under: [Security – Safety Projects](#)

231. [How to Use IR Remotes with Arduino \(Current and Updated\)](#)



I'm tired of these complicated tutorials on how to use certain things. I like simple, easy to understand, step by step instructions. My biggest problem was with IR and POV*. I've finally mastered how to control my project with any TV remote in a few..... Listed under: [Wireless Projects](#)

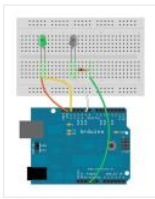
232. [ARDUINO Burglar Alarm Using Infrared Emitter-Detector pair](#)



In this tutorial i will show you , how to make a simple Inexpensive Intrusion Detection(Burglar alarm) using an Arduino Uno board . This project uses the Infrared Emitter-Detector pair to detect intrusion and triggers an alarm as soon as the object crosses the infrared..... Listed under: [Wireless Projects](#)

233. [Arduino for Photographers: Building a Universal Intervalometer](#)

Practicing the art of time-lapse photography without an intervalometer is doable, but not particularly efficient. And while any decent photo equipment store will be happy to sell you one, you can go the DIY way and build your own intervalometer based on the excellent Arduino platform. Theoretically, building..... Listed under: [LED Projects](#)



234. [Connecting the ADXL337 to the Arduino](#)



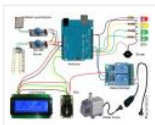
Today I'll write about the ADXL337 accelerometer. The ADXL337 measures the acceleration of the x, y and z axis. This means it measures the force acting on any of the axes at a specific moment in time. Because it's an analog device the measurement intervals are as short..... Listed under: [Other Projects](#)

235. [Arduino Accelerometer mma7361](#)



Hey guys, I am a teaching assistant for an introduction to engineering class for biomedical engineering majors at Vanderbilt University this semester. I created this video to explain analog-to-digital conversion to them because time ran out during class and I did not get to this..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)

236. [Arduino Automatic Watering System](#)



INTRODUCTION & OBJECTIVES: I is a simple system, using Arduino to automate the irrigation and watering of small potted plants or crops. This system does the control of soil moisture, doing indications via LEDs and in case of dry soil emitting a alarm beep. In..... Listed under: [Featured](#), [Home Automation Projects](#)

237. [Arduino Compatible apc220 Wireless rf Module with Graphics LCD](#)



16 node mesh, up to 1000m between nodes, sample two analog voltages per node, link any node to any other node, display data on any node with either graphics or text display, turn on relays based on data at any node, fault tolerant with data..... Listed under: [RFID – NFC projects](#), [Wireless Projects](#)

238. [Arduino DS1307 Clock](#)



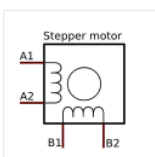
1) Introduction and Images Hello friends, today I am going to build a Digital Clock using Arduino UNO and famous DS1307 Real Time Clock IC. Before we begin, here are some images of the completed project. You can find the YouTube video at the bottom..... Listed under: [Clock – Timer Projects](#), [LCD Projects](#)

239. [MCP41100 an Arduino Controlled Potentiometer](#)



We know the analog potentiometer , is a three-terminal resistor with a sliding contact that forms an adjustable voltage divider . MCP41100 an Arduino Controlled Potentiometer: 1)volume controls on audio equipment. 2) Control the amplifier Gain and offset . 3) Transducer " displacement transducers "..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)

240. [Arduino Bipolar Stepper Motor](#)



It is a well known fact that Stepper motors are awesome! The only downside is that they can be a bit trickier to get going than servos and plain old DC motors. If you are interested in the inner mechanics and theory of stepper motors, check this..... Listed under: [Motor Projects](#)

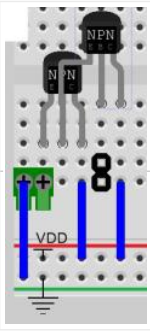
241. [How To Generate Square Wave Using Arduino](#)

Any AVR microcontroller based board which follows the standard Arduino schematic and is flashed with the Arduino bootloader can be called an Arduino board. The Arduino is referred to as open source hardware and the Arduino IDE is also open source and anybody can



contribute..... Listed under: [Development Board – Kits Projects](#)

242. [Arduino and Transistors Question – RE: School Musical Production](#)



One of the directors has asked me to create a special backdrop for our college musical. This particular backdrop has a particular design (see below) that includes LED strip lighting to give the feel of a 1920s casino sign – similar to what is seen..... Listed under: [LED Projects](#)

243. [Build Arduino Based Home Security System Using PIR Motion Sensor](#)



PIR sensors are widely applied in wireless residential security systems, home alarms systems and many more security circuits as motion detector sensors. A typical PIR sensor detects the infrared red (IR) waves from human body and so it is also known as 'human sensor'. It..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)

244. [Temperature Sensing with Arduino](#)



As part of the CanSat Primary Mission, we need to measure temperature. For this our starter kit has given us an Arduino Uno R3 micro-controller, as well as some resistors and an NTCLE101E3 NTC Thermistor. The thermistor is a special kind of resistor that changes..... Listed under: [Sensor – Transducer – Detector Projects](#), [Temperature Measurement Projects](#)

245. [Arduino Basics #5 – Add SD storage to Arduino](#)



Arduino Uno's microcontroller board is great, but the one thing it's not overly generous with is storage. Having 32KB of program flash storage, 2KB of RAM and 1KB of programmable EEPROM space at your disposal is fine for many Arduino projects, but it's not enough..... Listed under: [Arduino Programmer Projects](#)

246. [GSM Based Wireless Notice Board](#)



ABSTRACT: There are several places which require vital notice to be displayed like colleges, railway stations, share-market, restaurants, hospitals etc. Looking into the present trend of information transfer, it is seen that vital notice take time to be displayed on the displaying boards. This latency..... Listed under: [Wireless Projects](#)

247. [How to Make Phonecall From GSM Module Using Arduino](#)



One can use a cell phone with any cellular networks around the globe if the proper SIM card is inserted in it. This is possible because there is some device inside the cell phone which follows a global standard enabling them to connect with different..... Listed under: [Phone Projects](#)

248. [Sinewave Inverter Circuit Using Arduino](#)



The post explains how to build a simple sinewave inverter circuit using PWM feed from an Arduino Uno board, the article also discusses a sinewave 3 phase inverter using the same input from an Arduino. The idea was requested by Mr. Raju Visshwanath Technical Specifications..... Listed under: [PWM Projects](#)

249. [Arduino Digital Voltmeter 0V to 30V](#)



Here is a useful circuit for Arduino lovers and experimenters. It is a simple digital voltmeter, which can safely measure input dc voltages in 0 to 30V range. The Arduino board can be powered from a standard 9V battery pack, as usual. As you may..... Listed under: [Metering – Instrument Projects](#)

250. [Pololu Dual VNH5019 Motor Driver Shield for Arduino \(ash02a\)](#)



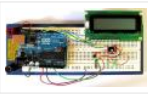
Get your Arduino moving! This shield makes it easy to control two high-power DC motors with your Arduino or Arduino-compatible board. Its dual robust VNH5019 motor drivers operate from 5.5 to 24 V and can deliver a continuous 12 A (30 A peak) per motor, or a continuous..... Listed under: [Motor Projects](#)

251. [Arduino Programming For Beginners: The Traffic Light Controller](#)



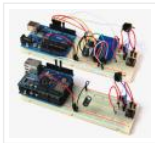
Last week, we learnt about the basic structure of an Arduino program and took a closer look at the 'blink' example. Hopefully you took the opportunity to experiment with code, adjusting the timings. This time, we'll be writing something from scratch. In fact, let's make..... Listed under: [LED Projects](#)

252. [Tutorial 14: Arduino LCD Thermometer](#)



In this tutorial, a temperature sensor (MCP9700 linear active thermistor IC) and LCD are connected to the Arduino. The Arduino reads the temperature from the MCP9700 on analog pin A0 and displays the temperature on the LCD. This video shows the circuit operating. When touched..... Listed under: [LCD Projects](#)

253. [Arduino Project 5: Digital audio player](#)



So far in this series we've had a diverse look at how Arduino can interact with a range of real-world devices from servo motors to ultrasonic range finders TVs to humidity sensors. Now we'll see if we could get the Arduino to make a few..... Listed under: [Sound – Audio Projects](#)

254. [Arduino Project # 1 – Make an Ultrasonic Distance Calculator](#)



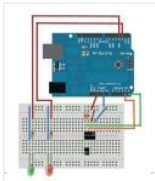
Arduino Project – The distance calculator I have been playing with Arduino (micro-controller) for about 2 years now and I am becoming more and more passionate about circuits. For those who are not aware of Arduino, check out my article "Arduino – A Guide for..... Listed under: [Calculator Projects](#)

255. [Arduino Project 4: Enhancing your mini robot](#)



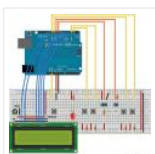
You'll need these: HC-SR04 – Get this ultrasonic sensor from eBay.com.au for \$2. SG90 Servo Motor – We've seen this servo selling for around \$4 on ebay. Motor drive shield – You can get this expansion board for \$5 online. If you're new to APC..... Listed under: [Robotics – Automation Projects](#)

256. [Capacitive Touch Sensor on Arduino](#)



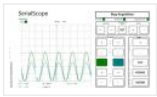
If you ever wanted to integrate touch sensitivity into your project, this board could just do the trick. It's a capacitive touch sensor. These sensors are used in our everyday consumer electronics like notebook trackpads, video game consoles, touchscreens...just to name a few. They work..... Listed under: [Sensor – Transducer – Detector Projects](#)

257. [PID Thermostat](#)



PID Thermostat This is a PID thermostat for the arduino. It supports independent tuning parameters for multiple hardware 'profiles', and includes an autotune mode to estimate the PID parameters for a given setpoint. Installation Hardware DS18-series (I'm using the DS18B20) temperature sensor Solid-state relay rated..... Listed under: [Sensor – Transducer – Detector Projects](#)

258. [Wireless Arduino Oscilloscope](#)



In this guide I will explain how to use a Windows 8.1 phone, Arduino Uno board, and HC-05 Bluetooth module to build a wireless oscilloscope. The phone application has the critical functions of an oscilloscope, although the bandwidth is a measly 300 Hz. Still, if..... Listed under: [Wireless Projects](#)

259. [Simple Arduino Wireless Mesh](#)



Build a low cost simple wireless mesh using arduinos and long range APC220 radio modules. Wireless mesh networks can handle individual nodes not working and are tolerant to environments such as forests and hills where data may not be able to go directly from one..... Listed under: [Wireless Projects](#)

260. [Arduino 3.3V](#)



This Lazy Old Geek (L.O.G.) loves Arduinos. I have noticed that a lot of sensors, like GPS, LCDs, magnetometers are 3.3Vdc sensors. But the standard Arduinos, Uno, RBBB are 5Vdc modules. So I decided I'm going to make more of my Arduino projects with 3.3Vdc..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

261. [Arduino Fridge Magnet](#)



Do you have a habit of leaving notes on the fridge, now take it digital and add an Arduino to it. In this instructable I'm going to show you how to do just that. All you need is an Arduino, an LCD screen and a..... Listed under: [LCD Projects](#)

262. [Ultrasonic Range detector using Arduino and the SR04 Ultrasonic sensor](#)



this is a preliminary instructable that will take you through the steps I took to get the SR04 ULTRASONIC SENSOR connected and working to the Arduino. It will then be incorporated to my mini environment monitor. Eventually, if it all fits, it will end up..... Listed under: [Sensor – Transducer – Detector Projects](#)

263. [Kid-friendly PuppyDuino 0.31](#)



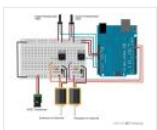
OK, this is not a fully autonomous “get you a beer, open it for you and then tweet about it” robodog (yet ☺ but if you're itching to get past the blinky lights on a breadboard stage with your Arduino and you're ten or know..... Listed under: [LED Projects](#)

264. [The Arduino Mothbot](#)



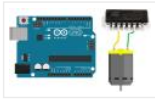
The purpose of this project is to design and build a simple light-following robot using an Arduino Duemilanove microcontroller board. I really wanted to share a robot project that was cheap, simple to build, and had a complete set of instructions for all of the..... Listed under: [Robotics – Automation Projects](#)

265. [David Bynoe works in progress](#)



For an upcoming project I needed a pneumatic ram with a closed loop control system so I could position it accurately. Didn't have the budget for an off the shelf solution, so I bodged one together with an arduino, a couple air solenoid valves, and..... Listed under: [Other Projects](#)

266. [How to Build an H-bridge Circuit with an Arduino Microcontroller](#)



An h-bridge is a chip that allows DC motors to be run versatile, with bidirectional capability. With an H-bridge, motors can go forward or backward, left or right, up or down, etc, depending on the use of the motor(s) in the circuit. Without a microcontroller,..... Listed under: [Motor Projects](#)

267. [Arduino passive IR trigger for Canon EOS](#)



The other day I wanted to experiment with external triggers for my Canon EOS 550D camera. I stumbled upon a nice open source project called Arduino Camera Control from Oleg Mazurov, the creator of the USB Host Shield library for Arduino. The Arduino Camera Control..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

268. [ARDUINO RF power & SWR meter](#)



This sketch will readout RF power and SWR from any SWR bridge (for example 'monimatch' type). As this 'monimatch' type of bridge is frequency dependant, the meter must be calibrated for every band. Because my primary interest was for VHF/UHF/SHF, I have foreseen positions for..... Listed under: [Metering – Instrument Projects](#)

269. [Internet connection indicator box with restart button](#)



THE SETUP For an interface I thought 3 LEDs would be simple enough: Blue for everything is fine (as blue LEDs are cooler than green ones); red for something is wrong; and yellow for the modem and router are being restarted. I added a button..... Listed under: [Internet – Ethernet – LAN Projects](#)

270. [Arduino Security Alarm with Reed Switch](#)



How does the security alarm circuit works? When power is turned on, the circuit goes into standby mode, and this condition is indicated by "SECURITY ALARM" in the LCD screen. Note that here a N/O reedswitch + bar magnet combination is used to detect any mishaps,..... Listed under: [Security – Safety Projects](#)

271. [Line Follower Robot using Arduino](#)



A line follower robot using 8051 microcontroller is already published here and this time the same thing is done using arduino. This line follower robot is basically designed to follow a black line on a white surface. Any way the same project can be used..... Listed under: [Robotics – Automation Projects](#)

272. [HOW TO MAKE CUSTOM GEAR FOR LINEAR MOTION](#)



In the manufacturing industry, a wide variety of devices used at home or in the garden has been experiencing challenges in automating linear displacement of any of the items used. For instance, For example, an automatic opening of gates, automatic unlocking and changing positions of..... Listed under: [Metering – Instrument Projects](#)

273. [Arduino Platform – SIMON Game Implementation](#)



Introduction Having been a CodeProject member for several years, and not having got round to ever publishing an article, left me feeling a bit disappointed in myself. I have thought many a time on what kind of article I can produce. Then after coming across..... Listed under: [Game – Entertainment Projects](#)

274. [Arduino Based Security System using GSM & PIR Sensor](#)



In present time Home/Office and many other place security is most important. In our absence these places are not secure. For make these palaces secure many peoples keep guards and many people prefer electronic security systems. In present time many types of security systems are..... Listed under: [Security – Safety Projects](#)

275. [Interface single and Dual IR Infrared sensor with Arduino and LCD](#)



Interface single and Dual IR Infrared sensor with Arduino and LCD Introduction- Multiple Sensor Interface to Arduino In this another tutorial on sensors for beginners, we are going to interface single and multiple Infrared IR sensors with Arduino Uno development board, working simultaneously and have the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Sensor – Transducer – Detector Projects](#)

276. [Getting Started with Arduino – LED Blinking](#)



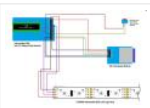
Arduino Uno is the best development board for beginners in the field of embedded systems. We can program Arduino board with less technical knowledge and programming skills. This tutorial is intended to beginners in the field of Arduino. Hope you already have an Arduino board. Then..... Listed under: [LED Projects](#)

277. [26-Way MIDI DRUMS](#)



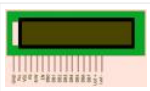
his design is a 26-way MIDI/USB drum pad system with the velocity byte fixed for 10 input drum switches and a 16-way velocity sensitive circuit, providing a full (0-127) velocity range using piezo sensors. The drums are pre-selected to the MIDI outputs 35-50 for the..... Listed under: [Other Projects](#)

278. [LPD8806 SD/LCD Digital Light Wand! \(Last Update – 20 September 2014\)](#)



I have gathered the information from the HL1606 Digital Light Wand Blog and brought it all over to this new page so that there would be a page dedicated to the LPD8806 Digital Light Wand created by ISO-MICK. Mick took my original design and turned..... Listed under: [LCD Projects](#)

279. [Interfacing LCD with Arduino Uno](#)



16x2 character LCD display is a very basic LCD module which is commonly used in electronic projects. 16x2 means it can display 2 rows of 16 characters (columns). Its other variants such as 16x1, 16x4 etc are also available. These LCDs are usually made using..... Listed under: [LCD Projects](#)

280. [Analog to Digital Conversion in ARDUINO](#)



Analog to digital conversion module of ARDUINO UNO has 6 input ports. The number of the port varies with your ARDUINO model but the coding remains the same. The analog reading in the analog inputs are converted into corresponding 10bit(0-1023). ARDUINO developers have made such an option that you..... Listed under: [Other Projects](#)

281. [How to Convert an Arduino into an AVR Flash Programmer](#)



In case you don't have an AVR programmer but you do have an arduino, the arduino can be converted into an AVR flash programmer, meaning it can program bare AVR microcontroller chips. Say if you have an AVR chip and you want to program the..... Listed under: [Arduino Programmer Projects, How To – DIY – Projects](#)

282. [How to Build an Infrared Distance Sensor Circuit](#)



An infrared (IR) distance sensor is a sensor that can measure distance from a solid or physical object. An infrared distance sensor does this through light waves. It sends out infrared light and waits to receive it back at the receiver end. If it receives..... Listed under: [How To – DIY – Projects](#)

283. [How to Build an HC-SR04 Distance Sensor Circuit](#)



An ultrasonic distance sensor is a sensor that can measure distance from a solid or physical object. An ultrasonic range finder does this through sound waves. It sends out high-frequency sound waves and then waits to listen back for these sound waves. If it has..... Listed under: [Sensor – Transducer – Detector Projects](#)

284. [How to Build a Servo Motor Circuit \(with Arduino\)](#)



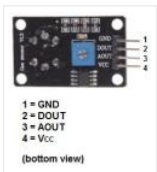
In this project, we will go over how to build a servo motor circuit using an arduino. This is a circuit which can control and rotate a servo motor to rotate a certain amount of degrees. Specifically, in our circuit, we will make it so..... Listed under: [Motor Projects](#)

285. [How to Build an Ohmmeter Using an Arduino](#)



In this project, we will show how you can build an ohmmeter using an arduino. An ohmmeter is a device that can measure resistance. Most of the times now, ohmmeters aren't standalone devices but appear as one of type of measuring device amongst many in..... Listed under: [Metering – Instrument Projects](#)

286. [MQ-7 Carbon Monoxide Sensor Circuit Built with an Arduino](#)



In this project, we will go over how to build a carbon monoxide sensor circuit with an arduino. The carbon monoxide sensor we will use is the MQ-7 sensor. This is a sensor that is sensitive to effects of CO. Carbon monoxide (CO) is a..... Listed under: [Sensor – Transducer – Detector Projects](#)

287. [MQ-3 Alcohol Sensor Circuit Built with an Arduino](#)



In this project, we will go over how to build an alcohol sensor with an arduino. The alcohol sensor we will use is the MQ-3 sensor. This is a sensor that is not only sensitive to alcohol, particularly ethanol, which is the type of alcohol..... Listed under: [Sensor – Transducer – Detector Projects](#)

288. [MQ-2 Smoke Sensor Circuit Built with an Arduino](#)



In this project, we will go over how to build a smoke sensor circuit with an arduino board. The smoke sensor we will use is the MQ-2. This is a sensor that is not only sensitive to smoke, but also to flammable gas. The MQ-2..... Listed under: [Sensor – Transducer – Detector Projects](#)

289. [How to Build a Liquid Level Gauge Circuit with an Arduino](#)



In this project, we will build a liquid level gauge circuit with an arduino. This is a circuit in which a liquid level can be monitored through a gauge. We read the liquid level from the gauge (low, medium, or high), just as you see..... Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)

290. [Arduino Light Meter Circuit](#)



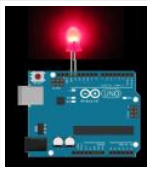
In this project, we will go over how to connect an analog volt panel meter to an arduino so that it can measure and give us a readout of light striking the circuit. In this way, the circuit will function as a light meter. When..... Listed under: [Metering – Instrument Projects](#)

291. [How to Build a Soil Moisture Sensor Circuit with an Arduino](#)



In this project, we are going to build a soil moisture sensor with an Arduino microcontroller. A soil moisture sensor, also called a hygrometer, measures the amount of moisture, or water, in the soil. Therefore, we can tell whether the soil has enough moisture or..... Listed under: [How To – DIY – Projects](#), [Sensor – Transducer – Detector Projects](#)

292. [How to Build a Night Light Circuit Using an Arduino](#)



In this project, we will go over how to build a night light circuit using an arduino. A night light circuit is a circuit which will turn on when nighttime comes, which is when it gets dark and the place could use some illumination. It..... Listed under: [How To – DIY – Projects, LED Projects](#)

293. [How to Build a Heat Detector Circuit Using an Arduino](#)



In this project, we will go over how to build a heat detector circuit using an Arduino. A heat detector circuit is a circuit, of course, which can detect the presence or absence of heat. This could be useful for a wide range of circuits..... Listed under: [Sensor – Transducer – Detector Projects](#)

294. [How to Build a Color Sensor Circuit](#)



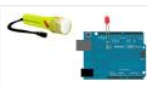
In this project, we are going to build a color sensor circuit with an Arduino microcontroller. A color sensor is a device that can detect and differentiate between certain primary colors. This sensor can detect and differentiate between the colors white, blue, green, and red..... Listed under: [How To – DIY – Projects, Sensor – Transducer – Detector Projects](#)

295. [Visual / Aural Guitar Tuner “The Tune Trainer” using arduino](#)



Build a strobe tuner with an integrated tone generator to teach tuning by ear. --Background-- I have always dabbled in instruments. Over the course of my life, I've attempted (with varying success) Piano, Guitar, Banjo, Penny Whistle, Ocarina, Panpipes, Great Highland Bagpipes, Smallpipes, and Didgeridoo..... Listed under: [Sound – Audio Projects](#)

296. [How to Build a Light Detector Circuit Using an Arduino](#)



In this project, we will go over how to build a light detector circuit using an arduino. A light detector circuit is a circuit which can detect the presence or absence of light, depending on how we write our code to respond to the varying..... Listed under: [How To – DIY – Projects](#)

297. [Arduino-Based Optical Tachometer using arduino](#)



Over ten years ago, I put up a web page with detailed instructions on building a simple electric motor based on one from the Beakman's World TV show. I called it the “Beakman's Electric Motor” page and over the years it has had hundreds of..... Listed under: [Metering – Instrument Projects](#)

298. [How to Build an Infrared Proximity Switch Circuit Using an Arduino](#)



In this project, we will build an infrared proximity switch circuit using an arduino. This is a circuit in which a switch activates when the infrared sensor detects an object in its proximity. The infrared proximity switch sensor is a reflection-type photoelectric sensor which sends..... Listed under: [How To – DIY – Projects](#)

299. [Ultrasonic Batgoggles](#)



Wish you were bat? Want to Experience Echolocation? Want to try to “see” with your ears? For my first Instructable, I will show you how to build your own ultrasonic batgoggles using an Arduino microcontroller clone, Devantech ultrasonic sensor and welding goggles for around \$60..... Listed under: [Game – Entertainment Projects](#)

300. [How to Build a Simple Force Sensing Resistor \(FSR\) Circuit](#)



In this article, we will go over how to connect a force sensing resistor, or force sensitive resistor, (FSR) to a circuit to build many different types of useful circuits with them. Force sensing resistors are variable resistors which change resistance according to the pressure..... Listed under: [How To – DIY – Projects](#)

301. [How to Install the Arduino to the Lithium Backpack using arduino](#)



The Arduino is an open source hardware input and output circuit and the Lithium Backpack is a Ardino accessory that will power the Arduino when it is away from a computer or a wall power. These products are sold at Liquidware for under \$34 each..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

302. [How to Connect a Microphone to an Arduino](#)



In this project, we will go over how to connect a microphone to an arduino so that the arduino can detect whether there is sound in the environment or not. This circuit is only capable of detecting whether there is sound in the environment or..... Listed under: [How To – DIY – Projects](#)

303. [Spectrographic Auroral Indicator – A Northern Lights Warning Device using arduino](#)



3/16/2011 EDIT: The Wing Kp Predicted Geomagnetic Activity Index model is now deployed and operational. Costello is now considered non-operational and will be discontinued on 23 Mar 2011. Comments and questions are welcomed at SWPC.CustomerSupport@noaa.gov The Wing Kp Predicted Geomagnetic Activity Index model is known..... Listed under: [Security – Safety Projects](#)

304. [How to Integrate a Temperature Sensor Circuit to an LCD](#)



In this project, we will go over how we can build a temperature sensor circuit and integrate it to an LCD so that we can get a readout of the temperature on the LCD. In previous projects with temperature sensor circuits, we built the circuit..... Listed under: [LCD Projects, Sensor – Transducer – Detector Projects](#)

305. [How to Build a LM335 Temperature Sensor Circuit](#)



In this project, we will demonstrate how to build temperature sensor circuit using a LM335 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay this temperature to us back in degrees Kelvin. The difference between an LM335..... Listed under: [Sensor – Transducer – Detector Projects](#)

306. [How to Build a TMP36 Temperature Sensor Circuit](#)



In this project, we will demonstrate how to build temperature sensor circuit using a TMP36 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay the temperature to us back in degrees fahrenheit. The IC we will use..... Listed under: [Sensor – Transducer – Detector Projects](#)

307. [Hard Drive Persistence of Vision \(HDPOV\) using arduino](#)



The platter of a hard drive spins well over sixty times a second. If a narrow slot was cut into the platter to allow LEDs to shine through, we can achieve flicker fusion and trick the eye into seeing a stable image. This phenomenon is.....

