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Advanced View Arduino Projects List

List of Projects using arduino with advance view:

1. [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](#)

2. [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](#)

3. [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 (≈ \$3.50 at Radio Shack.) The ATtiny85 takes..... Listed under: [Arduino Programmer Projects](#)

4. [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](#)

5. [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](#)

6. ["Ayduino" Single-Sided Arduino Clone](#)



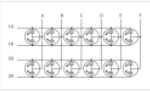
I'm teaching "Electronics for Scientists" this semester, and I wanted to allow each student to have their own Arduino to play with for microcontroller lab exercises and possibly use for their final projects. The Arduino is not very expensive at roughly \$30 per, but they..... Listed under: [Development Board – Kits Projects](#)

7. [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](#)

8. [Network-status indicator](#)



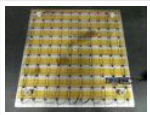
I run a NFS/NIS network under a combination of OS's for the upper-division physics lab here at CSUC, and one source of irritation is when one machine goes down and nobody lets me know until suddenly that machine is absolutely necessary NOW! So I figured..... Listed under: [Internet – Ethernet – LAN Projects](#)

9. [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](#)

10. [Quantitative Two-Dimensional Temperature Measurements](#)



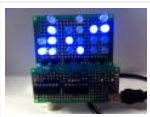
Lab Experiments involving the Heat Equation are usually one-dimensional exercises involving a copper pipe and a half-dozen thermocouples. But with DS18B20 "One-Wire" thermometer chips and an Arduino, it's possible to measure hundreds of temperature values simultaneously. Here's what my students Daniel Lund and Lawrence Lechuga..... Listed under: [Temperature Measurement Projects](#)

11. [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](#)

12. [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](#)

13. [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](#)

14. [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](#)

15. [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](#)

16. [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](#)

17. [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](#)

18. [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](#)

19. [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](#)

20. [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](#)

21. [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](#)

22. [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](#)

23. [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](#)

24. [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](#)

25. [Electrically Insulated Altoids Tin](#)



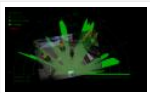
Ah yes, it's time for another Instructable involving an Altoids tin... But this time it's not about what's inside the Altoids tin, it's about the Altoids tin itself. In all its greatness, the Altoids tin we all know and love has one rather major flaw..... Listed under: [Development Board – Kits Projects](#)

26. [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](#)

27. [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](#)

28. [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](#)

29. [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](#)

30. [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](#)

31. [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](#)

32. [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](#)

33. [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 for the signals to be sent..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

34. [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](#)

35. [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](#)

36. [Arduino + Processing – Make a Radar Screen to Visualise Sensor Data from SRF-05 – Part 1](#)



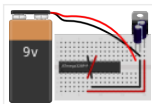
First things first, we need to build our circuit. This is the easy bit! We'll be using the Arduino to control a servo that will rotate our sensor around 180 degrees. The Arduino will then send the value from the distance sensor along with the..... Listed under: [LCD Projects](#), [Sensor – Transducer – Detector Projects](#)

37. [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](#)

38. [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](#)

39. [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](#)

40. [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](#)

41. [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](#)

42. [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](#)

43. [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](#)

44. [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](#)

45. [How to build your own sugru robot – Fixbot](#)



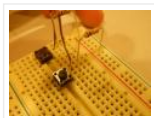
So you saw our video and you've fallen in love with Fixbot, have you? That's okay, it's understandable. We've fallen in love with it too. We have some great news! You can build your own Fixbot too, provided that you're okay with getting your hands..... Listed under: [Robotics – Automation Projects](#)

46. [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](#)

47. [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](#)

48. [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](#)

49. [BOXZ](#)



BOXZ is 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](#)

50. [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](#)

51. [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](#)

52. [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 dissappeared. It's okay..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [How To – DIY – Projects](#), [Projects](#)

53. [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](#)

54. [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](#)

55. [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](#)

56. [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](#)

57. [Arduino & Processing – Getting values from SRF05 ultrasound sensor & serial port](#)



I've started to delve into Processing and passing values between Processing and Arduino. If you're wondering what Processing is, basically its an open source programming language for vizualising data that can interface with Arduino either by reading values/ pins or by setting them. Just remember..... Listed under: [Sensor – Transducer – Detector Projects](#)

58. [SMS controlled Wireless Irrigation System using an Arduino](#)



UPDATE 02/13/11 : Voting has started for the Sparkfun Microcontroller Contest. Please VOTE for me! UPDATE 02/26/11 : I won a second prize!! Huzzah! Thanks for all the votes guys! UPDATE 03/17/11: I would love to win a Laser cutter in the Epilog challenge as..... Listed under: [Phone Projects](#), [Projects](#)

59. [Tissue Box Guitar – Light Strings using Arduino](#)



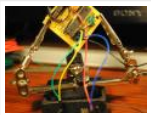
the idea of anything can be an instrumental music has been always in my mind so i made a wooden tissue box that i installed inside it a guitar of light strings Step 1: Building Box i made this wooden tissue box Step 2: Wiring..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#), [Sound – Audio Projects](#)

60. [123D Scanner – Home made 3D Scanner](#)



Hey – have a look at my new project HERE In this project I built a 3D Scanner, that enables generating 3D models of physical objects. The files can later be viewed in 3D software (GLC Player, Sketchup, Rhino, or sites such as <http://3dfile.io>) and..... Listed under: [How To – DIY – Projects](#)

61. [Mint Tin Hero using Arduino](#)



A friend at work proposed a friendly competition between a few co-workers: to make something cool out of a Trader Joe's green tea mint tin. Anything – whatever our creative hearts desired. The prize? Nobody cared – we'd figure that part out later. I thought..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

62. [Track Honeybees With Temperature](#)



Data analysis coming soon! My school is kind of strange. We don't have a cafeteria, but we do have a four week course on "The Simpsons." We don't have a jungle-gym on the elementary playground, but we do have a half-buried firetruck. We don't have..... Listed under: [Temperature Measurement Projects](#)

63. [Arduino – \(Very\) Basic motion tracking with 2 PIR sensors](#)



Took me a little while to get started but I've managed to wire 2 PIR infrared sensors with an Arduino to sense motion either on the left or on the right side. The result will trigger an LED to represent each PIR sensor then I..... Listed under: [Sensor – Transducer – Detector Projects](#)

64. [Pachube Client using Strings with Arduino](#)



This example shows you how to answer a HTTP request using an Ethernet shield. Specifically, it connects to pachube.com, a free datalogging site. The example requires that you set up a pachube.com account, as well as a pachube feed (for more information on setting up..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

65. [Making a Better Mouse Trap](#)



There are a lot of things this world needs at the moment. One of them is a better mouse trap. Mice are getting smarter every day and if we're not careful we'll end up with Planet of the Mice. Luckily, with the help of a..... Listed under: [Home Automation Projects](#)

66. [Arduino – motion triggered camera](#)



So having worked out that I can make a remote for my Nikon D80 to do some timelapse photography. I started thinking of things I can do to trigger the remote, below video shows it working but you'll need sound to hear the shutter going..... Listed under: [Sensor – Transducer – Detector Projects](#), [Video – Camera – Imaging Projects](#)

67. [Accelerometer Table using Arduino Esplora](#)



This example simplifies the task of collecting data from the Esplora's accelerometer and graphing it with your computer. The Esplora sends keypresses to a connected computer about the state of the accelerometer. If you open a spreadsheet application, you can log the data from the..... Listed under: [Development Board – Kits Projects](#), [Metering – Instrument Projects](#), [Projects](#)

68. [Arduino Esplora Kart](#)



This example demonstrates how to turn your Esplora into a customized computer game pad. It uses the analog joystick and the four switches as inputs to a video game. The Esplora will appear to the computer as a standard keyboard, the computer will see joystick..... Listed under: [Development Board – Kits Projects](#), [Game – Entertainment Projects](#), [Projects](#)

69. [Arduino text'in](#)



Arduino text'in. Key Features: 24 relays controlled by 4 I/O lines! Cell phone text using your Arduino. This project hacks a cell phone to text using normally open relays. After investigating cellular modules on the internet I decided it looks not only rather pricy, but..... Listed under: [Phone Projects](#)

70. [Arduino – IR remote/ intervalometer for Nikon D80 DSLR](#)



I'm cheap and skint, yet I want to do timelapse photography with my Nikon D80 DSLR. Unfortunately that requires spending some cash on an intervalometer for time lapse photography which will set me back a sizeable chunk of cash. Or I could get a remote..... Listed under: [Video – Camera – Imaging Projects](#)

71. [My hat with full of stars](#)



Top hats are cool; just like bow ties. Not only are they stylish, but they give you a lot of room for incorporating techno goodness. I recently had cause to buy a tuxedo, which necessitated a kilt, and then a top hat. You know how..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

72. [Arduino – Sonic range finder with SRF05](#)



A guide to using the SRF05 Distance Sensor with Arduino in order to calculate distances from objects. In this case I'm also altering the output of an LED with PWM according to how close an object is to the sensor. So the nearer you are..... Listed under: [Metering – Instrument Projects](#)

73. [Arduino Esplora Temperature Sensor](#)



This sketch shows you how to read the Esplora's temperature sensor. You can read the temperature sensor in Fahrenheit or Celsius. Circuit Only your Arduino Esplora is needed for this example. Connect the Esplora to your computer with a USB cable and open the Arduino's..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

74. [Knock Block using an Arduino board](#)



Knock Block: a modern knocking framework Man has long wrestled with Time. Also, with knocking on things and not getting the time of day. We propose a knocking platform through which these fundamental needs are met. This is illustrated with the Knock Block KUI and..... Listed under: [Home Automation Projects](#), [Projects](#)

75. [Arduino Analog Inputs](#)



This week is all about analog inputs for the arduino. I'll show you how you can use a voltage divider circuit (see episode 3) and a variable resistor to make an analog sensor. [box type="note" color=" #202020 " bg=" #ffbb00 " font=" verdana " fontsize=" 14 " radius=" 20 " border=" #000 " Listed under: [Projects](#), [PWM Projects](#)

76. [Intervalometer for Sony NEX 5n](#)



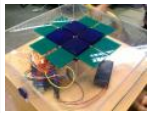
This intervalometer used infrared LED To built intervalometer you need: Arduino Nano (or Arduino-compatibility). I used Nano V3 Serial LCD Joystick Module IR Led and resistor ~200 Ohm Switch Push Button Plastic enclosure Battery 9V Schematic is very simple Step 2: Connection Serial LCD has..... Listed under: [Metering – Instrument Projects](#)

77. [Arduino – Control a DC motor with TIP120, potentiometer and multiple power supplies](#)



A quick circuit showing how to control the speed of a DC motor with a potentiometer with your Arduino board. Also shows how to use a TIP120 transistor to allow the Arduino control a larger power supply. Transistors are 3 pin devices, which via the..... Listed under: [Metering – Instrument Projects](#), [Motor Projects](#)

78. [Combo Blocks using an Arduino](#)



Project by CU Boulder Thinks That Think students: Michelle Bourgeois, Charles Dietrich, and Ben Link Imagine having a safe in which the combo is any small object of your choosing. Perhaps it's your favorite coffee mug, or a bat man figurine. This project is based..... Listed under: [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

79. [Fart Operated Random Channel TV Remote using an Arduino](#)



OK, I know that sounds weird, but bear with me for a moment. My Pops really enjoys two things; 1) channel surfing and 2) farting. So one day I was over at <http://hackaday.com/> and read about a guy who used his Arduino to turn a..... Listed under: [Home Automation Projects](#), [Projects](#)

80. [Haptic Proximity Module \(HPM\) for Low Vision users](#)



The Haptic Proximity Module (HPM) seeks to enable people with low vision, or other vision impairments, to engage with their direct surroundings through vibration feedback from a range detector, and do so cheaply with readily available components. The aim of this instructables is to share..... Listed under: [Development Board – Kits Projects](#)

81. [Control a DC motor with Arduino and L293D chip](#)



This is a quick guide with a bit of extra info (pin configurations etc..) that I've learnt along the way on how to use the L293D with the Arduino, showing that we can: A) Use a supplemental power source to power the DC motor B)..... Listed under: [Motor Projects](#)

82. [Reaction Timer using an Arduino](#)



I am new to Arduino and wanted a project which would teach me different things. This got me involved with sound and the use of a LCD. This project is based on the Instructable posted by bertus52x11 which you can find here <http://www.instructables.com/id/After-Dinner-Reaction-Time-Tester/> . While..... Listed under: [Clock – Timer Projects](#), [Projects](#)

83. [Buzz Wire Alarm Clock](#)