Listed under: [Memory – Storage Projects](#)

308. [How to Drive a 7 Segment LED Display with an Arduino](#)



In this project, we will show how to drive a single 7 segment LED display with an arduino microcontroller. A 7 Segment LED Display is an electronic device housing 8 individual LEDs. Using this device, we can display all numerals and many alphabetical characters and many more..... Listed under: [LED Projects](#)

309. [Low Cost Water Flow Sensor and Ambient Display using arduino](#)



Water is a precious resource. Millions of people do not have access to clean drinking water, and as many as 4000 children die from water contaminated illnesses every day. Yet, we continue to be wasteful with our resources. The overarching goal of this project is..... Listed under: [Home Automation Projects](#)

310. [How to Build an RGB Full Color LED Module Circuit](#)



In this project, we are going to build an RGB Full Color LED module circuit. A full color LED module is a circuit in which an LED can be lit to any color. This is why it is called a full color LED module. By..... Listed under: [LED Projects](#)

311. [Control Your Robot Using a Wii Nunchuck \(and an Arduino\) using arduino](#)



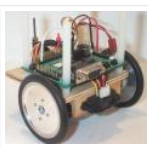
After wearing myself out playing Wii Boxing I got to thinking wouldn't it be great if I could use this to control my robot, (looking to my left hand). Looking around the internet I found a bevy of people doing similar things, (links to everyone..... Listed under: [Robotics – Automation Projects](#)

312. [How to Connect and Read a Keypad with an Arduino](#)



In this project, we will go over how to integrate a keyboard with an arduino board so that the arduino can read the keys being pressed by a user. Keypads are used in all types of devices, including cell phones, fax machines, microwaves, ovens, door..... Listed under: [Development Board – Kits Projects](#)

313. [Super Simple Beginners Robot! using arduino](#)



I created this Instructable for the absolute n00by robot wannabe. I have noticed a huge jump in the number of beginners getting into the hobby and the number of "how do I" questions seem to be mounting. Maybe this humble little Instructable will help one..... Listed under: [Robotics – Automation Projects](#)

314. [How to Interface GPS with Arduino](#)



Every single location in the entire globe can be specified in terms of geographical coordinates. The geographical coordinate is a system which specifies any given location on the earth surface as latitude and longitude. There are devices which can read the geographical coordinates of a..... Listed under: [GPS Based Projects](#)

315. [Touch-less Switch](#)



Arduino Project – Touch Me Not I modified the Arduino project from the Arduino Starter Kit (Touch Sensor Lamp). Now it lights up an LED when your hand is close on the aluminium foil (without even touching it). This can be used as a 'Touch-less..... Listed under: [Sensor – Transducer – Detector Projects](#)

316. [Create an Applescript/Arduino Alert flag_ using arduino](#)



Have you ever felt like the mail sound on your Mac just wasn't enough? Simple sounds and alerts just don't cut it for you? You want something more apparent and rewarding? If so, this is the Instructable you've been looking for. In this Instructable, I'll..... Listed under: [How To – DIY – Projects](#)

317. [How to Build a Motion Sensor Light Circuit with an Arduino](#)



In this project, we will go over how to build a motion sensor light circuit with an arduino. A motion sensor light circuit is a circuit in which a light turns on when motion is detected. With a PIR motion sensor integrated with an arduino,..... Listed under: [Sensor – Transducer – Detector Projects](#)

318. [Time Sensing Bracelet using arduino](#)



The Time Sensing Bracelet is a fabric potentiometer. You select your desired time of day by making contact in the corresponding position on your wrist – where your watch would normally be. There is no point to it but fun. Update: Using some wire wrapped..... Listed under: [Sensor – Transducer – Detector Projects](#)

319. [YAHMS: Temperature Probes](#)



My wireless temperature probes work by using an Xbee module to transmit readings from a TMP36 down to the Arduino base station. The XBees aren't too cheap, coming in around £19 or \$23 so I tried to be cheap and ordered mine from Sparkfun, I..... Listed under: [Temperature Measurement Projects](#)

320. [Simple mass storage for your microcontroller project using arduino](#)



Do you want gigabytes of storage for your microcontroller? Would you like a simple way to transfer files from your PC to your picaxe or arduino or other micro project? This little projects demonstrates the uDrive that can be set up as an extra drive..... Listed under: [Memory – Storage Projects](#)

321. [How to make a solar iPod/iPhone charger -aka MightyMintyBoost using arduino](#)



I wanted a charger for my iPodTouch and the MintyBoost was definitely my first choice. I wanted to take it a bit further and make it not only rechargeable but also solar powered. The other issue is that the iPhone and iPodTouch have large batteries..... Listed under: [Solar energy projects](#)

322. [Make an Ultrasonic Distance Calculator](#)



Arduino Project – The distance calculator I have been playing with Arduino (micro-controller) for about 2 years now and I am becoming more and more passionate about circuits. For those who are not aware of Arduino, check out my article “Arduino – A Guide for..... Listed under: [Calculator Projects](#)

323. [TV-B-Gone Kit using arduino](#)



Tired of all those LCD TVs everywhere? Want a break from advertisements while you're trying to eat? Want to zap screens from across the street? The TV-B-Gone kit is what you need! This ultra-high-power version of the popular TV-B-Gone is fun to make and even..... Listed under: [Video – Camera – Imaging Projects](#)

324. [Arduino Police Flasher Kit](#)



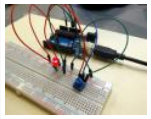
After reading about the famous Arduino programmable microcontroller using the “Getting Started with Arduino Kit (Jameco P/N 2121121) I was eager to try my hand at some real live electronic programming. The Arduino platform is a great place to start for a novice like me. After learning..... Listed under: [LED Projects](#)

325. [Tweet-a-watt – How to make a twittering power meter... using arduino](#)



Tweet-a-watt – How to make a twittering power meter... This project documents my adventures in learning how to wire up my home for wireless power monitoring. I live in a rented apartment so I don't have hacking-access to a meter or breaker panel. Since I'm..... Listed under: [Metering – Instrument Projects](#)

326. [Arduino Circuit to Dim LED with Potentiometer](#)



In Lesson 8 you learned to write analog voltages on the Arduino, and in Lesson 10 you learned to read analog voltages from the arduino. In this lesson we will combine what you did in lessons 8, 9, and 10 to create an LED with..... Listed under: [LED Projects](#)

327. [LED Sunrise Alarm Clock with Customizable Song Alarm using arduino](#)



My Motivation This winter my girlfriend had a lot of trouble waking up in the morning and seemed to be suffering from SAD (Seasonal Affective Disorder). I even notice how much harder it is to wake up in the winter since the sun hasn't come..... Listed under: [Clock – Timer Projects](#)

328. [Arduino Lab 2 – Morse Code Generator](#)



Introduction An excerpt from OmniGlott.com about the origin of Morse Code: Morse Code was invented by Samuel F. B. Morse (1791-1872), a painter and founder of the National Academy of Design. He conceived the basic idea of an electromagnetic telegraph in 1832, and produced the..... Listed under: [Development Board – Kits Projects](#)

329. [Arduino robot kit – Wiring Diagram](#)



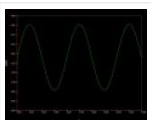
I have created this wiring diagram for the connections between the motor controller, motors, and sensor shield. I'll update it later to include other components. And here is an update that includes the servo motor and the range sensor. And here are the detailed pin..... Listed under: [Robotics – Automation Projects](#)

330. [How To Communicate With An Alien Artifact or using arduino](#)



Close Encounters of the Curiously Minty Kind. This Instructable will show you how to build an Altoids version of the 'Close Encounters' mothership, and how to interact with it. This may be vital training for that day when the Bright White Beam comes to suck..... Listed under: [Game – Entertainment Projects](#)

331. [Isolated mains power monitoring \(Arduino\)](#)



All about power today.. For a while now, I've been looking around for a mains (220-240VAC) power monitoring circuit that I might be able to interface with an Arduino. There is of course the OpenEnergyMonitor solution, but they seem to use a transformer to isolate and measure..... Listed under: [Metering – Instrument Projects](#)

332. [How to build an 8x8x8 LED cube and control it with an Arduino using arduino](#)



There are a lot of LED cubes on Instructables, so why do another? Most are for small cubes consisting of 27 or 64 LEDs, rarely larger since they are limited to the number of outputs available on the microcontroller. This cube will be 512 LEDs,..... Listed under: [LED Projects](#)

333. [Arduino automatic watering system](#)



[caption id="attachment_19540" align="alignright" width="210"] Fig. 1: Author's prototype[/caption] During summers, most people are too lazy to water the potted plants on their rooftop gardens every day. Explained in this section is a simple and exciting plant watering system that you can build yourself in just..... Listed under: [Home Automation Projects](#)

334. [Bar Graph](#)



Introduction This project explores a couple of ways of simulating and using a bar graph with the Arduino. Bar graph components like the following one can be used, This type of bar graph is basically just 10 LEDs in a row with anodes on one..... Listed under: [Other Projects](#)

335. [Solderless Breadboard Layout Sheets \(plug and play electronics\) using arduino](#)



Here's a fun system designed to take care of some of the headaches involved in breadboarding a circuit. It is a simple set of template files drawn to scale with real world electronic components. Using a vector drawing program you simply move the components..... Listed under: [Development Board – Kits Projects](#)

336. [Arduino-Based Optical Tachometer](#)



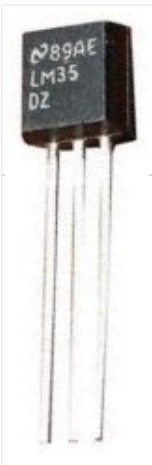
Over ten years ago, I put up a web page with detailed instructions on building a simple electric motor based on one from the Beakman's World TV show. I called it the "Beakman's Electric Motor" page and over the years it has had hundreds of thousands, if..... Listed under: [Metering – Instrument Projects](#)

337. [USB NES controller with an arduino! using arduino](#)



UPDATE 22-12-2014 Instructables user mattpbooth has updated the code and is hosting it on github: <https://github.com/mattpbooth/ArduinoNESController...> Thanks Matt! UPDATE 03-12-2011 Replaced a println with print (derp). UPDATE 01-12-2011 Remade all code from scratch. Remade 'ible code section; Now includes a 'Processing COM port config for..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

338. [How to Build a LM35 Temperature Sensor Circuit](#)



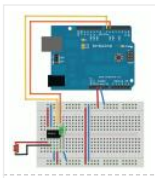
In this project, we will demonstrate how to build temperature sensor circuit using a LM35 sensor. As a temperature sensor, the circuit will read the temperature of the surrounding environment and relay thi temperature to us back in degrees celsius. The IC we will use..... Listed under: [How To – DIY – Projects](#), [Temperature Measurement Projects](#)

339. [Tilt Sensor Tutorial using arduino](#)



What is a tilt sensor? Tilt sensors allow you to detect orientation or inclination. They are small, inexpensive, low-power and easy-to-use. If used properly, they will not wear out. Their simplicity makes them popular for toys, gadgets and appliances. Sometimes they are referred to as..... Listed under: [Sensor – Transducer – Detector Projects](#)

340. [RFID with Arduino](#)



If you ever wanted to integrate RFID functionality into your project, this small tutorial might help you accomplish that. I used the RDM630 module from seedstudio in its UART version. It comes on a small board with presoldered connectors which fits perfectly on a breadboard. You only..... Listed under: [RFID – NFC projects](#)

341. [Ceiling Fan LED Display using arduino](#)



Seeing so many persistence of vision ideas on the web was too tempting not to try one. After considering several different motors to drive a display, a ceiling fan seemed to run at just the right speed, is out of the way, and very quiet..... Listed under: [Home Automation Projects](#)

342. [Home Automation using Arduino and MATLAB](#)



In present time home office appliance controlling is common thing. Today for controlling home/offices appliances, machineries in companies/industries use different types of automation systems like DTMF controlled, GSM controlled and many others. So here this project is made for interfacing MATLAB (Graphic User Interfacing) and Home/office/industries..... Listed under: [Home Automation Projects](#)

343. [AVRSH: A Command Interpreter Shell for Arduino/AVR. using arduino](#)



Ever wanted to be "logged in" to your AVR microcontroller? Ever thought it would be cool to "cat" a register to see its contents? Have you always wanted a way to power up and power down individual peripheral sub-systems of your AVR or Arduino in..... Listed under: [Arduino Programmer Projects](#)

344. [How to Build a Vibration Motor Circuit](#)



In this project, we will show how to build a vibration motor circuit. A vibration motor is a motor which vibrates when given sufficient power. It is a motor that literally shakes. It is very good for vibrating objects. It can be used in a..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

345. [Acorn Chime using arduino](#)



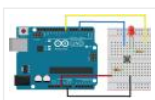
By: Charlie DeTar, Christina Xu, Boris Kizelshteyn, Hannah Perner-Wilson A digital wind chime with hanging acorns. Sound is produced by a remote speaker, and data about chime strikes is uploaded to Pachube. Step 1: Brainstorming for a device that would represent ourselves Our goal was..... Listed under: [Game – Entertainment Projects](#)

346. [Arduino Chandelier from Jars](#)



E-Edit: Thank you very very much for voting for me in Featured Author, Glue and Battery Powered Contests! Cheer up and wait for my project so special is coming... Edit: If you really like this project, you can vote for me on the top right corner, forFeatured..... Listed under: [LED Projects](#)

347. [Using Push Button Switch with Arduino Uno](#)



In this tutorial you will learn how to read the status of a digital pin of Arduino. I hope that you already go through our first tutorial, Getting Started with Arduino Uno – LED Blinking. In this example, a push button switch and an LED is connected to Arduino..... Listed under: [LED Projects](#)

348. [Use Arduino to Interface with a Remote Controlled Power Switch](#)



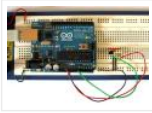
Update: check out the RFToy — an easy-to-use standalone gadget to control remote power sockets. Also, support for remote power sockets have been added to OpenSprinkler firmware 2.1.1. For a while I've been looking for a way to switch household power line (110V) devices. One of the simplest..... Listed under: [Interfacing\(USB – RS232 – I2c - ISP\) Projects](#)

349. [Two Wire Arduino Knight Rider](#)



This tutorial shows how to interface eight LEDs to an Arduino using only two Arduino pins. This is made possible by using a PCF8574 I/O expander IC. A "Knight Rider" display is shown on the LEDs. Prerequisites Complete tutorial 4 – Arduino Knight Rider. Be able..... Listed under: [LED Projects](#)

350. [Arduino Serial Thermometer](#)



The Arduino reads temperature from a MCP9700 temperature sensor IC and displays the temperature in the Arduino IDE serial monitor window. Also see the Arduino LCD thermometer tutorial (tutorial 14). Prerequisites Complete Tutorial 9: Using the Arduino Serial Port before attempting this tutorial. Components Besides an Arduino Uno board,..... Listed under: [Metering – Instrument Projects](#)

351. [Using the Arduino Serial Port](#)



The Arduino Uno can send data (such as a text message) to the PC over the USB cable. The Arduino IDE has a serial monitor window that can be opened and will receive and display the data sent from the Arduino board. Data can also..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

352. [Dual LED Flasher](#)



A two transistor circuit that flashes two LEDs on and off alternately. Prerequisites Complete tutorial two – Transistor Timer before attempting this tutorial. Components In addition to an electronic breadboard, wire links, a 9V battery and a battery clip, you will need: QTY PART DESIGNATOR NOTES TYPE..... Listed under: [LED Projects](#)

353. [Arduino Melody](#)



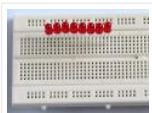
A very easy tutorial that uses only two components. The Arduino plays a short melody on a loudspeaker. The program to load to the Arduino is one of the programs that is built into the Arduino IDE. Prerequisites Complete tutorial 3 – Starting with Arduino..... Listed under: [Sound – Audio Projects](#)

354. [Twitter Mood Light – The World's Mood in a Box using arduino](#)



How's the world feeling right now? This box tells you. Powered by: an Arduino, a WiFly wireless module, an RGB LED, Twitter.com and a 9v battery. I'm a news junkie. I want to know everything that is going on in the world as soon as..... Listed under: [Game – Entertainment Projects](#)

355. [Arduino Knight Rider](#)



In this tutorial, eight LEDs are interfaced to the Arduino Uno board. This is not complicated – it is just like interfacing a single LED to the Arduino as done in tutorial 3, but eight times over. A program is then loaded to the Arduino..... Listed under: [LED Projects](#)

356. [Arduino LCD](#)



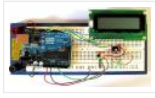
In this tutorial you will connect a LCD (Liquid Crystal Display) to the Arduino Uno and then run the Arduino LCD example programs that are built into the Arduino IDE. Prerequisites It is recommended for beginners to complete all the Arduino tutorials up to and..... Listed under: [LCD Projects](#)

357. [Let's make an Arduino real time clock shield](#)



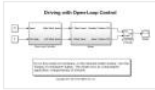
Today we are going to make a real time clock Arduino shield. Doing so will give you a simple way of adding ... real time capability to your projects such as time, date, alarms and so on. We will use the inexpensive Maxim DS1307 real-time..... Listed under: [Clock – Timer Projects](#)

358. [Arduino LCD Thermometer](#)



In this tutorial, a temperature sensor (MCP9700 linear active thermistor IC) and LCD are connected to the Arduino. The Arduino reads the temperature from the MCP9700 on analog pin A0 and displays the temperature on the LCD. This video shows the circuit operating. When touched..... Listed under: [LCD Projects](#)

359. [Drive with PID Control on an Arduino Mega 2560](#)



This example shows how to simulate a simple closed-loop control algorithm in Simulink and how to run it on an Arduino Mega 2560 board. Contents Introduction Prerequisites Required Hardware Task 1 – Build the Vehicle Task 2 – Build the Motor Controller Task 3 –..... Listed under: [Other Projects](#)

360. [Musical MIDI Shoes using arduino](#)



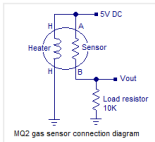
Like many people, I often find myself unconsciously tapping my feet, whether it's along to a song or out of some nervous habit. As fun as that is though, I've always felt as if something has been missing. If only I could trigger the sounds..... Listed under: [Sound – Audio Projects](#)

361. [MIDI Linear Actuator](#)



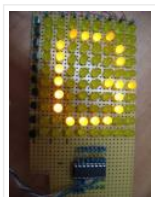
This project uses relays to control a Firgelli Automations linear actuator without feedback. The relays are controlled by the MIDI Volume (Control Change number CC7) command which is read by the microcontroller and converted into one of the only 3 states of operation: 1) The..... Listed under: [Other Projects](#)

362. [LPG sensor using arduino](#)



LPG sensor using arduino with alarm and cutoff. A simple LPG sensor using arduino is shown in this article. This circuit indicates the amount of LPG in the air. The circuit sounds an alarm and trips a relay when the concentration is above a predetermined..... Listed under: [Sensor – Transducer – Detector Projects](#)

363. [Make a 8×10 L.E.D Matrix using arduino](#)



UPDATE 1: I HAVE ADDED THE CODE FOR CONWAY'S GAME OF LIFE UPDATE 2:
NOW YOU CAN SAVE SOME ARDUINO PINS WITH THE HELP OF 1 SHIFT REGISTER. In this instructable I will show you how to build a quite fancy 8 by 10 L.E.D matrix(with scrolling text and animations) using the Arduino and 4017 decade..... Listed under: [LED Projects](#)

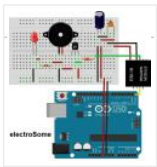
364. [The Lightning Simulator/Breathalyzer/Graphic Equalizer – Arduino Powered using arduino](#)



UPDATE: A portable version of the Talking Breathalyzer is here <http://talkingbreathalyzer.com> The LED strips are mounted on an outdoor trellace which functions as a lightning simulator, outdoor breathalyzer, graphic equalizer synced to music, and a few other effects with sound. Materials: 8 12v RGB Waterproof Flexible..... Listed under: [LED Projects](#)

365. [Interfacing EM-18 RFID reader with Arduino Uno](#)

Arduino Uno is an opensource physical computing platform based on ATmega328 microcontroller and provides a development environment for writing software for the board. It can be used for a variety of projects. EM-18 RFID reader is one of the commonly used RFID reader to read..... Listed under: [Other Projects](#)



366. [Arduino + WiFi, Music Responsive LED Light Fixture using arduino](#)



This instructable gives instructions for constructing a Saiko5 WiFi enabled LED light fixture based on the Arduino hobbyist platform. It includes step-by-step instructions from board design to soldering to case integration, as well as instructions explaining how the software and firmware can be used to..... Listed under: [LED Projects](#)

367. [Trinket Audio Player using arduino](#)



Overview We usually think of the Adafruit Trinket as a tiny subset of a “real” Arduino; less RAM, less code space, less I/O. But this little chip has a couple tricks up its sleeve, things its larger brethren can't do. One of these is a..... Listed under: [Sound – Audio Projects](#)

368. [Beatfly : Make an illuminating blimp and control it with your voice, Keyboard, MIDI Controller, Garageband file, iPhone, Flash, and more! \[Mac OSX\] using arduino](#)



[Mac OSX Only] Because I use Quartz Composer, my program works only on Mac OSX. I am now extending and improving it toward cross-platform. If you have knowledge of computer programming, you can make your own system that connects to the blimp. The communication protocol..... Listed under: [LED Projects](#), [Sound – Audio Project Ideas](#)

369. [Arduino Solar Radio](#)



Solar charging, via the panel on the back. * 12 position switch to select channel number * Seek up / seek down controls and 'store' button * RDS display of call sign * Frequency display * Battery voltage display * Solar charging current display The..... Listed under: [Radio Projects](#)