Does it happen to you to slide your finger across your phone's screen and turn the alarm off ... just because you have automated this task and don't even need to open your eyes? Well, let me present to you the alarm clock that WILL..... Listed under: [Clock – Timer Projects](#)

84. [Making a 9v Battery DC power supply.](#)



Rather than use the USB to power my Arduino board with a handy trip to the electronics store with some more knowledgeable people than I, I have constructed a 9Volt DC power supply. Taking a 9 volt battery, a 9v battery holder and a 2.1mm..... Listed under: [Battery Projects](#)

85. [Simple Ipad Controller using an Arduino](#)



This instructable will help you understand the iPod serial protocol, and how to send commands to an iPod using an Arduino. This instructable is only meant to show the basics of the protocol and is by no means complete. I only had enough hardware space..... Listed under: [Projects](#), [Sound – Audio Projects](#)

86. [3 LED Crossfade with PWM and Arduino](#)



This ones quite simple, just mix/ crossfade 3 separate LEDs using Phase Width Modulation (PWM) and Arduino. You will need 3 LEDs, I'm using a 5mm Red, Green and Blue so I can make the full light colour spectrum (When all combined they make white..... Listed under: [LED Projects](#), [PWM Projects](#)

87. [Making a Mayan Tzolkin Calendar](#)



OK, I will admit that I am a little obsessed with things Mayan at the moment, which explains why I wanted to make a Mayan Tzolkin calendar. I modeled the general layout and fabrication on the very nice Slek Word Clock by scottbez1 which you..... Listed under: [Clock – Timer Projects](#)

88. [Small form factor DIY Arduino on stripboard](#)



This board needs FTDI cable to program it. It is not Arduino compatible in the meaning of taking shields (just like every small form factor board isn't). But it has all the same pins (except 3.3V power and Vin*) available as female headers. The input..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#), [Projects](#)

89. [Robot Snake](#)



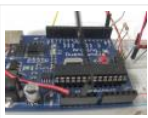
Purpose This project was built for the Things that Think undergraduate/graduate class CSCI 4830-7 and CSCI 7000-7 for the University of Colorado at Boulder. Our group consisted of one graduate and two undergraduate students. We worked on the project for 8 weeks, most of the time trying..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

90. [Controlling a Servo with Arduino](#)



Very simple basics of building a circuit to control a servo using Arduino and PWM For this you will need: Arduino Board – I'm using a Duemilanova ATMEGA328 Arduino Sketch software – I'm using version 0015 Arduino Servo Library found here save it to lib/targets/libraries..... Listed under: [Motor Projects](#)

91. [Use your android phone sensors on the arduino](#)



Hello, this is my very first step-by-step instructable, and today, we're going to learn how the sensors in your android smartphone can communicate with your arduino. In modern smartphones, there are a lot of useful sensors for an ingenious arduino project. I have a motorola..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

92. [Two ways to reset arduino in software](#)



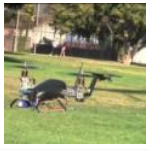
If you want to RESET Arduino from the beginning without manually pressing the RESET button, there are a few ways. Here are two ways, using minimal wiring / circuitry. Step 1: Using 1 wire connected to the RESET pin 1. electronically, using only 1 wire..... Listed under: [Arduino Programmer Projects](#)

93. [Siduri – An Arduino Control Smart Coaster](#)



Siduri named after the Sumerian god of happiness and merriment, is a smart coaster for your drinks. It recognizes when a glass is near empty and then glows yellow to alert waiters that you will be in need of a refill soon. Designed specifically for..... Listed under: [Home Automation Projects](#)

94. [How I'm building my bi-copter with Android and Arduino](#)



Last year I was fascinated by the "How to build your own Quadrocopter" by Lenz Grimmer and decided that somehow I should try to do a similar thing. This talk is about the way I'm building a bi-copter using lessons learned for last year's talk..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#), [Robotics – Automation Projects](#)

95. [Discreet Data Logger using Arduino](#)



There is no better way to hide a covert device than to stick it inside a larger conspicuous device. That said... Essentially, this is a guide for making a data logging system for use with the breathalyzer microphone. To accomplish this, an Arduino and a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Project Ideas](#), [Projects](#)

96. [A DVD Player Hack](#)



This is a description of an open source/open hardware project of a remotely controlled Arduino (Freeduino) based clock/thermometer utilising power supply and VFD panel from a broken DVD player in a custom made acrylic enclosure. The aim of the project was to demonstrate what could..... Listed under: [Video – Camera – Imaging Projects](#)

97. [Texting mat using arduino](#)



Lusha and May created a "Text-Mat". This surface can allow the user to write and send messages using one's feet. This text-mat is designed to send secret messages during meetings or classes. The design utilizes conductive fabric and thread, as well as a flora-board. The..... Listed under: [Home Automation Projects](#)

98. [The KITT-duino, DIY Larson Scanner with an Arduino](#)



IMPORTANT: CODE IS NOW UPDATED. FIXES INCLUDE ADDING AN INTEGER VALUE TO MANIPULATE TIMING AND FIXING A DOUBLE-BLINKING LED. Thanks. It is my understanding that many Larson Scanners can only pulse from side to side. I felt that that needed to be changed, seeing as..... Listed under: [CNC Machines Projects](#), [How To – DIY – Projects](#)

99. [Low cost digital microscope with automated slide movement using arduino](#)



This is an easy-to-implement product modification that will be extremely useful for clinicians, pathologists, researchers or other microscopy enthusiasts interested in capturing whole slide images or creating virtual slides for later use. The device allows one to take multiple images of the slide under high..... Listed under: [Medical – Health based Projects](#)

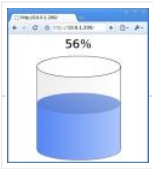
100. [Obstacle avoidance Arduino robot – build your own LarryBot](#)



So after 5 previous versions that had various flaws, I now have an Arduino robot that actually works and although basic is very cheap – although there a probably a few more flaws so please point them out to me but this is a good..... Listed under: [Robotics – Automation Projects](#)

101. [Water Tank Depth Sensor using Arduino](#)

Water is a precious resource in many parts of the world, and many people rely on water tanks to supplement their water supply by storing collected rainwater or water pumped from a well or bore. But how do you measure how full a tank is?..... Listed under: [Sensor](#)



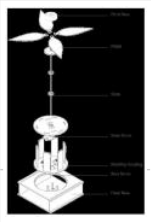
[– Transducer – Detector Projects](#)

102. [Arduino Dragon Wings](#)



Hello World!! I am making this Instructables on how to make arduino controlled dragon wings. XD I planned on wearing these dressed as Smaug to 'The Hobbit Desolation of Smaug' premier but I didn't complete the entire outfit in time, but I will continue working..... Listed under: [Game – Entertainment Projects](#)

103. [Augmenting Plant Behavior Through Robotics using Arduino](#)



The PhytoBot is a semi-intelligent plant which responds to external stimulus (light intensity and light location) and responds to it as a phototropic plant would. Essentially it is designed as a piece of interactive artwork for operation over a long period of time. The motivation..... Listed under: [Projects, Robotics – Automation Projects](#)

104. [Rabbit Ears on a Cap using Arduino](#)



We are students from Singapore Polytechnic. After looking at the famous Necomimi Arduino Cat Ears, we decided to give it a try to help us familiarise ourselves with the accelerometer and the arduino. Using the materials that we had on hand, we managed to produce..... Listed under: [Game – Entertainment Projects, Projects](#)

105. [Geoweaver: A Walking 3D Printer Hexapod using arduino](#)



Geoweaver is a student designed (team members Jia Wu, Mary Sek, and Jeff Maeshiro) robot created in the Creative Architecture Machines advanced options studio at the California College of the Arts (CCA) in San Francisco, California, taught by Jason Kelly Johnson of Future Cities Lab..... Listed under: [CNC Machines Projects](#)

106. [Programmable auto filter interface for C64 using Arduino](#)



Overview A software / hardware combo that allows for control of the analog filter inside a Commodore 64 that is running Cynthcart from a host computer (eg, Macbook, PC). Software • 16-step filter sequencer • Set the speed of the filter sequence (with intervals between..... Listed under: [Arduino Programmer Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

107. [Control Access of Arduino YUN with MySQL, PHP5 and Python](#)



Hello Friends! Well, as you know, in September the new premiere shield of Arduino, Arduino YUN. This little friend has a Linux embedded system with which we can run anything you can think of (at least so far). While there is very little information on.....

Listed under: [Robotics – Automation Projects](#)

108. [All in one Remote using Arduino](#)



Introduction August, 2007 One of my other hobbies is photography, and, about a year ago, I purchased a new digicam – a Panasonic FZ30. I joined the Panasonic forum on the dpreview site. One of the posters, a programmer and electronic hobbyist, designed a nifty wireless..... Listed under: [Projects, Radio Projects](#)

109. [Simple Arduino Wing Shield](#)



I buy a lot of these stackable Arduino header sets because they are handy for a lot of things. I make some breakout boards with them, I use them to add some clearance between a taller shield and the next shield that I am stacking..... Listed under: [Development Board – Kits Projects](#)

110. [Polar Plotter on Arduino and MakerBeams](#)



The project A polar plotter is a plotter with a rotating, extendable arm. Its characteristics differ greatly from those of a traditional plotter, which in most areas have a superior design. You could say the polar plotter is more portable or something, but mainly I..... Listed under: [CNC Machines Projects, Projects](#)

111. [Build the Remote Control Bobble-head Bobbler! using arduino](#)



Bobble-heads!!! Every sports fan loves em, but they're kind of boring, just sitting frozen on your shelf ☐ I thought it might be fun to create an Automatic Bobble-head Bobbler something that can wake that old bobble-head up and get him nodding away. I finally found..... Listed under: [Robotics – Automation Projects](#)

112. [Clock with Meggy Jr RGB using Arduino](#)



There is a saying: “If all you have is a hammer, everything looks like a nail”. Well, when I see a display, I think of clocks ☐ I will show you here how to easily make a simple digital clock by hacking Meggy Jr RGB..... Listed under: [Clock – Timer Projects, Projects](#)

113. [Let's cook: 3D scanner based on Arduino and Processing](#)



Ever wonder of cypypaste method, usable in real life, not only in virtual reality? Me too. It is 21th century, and those are nearer than most of all can imagine! This is possible thank to 3d scanners and printers. So let's try to scan something!..... Listed under: [How To – DIY – Projects](#)

114. [Motion Sensing Eye using arduino](#)



I have always wanted to make something with my LED dot matrix display, and so when I found a old alarm motion sensor I knew just what to make, a Motion Sensing Eye! This instructable will hopefully finish with you having a working dmd, that..... Listed under: [LED Projects, Sensor – Transducer – Detector Projects](#)

115. [LED Clock](#)



A 24-hour clock with hour, minute, and second indicators. Here's the catch, despite being a digital media (LED's) it is still displaying using an analog method (circles!). I finished making this clock months ago but did not bring it with me to school so I..... Listed under: [Clock – Timer Projects, LED Projects](#)

116. [Arduino Webserver Control Lights, Relays, Servos, etc....](#)



In this project using only an Arduino with an Ethernet shield. I'll be controlling one LED and a servo, but you can apply this method to control a DC motors, buzzers, relays, stepper motors, etc.. Overview: When you upload the the code provided in this..... Listed under: [Internet – Ethernet – LAN Projects](#)

117. [Vehicle Telemetry Platform using Arduino](#)



Ever wondered what goes on under the hood of your car? Wish you could peek inside the engine management system and read values from it? Annoyed that your dashboard displays a cryptic “Check Engine” light (yep, the engine is still there) but gives absolutely no..... Listed under: [Car Projects](#)

118. [Weather Station Receiver using Arduino](#)



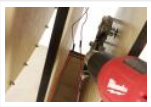
The incredible popularity of home weather stations shows that it's not just farmers who are interested in the weather. Many people want to be able to track and record weather events within their local environment rather than relying on a state or national weather service..... Listed under: [Sensor – Transducer – Detector Projects](#)

119. [Arduino Beer Pong Arcade](#)



We are going to be making a flashy beer pong table. The table lights up as cups are eliminated and old style arcade sounds are played. This game elevates the subtle art of BEER PONG to a new level. A sporting level. A competitive, Listed under: [Game – Entertainment Projects](#)

120. [Lunch Decider Wheel using arduino](#)



The lunch decider wheel is basically a carnival-style wheel that spins every day at 11:45am and selects what is for lunch. It came about on account of my perpetual indecision on this very important culinary matter. In fact, this device does more than just decide..... Listed under: [Game – Entertainment Projects](#)

121. [Arduino: Making a set of traffic lights](#)