370. [Intelligent Letter Box using Arduino and GSM](#)



In the days of technology postman still comes to our house for delivering the letters, couriers and parcels. Because some things like courier, parcels can't send via email and by using any other electronic media. So for getting notification of our letter delivery in our..... Listed under: [Other Projects](#)

371. [LED Umbrella with Arduino using arduino](#)



The LED Umbrella with Arduino combines an umbrella, an 8x10 LED matrix and an Arduino microcontroller to create a controllable, programmable LED experience in the privacy of your own umbrella. This project was inspired by the Electric Umbrella by sockmaster and a number of LED matrix instructables..... Listed under: [LED Projects](#)

372. [Project work3:Arduino code and the circuit diagram using arduino](#)



In order to realise the “music garden”, the most important part is the Arduino code and circuit diagram. First of all, I will present my Arduino code: (I will show you the way I think as a flow chart at first) Flow Chart: Details: this flow chart is a..... Listed under: [Sound – Audio Projects](#)

373. [Hobbyduino Mini V1.0 using arduino](#)



Introduction The Hobbyduino Mini is a clone of the Arduino main-board. It contains a ATmega328 processor programmed with the Arduino bootloader. The Hobbyduino does not contain the circuitry for USB communication. I

opted to rely on the FTDI232R serial boards to handle the USB-to-Serial protocol. Here..... Listed under: [Development Board – Kits Projects](#)

374. [Build Your Own Arduino & Bootload an ATmega Microcontroller – part 1](#)



There are many reasons to build your own Arduino circuit on a protoboard or a custom-designed printed circuit board. At the heart of the Arduino platform is an AVR microcontroller, in usual way you need a special hardware programmer and suitable hex files to program..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

375. [High-speed Photography with Arduino and CHDK using arduino](#)



This project uses an Arduino microcontroller and a laser break-beam trigger to fire via USB remote a Canon camera modified with CHDK (Canon Hack Development Kit) firmware. Immediate influences are the high-speed flash photography triggered by sound or light project by Glacial Wanderer and the..... Listed under: [Video – Camera – Imaging Projects](#)

376. [Arduino PWM Led Control using arduino](#)



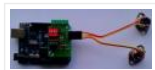
Looking for a simple circuit to control the light intensity of Light Emitting Diodes (LEDs) or similar lighting sources? Here is an Arduino based circuit with three independent pulse width modulated (PWM) channels to fulfil your requirements! Just follow the schematic diagram to complete the..... Listed under: [LED Projects](#)

377. [Simple Animatronics with Servos and Arduino using arduino](#)



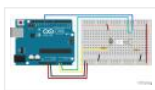
Servos are surprisingly easy to use. Even more so than simple DC motors and steppers when you have a microcontroller. In this instructable we'll use a 'duino to drive five servos which will control a doll's limbs and neck. I bought the servos at HobbyPartz..... Listed under: [Game – Entertainment Projects](#)

378. [MIDI Bass Pedal Arduino Encoder using arduino](#)



MIDI BASS PEDAL ARDUINO UNIT The MIDI Bass Pedal circuit is capable of encoding any number of momentary action, push to make, single pole single throw (SPST), switches from 1 up to 30 to produce the equivalent MIDI note-on/note-off data commands. The encoded switches are..... Listed under: [Sound – Audio Projects](#)

379. [Electronic Circuit: photocell and LED](#)



The cmd_response sketch is very general with respect to the ANALOG IN and DIGITAL I/O of the Arduino boards. We can use it to read a wide variety of sensors from remote computer systems. First, we demonstrate how the Arduino cmd_response sketch works, we construct..... Listed under: [LED Projects](#)

380. [Peggy2: High And Low](#)



First and foremost, big thanks to Damien for her time and effort on soldering 265 LEDs on peggy2 circuit board, which made my programming part possible to continue. Instead of soldering LEDs directly onto the Peggy2 board, we have to use Ethernet cables as "extensions"..... Listed under: [LED Projects](#)

381. [Rechargeable Battery Capacity Tester using arduino](#)



Do you have a pile of AA rechargeable batteries in your drawer? Some are old, some are new, but which sets would you bring with your camera on your next trip, and which ones are past their useful life? I like using rechargeable batteries, but..... Listed under: [Battery Projects](#)

382. [CMUcam3: Working Module But Not Working CMUcam3-Arduino System](#)



After over spending nearly 20 hours extra on fixing peggy2 board I mentioned in the previous post, there is only a few hours left for me to work on CMUcam3-Arduino system and its facial-recognition driven motor system. The basic programming architecture is shown below. When in..... Listed under: [Video – Camera – Imaging Projects](#)

383. [Camera controller](#)



Intervawhat? An intervalometer is a camera controller that signals the camera to take a picture after some set interval. This is really useful for creating timelapse videos. For a long time, I used my TI-89 calculator to create timelapse videos with my Canon digital Rebel XT. It..... Listed under: [Video – Camera – Imaging Projects](#)

384. [New Arduino WiFi Shield \(Testing\) using arduino](#)



The WiFi Shield was delivered by Amazon. The Arduino UNO Rev 3 was found at RadioShack... First you need to load the last Arduino IDE (Ver 1.0.2) it has the necessary library to use the WiFi shield. Tried the examples "Scan for available networks" and Listed under: [Wifi – Wlan Projects](#)

385. [Yet Another Daft Punk Coffee Table \(5x5 LED Matrix\) using arduino](#)



Yes, I know this has been done before, but I wanted to build my own, using as few parts as possible. I built this as a table top or wall mount model, but it can be scaled up to make a coffee table. I built..... Listed under: [LED Projects](#)

386. [Review – Maxim MAX7219 LED Display Driver IC using arduino](#)



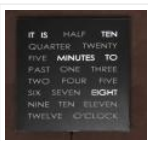
Today we are going to examine the Maxim MAX7219 LED display driver IC. The reason for doing so is to show you how something that used to be quite complex can be made very simple – and that is what all this technology is for,..... Listed under: [LED Projects](#)

387. [Brushless DC \(BLDC\) motor with Arduino. Part 3 – The Stroboscope Project](#)



It has been all dry theory in the Brushless DC (BLDC) motor with Arduino series up to this point. This is where it gets to be more fun. If you've just arrived, please check out the previous two installments: Driving a three-phase brushless DC motor..... Listed under: [Motor Projects](#)

388. [The Wordclock Grew Up! using arduino](#)



Well, It had to happen. I first published my WordClock project in September 2009. It was a Microchip PIC based clock, using a PIC16F877A microprocessor. In the last year and a half, I have been constantly improving it, and have adapted it to the Arduino,..... Listed under: [Clock – Timer Projects](#)

389. [Light Meter Using I2C Level Converter, LCD, and TSL2561 using arduino](#)



I recently needed to measure how different materials affect light transmission for a gardening project. I decided this was the perfect opportunity to try out the new logic level converter to run both a 5v LCD and a 3.3v light sensor on a single i2c..... Listed under: [LCD Projects](#), [Metering – Instrument Project Ideas](#)

390. [Make a simple platform and give mobility to your computer using arduino](#)



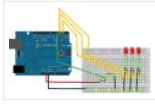
A computer is a very handy thing to use in your robots. If you start listing all the features that can be used for robotic purposes you'll find that it is cheaper to buy a netbook than buying LCD, wifi and bluetooth modules, cameras, speech synthesizer..... Listed under: [RTOS – OS Projects](#)

391. [Tutorial – Arduino and the MAX7219 LED Display Driver IC using arduino](#)



Use the Maxim MAX7219 LED display driver with Arduino in Chapter 56 of our Arduino Tutorials. The first chapter is here, the complete series is detailed here. Update – 4/1/15 – This article is pending a re-write, please refrain from comments and questions until the new version is published. Introduction..... Listed under: [LED Projects](#)

392. [Arduino Binary Die using arduino](#)



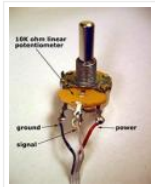
After buying a Nanode (an Arduino-compatible board with ethernet built-in) last weekend, we've been trying to work it out by making a couple of simple examples, the 'Binary Dice' is the first one with input and outputs. A note, this code example is based on..... Listed under: [LED Projects](#), [Other Project Ideas](#)

393. [Boozeduino using arduino](#)



Now with more LED. Arduino mega powered breathalyser using the MQ-3 sensor. A relative gauge for judging how intoxicated you are. NOT TO BE USED AS MEANS OF BREATHALYZING NEVER DRINK AND DRIVE. This is more of a device to encourage one to drink..... Listed under: [LED Projects](#)

394. [Analog Sensors using arduino](#)



Analog sensors produce an analog (continuous) voltage that typically varies from 0 to 5 volts. They have three wires – ground, power, and signal (typically red, black, and white, respectively). Examples shown below include: Potentiometers Proximity Accelerometers Ribbon Bend Pressure Light Temperature Sound Multi-touch Touch..... Listed under: [Sensor – Transducer – Detector Projects](#)

395. [Flash trigger using arduino](#)



his project is mainly based in this one from Glaciar Wanderer. I just liked his idea and worked it on my own. (I think this guy and me would be friends, as the projects he has in his photography category are things I've been wanting..... Listed under: [Video – Camera – Imaging Projects](#)

396. [Using the tymkrs "Turn Me" with an Arduino](#)



Here is a quick write up on how to use the tymkrs "Turn Me" rotary encoder. This supports the "push down" feature of the tymkrs kit. Fritzing Rotary Encoder Part: Rotary Encoder with Knob bth.fzpz Fritzing Project: RotaryEncoderDemo.fzz Arduino (1.5) project: RotaryEncoderDemo.ino 1 2 3 4 5 6 7 8..... Listed under: [Sound – Audio Projects](#)

397. [Boost Converter Intro with Arduino](#)



Let's say that you're trying to drive a few Nixie clock tubes, or you want to make a strobe light. A variable high voltage DC power supply from 50-200+ volts may be required. Transformers are terrific, but difficult to find the right one and a..... Listed under: [PWM Projects](#)

398. [Arduino Circular Cylon!](#)



This is a quick arduino project that is great for beginners. Enjoy! There is a video on the last step! Step 1: What you Need To build this project you will need: 10 LEDs, any color will do. Some wire, I used a ribbon cable..... Listed under: [LED Projects](#)

399. [Car No. 06 Programmed Automatic Driving Car using arduino](#)



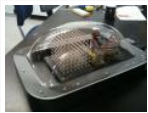
Hi! Kaeru no Ojisan is back with Car No.06. Car No.06 is a Programmed Automatic Driving Car with following procedure; – Simulate the Car Trajectory based on the Target Passing Points. – Drive automatically as simulated using Reflective Photosensor and Gyro Sensor . – Adjust..... Listed under: [Car Projects](#)

400. [8 LED Chaser with 74HC595 8 Bit Shift Register using arduino](#)



Have you wanted to make a sweet Cylon/Knight Rider (Larson) Scanner effect? But you don't want to use up all of your Arduino IO pins? Well, you can make a nice 8 LED Scanner with a shift register IC. In this tutorial we'll be using..... Listed under: [LED Projects](#)

401. [3D LED Cube using arduino](#)



The 3D LED Cube is a really cool device that enables you to see in three dimensions, get some depth perception and has 512 LED's or 512 pixels. It is based on an arduino uno which is an Atmel AVR microcontroller on a development board..... Listed under: [LED Projects](#)

402. [TiDiGino Contest using arduino](#)



The project TiDiGino We developed a new GSM remote control called TiDiGino. The name recalls the initials (TDGxx) of our previous GSM remote control and is also based on the Arduino project. All the details of this circuit can be found below, but no the sketch, because this is your assignment. The contest You have to write..... Listed under: [Wireless Projects](#)

403. [Control Ikea Dioder LED Strip with Arduino + 16X PWM LED Fader Board using arduino](#)



We're going to show how to wire up and control an Ikea DIODER LED strip with an arduino, using a 16X PWM LED Fader board as an intermediary. The 16X PWM board is basically a bunch of mosfets under PWM control (switches that turn on..... Listed under: [LED Projects](#)

404. [Secret Knock Final using arduino](#)



Secret Knock Description – My final project is a door lock that listens for your personalized knock. The lock uses an arduino board and a piezo speaker and will not unlock the door unless the specific pattern is used as a knock. Arduino Program -..... Listed under: [Home Automation Projects](#), [Security – Safety Project Ideas](#)

405. [Display Live Txts on Costume at Party w/ Scrolling LED Belt Buckle using arduino](#)



This project shows how to send SMS text messages to a cheap scrolling LED display via an Android app and arduino with USB host shield. The project was originally inspired by a friend wanting to make a "sexting themed" costume, with a scrolling LED display..... Listed under: [LED Projects](#)

406. [Voice Recognition System using arduino](#)



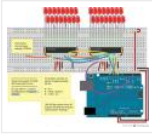
Contents 1 Team Members 2 Mentor 3 Concept 4 Softwares Used 5 circuits 5.1 Pre Amp circuit 5.1.1 Circuit Diagram 5.1.2 Working 5.2 EEPROM circuit 5.3 Led Matrix display circuit 6 Algorithm for silence & noise removal 6.1 Pre-Emphasis 6.2 Silence and Noise Removal 6.2.1..... Listed under: [Sound – Audio Projects](#)

407. [A Makers Wedding – Photo booth usnig arduino](#)

This Instructable is about: building an automated photo booth. The total build cost was around \$150 as I re-used a lot of the components and materials I already had in my garage – in addition to what I could salvage from scrap yards. Why? -..... Listed under: [Video – Camera – Imaging Projects](#)



408. [Extending PWM output pins with a Texas Instruments TLC5940 LED driver using arduino](#)



Introduction Microcontrollers like the Arduino were designed to facilitate the use of electronics for designers and DIY enthusiasts. The interface provides a great starting points for a variety of electronic circuit designs. However, as the microcontroller is standardized, it is also limited in its use..... Listed under: [PWM Projects](#)

409. [Human Body Infrared Smoke Temperature Alarm System with Arduino](#)



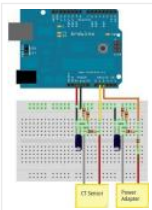
Web site: <http://www.instructables.com/id/Human-Body-Infrared-Smoke-Temperature-Alarm-System/> Project Summary: The Human Body Infrared Smoke Temperature Alarm System works under the DC 5v voltage and uses the DH11 Temperature Module to detect the room temperature. When the module detects the temperature is higher than the maximum, the buzzer alarms and..... Listed under: [Security – Safety Projects](#)

410. [1RE45 Non contact digital thermometer using arduino](#)



Contents 1 Introduction 2 Components Used 3 Description 4 Idea 5 Plan Of Action 6 1st week: 7 2nd week: 8 3rd week: 9 4th week 10 5th week 11 Expenses(In Rupees) 12 Videos, Photos 13 Code 14 Team Members 15 Resources: Introduction Temperature is..... Listed under: [Temperature Measurement Projects](#)

411. [How to build an Arduino energy monitor – measuring mains voltage and current arduino](#)



Including voltage measurement via AC-AC voltage adapter and current measurement via a CT sensor. This guide details how to build a simple electricity energy monitor on that can be used to measure how much electrical energy you use in your home. It measures voltage with..... Listed under: [How To – DIY – Projects](#), [Temperature Measurement Project Ideas](#)

412. [VOICE CONTROL CAR USING ARDUINO AND ANDROID](#)



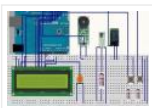
Hello friends,Welcome to ElectroPLUS . This is a post to show how to make voice control car using arduino and android. COMPONENTS REQUIRED: 1.Arduino uno or Induino R3 board. Hello friends,Welcome to ElectroPLUS . This is a post to show how to make voice control..... Listed under: [Car Projects](#), [Sound – Audio Projects](#)

413. [A new board for the 3Drag: there's more than Sanguinololu using arduino](#)



When we first released our 3D printer, we tried to use some parts that were already available and tested, in full respect of the open source philosophy. In particular, we decided to use the electronic card Sanguinololu. The “open” firmware we chose, the Marlin firmware..... Listed under: [Blog](#), [Motor Projects](#)

414. [Temperature Detecting Heating Control System with Arduino Mega2560](#)



Web site: http://www.icstation.com/product_info.php?products_id=3517 Project Summary: To help electronic DIY hobbyists, will show you how to use Temperature Detecting Heating Control System with Arduino Mega2560. Full Project: The temperature detecting heating control system works with DC5V voltage. This system uses DS18B20 temperature detection chip as the..... Listed under: [Temperature Measurement Projects](#)

415. [Camera and flash trigger module using arduino](#)



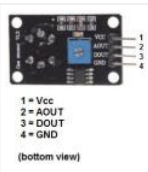
Here we go again, here is a picture of the camera and flash trigger module I made for my arduino photographic projects: It includes three 4N26 optocouplers. One (first one from the left side) to trigger a flash, as I did in the arduino controlled..... Listed under: [Video – Camera – Imaging Projects](#)

416. [3x3x3 LED cube shield using arduino](#)



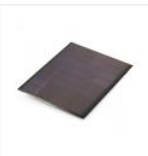
What should be in your kit: 1 – PCB 27 – LED's 2 – 6 Pins for Arduino 2 – 8 Pins for Arduino 3 – Resistors 1 – Foam Guide 1 – Small Wire 1 – Medium Wire 1 – Large Wire You will..... Listed under: [LED Projects](#)

417. [MQ-8 Hydrogen Gas Sensor Circuit Built with an Arduino](#)



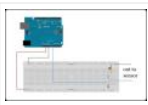
In this project, we will go over how to build a hydrogen gas sensor circuit with an arduino. The hydrogen gas sensor we will use is the MQ-8 sensor. This is a sensor that is sensitive to effects of hydrogen gas. Hydrogen gas (H₂), at..... Listed under: [Sensor – Transducer – Detector Projects](#)

418. [Simple Solar Power using arduino](#)



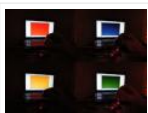
Simple Solar Power Light contains energy. When light hits a conductor (or semiconductor) some of the energy is translated into moving electrons, creating current. We can harness the current using solar cells (aka photovoltaic cells). When the sun shines on a solar cell, the current..... Listed under: [Battery Projects](#)

419. [Arduino-enabled Patron Interaction Counting using arduino](#)



Using the Arduino development board (<http://arduino.cc>) has become a very popular way to create hardware prototypes that bridge the divide between the physical world and the Internet. This article outlines how to use an Arduino, some off-the-shelf electronic parts, the Processing programming language, and Google..... Listed under: [Internet – Ethernet – LAN Projects](#)

420. [Using an RGB LED to Detect Colours using arduino](#)



I am going to show you how you can use an RGB LED and a CdS photocell as a colour sensor for a micro-controller. I will illustrate the method to retrieve a colour using Arduino, and I will show you a how you can verify the..... Listed under: [LED Projects](#)

421. [Reviving a dead arduino](#)



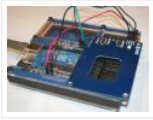
Well I managed to kill my arduino. It no longer accepted uploads with the classic out of sync error. After asking on the arduino forum I was told I would need a high voltage programmer to rectify, so I decided just to buy a new..... Listed under: [Development Board – Kits Projects](#)

422. [Cosmic ray detection from vertical and horizontal directions using three Geiger counters using arduino](#)



Research Group: Ryan Mountcastle, Minh Trang Nguyen, Nathan Ranno, and Ryan Ward Launch: Whitworth Fall 2012 This experiment was designed to examine cosmic ray activity in the Earth's atmosphere as altitude increases. The previous group's project utilized three Geiger counters stacked vertically to eliminate false..... Listed under: [Other Projects](#)

423. [Using the Parallax RFID Reader with an Arduino](#)



If you've ever wanted the ability to use some form of hardware-based authentication in your projects then this is the board to do it with. The Parallax RFID (Radio Frequency Identification) reader is super easy to configure. It only takes four wires! It uses serial..... Listed under: [Projects](#), [RFID – NFC projects](#)

424. [Build a network clock \(NCLK\) with Microduino-RTC](#)



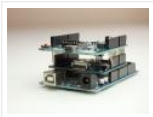
The resolvent of clock synchronization over internet. by PKJ, The web-based clock management system allows you to monitor clock status from wherever they are and centrally change settings. and this small device is built with PoE technology, thus IP clocks get their time, data and power..... Listed under: [Clock – Timer Projects](#), [Internet – Ethernet – LAN Projects](#)

425. [TFT Display with microSD breakout board using arduino](#)



128X160 pixels in 18 bit color with a microSD breakout board courtesy of Adafruit Industries You can purchase the 18-bit color TFT LCD display with microSD card breakout kit (part# ST7735R) from Adafruit Industries This tutorial from Adafruit is for a 1.8" diagonal TFT display..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#)

426. [SPI Interfaces using Arduino](#)



Update (6/7/2012) – I've had to disable comments on this post, because it is being targeted by spam bots for some reason. Please use the contact page if you have a question about this topic. [box type="note" color=" #202020 " bg=" #ffbb00 " font="verdana" fontsize="14" radius="20..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

427. [Awesome button, and then some. usnig arduino](#)



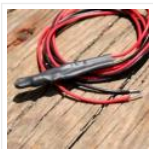
Many of you have probably seen the Awesome button done by Matt Richardson of Make Magazine. If not here is his video which was very well done and was the inspiration of my project. I liked the idea of having a button to press for..... Listed under: [LED Projects](#)

428. [Secret Knock Detecting Door Lock using Arduino](#)



Protect your secret hideout from intruders with a lock that will only open when it hears the secret knock. This started out as a bit of a joke project, but turned out to be surprisingly accurate at judging knocks. If the precision is turned all..... Listed under: [Home Automation Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

429. [The Soil Temperature Sensor using arduino](#)



You are building a soil temperature sensor. We need a waterproof thermometer that we can burry in the soil. The sensor is made up of a small circuit enclosed in a piece of heat shrink (to waterproof it). Supplies: (see the parts page) an LM335..... Listed under: [Home Automation Projects](#), [Temperature Measurement Projects](#)

430. [Arduino RFID Card Reading](#)



Finally! It's been about 3 months since my last arduino tutorial – I've been keeping busy as usual. I've been working on this one for some time. I got the parts months ago, made an outline a few weeks ago, prototyped the circuits and wrote..... Listed under: [Projects](#), [RFID – NFC projects](#)

431. [Arduino – One Wire Digital Temperature Sensor – DS18B20](#)

The one wire Digital Temperature Sensor – DS18B20 from Maxim (formerly Dallas) is a great chip for measuring temperature in your projects. Luckily, there is a Dallas Temperature library for the arduino which makes using this sensor very easy. The most recent



version of this..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#), [Temperature Measurement Projects](#)

432. [Traffic Light Stoplight LED Scarf – Safety Scarf of Righteousness using arduino](#)



Multipurpose like a traffic light, this one keeps you warm and blinks to make you more visible in the night. Stop traffic with this fun scarf worn around your neck. Repurpose a dollar-store bicycle safety flasher to embed in the scarf. Simulates the light changing..... Listed under: [LED Projects](#)

433. [Soldering an SMT MOSFET Driver with a hotplate](#)



Soldering SMD components isn't as hard as you might think. In fact it's easy. If you follow this instructables you'll soon see just what great results you can obtain at home using just a hotplate. It's not just being able to make small circuit boards..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)

434. [3D AIR mouse | Arduino + Processing](#)



3D AIR mouse | Arduino + Processing I'm an Industrial design student, and last year as part of a course called "Technology as RAW materiel" I built this project as my final work. I work most of the time with SolidWorks, a CAD software for..... Listed under: [Arduino Programmer Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

435. [Twitter Poem Box](#)



This is a project that was inspired by Marc de Vinck's Kitty Twitty Cat Toy <http://makezine.com/22/kittytwitty/> . It incorporates an RFID reader and the BlinkM, a programmable RGB LED. The lamp tweets random colored poems when it detects one of the three RFID cards which..... Listed under: [Internet – Ethernet – LAN Projects](#)

436. [BennyP's Light Contraption using arduino](#)