THIS PROJECT IS STILL A WORK IN PROGRESS FEEDBACK APPRECIATED!!! This tutorial will step you through the process of creating a set of controllable and configurable traffic lights whilst also teaching you the basics of Arduino. Some knowledge is needed and I highly recommend reading and..... Listed under: [Car Projects, Projects](#)

122. [3D Printed Webcam Controller](#)



The camera controller box is an easy way to rotate a webcam from a PC or remotely through the internet. Step 1: Materials and 3D files In this project I used a Teensy 2.0 micro-controller since it was available, but you can use any other MCU like an ATtiny85..... Listed under: [Internet – Ethernet – LAN Projects, Video – Camera – Imaging Projects](#)

123. [Wooshing leds – Rotated animation by arduino](#)



This project allows you draw in the air letters, symbols or other shapes – as you like. Controlled by the Arduino, the 7 simple LEDs blinking on and off – creating the illusion of floating text in the air. This combination of simple components with..... Listed under: [LED Projects](#)

124. [UnDecima Audio Output from Arduino](#)



I already have one project where arduino outputs audio signal to USB speakers via software 10-bits PWM. In first, I was not satisfied with quality of sound generated via PWM. There are just not enough speed in arduino engine to run PWM well. For example for..... Listed under: [Projects, Sound – Audio Projects](#)

125. [Security / Automation Sensors using Arduino](#)



Security system sensors such as motion detectors, reed switches, pressure mats, glass-break detectors, infra-red beams, and conductive film can be very handy for all sorts of things including home automation systems, interactive art installations – and sometimes even security systems! Almost all security system sensors..... Listed under: [Security – Safety Projects, Sensor – Transducer – Detector Projects](#)

126. [Interval Long Exposure Camera](#)



There's a real beauty in long exposure photography. Hours and days and weeks and months and even years can be condensed onto a single frame, and that frame will catalog the constants in our fast paced and forever changing lives. However, the issue is that..... Listed under: [Video – Camera – Imaging Projects](#)

127. [Lego Technic Car with Arduino + XBee Wireless Control](#)



I was perusing Instructables one fine winter Saturday, when my 8 yo son came in and peered over my shoulder and saw this: <http://www.instructables.com/id/RC-Lego-Car/> by sath02. My son is a huge fan of all things Lego, and loves robots and cars, and this was right..... Listed under: [Game – Entertainment Projects](#)

128. [Visual Navigator Making it MOBILE using Arduino](#)



Obstacle avoiding vehicle, continue in "3D Laser Range Finder" series (project 1, project 2). The basic idea is the same, measuring distance using red laser pointers, CCD analog camera and Arduino UNO. Modification was made in geometry. Two lasers were set for "far field"..... Listed under: [Game – Entertainment Project Ideas](#), [Projects](#), [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

129. [The Adventure of Electricity: An interactive light diorama](#)



Where does electricity come from? Who invented the light bulb? How do cities use this technology today? These are just a few questions that we hope to address in this interactive diorama, The Adventure of Electricity! This project was designed for educational purposes so that..... Listed under: [Game – Entertainment Projects](#)

130. [8x8x8 LED Cube with Arduino Mega \(+Sound +PS controller +Game\)](#)



This is a instructable which is based on the Cube by Chr, (<http://www.instructables.com/id/Led-Cube-8x8x8/>) by SuperTech-IT, (<http://www.instructables.com/id/CHRs-8X8X8-LED-Cu...>) and by das-labor.org, (http://www.das-labor.org/wiki/Borg3d_Bauanleitung...) but i think its better and easier. I started this Project without any skills from soldering to programming. First of..... Listed under: [Game – Entertainment Projects](#)

131. [Tears of Rainbow using an Arduino](#)



It's time to release new updates for my first (ever) project with Arduino, "Color Light Music". From artistic perspective, VU BarGraph style (IMHO) is the best one for spectral dynamic representation, and not much could be improved on this side. But this time, it cross my..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

132. [Joystick controlled Camera using Arduino](#)



Hi, First of all, my English is not perfect =) I've seen many projects with Arduino that describes how to control 2 servo's with a joystick or use a lcd screen. All of the projects that i have seen are all separate things. So i..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

133. [HandSight: A Glove for the Blind to Feel Shapes and Navigate Obstacles](#)



HandSight is a prototype glove to aid the blind. It can sense the lightness or darkness of a surface with tactile feedback from a vibration motor for each individual finger. It can also sense distance from physical objects or obstructions and indicate direction and distance..... Listed under: [Medical – Health based Projects](#)

134. [Arduino IR Musical Stairs](#)

This is a small scaled musical stairs! It was a project that had a deadline; had only two days to build it. So, it is a very small scaled project, but still serves its purpose! IR Sensor (receiver) that I used is TSOP38238 from Adafruit,..... Listed under: [Home Automation Projects](#)



135. [Gyro Camera for Motorcycle using Arduino](#)



As seen in MotoGP Race, the rider is seen riding through corners while laying aside his bike to the left and right. But there is an interesting moment when the motor looks to collapse sideward, the front views remain horizontally. How could that be? Such..... Listed under: [Car Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

136. [Building a device that clips to your belt](#)



Our goal in this step-by-step instructable is to build a device you can clip to your belt and wear throughout the day. This device will log data that, when downloaded to a back-end server system, will provide a report showing the location history of your..... Listed under: [Clock – Timer Projects](#)

137. [Hidden Wall Outlet Safe \(w/Arduino Lock\) using arduino](#)



Stash your valuables where no one will ever suspect. Wall outlets are perfect for stashing valuables since you have tons of them at home. You must be crazy enough to search every household outlet for a secret stash. Probably, no one would even think of..... Listed under: [Home Automation Projects](#)

138. [Power Arduino with a cellphone](#)



Old cellphones are easy to acquire and they have built in lithium charging circuitry. What a wonderful base for a power supply for small mobile things. I hooked up a cellphone to the arduino with the ability to charge the cellphone when you plug the..... Listed under: [Phone Projects](#)

139. [DIY Arduino Motor Shield \[for only \\$8!\]\(L298N 2x4A\)](#)



Today, I'm going to show you how to make an Arduino motor shield (driver) at a low cost. It works splendidly, it's almost all the characteristics of the original Arduino motor shield. It's almost considered as a clone. The original Arduino motor shield has the..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

140. [Intermediate Arduino: Inputs and Outputs using arduino](#)