Introduction Disclaimer: I am not an expert in any of this. There is lots of information online regarding such designs. Although this setup worked for me, do not trust any of my calculations. Please work all this out for yourself and consult many other sources,..... Listed under: [Home Automation Project Ideas](#), [PWM Projects](#)

437. [ST7565 LCDs: Graphical LCDs](#)



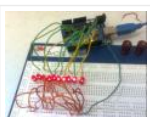
What it is... Type: Graphical (128×64) monochrome LCD with LED backlight Interface: Serial / SPI This is a good time to read the datasheet Available from: Adafruit, of course! Introduction: This mini-tutorial will go through the process of setting up a ST7565 LCD. These LCDs..... Listed under: [LCD Projects](#)

438. [Standalone Arduino chip on breadboard](#)



If you're like me, after I got my Arduino and performed a final programming on my first chip, I wanted to pull it off my Arduino Duemilanove and put it on my own circuit. This would also free up my Arduino for future projects. The problem..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

439. [Making 1×10 LED Array with Random Patterns](#)



This will teach you how to make a very simple 1×10 array of LEDs on a breadboard controlled by an Arduino Uno to make the LEDs blink and flash in 10 different patterns. Link to notebook for project: <https://docs.google.com/document/d/1YP4p11SbDNOnM7mDn-sRjLnxGPj6o0DkrFZnznVMvk/edit> Link to YouTube video of LEDs..... Listed under: [LED Projects](#)

440. [Arduino lets you play Atari 2600 and ZX Spectrum using a NES controller](#)



This instructable shows you how to use NES controller in Atari 2600 or ZX Spectrum (with Kempston Interface) with the aid of an Arduino. Step 1: Background talk I have recently acquired a couple of Atari 2600s and a bunch of joysticks. Both consoles were working..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

441. [Yet Another Arduino 110v Power Controller](#)



This Instructable shows you how to build a four-gang outlet box in which each outlet is controlled via an Arduino (or any other TTL level signals). It differs from the other relay boxes in that it uses no circuit boards and has very few parts (one..... Listed under: [Projects](#), [Solar energy projects](#)

442. [Pololu Dual MC33926 Motor Driver Shield for Arduino](#)



This shield makes it easy to control two brushed DC motors with your Arduino or Arduino-compatible board. Its dual MC33926 motor drivers operate from 5 to 28 V and can deliver a continuous 3 A per motor. These great drivers also offer current-sense feedback and accept ultrasonic..... Listed under: [Motor Projects](#)

443. [Displaying Twitter feed without a PC! using Arduino](#)



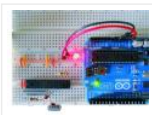
There are a lot of Twitter feed readers around the Web that use Arduino AND a PC to display twits on LCD displays or whatsoever. Then, I decide it was the time to design a solution for performing the same job WITHOUT A PC, and..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#)

444. [Geiger counter triggered LED decorations using arduino](#)



Bored of blinky lights that blink in response to time? Make them blink with space instead! This instructable shows a quick method for connecting LED tree decorations to a Geiger counter via arduino, so that the lights blink between different strings each time radiation is..... Listed under: [LED Projects](#)

445. [Arduino ISP \(In System Programming\) and stand-alone circuits](#)



We use an Arduino to program other ATmega without bootloader . This technique allows you to use all flash memory for code and make boards using new ATmega, cheaper than those with bootloader. The qualities that have made the success of Arduino are undoubtedly the open-source..... Listed under: [Arduino Programmer Projects](#)

446. [Digispark RGB LED Fader](#)



Forward: This instructable was roiginally posted at <http://www.instructables.com/id/How-to-make-LED-Fader-using-Digispark/> My students and I developed it into this exemplar, for wich they received a very good mark. Viewing the following video may leave you with a sense of too much too fast. Please continue to read this..... Listed under: [LED Projects](#)

447. [pedalSHIELD Arduino Guitar Pedal](#)



Web site: <http://www.electrosmash.com/pedalshield> Project Summary: pedalSHIELD is a programmable Arduino Open Source & Open Hardware guitar pedal made for guitarists, hackers and programmers. Users can program and share their own effects in C/C++. Full Project: pedalSHIELD is a programmable Arduino guitar pedal. It is Open..... Listed under: [Sound – Audio Projects](#)

448. [World's Smallest Stepper Motor with Arduino and EasyDriver](#)



This little wonder of electromechanical engineering came from inside a laser diode sled of an HP CT10L Bluray drive I've opened some time ago. The device on the picture consists of several parts, all easily fitting on a dime coin: a bipolar stepper motor with.....

Listed under: [Motor Projects](#)

449. [Telemetry with solar cell using an Arduino](#)



NOTE THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC. Telemetry – Solar Cells
Our project is using Arduino with the ZigBee to transmit and receive data from the solar cell. Data will be shown in the LCD and the software called..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)

450. [An I²C Bus powered Arduino IO Expander Board controlled via Bluetooth and Android](#)



Today we'll expand Arduino's digital resources thanks to an I2C bus equipped shield and we'll allow the management of the board via a bluetooth connection RN-42 through an Android systems. All Arduino boards feature a number of digital I/Os. For the simplest projects, such resources..... Listed under: [How To – DIY – Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#)

451. [Linking an Arduino to a Radiometrix NTX2B Transmitter](#)



Part 1 – Test Circuit and Test Code Introduction Getting your Arduino to transmit via the radio initially may seem daunting but its actually pretty simple. Please freely substitute the word “Arduino” for any micro-controller you wish to use. The example below works for 5V..... Listed under: [Wireless Projects](#)

452. [Solar USB Charger 2.0](#)



Everyone has USB gadgets. It's pretty much a fact of life. Another fact of life is that these USB gadgets also continually run out of power when you most need them. No need to fear, solar power is here! Ditch those crazy wall adaptors, throw..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Solar energy projects](#)

453. [0 to 99 Light display](#)



this circuit will take a light reading then display a number between zero and 99 please leave constructive comments
Step 1: Parts you will need [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14" radius="20" border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] to make the 0-99..... Listed under: [LED Projects](#)

454. [PS/2/You: Go-anywhere, LED digital message board using Arduino microcontroller](#)



Combine three inexpensive LED matrix display panels, an Ardweeny microcontroller and a standard PS/2 computer keyboard into your own go-anywhere, instantly updatable 768-pixel digital message board. The code can hold up to six lines of text with a maximum of 100 characters each. Pressing a..... Listed under: [LED Projects](#)

455. [Solar Tracker Relay circuit using Arduino](#)



I've reached the point where I need to think how I'm going to control the motor & linear actuator for my solar tracker. Things to consider – Must be able to go forwards and backwards – so that makes 4 channels, 2 for each motor..... Listed under: [How To – DIY – Projects](#)

456. [BARC Jeep – An XBOX Controlled Power Wheels](#)

Make a power wheels jeep that is controlled by an XBOX controller. This particular build is using Power Wheels® Jeep® Hurricane with Monster Traction™ but should be usable across many different types of power wheels with small adjustments. I wanted to do this



project so I could..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

457. [Nick Smith – Magical Music Box using arduino](#)



This is my Magical Music Box which converts music into a light show. When i was daydreaming what to make for my final project, i wanted something that would make a light show for any song simply by hearing it. Materials used: 1x arduino 8x..... Listed under: [Game – Entertainment Projects](#)

458. [Interactive LED Lab Coat using Arduino](#)



This is an instructable for the Interactive LED Lab Coats, showcased at Autodesk University. Check out the videos below! The first is a demo of the colors actuated by the buttons. The second is a demo of the breathalyzer! (this will be explained later) Tools Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)

459. [Sleep Tracking using an Arduino](#)



Background and motivation This project was motivated by two things: my almost complete inability to get out of bed in the morning, and my fondness for recording data from routine activities and making graphs with that data. My main problem with waking up in the..... Listed under: [Home Automation Projects](#), [Metering – Instrument Projects](#), [Projects](#)

460. [Arduino Controlled RGB LED Dot Matrix Board](#)



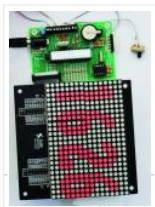
This project is a relatively straightforward and simple DIY music board. The Dot Matrix Board will allow any aged person to create their own music and beats. All you need to have is an understanding of Arduino and circuitry. Step 1: Gather Parts Needed [box..... Listed under: [LED Projects](#)

461. [5x5 rgb lpd6803-led matrix arduino controlled](#)



what: a 5*5 rgb led matrix, made with arduino and lpd6803 based leds from adafruit. with an pir sensor, it goes on if it detects movements and a ir distance sensor, 1 animation shows the distance you have from the sensor :). why: because its..... Listed under: [LED Projects](#), [Projects](#)

462. [An Open Source, hackable Digital Clock](#)



Andrew O'Malley, an amazingly creative maker, created this fanstastic Open Source Arduino-based clock that can display the time in many different ways: if not enough, one can also add his own personal animation. Compared to other clocks based on Arduino, this one has two distinctive..... Listed under: [Clock – Timer Projects](#)

463. [Tiny Wearable LED kit – 12 PWM LEDs from a reprogrammable ATtiny85](#)



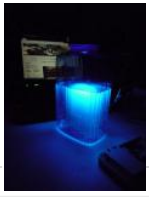
This instructable covers the assembly and use of a Tiny Wearable LED kit. The kit is useable immediately but is desigend to be hackable and can be reprogrammed to your liking using an ISP programmer or Arduino board and the Arduino IDE. There are not..... Listed under: [LED Projects](#), [Projects](#), [PWM Projects](#)

464. [Infinity Mirror – Tony Stark Arc-Reactor thing using arduino](#)



I'm creating a robot, but am finding that it's better if I break the build down into smaller projects. This is one of those projects, and it seems to have a look that could be used for other things as well. Step 1: Destroy a lady's..... Listed under: [Battery Projects](#)

465. [Ultraviolet nightlight, ingredients and setup](#)



This simple instructable will show you how to make a nightlight out of a translucent container, a bottle of tonic water, an Arduino, and ultraviolet LEDs. If you've ever played with a black light, you've noticed that some substances glow brightly under these lights. In..... Listed under: [LED Projects](#)

466. [LCD & Keypad Shield Quickstart Guide using arduino](#)



The 16x2 LCD And Keypad Shield is very simple to use because it's fully compatible with the Arduino "LiquidCrystal" library. You can initialise the LCD and display messages on it with just a few lines of code, but it also gives you the flexibility to..... Listed under: [LCD Projects](#)

467. [Arduino Esplora Light Calibrator](#)



This sketch shows you how to read and calibrate the Esplora's light sensor. Because light levels vary from one location to another, you need to calibrate the sensor for each location. To do this, you read the sensor for a few seconds, and save the..... Listed under: [Development Board – Kits Project Ideas](#), [LED Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

468. [MultiMovEDIA](#)



The title "MultiMovEDIA" does not mean much – if anything – at first sight. However, looking at more carefully, we can see it is a composition of two words: "Multimedia", referring to the information content and the channels it uses (text, image, sound), and "Move",..... Listed under: [Sound – Audio Projects](#)

469. [\[Team PGH\] – Prototype I Final Report: \[Motion RC Car\] using arduino](#)



Introduction: Give a brief description of what you are trying to solve. Include a high-level overview of what you made, why you made it, what parts you used, and what it does. In today's growing technology, it seems every little electronic is becoming touch or motion sensed..... Listed under: [Car Projects](#)

470. [Python Meets the Arduino](#)



Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. Python is our favorite programming language that allows you to integrate systems more effectively. Learn how to use Python to ... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

471. [Alarm Clock with Tetris to Prove You're Awake using Arduino](#)



This is an Arduino powered alarm clock that after hitting snooze twice the alarm will not cancel until the user has cleared 4 lines in the game Tetris. You physically turn the clock sideways, so the screen is vertical, to play Tetris. It's never fun..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#), [Projects](#)

472. [Arduino Mobile Processing](#)



How the mobile sketch works: The brain of the system is really on the arduino or the web page the phone requests. . . The phone just passes any data it sees back and forth. . . For the phone app to run, it needs..... Listed under: [Phone Projects](#)

473. [Localizer with SIM908 module using arduino](#)



The device is based on a GSM/GPRS module with included GPS. Its main function is to detect and communicate its own geographical position using, on the choice, the cellular phone reference system or the GPS. Its small dimensions are due to the use, for the..... Listed under: [GPS Based Projects](#), [Phone Projects](#)

474. [Lego Spybotics with Arduino](#)



A friend gave me his old Lego Spybotics robot, however, the programming environment that goes along with it is a bit too orientated to the younger user. So why not control it using an Arduino? Step 1: Open up! In order to get this robot..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)

475. [Arduino animatronics- make your awesome costumes more awesome](#)



Here's how to add lights, sound and action to your favorite Halloween project using the open source Arduino microcontroller. Arduino is easy to learn to use and it opens up a whole new world for costume builders and creature creators. If you want to learn..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

476. [Custom Large Font For 16x2 LCDs using arduino](#)



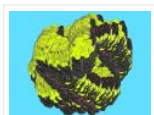
A couple of years ago i was learning to use the Ardiuno and started playing around with an Hitachi HD44780 based 16x2 LCD screen. I soon learned that the screen has 8 customizable character slots. I had found a project where someone used those slots..... Listed under: [LCD Projects](#)

477. [CARduino – Arduino-Powered, LabVIEW-Controlled Vehicle](#)



The CARduino is a remote-operated vehicle which is controlled by a controller attached to a computer running LabVIEW. The vehicle is powered by the Arduino, and can be expanded upon through the addition of sensors or other devices. Using LabVIEW, one can easily modify the..... Listed under: [Car Projects](#)

478. [Read analog data directly in Processing using arduino](#)



This instructable presents a fast an easy way to use data received from an analog sensor in Processing. You will learn to utilize the Arduino and prototype electronic boards to read meaningful data from the environment. The sensors can be affected by the light, the..... Listed under: [Arduino Programmer Projects](#)

479. [The Arduino Noise Machine](#)



Okay, okay, I know you all were wondering what I am up to now. I love synths and so, I built this. There are three things that can catch my attention: Synthesizers, Amplifiers and free. The other day (Actually it was just Thursday) I was..... Listed under: [Projects](#), [Sound – Audio Projects](#)

480. [The Soil Moisture Sensor using arduino](#)



You are building a cheap soil moisture sensor so the brain can read the amount of moisture in the soil. The version we are building is very low tech, but it is also very cheap and easy to build. It consists of a block of..... Listed under: [Home Automation Projects](#), [Temperature Measurement Project Ideas](#)

481. [Arduino theremin like musical instrument](#)



When I got my Arduino protoshield from sparkfun, I wanted to make something cool with it. And since I had seen a few Theremin projects before, and already thought about making some, I finally made one, using the Parallax PING sonar sensor. Here are some..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

482. [Mouse Control With Pushbuttons using arduino](#)



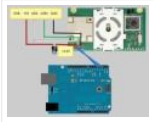
Overview In this lab, you'll build an alternative computer mouse using an Arduino Leonardo using pushbuttons to move the mouse left, right, up and down. You'll see the difference between reading a digital input continually and reading for a change of state. (toc Table of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

483. [G Meter using arduino](#)



I have a late 80's VW and the gauge cluster has 5 dummy LED locations underneath the other warning lights. Well I was tired of the m not doing anything, so I decided to do something about it. I came up with the idea to..... Listed under: [Metering – Instrument Projects](#)

484. [Xbox 360 RF module + Arduino](#)



I was going to make a huge write-up on this, but I can't be bothered right now. I'll probably do something about it later. Until then, have an Arduino sketch. If you don't know what you're doing with it then chances are you don't have..... Listed under: [Radio Project Ideas](#), [Wireless Projects](#)

485. [Robotic Talking Turret using Arduino](#)



Here I will show you an overview on how to make a robotic talking turret, loosely based off of the turrets from the popular game, Portal. This instructable should help anyone wanting to do an animatronics project. For more detailed pictures, go to: <http://razorconcepts.net/turret.html> This..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

486. [New Textiles 2012 using arduino](#)



Twist Switch by ttseng Through the action of twisting, swatches of conductive fabric are folded in upon each other, completing a circuit that then turns on LEDs. On each face of stretched spandex are swatches of conductive fabric. Before choosing which swatches to designate as..... Listed under: [LED Projects](#)

487. [Demystifying 4 pin RGB LEDS \(Radio Shack 276-0028\) using arduino](#)



RGB LEDs are fairly useful in projects allowing for a wide range of color from a single unit. However they can be a pain in the neck to work with and they too often come with little or no documentation. I searched for some time..... Listed under: [LED Projects](#)

488. [Connect the arduino and make the speaker play](#)



To make your Arduino to play a melody you need thes accessories. One 5 ohm speaker One Arduino uno board One Push button One 10 kohm resistor 8 leds And a lot of core wires Step 1: Connect the arduino and make the speaker play This..... Listed under: [Sound – Audio Projects](#)

489. [Team 1 Final Project Report & Video: Arduino Video Game System using arduino](#)



Introduction We built a video game system that can play either Snakes or Pong. We saw a project called "Arduino Pong" and wanted to recreate it with our own twist. Description Parts Needed: Arduino Uno Video Game Shield 2 LEDs 2 non-latching push buttons 2..... Listed under: [Game – Entertainment Projects](#)

490. [Arduino Morse Code Flaher using arduino](#)



I am a big fan of programming but I like to keep it down to 555 timer but when it comes to complex functions like flashing a LED in a certain pattern programming is necessary. One day while surfing through the I

came across something known as Morse code.I decided..... Listed under: [Arduino Programmer Projects](#)

491. [Arduino Robotic Arm](#)



In this instructable I will show you how to make a simple robotic arm controlled by 4 servos , 2 analog joysticks, and an Arduino UNO. It is very similar to my "2 Servos + Thumbstick" instructable. This tutorial is in particular to help out another..... Listed under: [Robotics – Automation Projects](#)

492. [Rear Wheel Tachometer using arduino](#)



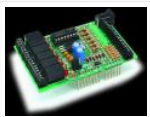
One of the goals of Movable Party is to provide an interactive experience for audiences/participants. Since power will be generated from a hub motor attached to the rear wheel of each bike (see this post), the speed of the rear wheel directly translates to the..... Listed under: [CNC Machines Project Ideas](#), [Temperature Measurement Projects](#)

493. [Time-Lapse Camera Controller using Arduino](#)



Simple digital cameras can produce remarkably good quality photos and are now cheap enough that it doesn't hurt the wallet too much to buy one with the intention of modifying it for use in a project. You may even already have an old digital camera..... Listed under: [Video – Camera – Imaging Projects](#)

494. [A useful and simple IO Shield for Arduino](#)



In order to "visually" highlight the behavior of Arduino programs you must connect a device to the I/O pins, which gives you tangible signals. Normally, if you want to check if a program changes a level of an output pin, answering a command or executing..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#)

495. [Laser cut gear clock with ChronoDot using Arduino](#)



This summer, my hackerspace LVL1 (in Louisville, Ky) got an awesome laser cutter <http://fslaser.com/40w-deluxe-hobby-laser-engraver-and-cutter>. LVL1 is an awesome community of creative folks that like to build stuff. You can always check out what we are up to at <http://www.lv1.org>. If you like instructables and making..... Listed under: [Clock – Timer Projects](#), [Projects](#)

496. [Using an Arduino to Control or Test an SPI electronic device](#)



There are many electronic devices that use the SPI bus, or Serial Peripheral Interface bus, for communications (e.g. various sensors, LCD displays, digital potentiometers, D/A and A/D converters, wireless transmitters and receivers, audio volume controls). The devices receive data serially from a microcontroller using a..... Listed under: [Battery Projects](#)

497. [Solar Powered LED/Ultracapacitor Arduino Regulated Light](#)



This instructable primarily shows how to control the charging voltage from a solar panel to an energy storage device (capacitors in this case). I showed how to construct the light previously <http://www.instructables.com/id/Human-Powered-Light-from-my-book-Doable-Renewab/> Step 1: This solar panel can produce up to 18 volts, but my..... Listed under: [LED Projects](#), [Projects](#)

498. [Arduino – based camera trigger unit](#)



I developed the camera trigger unit in order to synchronize various events and actions during free-flight experiments with hawkmoths in the wind tunnel described in a previous post. More specifically, the goal was to trigger multiple high-speed cameras and have LEDs that indicate the exact..... Listed under: [Home Automation Project Ideas](#), [Video – Camera – Imaging Projects](#)

499. [Bouncing Multicolored LED line](#)



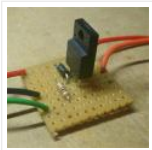
This is an arduino controlled project and uses leds, jumper wires, and a breadboard. This is one of my first attempts on programming arduino and I am pleased with the outcome. I'm ten years old and I just started programming 2 weeks ago. Step 1:..... Listed under: [LED Projects](#)

500. [Airmonica – a free-air musical instrument](#)



improvise + harmonize + customize The airmonica is a easy-to-learn tweakable musical instrument that you can use to perform harmonic musical ditties by accompanying a tri-tone arpeggiator. There are endless opportunities to expand the airmonica in any way that will make it your your own..... Listed under: [Sound – Audio Projects](#)

501. [Controllers and Sensors using arduino](#)



Intro The Arduino microcontroller board is able to supply a current of 40mA from its output connections. These digital outputs are fixed at 5V "ON" or 0V "OFF". This is adequate for working with LEDs but devices such as motors, solenoids, high brightness LEDs etc..... Listed under: [Motor Projects](#)

502. [Programming Arduino in C++11 — ROM dumping](#)



In this tool-assisted education video I show how to program an Arduino Atmega2560 board in C++11 to dump a ROM chip, such as a 386sx BIOS or a Famicom cartridge ROM. I also make a ZMODEM sender and a LED blinker in this video. Sorry..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

503. [Arduino Automatic Watering System For Plants Sprinkler](#)



Last month, Elecrow have left from the original office and moved to a new office. We will miss our original office where we worked so hard for more than two years, we will miss everything here, the desks, the windows, and those potted plants, that..... Listed under: [Home Automation Projects](#)

504. [The iButton garage-door opener using an Arduino](#)



I've made an iButton garagedoor opener and logger. On a Dutch (kind of) eBay (www.marktplaats.nl) I found some iButtons and readers very cheap. I had no idea what to do with them, but I bought them anyway. My garage opens with a push on a..... Listed under: [Home Automation Projects](#), [LCD Projects](#), [Projects](#)

505. [RFM12B – Part 1 – Hardware Overview](#)



To see how RFM12B wireless compares to other similar wireless options (e.g Xbee, XRF etc..) check out this well compiled comparison overview by Stuart Poulton: <http://blog.homelabs.org.uk/wireless-connectivity/>. Overview Made by Hope RF, re-branded by RFSolutions in the UK. Sometimes called 'Alpha RF' Low cost RF transceiver (from Rapid, Farnell,..... Listed under: [Radio Project Ideas](#), [Wireless Projects](#)

506. [Arduino Throttle Body Synchronization Shield](#)



A common Motorcycle maintenance task is to synchronize the throttle bodies on the engine to smooth out any rough idle. This is done by monitoring the vacuum on each throttle body and using the idle screw to make the adjustment. While this sounds rather advanced,..... Listed under: [Car Projects](#), [Projects](#)

507. [Ardusumo: an Open Source Platform for Fighting Robots using Arduino](#)



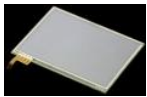
The idea ArduSumo is a universal platform to build robots on wheels that can move around avoiding obstacles using infrared sensors and follow routes marked with dark lines on a white background. We have created ArduSumo to bring young students to the world of robotics:..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

508. [BUILD YOUR OWN LASER HARP using Arduino](#)



The laser harp is a musical instrument made of light. A fan of beams shoots up from the floor into the night sky. The performer can create music by placing their hands in the beams. Not only does “breaking” the beam produce notes, but sliding..... Listed under: [Game – Entertainment Projects](#)

509. [Touch Control Panel using Arduino](#)



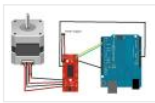
Small 4-wire resistive touchscreens are now amazingly cheap: they are produced in such enormous quantities for mobile phones, PDAs, and particularly handheld games such as the Nintendo DS that they can be bought brand new for under US\$10. Larger touchscreens are also rapidly falling in..... Listed under: [Sensor – Transducer – Detector Projects](#)