Continuing from my Intro to Arduino post, this Instructable will go over some slightly more advanced topics with Arduino, specifically relating to controlling and managing many inputs and outputs. The next class covers how to connect the Arduino's inputs and outputs to MIDI. Parts List:..... Listed under: [LED Projects](#)

141. [EL Wire Hat: Sequenced and Sound Activated with Remote Control](#)



Welcome to the Instructable guide of my EL Wire hat with some fun features. The concept is an EL Wired hat with 8 sequenced EL wires controlled by a wired remote. Multiple speed controllable sequence modes are pre-programmed into an Arduino UNO, including a sound..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

142. [Earth Globe Rotating With Arduino Or Raspberry Pi Controlled Stepper Motor using arduino](#)

This instructable describes how to upgrade your globe to a motorized version. It looks amazingly better on the shelf when it is slowly rotating, and any demonstration with your kids (to explain the day/night cycle or the seasons) will gain in interest. No need to..... Listed under: [Motor Projects](#)



143. [TV Remote Controlled Car](#)



Nothing is worse than losing the controller that came with your remote control car. Replace that sucker with an arduino and the one remote that always seems to be around, the TV remote! Remove these ads by Signing Up Step 1: Materials The materials for..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#)

144. [Arduino Solar Cell Tester](#)



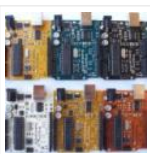
When I'm building Solar Shrubs and other solar-powered creations, I often scavenge cells from various off-the-shelf devices such as solar garden or security lights. But these cells are rarely labeled as to their voltage, current, and power output. So it's off to my bread-boarding station. First, I put each cell under..... Listed under: [Battery Projects](#), [Metering – Instrument Projects](#), [Projects](#), [Solar energy projects](#)

145. [Capteur temperature choix du type de degres par infrarouge using arduino](#)



ENGLISH VERSION HERE Dans ce programme nous allons voir comment capter une température et afficher sa valeur sur un lecteur LCD en choisissant si on veut l'afficher en°C ou °F grâce à une télécommande infrarouge. Dans ce tuto j'utilise: -Une carte SainSmart (similaire à Arduino..... Listed under: [LCD Projects](#)

146. [A World of Possibilities with Java ME + Bluetooth + Arduino](#)



"This presentation shows how to easily go from user stories to automated integration tests that themselves read like user stories. You can accomplish this by using custom domain-specific languages. Too often our automated integration tests rely on coding and intimate technical knowledge of our systems,..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

147. [Smart Snow Globe \(gives snow day alerts\) using arduino](#)



What does a smart snow globe do? It tells you if tomorrow's going to be a snow day! Is it snowing tonight? Will you have the day off from school or work tomorrow? Put this snow globe next to your bed when you go to..... Listed under: [Radio Projects](#)

148. [4x4x4 interactive LED-cube with Arduino](#)



To explain my 4x4x4 interactive LED-cube published before, a bit more clear, I will try to make my first step by step instructable. This 4x4x4 cube is interactive by using the top four corner LEDs both as LEDs and as sensors that will react on..... Listed under: [LED Projects](#), [Projects](#)

149. [IR Remote Controlled Color Changing Cloud \(Arduino\)](#)



CLICK HERE FOR THE UPDATED INSTRUCTABLE: <http://www.instructables.com/id/IR-Rainbow-Cloud-ver-1/> This is a project I created for a Digital Art and Installations class. The class covered basics of several types of programming, and our projects were meant to be an interactive cross between art and technology. This was a fun..... Listed under: [Game – Entertainment Projects](#)

150. [A Voice Shield for Arduino Board](#)



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: [Projects](#), [Sound – Audio Projects](#)

151. [Open Bitcoin ATM using arduino](#)



The world's first completely open-source Bitcoin ATM for Education and Experimentation.
<http://openbitcoinatm.org> for more information. Step 1: Fabricate Box and Faceplate Out of a piece of 12"x12" aluminum sheet metal, cut two rectangles and drill six rivet holes and four holes to attach the bill acceptor..... Listed under: [Robotics – Automation Projects](#)

152. [Arduino Wii nunchuck and Wii motion plus with updated code for IDE 1.0.2 and LEDs](#)



So, I was trying to hack my Wii nunchuck because I want to control motors and lights with the Wii nunchuck. The first problem that I found was how to connect the control without an adapter, I was planning to make one, but when I..... Listed under: [LED Projects](#)

153. [LED Dawn / Sunrise Alarm Clock, Nightlight & Security Light – Arduino Compatible](#)



As the nights gradually lengthened in autumn 2011, I discovered the joys of Arduino and thought that it would be a great way to implement something that I have wanted for a long while – a gentle way to wake up on a winter's morning. Listed under: [LED Projects](#), [Security – Safety Projects](#)

154. [Programming the Arduino I/O pins](#)



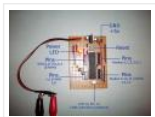
Overview The Arduino Uno is a microcontroller board based on the ATmega328 (datasheet). It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz ceramic resonator, a USB connection, a power jack, an ICSP header,..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

155. [Arduino, Sensors, and MIDI](#)



Now that you're up to speed on using Arduino's inputs and outputs, this Instructable will give you everything you need to get started using sensors to trigger MIDI notes from Arduino. This post is the last installment in a series of workshops I led at..... Listed under: [Home Automation Projects](#)

156. [Stripboard Arduino](#)



In this, my first Instructable I'm going to show you how to make a stripped down Arduino for a fraction of the price, using Stripboard/Veroboard. Material List: 1x Atmel ATmega168 = \$2.65 1x Stripboard = 72p 1x 7805 Voltage regulator = 26p 2x LEDs =..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

157. [Control an Arduino With a Wristwatch \(TI eZ430 Chronos\)](#)



The watch The Texas Instruments eZ430 Chronos is a cool gadget. It has bidirectional radio communication, and a whole bunch of sensors: temperature, pressure, acceleration. In fact, it is a development kit for the MSP 430 (a low-power microcontroller), that TI packaged as a watch..... Listed under: [Clock – Timer Projects](#)

158. [SuperScope: Circuit Simulation through Arduino-Processing Interface](#)



into the program where you can physically manipulate them. Arduino tests for the value of the component (a capacitor, inductor, resistor, or waveform of specific frequency) then sends the data to Processing. Imported components can then be plugged into circuit schematics. SuperScope builds upon the..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

159. [Improved Simple Wing Shield using arduino](#)