510. [Arduino + 2 Servos + Thumbstick \(joystick\) using arduino](#)



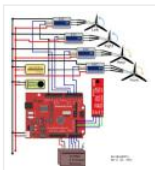
In my other 2 Arduino tutorials I have help new users to play tones and making 2 servos move with a mouse. This time I will help you move the same 2 servos with a thumbstick. And again I have surf the internet to see If there..... Listed under: [Motor Projects](#)

511. [Stepper Motor drive from Arduino](#)



Stepper Motor drive from Arduino In this tutorial we will show you how to connect a bipolar stepper motor to an Arduino Uno board. The stepper motor we are using is the Sparkfun Stepper Motor but you can use any other 4-wire bipolar stepper motor..... Listed under: [Motor Projects](#)

512. [UVic Quadcopter using arduino](#)



Hardware Controller The Arduino platform is selected for this project, mainly due to its open software and hardware nature which has resulted in availability of extensive technical information. As a result there are many tutorials and example project available for this platform. A list of..... Listed under: [Car Projects](#), [Robotics – Automation Project Ideas](#)

513. [How to: Use Arduino to Generate Glitchy Audio VGA Visuals](#)



This post is a guide for people that are interested in my previous posts about dual monitor VGA hacking (see 1, 2 and 3). You will need: • A laptop or a computer with a VGA output • A breadboard (optional) and some wires or..... Listed under: [Sound – Audio Projects](#), [Video – Camera – Imaging Projects](#)

514. [Hacked Pan and Tilt Camera Mount](#)



So my sister managed to break a pan and tilt camera mount and naturally thought daddy can fix this. After sitting on my dads workshop bench for a while he had a go at it and couldn't work out how to fix it so it..... Listed under: [Video – Camera – Imaging Projects](#)

515. [Adafruit Arduino Motor Shield Build](#)



Overview The Arduino Motor Shield is based on the L298 (datasheet), which is a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It lets you drive two DC motors with your Arduino board, controlling the speed and..... Listed under: [Motor Projects](#), [Projects](#)

516. [How to make fist pumping with LED animation using Arduino](#)



It's to make a fist pumping LED controller. What is it? Have you noticed yourself fist pumping to the music at a party or a club? That's exactly for that. You would wear a band with a accelerometer/gyro mounted. As you move your hand around..... Listed under: [LED Projects](#), [Projects](#)

517. [Developed on Hackaday: First Version of the Hardware](#)



The Hackaday writers and readers are currently working hand-in-hand on an offline password keeper, the mooltipass (click to see the project description). Next in our Developed on Hackaday series, we present the first version of our schematics. There's already been a lot of discussions going on in..... Listed under: [Security – Safety Projects](#)

518. [DIY Teagueduino](#)



What is Teagueduino? Teagueduino is an open source electronic board and interface that allows you to realize creative ideas without soldering or knowing how to code, while teaching you the ropes of programming and embedded development (like arduino). Teagueduino is designed to help you discover..... Listed under: [How To – DIY – Projects](#), [LED Projects](#)

519. [Automatic blind hooked up to existing projector screen using Arduino](#)



Hello my name is Chipsy, I'm French, reading instructables since at least 2 years, it is the first entry i make on this website. Why i made this project : I have a small homecinema system in my living room, with a projector and a..... Listed under: [Home Automation Projects](#), [Projects](#)

520. [MenZ-DECK](#)



About a year ago, we drunk beer in The-MenZ Lab. When Zagan said "I want PCDJ controller, So next project is make controller!". The project began at this time. ***MenZ-DECK featured by Maker Faire UK Blog.***
<http://www.makerfaireuk.com/maker-faire-tokyo/> (Continue with broken English) Components for make controller: Arduino..... Listed under: [Development Board – Kits Projects](#)

521. [Arduino Watch Build Instructions](#)



Update: New version out that works with Arduino 1.0 and higher! The Arduino Watch provides augmented sensing of temperature and range, 16-bit color drawing program, Breakout game, and also tells the time in your choice of digital, binary, or analog. Additional sensors, devices, and programs..... Listed under: [Clock – Timer Projects](#), [Projects](#)

522. [GSM Remote Control – GSM Module](#)



This GSM Mobile is used for our Remote Control (for example Gate Control, Temperature Control....). We use the word 'module' because, unlike what we did in our remote control projects, this time around the mobile phone is not mounted on a printed board, but rather on..... Listed under: [Phone Projects](#)

523. [Interface a rotary phone dial to an Arduino](#)

An old rotary phone can be used for a number of purposes in your Arduino projects – use it as a novel input device, or use the Arduino to interface a rotary phone to your computer. This is a very basic guide describing how to..... Listed under: [Interfacing\(USB – RS232 –](#)



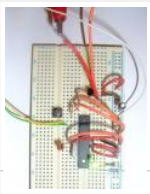
[I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)

524. [Arduino Controlled Can Crusher With LCD Readout](#)



I have always wanted to do an instructable, but I never had a somewhat original idea that hasn't been done a million times, or something that had no means of building. I have some friends who recycle aluminum for money and after seeing the large bags of an unknown..... Listed under: [Home Automation Projects](#), [LCD Projects](#), [Projects](#)

525. [Arduino ATmega328 – Hardcore](#)



Ok, you've completed your prototype using an Arduino Uno board, perhaps using a shield or a breadboard for any additional components, but now you want to finalise your design and construct it using your own pcb. Well, that is fairly straightforward, as we have made..... Listed under: [Arduino Programmer Projects](#)

526. [Computers are Dumb](#)



Objective: Overcome your fear of computers! If you can count to two, then you can master the basics of computers. If you think computers are smarter than you, you are wrong and I will prove it. For normal people, just follow the LOG: comments. Computers..... Listed under: [RTOS – OS Projects](#)

527. [Bicycle North Indicator using Arduino](#)



Magnetoception is the ability of some animals to detect magnetic fields as a means of orienting themselves. Although humans do not seem to possess the same biological mechanisms that allow other animals to sense magnetic fields, there are still many ways that we can improve our..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

528. [SPI interface to the FlySky/Turnigy 9x](#)



Interfacing a RC radio to a microcontroller is a bit of a pain, especially if you want a lot of channels, because you have to time each channel's output individually. An AVR only has one 16 bit timer with two compare channels, so either you..... Listed under: [Radio Projects](#)

529. [Arduino powered 7seg led display with Port Manipulation](#)



Time for something a little more advanced. Direct Port Manipulation. Normally when using Arduino software, the actual logic behind changing the values in pins is abstracted away with digitalWrite and digitalWrite. Now, for most people that's just fine. But it has some limitations. For one,..... Listed under: [LED Projects](#), [Projects](#)

530. [Arduino controlled animatronic wooden head \(reading lamp\) usnig arduino](#)



This head is a reading lamp which can be adjusted for direction of lighting, and dimmed as required. This Instructable combines Arduino programming, some simple electronics, carving with hand and power tools, mechanical control and a bit of woodwork. Apart from the Arduino and a..... Listed under: [Home Automation Projects](#)

531. [High Power RGB LED Moodlamp which syncs with Philips Hue](#)

In this instructable the main focus lies on the software which I've created – not so much on the hardware side. You needn't to use a high- power led for this, you can use every RGB- LED you like. The "High Power RGB LED Moodlamp"..... Listed under: [LED Projects](#)



532. [Buggy Wheelchair Robot using an Arduino](#)



This is a Modification of an electric wheelchair. I called it "Buggy" for two reasons. #1 My kids can still ride it around because I left the seat intact. #2 I haven't programmed anything for a long time. I plan to create "jobs" for it..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

533. [Precision Fermentation: Arduino-Controlled Crock Pot Yogurt Maker](#)



A homemade thermostat attachment for a crock pot (or other electric heating device). It can be used to precisely control the temperature of the crock pot for things like yogurt fermentation. Why Making yogurt is fun. It is also way cheaper than buying it. You..... Listed under: [Home Automation Projects](#)

534. [BLU-BOARD, control your home with blue tooth!](#)



Big thanks to the fine people at Hack-A-Day for sharing this with the world! if you'd like to donate to the project: <https://www.suprmasv.com/projects/167/blu-board> This project has been in the works for along time, three months if I reckon Correctly, but anyways, this device will allow you..... Listed under: [Development Board – Kits](#), [Projects](#), [Home Automation Projects](#)

535. [CatBot: Automated Cat Laser using an Arduino](#)



The CatBot is an autonomous laser toy for your cat. You may say "But Joe, isn't the laser pointer the best toy for the lazy cat owner?" I'd have to say no, the CatBot takes one step further. Using two servos, an Arduino and a..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

536. [Nerd++: Controlling Dioder RGB LED Strips with Arduino, Pt. 1 – Getting Started](#)



A few weeks ago, it came to my attention that IKEA do a set of colour-changeable LED strips. I've been looking for a decent way of providing some lighting behind my computer to reduce eye-strain for a long time, and these seemed perfect: I was..... Listed under: [LED Projects](#)

537. [Arduino compatible Luna Mod Looper](#)



The Luna Mod Looper, basically lets you record a sequence using a potentiometer to control the pitch of the note, and then play it back and add affects. Ever since I saw videos of the Luna Mod being played, I wanted to build my own..... Listed under: [Projects](#), [Sound – Audio Projects](#)

538. [Glowing Color-Changing Guitar](#)



In the kingdom of rock and roll it is important to set oneself apart. With millions of people in this world who can play the guitar, simply playing well is just not going to cut it. You need something extra to rise up as a..... Listed under: [Sound – Audio Projects](#)

539. [LED matrix using shift registers using arduino](#)



This instructable is meant to be a more complete explanation than others available online. Notably, this will provide more hardware explanation than is available in the LED Marquee instructable by led555. Goals This instructable presents the concepts involved with shift registers and high side drivers..... Listed under: [LED Projects](#)

540. [Athena: The Global Car Tracking System\(3D Images\)](#)



Bring out your 3D glasses and enjoy viewing in a novel way! I have added a new dimension to my instructable. If you do not have 3D glasses, then you can make one yourself. The following link explains how to make 3D glasses (link). Please..... Listed under: [Car Projects](#), [Sensor – Transducer – Detector Projects](#)

541. [Piano Stairs with Arduino and Raspberry Pi](#)



Who doesn't love music? These Piano Stairs are an interactive, relatively portable, musical installation that can be applied to basically any stairwell. I built them for HackPrinceton and won 2nd place in the hardware track. I've had requests to share my code and diagrams, so..... Listed under: [Sound – Audio Projects](#)

542. [Addressable Milk Bottles \(LED Lighting + Arduino\) using arduino](#)



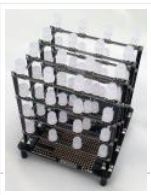
Make PPE milk bottles into good looking LED lights, and use an Arduino to control them. This recycles a number of things, mainly the milk bottles, and uses a very low amount of power: the LEDs apparently dissipate less than 3 watts but are bright..... Listed under: [LED Projects](#)

543. [Make your own cellphone from scratch](#)



The DIY Cellphone is a working (albeit basic) cellphone that you can make yourself. It can make and receive phone calls and text messages, store names and phone numbers, display the time, and serve as an alarm clock. It connects to GSM networks (like AT&T and T-Mobile..... Listed under: [How To – DIY – Projects](#), [Phone Projects](#)

544. [LED Cube Spectrum Analyzer](#)



In this project we'll create a small add-on PCB containing the a MSGEQ7 spectrum analyzer circuit and show how it can drive the RGB LED cube kit from Freetronics. This allows the cube to display the seven bands over four horizontal planes. There is a small amount..... Listed under: [LED Projects](#)

545. [High Speed Outdoor Photography](#)



High speed photography is generally carried out in a dark room with dedicated equipment (controlled remote flash for example)... The instructable proposed here enables to make high speed photography outside (and enjoy the sun!), in less than 2 hours with some generic DIY basic tools. The principle is the following..... Listed under: [Video – Camera – Imaging Projects](#)

546. [DIY Sensors Workshop using arduino](#)



The Arduino offers the advantage that a lot of people are using it so it is usually quite easy to get help or information via the internet. The main website for the Arduino is: <http://www.arduino.cc/>. The Arduino can also be programmed to behave in many..... Listed under: [Sensor – Transducer – Detector Projects](#)

547. [Troubleshoot your car battery with ATtiny](#)



Last winter I experienced some problems with my car battery. I knew that it was about time to replace it so off I went to buy a new one. This fact reminded me of an old article about a car battery/charging system diagnostics kit I..... Listed under: [Battery Projects](#), [Car Projects](#)

548. [STEAMPUNK STEAM GAUGE, POWERED BY ARDUINO](#)



This was created to be some eye-candy for my kitchen. I wanted something unique for a special blank space on my wall, and adding movement, blinky lights and interesting mechanical "guts" made it even better. Ultimately, this project ended up requiring the following range of..... Listed under: [Metering – Instrument Projects](#), [Sensor – Transducer – Detector Projects](#)

549. [Arduino Laser Engraver](#)



I started this project because I wanted to make something that had mechanical, electrical and software components. After looking around on Instructables, I figured that an Arduino based laser engraver would be an interesting machine to make, and that the machine itself could make interesting..... Listed under: [Other Projects](#)

550. [Google Docs and the Arduino Yún](#)



Introduction This is the second in a series of tutorials examining various uses of the Arduino Yún. In this article we'll examine how your Arduino Yún can send data that it captures from the analogue and digital inputs and a real-time clock IC to an online Google..... Listed under: [Internet – Ethernet – LAN Projects](#)

551. [Multitouch Music Controller](#)



This project is an Arduino-powered infrared touchscreen / coffee-table interface that I've been using to control various music and graphics applications on my computer. This is an old project that I've recently had time to go back and document/fix up; this project is a little..... Listed under: [LCD Projects](#), [Sound – Audio Projects](#)

552. [Controlling Cubase with Arduino based MIDI](#)



A friend of mine wanted to control Cubase, his audio recording software, with a push button so that he could stop and start recordings remotely without having to go over to the computer and type on the keyboard. You may be able to do this..... Listed under: [Projects](#), [Sound – Audio Projects](#)

553. [Plugduino – Arduino based 120 Volt outlet controller](#)



give your Arduino a 120 volt kick in the pants! The Arduino is a great tool for anyone interested in learning microcontroller programming, but after blinking some LEDs, what's next? This project enables your Arduino to control real-world 120 Volt electrical appliances you have in..... Listed under: [LED Projects](#)

554. [Arduino Masterclass Part 2: Build an LED weather station using arduino](#)



Project-specific parts You'll need the standard parts (Arduino board breadboard wires pliers and so on) along with these extras: DHT11 temperature/humidity sensor 7 x 330-ohm/0.5W metal film resistors 3 x 4.7k-ohm/0.5W metal film resistors 2 x BC337 NPN transistors 2 x LTS543R or FND500 common..... Listed under: [LED Projects](#)

555. [Proximity Sensing Origami Flower using Arduino](#)



Origami is the traditional Japanese art of paper folding. In this project, with a little help from an Arduino, you can bring your origami into the 21st century and make it an interactive art! The result shown here uses Bare Conductive paint to give an..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

556. [Worms in Space Board Game](#)

Story: NASA has taken worms to the ISS on their own special capsule. There was an accident aboard the station and the worm astronauts have to navigate to the escape capsule to return to Earth. The airlock to the escape capsule has been damaged but..... Listed under: [Game – Entertainment Projects](#)



557. [FireHero: Turn Guitar Hero into an extreme sport by adding flamethrowers! using Arduino microcontroller](#)



So, long ago I had read about propane fire poofers. They're pretty cool... I mean, who doesn't love fire?! But, no matter how awesome, they could get pretty boring after a while of seeing the same large fireball. I never built one because I wanted..... Listed under: [Game – Entertainment Projects](#)

558. [How to Display Text on an HD44780 LCD with an Arduino](#)



In this article, we will go over how to connect an HD44780 LCD to an arduino in order to display any text that we want to show on the LCD. To do this, first, we must make the appropriate physical connections from the arduino board.....

Listed under: [LCD Projects](#)

559. [DIY Antique Phone Doorbell using Arduino](#)



Bryan Zimmer emailed us this fantastic retro-themed DIY hack, a most timely submission as we just revisited the noir art deco-science fiction classic Dark City and we think this would have perfectly fit in the world (or in Adama's quarters on BSG). Bryan gives step-by-step..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [Phone Projects](#)

560. [Arduino Touch Screen iTunes control \(ATSIC\) using arduino](#)



What I'm going to show you is how to make an iTunes control device using an Arduino and a touch screen. The iTunes Control works by reading area's of the touch screen and send a letter to the computer via the serial port, which is.....

Listed under: [Phone Projects](#)

561. [Building an Arduino Robot, Part II: Programming the Arduino](#)



Welcome to the second article in the tutorial series in which I'm building a remote controlled Arduino based vehicle robot. Here is the list of articles I have published: Part I: Hardware Components Part II: Programming the Arduino (this article) Part III: Assembling the Robot..... Listed under: [Robotics – Automation Projects](#)

562. [Color changing display](#)



Custom made Multiple color display. Have you ever wanted a display that is a little larger then one you can buy? Have you ever wanted to make a display the way you wanted it? Me too! This is how I made a custom multiple color.....

Listed under: [LED Projects](#)

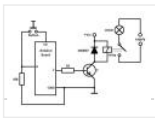
563. [DMX Ardweeny Node using Arduino](#)



I've settled on the lighting industry standard of DMX as my overall control protocol as I explore the world of blinky lights. This universal control method is electrically robust, radio transmissible, and flexible enough for my needs (not to mention the needs of major concert..... Listed under: [Development Board – Kits Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

564. [Control a Relay with Arduino](#)

In this quick Arduino tutorial I will explain how you can control a relay using the Arduino Board, one 1K and one 10K resistors, 1 BC547 transistor, one 6V or 12V relay, one 1N4007 diode and a 12V fan. When the button is pressed the..... Listed under: [Sensor – Transducer](#)



[– Detector Projects](#)

565. [Easily control your iPod using Arduino](#)



Easily control your iPod with Arduino using serial commands. This instructable includes the schematic, the code and some extra info; everything you need to make this work. USB, battery or wall power supply powered. Step 1: What you need Parts: 5x 1K ohm resistors 2x 1M..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#), [Projects](#)

566. [Make an Arduino timer](#)



Hi, so me and my pal are setting up so we can make PCB's. We are currently making a UV exposure box (possibly another instructable) and for this box, we needed a timer, so this is what we have done so far, and what we..... Listed under: [Clock – Timer Projects](#), [Projects](#)

567. [Easy 4x6 LED Matrix, Arduino!](#)



In this inst'able, I will show you how to create your very own 4x6 LED matrix as well as show you how to write code for it! There is an animation creator program in step 4! Here is one ANIMATION to get you excited about the project! ***Wave..... Listed under: [LED Projects](#), [Projects](#)

568. [Pulse Width Modulation : PWM using Arduino](#)



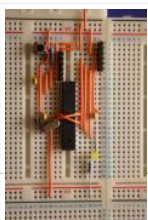
Pulse Width Modulation or PWM is a method of Digital to Analog Conversion. It helps in delivering analog average voltage using digital pulses of variable pulse width. By controlling the on time and off time, we can generate an analog average voltage using the digital..... Listed under: [PWM Projects](#)

569. [Robot arm from a desk lamp \(IKEA Tertial hack\)](#)



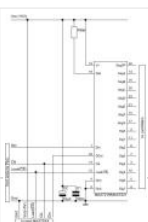
This project answers to a need I had: a third hand that holds a camera while I perform a test and takes photos/videos (useful when you're stuck at the lab late at night, and suddenly need a photographer). The downside to a robotic arm was..... Listed under: [Robotics – Automation Projects](#)

570. [Breadboard Arduino](#)



Received a couple of nice big bread boards for Christmas and decided that one of them needed an arduino to use with it. After some thought I decided that the best option was to build the required parts of an Arduino circuit direct on the..... Listed under: [Development Board – Kits Projects](#)

571. [The MAX7219 and MAX7221 Led drivers](#)



These two integrated circuits from Maxim are for driving either 64 individual Led's, or up to 8 digits of 7-segment displays. The drivers implement a SPI compatible slave interface that can be controlled from the Arduino using only 3 of the digital output pins. An..... Listed under: [LED Projects](#)

572. [Arduino Time & Temp Display Shield](#)



Another project I'm working on required a good timer, but the more I read about Arduino, I realized that I couldn't make an accurate timer using an Arduino that was already devoted to other tasks. The Arduino will always lose time if you perform other..... Listed under: [Temperature Measurement Projects](#)

573. [Measuring Battery Capacity With an Arduino](#)



I needed a couple of AA batteries and found the display at the supermarket where they were all arrayed. Normally when I'm shopping in the supermarket, I tend to look at the price/kg or price/l when comparing similar products. In the case of the batteries,..... Listed under: [Battery Projects](#), [Projects](#)

574. [Sunflower Automaton using arduino](#)



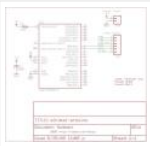
This was a 6 week project created for the Spring 2012 Things That Think course at the University of Colorado at Boulder. Our project is an autonomous Sunflower. As in nature, the highest priority for our flower is sunlight, necessary for photosynthesis. Our Arduino controlled..... Listed under: [Video – Camera – Imaging Projects](#)

575. [Charlieplexing LEDs with an Arduino](#)



Charlieplexing is an ingenious method for controlling many LEDs without using many microcontroller pins. You can turn on or off one LED at a time. To light more than one LED at a time, you can scan the LEDs by turning a sequence of them..... Listed under: [LED Projects](#), [Projects](#)

576. [Minimal Arduino with ATmega8](#)



Like me, you may have a few old Arduino boards or ATmega8 chips (in the boards) laying around from when you were first playing with Arduino. Those chips can still be really useful as the heart of a tiny "Minimal Arduino" setup. A normal Arduino..... Listed under: [Other Projects](#)

577. [Nocturnal Emissions: My Arduino Powered Internet Enabled Dream Generator](#)



We all need to dream more so I've created this Arduino Powered "dream generator" to help plant the seeds for some big thinking craziness. When you approach the generator a Maxbotix ultrasonic sensor triggers lights and music that draw you in so you can stare..... Listed under: [Internet – Ethernet – LAN Projects](#)

578. [Light Seeking R.C Car Hack \(with Arduino\) using arduino](#)



Creating a robotics platform from scratch takes a lot of work and a few dollars. Buying a ready built one is easy but costs a lot of money (at least for me). So instead I decided to piggy back off of the companies who make remote control..... Listed under: [Car Projects](#)

579. [Appliance Remote Control using Arduino](#)



One of the basic tasks in many home automation systems is controlling power to appliances. They could be lights, or a heater, or an exhaust fan, or just about anything else that runs on mains power. The problem of course is that it's dangerous to..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)

580. [Arduino Wireless Programming with XBee Series 1 or 2](#)



Hi. This Instructable will guide you through the process of wirelessly programming your Arduino using two XBees. I just finished designing a wireless EEG system with the XBee modules, so I've become quite fluent in their programming and have just now been able to accomplish this. It still amazes..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

581. [My Arduino Binary Clock](#)



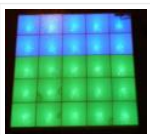
Hi from Italy Although many watches are created binary, my project was inspired mainly to this: <http://www.instructables.com/id/LED-Binary-Clock-1/>, very smart and funny. I tried to improve the design and to add something personal. I think it's a good result at the end. The project is..... Listed under: [Clock – Timer Projects](#), [Projects](#)

582. [Cheap Arduino Controlled Yogurt Maker](#)



These days I was reading an interesting post on how to make yogurt “by the gallon” (<http://www.instructables.com/id/Yogurt-By-The-Gallon/>). One thing needed was to maintain a rather constant temperature of 43°C (110°F), so the bacteria can grow properly. Though you can buy commercial yogurt makers, they aren't..... Listed under: [Home Automation Projects](#), [Projects](#)