Not too long ago, I made my own version of the popular Wing Shield out of some spare parts and scraps of perf board I had laying around. Instead of the screw terminals that the regular wing shield uses, I used some female headers that..... Listed under: [Home Automation Projects](#)

160. [A credit card sized Ethernet Arduino compatible controller board](#)



I love the Arduino as a simple and accessible controller platform for many varied projects. A few months ago, a purchased an Ethernet shield for my Arduino controller to work on some projects with a mate of mine – it was a massive hit -..... Listed under: [Development Board – Kits Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

161. [Make Your Own GRBL CNC Pendant](#)



So you just finished your DIY CNC machine, set up GRBL and even cut your first part. Now what? Well, did you know that as of GRBL v0.8 there are pinouts some really useful commands such as Cycle Start, Feed Hold and a Soft Reset?..... Listed under: [CNC Machines Projects](#)

162. [How to access 5 buttons through 1 Arduino input](#)



Using this method, I'll show you how you can access 5 (or even more) inputs through 1 Arduino pin. These buttons will only be read correctly if only one is pushed at any time though. As we go through it I'll explain whatever background info..... Listed under: [How To – DIY – Project Ideas](#), [LED Projects](#), [Projects](#)

163. [LittleBitty Joe using arduino](#)



Say Hello to littleBitty Joe! Joe is my school's mascot! Speak to Joe and watch his eyebrows lift, whiskers vibrate, eyes illuminate, heart spin and hear him ROAR! Not only does his roaring affect work with our project, but it can definitely work with your..... Listed under: [Game – Entertainment Projects](#)

164. [Digispark DIY: The smallest USB Arduino](#)



Digispark is an ATtiny85 based microcontroller development board come with USB interface. Coding is similar to Arduino, and it use the familiar Arduino IDE for development. Digispark is copyrighted by Digistump LLC (digistump.com) and the full license is here: <http://digistump.com/wiki/digispark/policy> Specification: Support for the Arduino IDE..... Listed under: [Development Board – Kits Projects](#), [How To – DIY – Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\)](#), [Projects](#), [Projects](#)

165. [3D-Printed Biologically-Inspired Robotics](#)



I have been spending the last few months doing research into biologically inspired robotic structures. While my approach may seem formalistic in nature, these devices were simply a means for ultimately conducting social research. This desire stems from my experience building Simple Bots, and their..... Listed under: [Robotics – Automation Projects](#)

166. [Light Clapper using arduino](#)



This is a project that I quickly made one night because I wanted to 'clap' to turn off and on the light in my room! I have a small room for myself, so I basically have no other noise around. So, I was able to..... Listed under: [Home Automation Projects](#)

167. [RC Car Anti-Crash System Using Arduino](#)



Hi guys! So for my electronics class this year we were tasked with creating some kind of electronic gadget in order to demonstrate what we learned over the semester. Being a car-loving type of guy, I decided to get a cheap RC car and see..... Listed under: [Car Projects](#), [Projects](#), [Security – Safety Projects](#)

168. [Arduilay](#)



Arduilay is an 8 channel AC relay box for use with Arduino, Max/MSP, Processing, etc. I designed this system as an alternative to the USB>DMX 4 channel relay option. While DMX gives you dimming control, the setup is easily 5 times as expensive as this..... Listed under: [Development Board – Kits Projects](#)

169. [ARDUINO Laser 3D Tracking or Range Finder](#)



The idea of using triangulation for distance measurements is well known since Pythagorean time, when his brilliant formula become available for mathematicians. What is new in this design, is lasers power control via “blooming” effect of CMOS camera. Here this “negative” effect was put to..... Listed under: [Metering – Instrument Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

170. [Cheap and effective Sous Vide cooker \(Arduino powered\)](#)



Sous-vide cooking is a great new way of cooking food. I will not explain why and how it works here... for great recipes and explanations, you can check out those guys : <http://modernistcuisine.com/2013/01/why-cook-sous-...> Unfortunately, a good (and I mean precise to the half °C) sous-vide..... Listed under: [Home Automation Projects](#)

171. [2 player Pong using Arduino](#)



I started with the Instructable from Kyle Brinkerhoff; <http://www.instructables.com/id/Ardu-pong-the-Arduino-based-pong-console/> Thanks Kyle! and the following at Make magazine <http://blog.makezine.com/archive/2007/08/arduino-pong.html> and I see the original code is attributed to Pete Lamonica Thanks Pete!! I am using the paddles instead of the joy stick and I have made..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

172. [Arduino Step Sequencer](#)



I was wondering about on making a sequencer, a big 16 step sequencer was what I wanted to make. To it's full extension with lots of features including single leds for each step, midi input and output, etc. Then I realised that I should start from a..... Listed under: [Sound – Audio Projects](#)

173. [ASCII Table using Arduino](#)



Demonstrates the advanced serial printing functions by generating a table of characters and their ASCII values in decimal, hexadecimal, octal, and binary. For more on ASCII, see asciitable.com Circuit image developed using Fritzing. For more circuit examples, see the Fritzing project page None, but the Arduino has to..... Listed under: [How To – DIY – Projects](#), [Projects](#)

174. [A Simple and Very Easy Inverted Pendulum Balancing Robot](#)



Let's make a simple inverted balancing robot, and operate it. You need only half a day to do them, if you have an arduino and some materials. [a video of a robot you would make] introduction: After a few work with arduino, I have thought..... Listed under: [Robotics – Automation Projects](#)

175. [Wii Nunchuck Arduino Spirit Level](#)



Thanks to: <http://jeonlab.wordpress.com/> Since I have read an article on todobot blog, I bought a couple of Wii Nunchucks from ebay. I don't remember how much I paid for them, but it was much cheaper than buying the accelerometer breakout boards. With the nunchuck data reading..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

176. [Nama Instrument 1.0](#)



A motion sensing soft-circuit interface. The following instructable will guide you through the construction of your own personalized Nama Instrument. I'd love to hear some feedback. Hope you like it and it serves you somehow! :) Access <http://www.viraseres.com/nama> to download the project's open source files..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

177. [Wex, the One Eyed Watcher using an Arduino](#)



Wex detects your location with ultrasonic sensors then follows you with his one flashing eye. His red "heartbeat" can be seen through his mouth. Step 1: Parts needed include: Arduino Two ping ultrasonic sensors Futaba s3103 servo Radio Shack 276-0016 7 color led Radio Shack Listed under: [Projects](#), [Robotics – Automation Projects](#)

178. [OpenSquare – Write big with a RC car](#)