583. [Low Cost LED Grid](#)



There are a number of great Instructables on LED grids out there. This is a low cost version – not quite as polished, but easy to make. This project uses a couple of sheets of foam core, a fluorescent fixture cover from the local home..... Listed under: [LED Projects](#)

584. [Make an Attiny13 based IR proximity sensor](#)



This is an extremely cheap IR proximity sensor you can make with a few cheap parts and an AVR programmer. I use an Arduino as my programmer in this Instructable. This sensor only has a range of about 3 inches. You can easily add more..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sensor – Transducer – Detector Projects](#)

585. [Google Weather on graphical display with Arduino](#)



In this project, I am using an Arduino board to show forecast of the weather from Google Weather service on a VGA screen. The display is obviously graphical one, with icons and some colorful text. It is one of those gadgets I wanted to have..... Listed under: [Internet – Ethernet – LAN Projects](#), [LCD Projects](#), [Projects](#)

586. [Bluetooth plus Infrared Controlled Robotic Arm](#)



Hi. I'm Darren a 17 year old hobbyist, and this is the first Instructable I'm posting here, so I apologize if it kinda sucks! I hope it's good enough... So how did the idea of a robotic arm come to me? Well, the first thing..... Listed under: [Internet – Ethernet – LAN Projects](#), [Robotics – Automation Projects](#)

587. [Intro to Arduino](#)



An Arduino is an open-source microcontroller development board. In plain English, you can use the Arduino to read sensors and control things like motors and lights. This allows you to upload programs to this board which can then interact with things in the real world..... Listed under: [Development Board – Kits Projects](#)

588. [Transforming Chandelier](#)



In this tutorial I will go over how to make a transforming chandelier. This project will be heavily CAD oriented (Solidworks and Illustrator), made by laser cutting/engraving acrylic sheets, and a little bit of Arduino coding and soldering. Step 1: Choosing materials. All the pieces..... Listed under: [Other Projects](#)

589. [Sentriduino! Its the all new Sentry turret](#)



Hey guys, Today I would like to show you how to make a simple sentry turret out of household Items! You would only need to get an Arduino UNO or Mega, a Ping))) Ultrasonic Range finder, two servos, and an electronic water squinter! The rest of..... Listed under: [How To – DIY – Projects](#)

590. [RGB / RFID Lamp](#)

We have taken this project down, due to vendor's request. Please wait till we get approval again..... Listed under: [Home Automation Projects](#), [RFID – NFC projects](#)

591. [How to make a Ghost Knocker](#)



Step 1: Check the materials you need. Below is the list of stuff you need to make it: 1. Arduino I used an Arduino Pro Mini 3.3V. You also need USB-Serial tether to program it. 2. A battery box I used a AA x 4..... Listed under: [Game – Entertainment Projects](#)

592. [Temperature-Sensitive Infinity Mirro](#)



As per an assignment in my digital multi-media class, I've combined two Arduino-related tutorials into a functional object! The result is a pair of infinity mirrors that flash red and blue depending on minute fluctuations in ambient temperature. This is my first experience with Arduino,..... Listed under: [Temperature Measurement Projects](#)

593. [Wireless nunchuk controlled animatronic doll](#)



This instructable will attempt to show you how to make an animatronic doll controlled by a wireless nunchuk. This doll can only move its head though. I'm sure there are plenty of people out there who can take this and expand on it and make..... Listed under: [Game – Entertainment Projects](#)

594. [The Word Clock Arduino version](#)



***** Major updates – A much better enclosure for this clock has been designed – check out <http://www.instructables.com/id/The-Wordclock-Grew-Up/> ***** Last month I wanted to build a special gift for my beautiful wife, Megan. She has a teaching background in English, so what better present to..... Listed under: [Clock – Timer Projects](#), [Projects](#)

595. [Arduino BlinkyBall Project](#)



I frequent a blog called hackaday.com which featured a project by "Nikolai", it was a 10cm LED ball that used shift registers. It seems like a really fun project to attempt but the cost of having the boards made & not having any experience sending..... Listed under: [LED Projects](#)

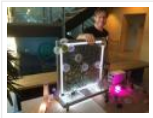
596. [Educational colorimeter kit](#)



This instructable is a step-by-step assembly guide for the educational colorimeter kit we launched in April 2012 on Kickstarter. Assembly takes from 20-40 minutes. Once assembled the colorimeter can be used in a wide variety of science experiments to measure the absorbance and concentration of..... Listed under: [Metering – Instrument](#)

[Projects](#)

597. [Blinky Lights using Arduino and LumiGeek](#)



I used the Arduino UNO combined with three LumiGeek shields to run lighting. LumiGeek has dedicated shields to support 1 Watt RGB LEDs that require constant current, Addressable RGB LED Strip, and Non-Addressable RGB LED Strip. Step 1: 1 Watt RGB LEDs (2x) I wired..... Listed under: [LED Projects](#)

598. [Servo 360 rotation mod \(Parallax\)](#)



In this instructable I will explain and show you how to make a Parallax servo rotate 360°. And again I have searched the internet to see tutorials clear enough to make this possible with no luck. Don't get me wrong they are somehow good but not..... Listed under: [Motor Projects](#)

599. [Wu-Tang Can: Interactive Tipping](#)



Cash rules everything around me. C.R.E.A.M. Get the money. Arduinos are showing up everywhere. Even in space. But what about the lowly tip jar? No. Are Arduino projects giving the Wu-Tang Clan the proper respect they deserve? Not even close! Rectification. That's what this is..... Listed under: [Other Projects](#)

600. [Hookup an LCD to an Arduino in 6 seconds with 3, not 6 pins](#)



Adding an LCD display to Arduino projects can add real value but the cost of doing so can be significant. Not a financial cost – you can pick up 16 (characters) x 2 (rows) LCD for as little as £3.50. The cost is the pin..... Listed under: [LCD Projects](#), [Projects](#)

601. [Arduino Based Four Legged Robot](#)



The name of our robot is FIER and here is a video of it saying hello to the world. In this instructable, I will try to show you the basic steps to making your own walking robot for the most bang for your buck. You..... Listed under: [Robotics – Automation Projects](#)

602. [Analog audio panel for PC using Arduino](#)



Have you ever struggled with audio settings in control panel in middle of a VoIP call? Or, wondered if the other guy can hear you properly? I have. My work requires a great deal of remote conference calls using PC. The first thing I wonder always..... Listed under: [Projects](#), [Sound – Audio Projects](#)

603. [4X4X4 LED Cube w/ Arduino Un](#)



As someone who is very new to digital electronics this LED cube was fun to make, challenging and a great lesson in soldering. If you have some patience (64 LED's to solder!) and steady hands, this project will be well worth it in the end!..... Listed under: [LED Projects](#)

604. [Vacation Pet Feeder from Recycled Materials](#)



If you are a pet owner, going on vacation can be stressful. Usually, you need a friend or neighbor to come over every day and feed your pets. However, by enslaving robots you can keep your pet happy and enjoy a stress-free holiday. To save..... Listed under: [Home Automation Projects](#)

605. [HexiLogger, an Arduino based data logger](#)



The purpose of this project was to create a simple, portable device that would periodically read sensors and then store the sensor data so it could be retrieved later. The result is the HexiLogger, "hexi" because it can support up to six different sensor inputs..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

606. [Open Source Server Room Monitor using Arduino](#)



This server room environmental monitoring system is a low cost high performance device with the same onboard features as commercial devices costing hundreds of dollars more. In addition to a low cost platform we will provide low cost sensors for many important devices to insure..... Listed under: [Internet – Ethernet – LAN Projects, Metering – Instrument Projects, Projects, Sensor – Transducer – Detector Projects](#)

607. [iTime clock in a Mac Mini box using Arduino](#)



After the untimely death of my Mac Mini (the last thing Apple I never buy), I recycled her limping in a clock display LEDs. Technically, there is not rocket science: an Arduino reads the time from an external clock and displays a matrix of 8x6..... Listed under: [Clock – Timer Projects, Projects](#)

608. [The UCube: Design & Print 3D Objects by flipping switches](#)



This instructable goes through how to design and print a variety of 3D models using a system called the 'UCube'. Note: I would love to eventually publish detailed instructions on how to make your own UCube, but since the design is still changing and improving,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

609. [Open Source Hearing Impaired Alarm Clock using Arduino](#)



Activities of daily living (ADL) are self-care activities that are usually taken for granted, since as the name implies they are performed on a daily basis. If you have ever ended up in a cast, or on crutches you can empathize how menial daily activities can suddenly be very difficult to..... Listed under: [Clock – Timer Projects, Projects](#)

610. [DIY Mod an Omnibot 80's Robot with Voice, Camera, Servos, Bluetooth](#)



*Check back for more updates on this build □ So, have you heard of the Omnibot? Well! Any kid from the 80's will remember how amazing this robot was. For you young kids, this robot was released in the early 80's by Tomy. The robot..... Listed under: [Internet – Ethernet – LAN Projects, Motor Projects, Robotics – Automation Projects, Video – Camera – Imaging Projects](#)

611. [LED Calculator with Rotary Quadrature Encoder for Target System Voltage Selection using Arduino](#)



I'm still working on the LED calculator (original idea and most recent work) — I've finally got 'round to adding a rotary encoder to set the target system voltage. Now you can turn the potentiometer to set the LED brightness, turn the rotary encoder to set what..... Listed under: [Calculator Projects, LED Projects, Projects](#)

612. [Arduino Lens Controller – Synchronized Zoom/Focus with Wii Classic Controller](#)



My Lumix GH2 Micro Four Thirds camera not only shoots fantastic high definition videos, but with inexpensive adapters I can use it with older manual lenses that are cheap and often very high quality. I shoot a lot of performance videos for my daughter's dance studio, and I..... Listed under: [Video – Camera – Imaging Projects](#)

613. [Sensing Squeeze using Arduino](#)



I'm researching squeeze sensing as a mode of tactile interface. Here I will cover the process of developing a squeezeable sensor and the firmware/software concerns associated with interpreting the data from the sensor. This fulfills the "sensor project" for my class called Computational Principles in..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

614. [S.A.M. Spring Aided Machining \(CNC with adhesive remover\)](#)



S.A.M. Spring Aided Machining (CNC with solvent) is a school project designed by three architecture students at CCA, San Francisco: Matt Boeddiker, Abelino Robles, and Tim Henshaw-Plath. (www.cca.edu) The machine is capable of rapidly prototyping and creating subtractive formwork that can be used to cast..... Listed under: [CNC Machines Projects](#)

615. [A Beginner's guide to making an Arduino Shield PCB](#)



(This tutorial has gotten really popular recently, and I'm very pleased that so many people are interested. I learned all of this stuff while working on my first PCB. If you're interested, I've started to sell the most recent version of my Arduino ProtoShield. If.....

Listed under: [Development Board – Kits Projects](#)

616. [Arduino Color Sensor](#)



Here we will be learning how to make a color sensor. my model consists of three cardboard compartments containing an LED – one red, one blue, and one green – and an OP550B phototransistor. The LED's shine simultaneously on a solid colored card. The phototransistors..... Listed under: [Sensor – Transducer – Detector Projects](#)

617. [Cat Repelling PIR motion sensor \(covert\) speaker box alarm using Arduino](#)



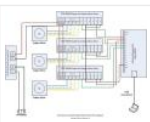
This is a PIR motion sensor device that works with the arduino uno. In order to make it covert enough to be placed in multiple settings and portable enough to fit most places, I decided to make the case for it appear as a speaker. The inspiration for..... Listed under: [Projects](#), [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#), [Sound – Audio Projects](#)

618. [Arduino MIDI Volume Pedal](#)



I'm playing keyboards this fall in another rock concert to benefit the high school robotics team, and for some of the tunes I need to be able to fade an organ in and out over a period of a measure or two. My keyboards are..... Listed under: [Projects](#), [Sound – Audio Projects](#)

619. [Arduino Stepper Motor Control](#)



Hardware Preparation Stepper Motor Driver Board Arduino Board (UNO) If you have purchased the Arduino Board from ZTW, we have already uploaded the g-code library for you. If you are using your own Arduino Board, you can download grbl Arduino library online and load it..... Listed under: [Motor Projects](#)

620. [Arduino Thermostat with TC74 sensor](#)



Hello all! This is a quick guide on how to use an Arduino® to control whether a cooling fan and a heater is turned on depending on the detected temperature from a TC74 Arduino sensor. This is for a final project for an Electronics class..... Listed under: [Sensor – Transducer – Detector Projects](#)

621. [Geiger Counter with Touch Interface!](#)



There are quite a few geiger counter instructables. The difference with this one is that I wanted to give it a modern interface, similar to smart phone touch screens, that anyone would feel comfortable using. The reason for this is that I

want to use it as..... Listed under: [Calculator Projects](#), [Sensor – Transducer – Detector Projects](#)

622. [Digital Clock with Arduino and DS1307](#)



In this article you will learn how to make a digital clock using Arduino and the DS1307 RTC IC. What is DS1307 IC actually? Well, it is a Real Time Clock (RTC) IC that is simple to use, low cost and easy available. The IC..... Listed under: [Clock – Timer Projects](#)

623. [Arduino Drawbot](#)



In some of my previous Arduino instructurables I have show to the Arduino beginners on how to control servos in different ways. And in my last instructurable I have show the modification of a Parallax servo for a 360° rotation. So in this one I will show Arduino..... Listed under: [Robotics – Automation Projects](#)

624. [Arduino Led Dice](#)



This instructable will show you how to create a dice using Arduino and few components. It's an easy and fun project, suitable for beginners and those who want to start with Arduino; it also requires a minimal amount of components. This explains how to create..... Listed under: [LED Projects](#), [Projects](#)

625. [Arduino-Square with Color LCD](#)



B-Squares is a modular electronics platform that enables users to build, customize, and continuously update their own electronics applications. In this B-Squares App we will cover how to assemble a simple Color-LCD Application using the Arduino-Square. Hardware: 1. Arduino-Square. 2. Battery-Square 3. Color LCD Shield..... Listed under: [LCD Projects](#), [Projects](#)

626. [Simon the Octopus](#)



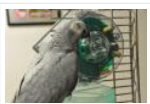
Everyone loves the Simon game ! So we decided to take it to another level. This project was done for our Things That Think class where we had to make a PlushBot (a plush toy that thinks! "with computation") thus, kids were our target. We..... Listed under: [Game – Entertainment Projects](#)

627. [The Traveling Geocache using Arduino](#)



This project and future projects can be found at my website <http://revoltlab.com/> where you can also find my blog. UPDATE LOG: NOW SUPER SIMPLE TO REPROGRAM! Easy FTDI USB interface hardware explained in step 10 Easy FTDI USB interface programming explained in step 13 NEW..... Listed under: [GPS Based Projects](#), [LCD Projects](#), [Projects](#)

628. [Arduino Button Activated Treat Dispenser](#)



For my Digital Multimedia class final, I created a treat dispenser that is activated by pulling a chain, which starts a servo motor that spins a wheel to dispense treats to my to African Grey parrots. Step 1: Gather Materials [box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14"..... Listed under: [Motor Projects](#), [Other Projects](#)

629. [DIY Arduino Stepper Motor Driver Board](#)



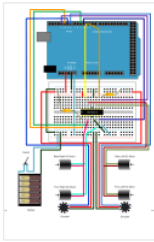
This page will show you how to put together a simple stepper motor driver board that can be controlled with an Arduino. I built mine to use with my heliostat projects, but it could be used for other things too. Update: I no longer use..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

630. [Giant LED bar graph](#)



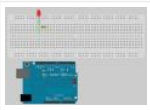
For a recent project I needed to build a large and obvious bar graph display. This was to show the power generated from a bicycle generator. I came up with this design and was pretty pleased with the final results as it is relatively low..... Listed under: [LED Projects](#)

631. [Drive with PID Control](#)



This example shows how to simulate a simple closed-loop control algorithm in Simulink® and how to run it on an Arduino® board. Supported Hardware: Arduino Leonardo Arduino Mega 2560 Arduino Mega ADK Arduino Pro Arduino Uno Available versions of this example: Arduino Mega 2560 board:..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

632. [BLINKING AN LED USING AN ARDUINO UNO \(EXPLAINED\)](#)



So you're here because you want to start learning some of the Arduino Basics... So let's start with THE most basics... no this "tutorial" is actually a little more basic than what you have in mind. It only requires that you: Have ANY Arduino Board..... Listed under: [LED Projects](#)

633. [Easy Arduino Audio Annoyatron](#)



This simple device simply plays a small tune at a random interval, between 5 and 30 seconds when the lights in a room go off. It can be cleverly disguised inside a tissue box, or inside or under any number of household objects. This is a very simple project (my..... Listed under: [Projects](#), [Sound – Audio Projects](#)

634. [Blinky the one-eyed clock using Arduino](#)



In this tutorial you learn how to make a blinking clock with a difference! Updated 18/03/2013 Followers of my website would realise that I tend to make too many clocks in those tutorials. Well, I like making clocks... so here is another one. However this time..... Listed under: [Clock – Timer Projects](#), [Projects](#)

635. [How to make your own Arduino board](#)



If you are like me which I am guessing you are, then ever since you got into doing stuff with arduino you have wanted to make your own arduino board. You may be surprised to find out that making the prototyping board is actually very..... Listed under: [Development Board – Kits Projects](#)

636. [Arduino SOS signal with 8ohms speaker and LED blinking](#)



SOS is the commonly used description for the international Morse code distress signal (··· — — ···). [read more on wiki] Requirements: 1) Arduino 2*) 8 Ω speaker 3*) 150 Ω or similar resistor 4) 5mm RED LED 5) Hook-up..... Listed under: [LED Projects](#), [Projects](#), [Radio Projects](#), [Sound – Audio Projects](#)

637. [Radio link between two Arduino boards](#)



I was looking for a way to handle wireless communications between two Arduino boards. Other options like Xbee or Bluetooth were going to cost \$50 to over \$100. Then I found a cheap RF transmitter and receiver at Sparkfun. The total cost is only \$9!..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [Radio Projects](#)

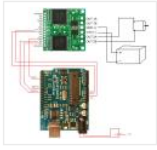
638. [DIY Amp / Watt Hour Volt Meter – Arduino](#)

Major corrections and additions made 9/9/2014 For my off-grid Ham Radio and Solar projects, I needed a way to measure volts, amps, watts, amp hours and watt hours. There's a couple of commercial products that can do this, but not with the flexibility I wanted.....



Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#)

639. [Pololu Motor Controller Testing and Troubleshooting](#)



Finally, I finished reading the datasheet. It didn't give much information about how to connect the motor controller to a micro-controller. I used the simple circuit I found from a post in Pololu's forum: Using Dual VN3SP30 Motor Driver with arduino @ <http://forum.pololu.com/viewtopic.php?f=15&t=1923>. Dual VN2SP30..... Listed under: [Motor Projects](#)

640. [Webster: A Geometric Pattern Weaving Machine](#)



We are three students from California College of the Arts in San Francisco in the Architecture program. This studio is called Creative Architecture Machines and is taught by Jason Johnson and Michael Shiloh. Webster is a geometric pattern weaving machine that takes inspiration from Islamic..... Listed under: [Calculator Projects](#), [PWM Projects](#)

641. [Colorful Countdown Clock for tight timeline management using Arduino](#)



This is a funny looking clock that has that displays time on relatively large 32x16 Bi-Color LED Matrix. It includes also a countdown counter that I find very useful in many situations. Features: Date And time display Temperature display Countdown timer Buzzer notification Randomly changing..... Listed under: [Clock – Timer Projects](#), [Projects](#)

642. [Arduino Nano based Microbot](#)



This instructable was created to be entered in the Robot Challenge. If I win, the parts will of course, go into robots like this one. Notes on how to include some of the very components in the prize packages are given in the last step. I..... Listed under: [Robotics – Automation Projects](#)

643. [Simple Arduino light meter](#)



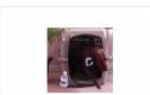
This Arduino project is a simple light meter using a photo-transistor. An LDR would be more appropriate but the photo-transistor is what I has spare at the time. On the other hand the photo-transistor is sensitive to infrared, so its handy for testing remote controls..... Listed under: [Metering – Instrument Projects](#)

644. [Arduino Based Automated Lighting Control](#)



This is my second instructable. i want to share some of the basic things i made using the arduino i am so busy lately. then i got the chance to have this spare time... inspired by my former student and a fellow co league to..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [LED Projects](#), [Projects](#)

645. [Remote Control Door – Internet Your Thing](#)



We can instantly open a door or control anything we can connect. It works from any iPhone, Android, or PC. After connecting something we want to control, download the free app to a PC, open a port, and control it remotely from anywhere. It's open..... Listed under: [Internet – Ethernet – LAN Projects](#)

646. [Minimal Arduino with ATmega8](#)



Like me, you may have a few old Arduino boards or ATmega8 chips (in the boards) laying around from when you were first playing with Arduino. Those chips can still be really useful as the heart of a tiny "Minimal Arduino" setup. A normal Arduino..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

647. [Control Arduino Wirelessly with MATLAB](#)



Been seeing few DIYs on how to establish a communication between MATLAB application and Arduino that is hardwired to PC. However, I haven't encountered anything that control Arduino via MATLAB wirelessly using the ENC28J60 compatible Ethernet shield. In this ible', I'm going to show the..... Listed under: [How To – DIY – Projects](#), [Internet – Ethernet – LAN Projects](#)

648. [Turn your Arduino into a 4 voice wavetable synth](#)



Multiple synthesizer projects have been done for the Arduino, but few have been able to utilize the full power of the Arduino processor. DZL from GeekPhysical wrote a 4 voice wavetable synthesizer that is one of the more advanced software based synths for the Arduino..... Listed under: [Sound – Audio Projects](#)

649. [Perfboard Hackduino \(Arduino-compatible circuit\)](#)



Never again will you have to dismantle a finished project just to reuse an Arduino board! This tutorial will go through the steps involved in fabricating your own Arduino-compatible circuit using just ~\$8 of parts (this includes the ATmega chip!). This is perfect for installing..... Listed under: [Development Board – Kits Projects](#)

650. [Arduino Backlit LCD shield](#)



In this tutorial learn how to make your own backlit-LCD Arduino shield. Updated 18/03/2013 Let's see how simple it is to make your own Arduino LCD shield. Sure – you can just buy one, but where's the fun in that? Getting Started Our LCD is..... Listed under: [LCD Projects](#), [Projects](#)

651. [Knight Rider Rides Again using an Arduino](#)



This a Knight Rider Style LED Chaser Done with a Arduino Duemilanove with an ATmega328 chip. Step 1: Things you'll need: 6 LEDs (any color) 1 Breadboard 1 100 Ohm Resistor 12 Breadboard Jumpers 1 Arduino Duemilanove "or" Decimila 1 USB cable with A-type connector..... Listed under: [LED Projects](#), [Projects](#)

652. [Simple Buck LED Driver with PWM Input](#)



High-power LEDs over 1W are now quite inexpensive. I'm sure many of you are incorporating LEDs as light sources in your projects. However I realize that the finding and configuring the power supply is still not as simple as it can be; commercially available LED..... Listed under: [LED Projects](#), [PWM Projects](#)

653. [Breadboard and LEDs \(lesson 3\)](#)



Introduction You've started modifying sketches, and played a bit with the onboard LED (or if you have an NG, an LED you added). The next step is to start adding onto the hardware component of the Arduino. We will do this by adding a solderless breadboard..... Listed under: [LED Projects](#)

654. [The Talking Breathalyzer using an Arduino](#)



*** Additional info at <http://droidalyzer.com/talkingbreathalyzer/index.html> *** A customizable Breathalyzer that talks and tells you how much you've had to drink. It's also open source and can easily be modified with your own text on the LCD screen and audio MP3 files. When tethered to a PC with..... Listed under: [Medical – Health based Projects](#), [Projects](#)

655. [FaceBooth – One button to facebook photobooth](#)

I wanted to make a photobooth for a Christmas party. I wanted it to be simple to operate and only be one click easy so that even a guest who was chemically uncoordinated could even operate it.I wanted a solution that would take a photo..... Listed under: [Internet – Ethernet – LAN Projects](#), [Video – Camera – Imaging Projects](#)



656. [Arduino-controlled, Aluminum Archangel Costume Wings](#)



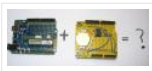
I have always loved the Marvel character Archangel. When my brother, (Shameless plug alert) budding comic book artist David Fernandez, showed me pics of a cosplay convention he went to I thought "wouldn't it be awesome if someone made life-size archangel wings?". The idea sank into the..... Listed under: [Game – Entertainment Projects, Projects](#)

657. [Arduino Breathalyzer](#)



What is a breathalyzer you may ask? It is a device for estimating blood alcohol content (BAC) from a breath sample. In simple terms it is a device to test whether a person is drunk or not. As the title suggests it runs on the Arduino. Our breathalyzer..... Listed under: [Medical – Health based Projects](#)

658. [Add a real-time clock to the Freetronics TwentyTen using Arduino](#)



Let's add a DS1307 real-time clock to our Freetronics Arduino-compatible board. Updated 18/03/2013 Now and again I find myself making another kind of clock or timing device using the Arduino system, and each one has been making use of the Maxim DS1307 real-time clock IC. However..... Listed under: [Clock – Timer Projects, Projects](#)

659. [Arduino Masterclass Part 1: Make your own hardware](#)



The world is going nuts over the Raspberry Pi single-board computer (SBC) for being a whole system under \$50. In reality though the Pi isn't actually the cheapest computing device available. If you want really cheap how does \$13.50 sound for a mini computer that..... Listed under: [Development Board – Kits Projects](#)

660. [Turn a pencil drawing into a capacitive sensor for Arduino](#)



Did you know? You can make pencil drawings reactive to touch for use with your projects! It's really easy, and gives you a lot of flexibility in making interfaces for whatever microcontroller project you're making. I put this together as part of my UnoJoy project..... Listed under: [Sensor – Transducer – Detector Projects](#)

661. [The Arduino Synthesizer](#)



The Arduino is able to output sound through a library that has been developed called the Tone Library. By creating an interface and a program that can call certain values to be output to an audio out, the Arduino Synthesizer is a robust tool for..... Listed under: [Sound – Audio Projects](#)

662. [Arduino Breathalyzer: Calibrating the MQ-3 Alcohol Sensor](#)



The MQ-3 is an alcohol gas sensor that is available for about \$5 from Sparkfun, Seeed Studio, and others. It's easy to use and has sparked the imagination of anyone who has dreamed of building their own breathalyzer device for measuring the amount of alcohol..... Listed under: [Sensor – Transducer – Detector Projects](#)

663. [SD Card Data Readable Anywhere](#)



This project started as many of mine usually do, as a honey-do. We have compiled an extensive list of our book and movie collections on our computer at home, but my wife wanted to be able to scan the list from the video store (yes, Listed under: [Memory – Storage Projects](#)

664. [Arduino Powered Binary Clock](#)



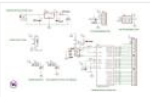
This instructable will help you to build an Arduino Binary Clock. The original idea for this instructable was designed by Daniel Andrade. My instructable uses surface mount components, but can easily be adapted to through-hole components if you wish. You can follow my other Instructable..... Listed under: [Clock – Timer Projects](#), [Projects](#)

665. [PCB Quadrotor \(Brushless\)](#)



Quadrotors are the new Segways: a mesmerizing, somewhat magical, self-stabilizing platform that every tech person wants to have. You can't ride a quadrotor (well, maybe you can), but they do fly, and you can build one yourself from scratch! I helped with a previous quadrotor..... Listed under: [Robotics – Automation Projects](#)

666. [Build Your Own Arduino Board](#)



Need more Arduino board? Do not spend more money for another one. Why not try to build your own DIY Arduino board? It is easy and simple. DIY Arduino Step 1 Get an Atmega328-PU or Atmega328P-PU (with bootloader inside). atmega328p A brief introduction on the..... Listed under: [Development Board – Kits Projects](#)

667. [Electronic Instrument](#)



This electronic instrument allows you to sequence and loop audio and MIDI data. Most of the time I use it to sequence drum samples so I can play around with different beats and rhythms. The really great thing about this instrument is that it is..... Listed under: [How To – DIY – Projects](#)

668. [ANDROID+ARDUINOADK+RGB led](#)



this is a project which makes an android app, then configure it to use it with android debug bridge or android accessory development kit. for making the android app we use android mode of processing. For hardware, i always choose arduino. here i have a..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

669. [Arduino Uno – Programming With A Serial Port](#)



I'm working on an Arduino clone. The Arduino is essentially an ATMEGA328P development board with a bootloader pre-loaded.

There are a lot of custom macros built into the programming interface that make it really easy to use, and even easy to build some powerful applications. Listed under: [Arduino Programmer Projects](#)

670. [Arduino from Scratch Digital Thermometer](#)



I have loved making projects with Arduinos, but at \$30 a piece your projects can get expensive. So I want to show you how you can make your own Arduino from scratch and save money doing it. Make your own Arduino for around \$8.

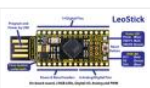
For..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

671. [BrainTap: the interactive arthritis and memory exercise game](#)



I built this project at uni as a 3rd year project (with a couple of classmates) at the University of Technology, Sydney. It is aimed at Baby Boomers and targets a skill and level based memory and fine motor skills exercise game. The form is..... Listed under: [Game – Entertainment Projects](#)

672. [LeoStick Getting Started Guide](#)



The Freetronics LeoStick is a handy break-out board for the ATmega32U4 microcontroller. The board has a convenient USB stick format, and is based on the pinout and connections of the Arduino Leonardo reference design for compatibility with the Arduino IDE. Before you plug in your LeoStick..... Listed under: [How To – DIY – Projects](#)

673. [Arduino Wall Lamp](#)



So, I have always wanted a nice lamp by the side of my bed, Something simple with out any buttons. Of course this would mean it had to be wireless. I also wanted to use it from my bed but not getting out of my bed to turn it off..... Listed under: [Home Automation Projects](#), [LED Projects](#)

674. [Sensor Less 3d Printed Robot](#)



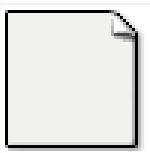
Tyree (he wears a tie and he has tires) actually smiles after he bumps into something (see video). Using an Arduino motor shield, he detects obstacles using the “more current into the motor means something is in the way” principle. Tyree started out as a..... Listed under: [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

675. [Building an 8x8x8 LED Cube – The Driving Circuit](#)



In this article we are going to take a detailed look at how to build the driving circuit for the 8x8x8 LED cube. In other words we are going to design and analyze the circuit which translates the signals coming from the Arduino to appropriate..... Listed under: [LED Projects](#)

676. [ArduSensor Fun Pack](#)



ArduSensors are open source plug-in-play sensors for Arduino. These were originally made for beginners to get started with Arduino, a very cool electronics prototyping platform, but anyone can use them. I still play around with them all of the time, and I bet a ton..... Listed under: [Sensor – Transducer – Detector Projects](#)

677. [TiDiGino, the Arduino-based GSM remote control](#)



Using an ATmega 2560 and therefore the heart of Arduino, we have developed a universal remote control with GSM. This allows to control 2IN/2OUT, DTMF key, gate control and GSM thermostat activated remotely. We have already presented several remote control with different functions. But now..... Listed under: [Phone Projects](#), [Radio Projects](#)

678. [UltraSonic Arduino Video instructions How To – Parking your car with an Arduino](#)



How To – Parking your car with an Arduino Code: // Back up Helper, by Kevin Darrah v4 #include <SoftwareSerial.h> // to read the data from the range finder on any digital pin SoftwareSerial sonar(5, 6); // RX, TX //we're only using the RX pin (5),..... Listed under: [Car Projects](#), [Projects](#)

679. [Hack Your Hasbro R2D2 With an IOIO Microcontroller](#)



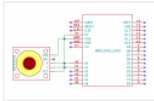
My wife bought me a Hasbro Interactive R2D2 Astromech Droid for my birthday a few years ago after I said how much fun it would be to hack it and I've finally managed to get inside and start playing! Although the built-in voice control functions are..... Listed under: [Robotics – Automation Projects](#)

680. [Clock One – Digital plus Analog Clock An Arduino](#)



For some strange reason I have a fascination with various types of electronic clocks (which explains this article). Therefore this project will be the start of an irregular series of clock projects whose goal will be easy to follow and produce interesting results. Our “Clock..... Listed under: [Clock – Timer Projects](#), [Projects](#)

681. [Ardu-Bot-Tom – RF Link Controlled Robot](#)



[box color="#985D00" bg="#FFF8CB" font="verdana" fontsize="14 " radius="20 " border="#985D12" float="right" head="Major Components in Project" headbg="#FFEB70" headcolor="#985D00"] Ardu-Bot-Tom List of Materials
Controller Parts: 1x – Arduino Uno 1x – 9V Battery 1x – 433Mhz TX Module 1x – SparkFun Joystick Robot Parts: 1x – Arduino Uno..... Listed under: [Robotics – Automation Projects](#)

682. [Multiplexing with Arduino and the 74HC595](#)



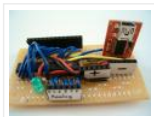
The 74HC595 is an easy and inexpensive (at about 60 cents apiece) way to increase the number of digital out pins on your Arduino. In this tutorial I'll show you how to drive up to 16 LEDs with one 74HC595 using a technique called multiplexing..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

683. [Arduino punk console](#)



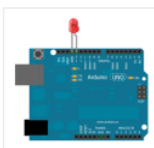
This is my first build using an arduino microcontroller. I wanted to create a simple tone output device along the lines of the 555-based atari punk console, but using solely the mcu as the tone generator. Unfortunately, that was just too simple a task with a microcontroller to..... Listed under: [Projects, Sound – Audio Projects](#)

684. [Perfduino: Build Your Own Arduino Microcontroller](#)



This how-to takes you through all the steps of making your own arduino on a perfboard or perfduino! Arduino microcontrollers are great for learning about physical computing and are very useful for rapid prototyping. Arduino's simple programming language makes it a favorite of hobbyists and..... Listed under: [Development Board – Kits Projects, How To – DIY – Projects, Projects](#)

685. [Arduino LED Flasher Circuit](#)



In this project, we will go over how to build an arduino LED flasher circuit. We will use a standard arduino board, doesn't matter which, and connect it so that it flashes an LED a certain amounts of times on and off repeatedly to create..... Listed under: [LED Projects](#)

686. [Touche for Arduino: Advanced touch sensing](#)



Update: New interface – look at the last step. Credits: Arduino sensing done by DZL, Processing sketch and Instructable done by Mads Hoby. Disney Research lab designed a novel way to detect touch. You can see a video of their demo here: I had the honor to meet..... Listed under: [Sensor – Transducer – Detector Projects](#)

687. [Clock Three – A pillow clock using Arduino](#)



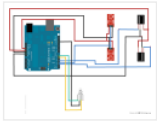
Time for another instalment in my irregular series of irregular clock projects. In contrast with the minimalism of Clock Two, in this article we describe how to build a different type of clock – using the “lilypad” style of Arduino-compatible board and components designed for use in e-textiles..... Listed under: [Clock – Timer Projects, Home Automation Projects, Projects](#)

688. [Get Into the Kit Business: How to Build and Sell Your Own Arduino Shields](#)



The DIY industry is booming, despite the desperate blackmailing of society by finance capitalists. Companies like Adafruit and Makerbot are grossing well over a million dollars a year, and Evil Mad Science Laboratories just recently dedicated themselves to running a full-time kit business. Making kits..... Listed under: [Development Board – Kits Projects](#)

689. [Arduino IR Transmitter & Receiver w/ LEDs Flickering Issue](#)



I have an Arduino Uno connected to two IR transmitters and respective receivers. Basically, when one of the receivers detects a beam break, I have a strand of LEDs display a pattern. This all works in principle, but the problem is that when the IR..... Listed under: [LED Projects](#), [Radio Projects](#)

690. [Intro to Model Airplane Autopilot](#)



I am twenty years old. I picked up my arduino for the first time this Christmas, and I've been keeping busy on my arduino applications so that I can bring you this instructable. I hope that it helps!!! The purpose of this project was to..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

691. [Making the Good Night Lamp using Arduino](#)



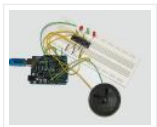
Last March, Alexandra Deschamps-Sonsino registered a new limited company in London, and booked a booth at CES, the consumer electronics trade show, taking place 10 months later. She had no team, and only a dated prototype product that she had designed back in 2005. "I..... Listed under: [Home Automation Projects](#), [LED Projects](#), [Projects](#)

692. [Salvaging an LCD from a fax machine using an Arduino](#)



I acquired an old fax machine that looked like a ripe source of parts, like steppers, IR sensors, micro switches and things. As it turned out, it was. It also had a nice looking 2 x 16 character LCD. However, after taking everything apart, I..... Listed under: [CNC Machines Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LCD Projects](#), [Projects](#)

693. [Arduino hardware hacking: Part 3](#)



In our previous two tutorials (see here and here), we created a Simon-type game using the Arduino, a hardware platform for simple, and not so simple, electronics projects. We placed three buttons and three LEDs on to something called a breadboard, and wrote a small..... Listed under: [How To – DIY – Projects](#)

694. [Arduino Solar Tracking Robot](#)



This is a simple solar tracker which automatically orients itself towards the sun or any bright source of light like the sun .If you place solar panels on this robot it can increase their productivity by 90 to 95 %. At first creating a solar..... Listed under: [Robotics – Automation Projects](#), [Solar energy projects](#)

695. [Arduino Esplora Accelerometer](#)



This sketch shows you how to read the values from the accelerometer. To see it in action, open the Arduino serial monitor on your computer and tilt the board. You'll see the accelerometer values for each axis change as you tilt the board. Circuit Only..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

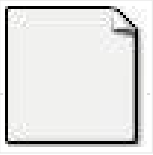
696. [Arduino hardware hacking: Part 2](#)



In part 1 of our Arduino tutorial seres we covered the basics of how the Arduino works, and we're going to use that knowledge in a hands-on project and see how this open-source hardware programming environment works when we're actually trying to get something done..... Listed under: [How To – DIY – Projects](#)

697. [The Revenge of the Yellow Drum Machine \(Arduino\)](#)

I was inspired by Frits Lyneborg's Yellow Drum Machine. Watching the videos, it has such personality! I have also been thinking recently about sound and robotics. I did some research looking for a version of the robot that used the Arduino as a brain, but.....



Listed under: [Sound – Audio Projects](#)

698. [Theremin with Zapper.laser.Arduino](#)



I created this Theremin like device after seeing this article in Make magazine: <http://m-cdn.dashdigital.com/make/vol15/?pg=69#pg67> While this looked pretty straight forward it turned out to be a bit much for me at the time. But after much effort, I got it to work pretty good. I..... Listed under: [Other Projects](#), [Projects](#)

699. [Arduino hardware hacking: Part 1](#)



Arduino is cool. It's cool because it's a tiny device – about three inches by two inches – that comes with a USB port and a programmable chip. It's cool because you can program it using a very simple programming language known as Wiring. But..... Listed under: [How To – DIY – Projects](#)

700. [Fluid In.Flux_3D Wax Printing In Water](#)



Fluid In.Flux is a 3D printing experimental machine which prints wax in water. The Machine was a semester-wide exploration as part of the Advanced Architecture Studio called “Creative Architecture Machines” by Professor Jason Kelly Johnson and Michael Shiloh at the California College of the Arts, in San Francisco..... Listed under: [CNC Machines Projects](#)

701. [RC Rocket Launch System](#)



This instructable will show you how to make an RC launch system for your Estes rocket, which can be operated with a TV remote. What it does is it allows you to press the center button on your TV remote, and it'll automatically launch your..... Listed under: [How To – DIY – Projects](#)

702. [Controlling your trains with an Arduino](#)



A quick introduction to the Arduino Arduino is an open-source electronics prototyping platform based on flexible, easy-to-use hardware and software. It's intended for artists, designers, hobbyists, and anyone interested in creating interactive objects or environments. Arduino can sense the environment by receiving input from a..... Listed under: [How To – DIY – Projects](#)

703. [Throwduino Basic – Light-Sensing Flashing Throwie](#)



Throwies are great. They have a minimal parts count – 2 or 3 depending on whether you use a magnet – and produce a great effect. They are very cheap and easy but not highly efficient: 1) They are on all the time, so on..... Listed under: [LED Projects](#), [Sensor – Transducer – Detector Projects](#)

704. [Arduino Online Thermometer Project](#)



I have been researching a project which will help me with my understanding of electronics, networking, and programming. I decided to build an online thermometer which could be used in applications that need temperature monitoring. I currently work in a lab environment where I test, troubleshoot,..... Listed under: [Medical – Health based Projects](#), [Temperature Measurement Projects](#)

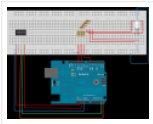
705. [Graphing values in Arduino](#)



Sometimes when you're testing a sensor or debugging a value in an Arduino project, you want to see something other than numbers flying by in the Serial Monitor. However, you want to get the sensor working quickly, and you don't want

to take the time..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

706. [RGB Color Sensor on Arduino](#)



The next board I want to show you is the ADJD-S371 Color Light Sensor Evaluation Board from sparkfun. It emits light and analyses the reflected color spectrum. The board can be controlled via I2C. The sleep and xclk pins were not used in this example..... Listed under: [Sensor – Transducer – Detector Projects](#)

707. [Paperduino 2.0 with Circuit Scribe – Paper Arduino](#)



What if making an Arduino, or wiring up an Arduino was as easy as printing one out? In this tutorial we printed our own Arduino Pro Mini board using a pen plotter and the Electroninks Circuit Scribe (a rollerball pen with highly conductive ink). Within..... Listed under: [LED Projects](#)

708. [Daft Punk LED Matrix Breakout Board](#)



I was always impressed by the Daft Punk Coffee Table. Being able to light up a bunch of LEDs and flash them in patterns has so many applications. It was one of the reasons why I bought an Arduino seeing how it could control a..... Listed under: [LED Projects](#)

709. [LEARN! ARDUINO – A HANDS-ON APPROACH](#)



INTRODUCTION This manual will show you how to use each of the components in the kit, and give you software Sketch examples for each one. Then you can combine some components to make examples of Automatic Systems such as a lighting controller. You're probably..... Listed under: [How To – DIY – Projects](#)

710. [Alarm Clock Overkill](#)



I don't get up at the same time every day, so I thought it'd be nice to have an alarm clock that would drag me out of bed at different times on different days. That was the initial idea: things got out of hand, of..... Listed under: [Clock – Timer Projects](#)

711. [The Clamshell Stompbox](#)



This is a DIY variable resistor I created as an interface for live performance– like astomp box. I designed it as a project my audio students could build with materials we already have in the classroom. The result is a variable resistor that can be..... Listed under: [LED Projects](#)

712. [Arduino and CueCat barcode scanner](#)



I've had a cuecat barcode scanner sitting around for over 10 years. Basically it connects to a PS2 port (apparently there is a USB version) like a keyboard and spits out a barcode when scanned. Nice!. The annoying thing is that it is "encrypted". What..... Listed under: [Sensor – Transducer – Detector Projects](#)

713. [Domotic arduino](#)



In this introduction I will show you a overview of this project whit Arduino Uno. The purpose of this instructable is move a electric roller shutter by Arduino Uno. The prototype that I made is my first electronic project with Arduino and I hope this..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

714. [Cylon Pumpkin](#)



This has been done before. There are several good ways to do it: most use either a 555 timer chip and decimal counter chip, or an Arduino. Stefan and I used an Arduino (Boarduino, technically) which limited our scanner to 14 LEDs. No problem —..... Listed under: [Game – Entertainment Projects](#)

715. [Build Your Own Programmable LED Matrix](#)



QR codes are addicting. Smartphones are smart enough to read them from virtually any angle or orientation. But imagine taking it a step further. I had dreams of a digital LED array that I could program with QR codes, and I wanted it really big!..... Listed under: [LED Projects](#)

716. [Botanicals Clone using an Arduino](#)



During the past spring a good friend of mine bought me my first house plant, a Lady Palm, and I've found myself rather invested in keeping it alive. To that end I wanted to monitor the plant's environment so I could ensure that its needs..... Listed under: [How To – DIY – Projects, Projects](#)

717. [Arduino DDNS \(Dynamic DNS\) by Open-Electronics.org](#)



This device captures the IP address of your network and it publish on site DynDNS.com. All without PC. It allow a remote access to your LAN even if the IP address of the connections changes. For logistics reasons the provider can not assign a IP..... Listed under: [Internet – Ethernet – LAN Projects, Projects](#)

718. [Visualize data from sensors using Arduino + coolterm](#)



Once you're getting some values from sensors, for example using Arduino, (see my previous instructable), sometimes it's nice to see the sensor data in a graph. Here's how in only a few steps! I made this particular Instructables using a sonar sensor (XL Max Sonar..... Listed under: [Sensor – Transducer – Detector Projects](#)

719. [USB Game Pad With Tilt-accelerometer Mouse using an Arduino](#)



Make a game pad with an accelerometer inside! This project tutorial will show you how you can convert a console game pad into a USB keyboard mouse for playing games on your PC. The USB game pad can be used with nearly any software, such..... Listed under: [Game – Entertainment Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects, Metering – Instrument Projects, Projects](#)

720. [Singing plant. Make your plant sing with Arduino, touche and a gameduino](#)



This project is a part of experiments done while doing an artist in residence at Instructables. You can see the other projects here. Making a plant sing has been a trick since the Theremin was invented. Here I am going to teach you how to do..... Listed under: [Game – Entertainment Projects, Home Automation Projects, Projects, Sound – Audio Projects](#)

721. [BaW-Bot Part 2: Build the motor-controller & body](#)



This is the second part of our BaW-Bot (Bells-and-Whistles Bot) build – 5 separate instructables that look into different Arduino-related technologies, combining to create a Bot with all the bells-and-whistles. Part 1: Build an Arduino on a Board Part 2: Build the motor-controller & body..... Listed under: [Motor Projects, Robotics – Automation Projects](#)

722. [Remote key-switch operation](#)

One of my colleagues, Dr. Shane Mayor, has built a very nice LIDAR system for atmospheric research. It's located at a remote site, at the end of a dirt road, and everything about the system can be controlled remotely except the main pump laser power..... Listed under:



[Radio Projects](#)

723. [Connecting a 12V relay to Arduino](#)



To connect a 12V relay to the Arduino you need the following things: – 1 Arduino – 1 diode for example 1N4007 – 1 NPN transistor for example 2N2222 (in the US) or BC548 (in Europe) – 1 relay for example one with coil voltage.....

Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

724. [Arduino Flash Controller for Photography](#)



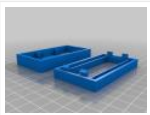
Being a broke amateur photographer isn't easy. Film, chemicals and paper aren't cheap and a budget for some studio lights is non existant. So, I decided to, with the help of my trusty arduino, create my own sync controller to use with disposable camera flash circuits. By using a..... Listed under: [Video – Camera – Imaging Projects](#)

725. [Super Secret Lock Box w/ Capacitive Touch](#)



Hey everyone, I wanted to share a project I just finished up. I built a super secret locking box for my girlfriends little brother. He has a knack for creative lego building so I thought it would be a good idea to open him up..... Listed under: [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#)

726. [Driving multiple Sparkfun 7-segment displays with an Arduino](#)



I'm currently helping a couple of engineering students finish a senior project that didn't get finished last year. Long story... Anyway, it's a bicycle brake tester being built for Paul Components. The mechanical design is great, but they had trouble with the electronics. Part of..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

727. [Aquameterduino: Water meter plus Arduino](#)



After a bad water damage (our cellar basically filled up whilst we were away for several days), I decided to monitor our water usage for anomalies. Enters Arduino... The idea of this project is to use an arduino to count every drop of water that..... Listed under: [Metering – Instrument Projects](#)

728. [Wrap Beats – Capsense Arduino Instrument](#)



Wrap Beats is an instrument that lets you string together notes in order to create different melodies and visual patterns. I constructed it using the Capacitive sensing library for Arduino and combining that with the music abilities of processing to create a dynamic instrument that..... Listed under: [Sound – Audio Projects](#)

729. [Arduino PCR \(thermal cycler\) for under \\$85](#)



This tutorial will show you how to make a thermal cycler from scratch for about \$85. In short, PCR (polymerase chain reaction) amplifies bits of DNA, creating millions of copies of a target sequence. You can use it to test a DNA sample for a..... Listed under: [How To – DIY – Projects](#)

730. [ISP Clip for ATtiny44/84 \(or others!\)](#)



I got my start in microcontrollers with the Arduino, as many of us outside of electrical engineering did. (And still do!) The ease of programming that little board makes it a great gateway... and like any gateway, sometimes you go through. Most of my projects..... Listed under: [Development Board – Kits Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

731. [RFI-DJ: MP3 Playing RFID Thing](#)



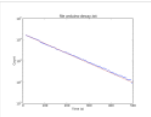
The RFI-DJ is a USB device for playing MP3 files from your computer. You have a set of RFID cards, each one with a song name written on it. You choose a card and place it on the RFI-DJ, and your computer will play that..... Listed under: [RFID – NFC projects](#), [Sound – Audio Projects](#)

732. [RGB LED Color Selector](#)



One Challenge with working with RGB LEDs is getting the right Red, Green and Blue values to match a color you are trying to display. You can start with web colors, and then sometimes need to adjust them since the LEDs don't look quite the..... Listed under: [LED Projects](#)

733. [Radioactive isotope decay simulation](#)



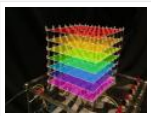
My students need to learn LabVIEW —I know, it's proprietary software, and expensive, but until a viable open-source equivalent comes along we're stuck with it— and one of the exercises I have them do is to make a program to analyze radioactive decay. This gives..... Listed under: [Radio Projects](#)

734. [Mood Lamp with Arduino](#)



Hi! In this tutorial you will learn to make a mood lamp with arduino. I know that you may have seen a lot of mood lamp projects with arduino, but I wasn't very satisfied with them because they all change the color very abruptly. So, Listed under: [Home Automation Projects](#)

735. [Self-Contained 7x7x7 LED Cube using Arduino](#)



LED cubes are true 3D displays that work by lighting up points in a 3D lattice of LEDs. On the 3D display you can produce some truly mesmerizing animations. This Instructable will walk you through creating an LED cube for yourself that is completely self-contained and powered..... Listed under: [LED Projects](#), [Projects](#)

736. [Using a quadrature encoder \(rotary switch\) with Arduino](#)



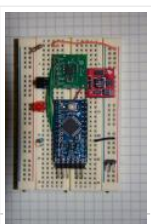
I've found several sites and posts explaining how to use a quadrature encoder with an Arduino, but wasn't completely satisfied with any of the methods used. Perhaps part of the problem is with the encoder I'm using: it's part #COM-09117 at Sparkfun.com. This encoder has..... Listed under: [Arduino Programmer Projects](#)

737. [Use xbees \(series 2\) to control a motor](#)



Using two xbees, an arduino, an xbee explorer, and an h-bridge, wirelessly control a DC motor to spin in both directions (last video). Note: I used the xbee I linked to, but for a one to one communication, rather than a network of wireless devices,..... Listed under: [Motor Projects](#)

738. [Simple Datalogger](#)



Here's a simple Arduino-based datalogger I'm currently developing: This test-of-concept model is based on the Arduino Pro Mini (ATMega168). It runs on a 1.5-V battery, using a voltage up-converter from Sparkfun.com. For a sensor, it's using a 3-axis accelerometer on a breakout board, also from..... Listed under: [Development Board – Kits Projects](#)

739. [BaW-Bot Part 3: Adding Sight and Touch to the Bot](#)

This is the third part of our BaW-Bot (Bells-and-Whistles Bot) build – 5 separate instructables that look into different Arduino-related technologies, combining to create a Bot with all the bells-and-whistles. Part 1: Build an Arduino on a Board Part 2: Build the motor-



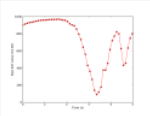
controller & body..... Listed under: [Robotics – Automation Projects](#)

740. [Building an Breathalyzer with MQ-3 and Arduino](#)



During the First Meeting of Electronic Arts in Florianópolis, we built a Breathalyzer using the Alcohol Gas Sensor MQ-3 and a Arduino Board to use in the last day of the meeting, in which we gave a party. You can see a quick video two..... Listed under: [Medical – Health based Projects](#), [Projects](#), [Sound – Audio Projects](#)

741. [Simple Arduino data-collection](#)



At this year's "Arduinos in the Physics Lab" workshop at the AAPT meeting, one of the participants asked for a simple way of using the Arduino as a tethered A/D converter for data collection direct to a computer. This is my quick & dirty demonstration..... Listed under: [Metering – Instrument Projects](#)

742. [Energino: an Arduino-based energy consumption monitoring shield](#)



Energino is a plug-load meter that measures the amount of power consumed by whatever DC electrical appliance is plugged into its. It was originally designed to monitor the energy consumption of simple networking devices such as Ethernet switches and WiFi access points, but it can..... Listed under: [Metering – Instrument Projects](#)

743. [More Humane Moisture sensor](#)



Recently I got a project from Titan industries, who were in search of something as an interactive plant pot which could bridge this gap of emotional communication, in mins this reminded me of brilliant projects done by people where the plant could tweet and..... Listed under: [Sensor – Transducer – Detector Projects](#)

744. [Arduino-based event counter](#)



I teach Modern Physics here at CSUC, and we occasionally use isotopes with half-lives of a year or less (such as Zinc-65 and Cadmium-109) for energy-calibration sources for a gamma-spectroscopy lab. I thought it might be fun to try measuring the activity of one of..... Listed under: [Calculator Projects](#)

745. [Lithium Battery Solar USB – iPhone – Arduino Charger](#)



One of the most fun and useful projects on instructables is to create your very own solar USB/ iPhone charger. They're not overly difficult to make, nor are the parts overly expensive or hard to find. For the most part they do a rather good..... Listed under: [Battery Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#)

746. [ATtiny85/45/25 LED dice](#)



If you have looked at my 5 LED ATtiny85 POV display, we programmed the ATtiny with the Arduino. (If you haven't seen it, click here) We will be doing the same thing for this LED Dice project. The total parts cost for this project is..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LED Projects](#)

747. [Morse-code trainer](#)



My kids are learning Morse code this summer, so I threw together this little circuit to help them learn. And to make it more fun... It uses an ATtiny85 (\$2.26 at digikey.com) to drive a piezo beeper (\approx \$3.50 at Radio Shack.) The ATtiny85 takes..... Listed under: [Arduino Programmer Projects](#)

748. [Light Painters Palette aka Light Box](#)



Today I'm going to show you how I made my "light painters palette" aka light box. If your into electronics and photography than this is probably something you are going to like. Supplies: -Arduino (I'm using a arduino pro mini which requires a ftdi basic to program,..... Listed under: [LED Projects](#), [Video – Camera – Imaging Projects](#)

749. [How To Make an Obstacle Avoiding Arduino Robot](#)



Hello all! In this Instructable I'll be showing you how to make a robot similar to the "Mobile Arduino Experimental Platform" (MAEP) that I made. It is equipped with two motors that can steer the robot and the ability to see obstacles in front of..... Listed under: [Robotics – Automation Projects](#)

750. ["Ayrduino" Single-Sided Arduino Clone](#)



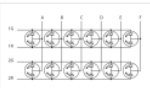
I'm teaching "Electronics for Scientists" this semester, and I wanted to allow each student to have their own Arduino to play with for microcontroller lab exercises and possibly use for their final projects. The Arduino is not very expensive at roughly \$30 per, but they..... Listed under: [Development Board – Kits Projects](#)

751. [Fijibot](#)



Fijibot is an autonomous, self-charging photovore. I built him using a 1.5 liter Fiji Water bottle, an Arduino Uno, 6v solar panel (plus various other parts) from Radio Shack, an Arduino Proto Shield (plus various other parts) from Adafruit, and the wheels and steering arrangement..... Listed under: [Robotics – Automation Projects](#)

752. [Network-status indicator](#)



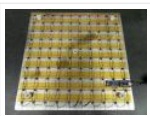
I run a NFS/NIS network under a combination of OS's for the upper-division physics lab here at CSUC, and one source of irritation is when one machine goes down and nobody lets me know until suddenly that machine is absolutely necessary NOW! So I figured..... Listed under: [Internet – Ethernet – LAN Projects](#)

753. [4x4x4 LED Cube Arduino](#)



After seeing all the different instructables for Led cubes i was still left with a lot of unanswered questions. So after reading everything i could find this is what i got. I decided to make the instructable after building it...so ill try to recreate the process the best..... Listed under: [LED Projects](#)

754. [Quantitative Two-Dimensional Temperature Measurements](#)



Lab Experiments involving the Heat Equation are usually one-dimensional exercises involving a copper pipe and a half-dozen thermocouples. But with DS18B20 "One-Wire" thermometer chips and an Arduino, it's possible to measure hundreds of temperature values simultaneously. Here's what my students Daniel Lund and Lawrence Lechuga..... Listed under: [Temperature Measurement Projects](#)

755. [Arduino ATtiny2313 Programming Shield](#)



Today, I made a small 3x3x3 LED cube with an ATtiny2313 that I had from about 2 weeks ago. Whenever I had to reprogram the LED cube when I thought of more awesome patterns, I had to get out my breadboard and then wire up..... Listed under: [Arduino Programmer Projects](#), [Development Board – Kits Projects](#), [Projects](#)

756. [Full Binary Clock](#)



I was wandering the internet looking for a good arduino tutorial on how to build a binary clock with seconds, but I could not find one. So now I am writing this for you to have a binary clock with seconds, minutes, and hours. What..... Listed under: [Clock – Timer Projects](#)

757. [Universal clock suitable for visually impaired using Arduino](#)



I was googling around looking for some sort of device I could make using arduino and stumbled upon eshop with devices for visually impaired. What really shocked me was the price. I mean-I do realize that such sorts of devices are not really mainstream, but..... Listed under: [Clock – Timer Projects](#), [Projects](#)

758. [Arduino Robot Arm – LarryArm v0.1](#)



I have constructed a basic Arduino robot arm using 3 servos that cost me £15 in total plus a couple of hours in time to build and it's very simple that I think anyone can replicate and build this. I already had the Arduino Duemilanove..... Listed under: [Robotics – Automation Projects](#)

759. [Cwik Clock v1.0 – An Arduino Binary Clock](#)



Overview This is a guide to building an Arduino-powered clock that uses LEDs to display a 24-hour clock (hours and minutes) as binary digits, an analog meter to display the seconds, a switch to toggle between time-display and time-setting mode, and 2 knobs for setting..... Listed under: [Clock – Timer Projects](#)

760. [Arduino: Controlling the Robot Arm](#)



So the arm is wired into Arduino as per the previous post, Arduino: Modifying a Robot Arm and hopefully this has worked. In this next part I alter the Arduino sketch slightly and write the first Processing sketch to test control of the arm –..... Listed under: [Robotics – Automation Projects](#)

761. [Clusterbot](#)



What is Clusterbot? He is a small, affordable, autonomous Arduino-powered robot. He can move, see, avoid obstacles, and makes a melodic chirping sound sometimes. Clusterbot was my first Arduino project, and I think he makes a great project for a beginner. While building Clusterbot you..... Listed under: [Robotics – Automation Projects](#)

762. [4 Servo drive CellBot which can be remotely controlled using Arduino](#)



I started with an idea of what I wanted to do from the beginning but one attempt after another I finally got to where I am now. This robot can be remotely controlled from anywhere in the world and driven around the house. I can..... Listed under: [Motor Projects](#), [Projects](#), [Robotics – Automation Projects](#)

763. [Using Processing to Send Values using the Serial Port to Arduino](#)



In this write-up, I'll show how to create a value in Processing and then send this value over the serial port to the Arduino. In the example I'm setting values of LEDs making them brighter or dimmed but this example can be extended to control..... Listed under: [Arduino Programmer Projects](#)

764. [Over the Counter Kitchen Radio using Arduino](#)



This project used the Si470x FM radio receiver and an arduino to make an over the counter kitchen radio. These parts had been purchased for a different build that unfortunately met a premature end. The concept for this project is simple. Play my favorite news..... Listed under: [Home Automation Projects](#), [Projects](#), [Radio Projects](#)

765. [SPEAKR](#)

Nature has a way of speaking to us in a way that soothes and revitalizes. Sounds of the wind in various places create low volume tones that we barely hear. They have a certain beauty and randomness to them that are unique to nature. We've..... Listed under: [Game –](#)



[Entertainment Projects](#)

766. [Box Scurity Package using Arduino](#)



If you touch the package, it will scream and run away—changing its course when it strikes an obstacle. When you lift the gift tag, light strikes a photocell and operation commences. Motors and a sound module are controlled by an Arduino (and Arduino Motor Shield)..... Listed under: [Projects](#), [Security – Safety Projects](#)

767. [Arduino + Processing – 3D Sensor Data Visualisation](#)



So following on from my previous posts about visualising sensor data in Processing, I'm now looking at drawing 3D representations of the data recorded from the Sharp IR sensor – although can be any kind of range finder. I started by rigging 2 servos, one..... Listed under: [Sensor – Transducer – Detector Projects](#)

768. [LED Cylinder using Arduino](#)



This is a little art project I made with 95 RGB LEDs arranged in a 3D cylinder shape, sitting atop a microcontroller-based driver circuit. The LEDs are individually addressable, and when you power it on, the software cycles through a series of animations, e.g. various..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

769. [Electrically Insulated Altoids Tin](#)



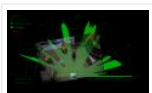
Ah yes, it's time for another Instructable involving an Altoids tin... But this time it's not about what's inside the Altoids tin, it's about the Altoids tin itself. In all its greatness, the Altoids tin we all know and love has one rather major flaw..... Listed under: [Development Board – Kits Projects](#)

770. [How To Interface a CDV 700 Geiger Counter to a PC Using an Arduino Video instructions](#)



How To Interface a CDV 700 Geiger Counter to a PC Using an Arduino (Part 1) The second part of our video series of our project to interface to a CDV-700 radiation meter using an Arduino Uno! How To Interface a CDV 700 Geiger Counter..... Listed under: [Calculator Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

771. [Arduino + Processing – Make a Radar Screen – Part 3: Visualising the Data from Sharp Infrared Range Finder](#)



So I had some luck with getting the Sharp Infrared range finder working and I've now plugged this on to my servo rig to see if I get better results on my radar styled display. Check out how to use the Sharp IR range finder..... Listed under: [LCD Projects](#), [Metering – Instrument Projects](#)

772. [Using the Sparkfun Motor Driver 1A Dual TB6612FNG using Arduino](#)



As a beginner myself, I struggled to find a one-stop set of instructions to get up and running with Sparkfun's Motor Driver 1A Dual TB6612FNG. This motor driver breakout board is exceptional value, is beautifully small, but does need a little more effort to get..... Listed under: [Motor Projects](#), [Projects](#)

773. [Motion Controlled Robotic Arm](#)



This instructable is not complete, I will post code soon The Arm: This instructable shows the process of building a robotic arm using servos, Arduino microprocessor, a gyroscope and multiple bend sensors. The user wears a glove containing the gyroscope and bend sensors which translate..... Listed under: [Robotics – Automation Projects](#)

774. [Arduino traffic lights](#)



I made this project on the same night that my Arduino Duemilanove arrived from Cool Components. After being an Instructables member for about a year I thought it was time I should contribute. There is another Arduino traffic light project similar to this, but it..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)

775. [Controlling a clock with an Arduino](#)



Update: The Arduino system is fine; the only thing you have to take into consideration is the 9.54 hour rollover event, which Rob Faludi has provided an excellent solution for here. I made up a nice little over-analysis of the issue, available here. I have..... Listed under: [Clock – Timer Projects](#), [Projects](#)

776. [RGB flashing iPod dock from an old speaker](#)



Using an Apple Pro speaker, I made a flashing RGB LED iPod dock for about \$35. I recommend reading the entire 'ible before starting. Also, note that the volume is control from the iPod. It consumes minimal power in shutdown mode, and is controlled by..... Listed under: [Sound – Audio Projects](#)

777. [Arduino + Processing: Make a Radar Screen to Visualise Sensor Data from SRF-05 – Part 2: Visualising the Data](#)



This is where all the work is done to read and interpret the values from the servo and the sensor. If the readings are too erratic then you won't have nice shapes. Also if you don't allow enough time to the signals to be sent..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

778. [An 8-Bit Waterfall using Arduino](#)



So far my Arduino projects have all needed only a small number of output pins. In a previous post I talked about moving some of the logic off the Arduino and into other integrated circuits in order to free up pins on the Arduino. While..... Listed under: [Other Projects](#), [Projects](#)

779. [Vibration Foam Speaker](#)



Concept: Very simple, using an arduino and the play melody basic program, create a music playing speaker out of a vibration motor and a piece of flexible foam. Instead of pulsing signal to a speaker, signal is pulsed to a motor varying how fast it..... Listed under: [Sound – Audio Projects](#)

780. [Arduino + Processing – Make a Radar Screen to Visualise Sensor Data from SRF-05 – Part 1](#)



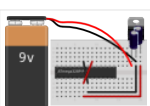
First things first, we need to build our circuit. This is the easy bit! We'll be using the Arduino to control a servo that will rotate our sensor around 180 degrees. The Arduino will then send the value from the distance sensor along with the..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

781. [Police Lights using an Arduino](#)



****DISCLAIMER**** I do not and will not take responsibility for anyone who gets in trouble for this, by either imitating emergency personnel, or using without a permit/licence. Updates! -I have shortened the code -Changed 16 LED's to 8 - Changed/added more flash patterns -Renamed variables As..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)

782. [Honey, I Shrunk The Arduino](#)



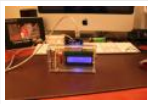
As you might be able to tell from recent posts, I've been doing quite a bit of work with an Arduino. I've now got at least one project that I'd like to make a little more permanent, rather than it just being a bunch of..... Listed under: [Other Projects](#), [Projects](#)

783. [Color Changing LED Tree](#)



Ever wanted an LED tree? Well now you can have your LED tree and eat it too (no, wait, you probably shouldn't).. Step 1: Gather the parts You will need: 1x ATtiny85 10x male header pins Solid core wire, 2 colors A bunch of LEDs..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [LED Projects](#)

784. [Brute force attack a BIOS with Arduino](#)



The goal of this experiment is to convert the Arduino board into an USB keyboard plus a VGA sniffer to crack the password of a standard BIOS using the brute force attack method. There are no advantages in using this method, in fact this can..... Listed under: [Memory – Storage Projects](#), [Projects](#)

785. [Send and Receive MIDI with Arduino](#)



This instructable will show you how to use an Arduino to send and receive a variety of MIDI messages so you can start building your own MIDI controllers and instruments. First I'll talk a little bit about MIDI protocol, if you're just looking for sample..... Listed under: [Sound – Audio Projects](#)

786. [Arduino – A Basic Theremin](#)



Theremins are cool. Fact. You may also have heard of them as either aetherphone/ etherophone or termenvox/ thereminvox. Essentially its an electronic music instrument that plays a certain note depending on the position of your hand and its distance from an antenna. Building a very..... Listed under: [Sound – Audio Projects](#)

787. [Tweetsapien: Hack a Robosapien With Arduino to React to Tweets](#)



A really fun project sent into us by Thomas Meghe. He's translated it all from his native French, which is a technical achievement itself. If you'd like to see the original, you can find it here. Bored of your favorite Twitter client ? No problem,..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

788. [Walleye using Arduino](#)



Walleye is an interactive light installation which engages users in temporal gestural and bodily play. It generates temporal light propagation patterns, or a large scale very low resolution pixilated image (depending on how you look at it) based on the realtime movement of visitors in..... Listed under: [Other Projects](#), [Projects](#)

789. [How to build your own sugru robot – Fixbot](#)



So you saw our video and you've fallen in love with Fixbot, have you? That's okay, it's understandable. We've fallen in love with it too. We have some great news! You can build your own Fixbot too, provided that you're okay with getting your hands..... Listed under: [Robotics – Automation Projects](#)

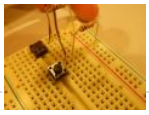
790. [Arduino – Basic Persistence of Vision](#)



I think this'll be the start of a few more projects for me. I've seen some cool LED PoV stuff (Persistence of Vision) with mounting displays on bikes, so hopefully I'll get round to doing something like that. Anyway as a start I've got 5..... Listed under: [LED Projects](#)

791. [How to make a servo leg using Arduino](#)

This instructable will show you how to create a simple servo leg that can be controlled by buttons on an arduino or via serial. Here is a video of the leg in action <http://www.youtube.com/watch?v=Q8i1nrPIJvo> Leg Materials: Popsicle sticks-make sure that all of them are



flat..... Listed under: [Motor Projects](#), [Projects](#)

792. [A Study in Non-Standard Distributed Computer Architecture using Arduino](#)



In the following tutorial, directions are given for creating a single node for the DoHas (Distributed Optical Harvard Architecture System). After constructing two of these nodes, a small distributed computer can be implemented which uses one node for sending instructions, mimicking input and the instruction..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [RTOS – OS Projects](#)

793. [BOXZ](#)



BOXZ is an open source robot platform for interactive entertainment! We connected Arduino, Plexiglass(or cardboard) Origami and your idea together, so we can easily and quickly build a remote robot by ourself! You can assembled it like LEGO! We can use it to playing football..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

794. [Arduino – Getting my LCD Screen to work](#)



I've gotten hold of what I assumed was a compatible 16×2 LCD screen with my Arduino board – it's a Powertip PC1602F and uses a compatible display driver for the Hitachi HD44780 display chip. This is essentially what the Arduino LCD libraries are built around, Listed under: [LCD Projects](#)

795. [Hacked roomba and arduino snowballs into a Eurobot 2013 entry.](#)



It all started as a weekend project with my kids and soon enough I got sucked into a 4 month project with their school ! The idea was to get a small group of kids aged 6 to 9 to participate to a robotics contest..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

796. [DIY Driving Simulator using an Arduino](#)



If you haven't noticed, as soon as you clicked into this instructable, you are now following me if you weren't already, you Favorited the instructable, and you voted for this instructable in all contests it is entered in. Then the buttons all disappeared. It's okay..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [How To – DIY – Projects](#), [Projects](#)

797. [BIKEDUINO – Stopping Point Predictor for bike riders](#)



The project consists in a Arduino that gets the speed of the bike from a dynamo and it controls a laser which points always to the point where the bike is gonna stop if it continues going at the same speed. Used Hardware: Arduino mini..... Listed under: [Car Projects](#)

798. [Version 2.0 Arduino Controlled Car Tracking System based on SMS](#)



This system is upgraded version of previous project... You will be able to track your car after you build this system, you will call the device then it will send you an sms which includes LAT, LON and Google Map link for just one touch..... Listed under: [Car Projects](#), [Phone Projects](#), [Projects](#)

799. [Building a Doodle Bot kit from DAGU](#)

Doodle Bot is a very simple beginners robot that can write messages using white board markers, jumbo chalk or crayons. The kit comes with all parts including an Arduino compatible controller and a screwdriver. You will need to supply 4x AAA batteries and a suitable..... Listed under: [Robotics – Automation Projects](#)



800. [Algorithmic noise machine](#)



This project is a part of experiments done while doing an artist in residence at Instructables. You can see the other projects here. You can use bit-shifting as an alternative way of creating “music”. This principle enables you to squeeze as much processing power as..... Listed under: [Sound – Audio Projects](#)

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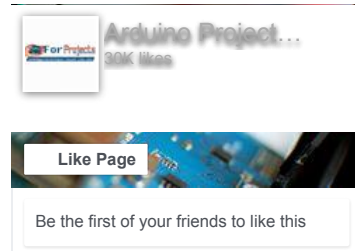
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
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