Hi there, You're going to transform any RC toy car into a big message writer that can be used to transform your city squares into witty messages, political statements or beautiful drawings, and for less than 20\$. The idea is to drop a trail of..... Listed under: [Car Projects](#)

179. [Building a Sentry Gun with Laser Trip Wire System and Arduino](#)



NOTE THIS PROJECT IS DONE BY A GROUP OF STUDENTS FROM SINGAPORE POLYTECHNIC. Concept: Trigger gun when laser is blocked by intruding object. Note: Tilting is included for expandability but not used in this project. Skill Level: Basic soldering and basic metal works Things You..... Listed under: [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

180. [I just wanna hold your hand](#)



Conducting energy through people to stimulate tangible public interactions <http://ijustwannaholdyourhand.com/> <http://vimeo.com/56350598> What did we do? We put together an Arduino, some wire, a Mac mini and a DLP Projector, then created a pair of hands out of aluminum. We additionally 3D printed some wall plates..... Listed under: [Game – Entertainment Projects](#)

181. [How to Control a Ton of RGB LEDs with Arduino & TLC5940](#)



This video explains how to use the 16 channel PWM controller TLC5940 The CODE: //Texas Instruments TLC 5940 with Arduino //www.kevindarrah.com #include <SPI.h>//Serial Peripheral Interface Library byte ch=0, chbit=0, spibit=0, spibyte=0;// variables used by tlc sub routine int SINData;//variable used to shift data to the..... Listed under: [LED Projects](#), [Projects](#), [PWM Projects](#)

182. [Forget Me Not- Remote Flower Watering](#)



Hi everyone, Lucy Matchett, Nicole Yi Messier, and Joselyn McDonald (Snax_and_Macs) made a remote flower-watering device so you can water your loved ones' plants when you water your own. We used Arduinos, a photoresistor, a servo, Arduino and Processing sketches, Spacebrew, and a little elbow..... Listed under: [Home Automation Projects](#)

183. [How to build an Arduino synth](#)



This is a super simple and easily customizable little synthesizer. This is my first time using the Arduino and also with acrylic, both I found very fun to work with though. This is also my first Instructables so hopefully I have explained this well enough..... Listed under: [How To – DIY – Projects, Projects](#)

184. [Palm Arduino V3](#)



I design and create this Palm Arduino V3 prototype PCB, as I was tired of recreating Arduino Compatible on perf board every time I prototyping a new project, especially when I had to spend a lot of time tracing the wiring to see that I..... Listed under: [Development Board – Kits Projects](#)

185. [Smart Distance Measuring Tape v2](#)



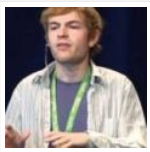
After posting up the v1 of my project many people requested an more detailed instructable. So i decided to start with a new one with a little upgrades to my previous instructable. What does this thing do? Well its quite simple it is just an..... Listed under: [Metering – Instrument Projects](#)

186. [2 Ways to Papercraft Stopmotion](#)



Good morning, please take a seat and watch that tofu wobble. This is not CGI, it is honest work of a papercraftsman. These are, in fact, 16 different papercubes that switch places in each frame. That technique is commonly known as replacement stopmotion. Problem: It only..... Listed under: [Game – Entertainment Projects](#)

187. [Building an Open Archival Scanning Robot Using Python and Arduino](#)



Project Gado is an initiative which aims to create an open-source archival scanning robot which small archives can purchase for \$500 and use to autonomously scan their photographic collections. This talk presents the Gado 2, a prototype... Listed under: [Internet – Ethernet – LAN Projects, Projects, Robotics – Automation Projects](#)

188. [Bird cage LED daylight simulation system](#)



Sometimes you get a chance to combine helping out your family with a nice hobby project.. In this case my father in law was looking for a lighting system for his bird breeding cages. A daylight simulation system to be exact. He asked me to..... Listed under: [Home Automation Projects, LED Projects](#)

189. [Arduino Solar Shield – A DIY solar source for your projects without waiting for PCBs](#)



This instructable is a basic version of Bley Joel's ("It's nine o'clock on a Saturday, the regular crowd shuffles in") Solar Shield, and it should work for most arduinos. I've tested it with SparkFun's Arduino Pro, and the new Leonardo. Myself and the other Solar..... Listed under: [How To – DIY – Projects, Projects, Solar energy projects](#)

190. [Audio Input to Arduino](#)



The easiest way to connect an audio signal to your arduino, is to build a simple 3 components (2 resistors plus cap) circuitry shown on the first drawings on right side. Disadvantage: there is no amplifier, and consequently sensitivity would be low, hardly enough to..... Listed under: [Projects, Sound – Audio Projects](#)

191. [Burn Arduino Bootloader on Atmega-328 TQFP and DIP chips on Breadboard](#)



Parts required (Hardware) Arduino Uno Board (1) TQFP 32 to DIP 28 Adapter (1) Link Atmega TQFP 32 pin chip (1) Atmega DIP 28 pin chip (1) 10K resistor (1) 16MHz crystal (1) 18pf – 22pf capacitor (2) Tact Switch (1) Jumper wires (few) LED..... Listed under: [Development Board – Kits Projects, Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

192. [How to make a LED 7-segment display with or without Arduino](#)



I'm going to show you how to make a 7 segment display with LEDs. Combine with Arduino to create countdown timers, simple text, and more. I like to make original projects. I searched the whole of instructables and didn't find one like this. In fact,..... Listed under: [LED Projects](#)

193. [Ariadne – a 1st person maze on a 16x2 LCD using Arduino](#)



This game is a homage to Ariadne, the maze-generator from Inception ☐ If you haven't seen the movie yet – watch this video again after you do (you can also watch it now – it's not a spoiler, it's just funnier for inception-vets). The nice thing about..... Listed under: [Game – Entertainment Project Ideas](#), [LCD Projects](#), [Projects](#)

194. [Arduino Control DC Motor via Bluetooth](#)



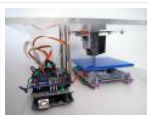
Hi guys, In this project we will control a DC motor with a smartphone via bluetooth. This project is great to learn more about: -DC motor -Interfacing Arduino with your smartphone -Bluetooth module -L293D you can visit my website for more electronic projects, interesting news..... Listed under: [Internet – Ethernet – LAN Projects](#), [Motor Projects](#), [Phone Projects](#), [Projects](#)

195. [Arduino Powered 3-zone thermostat](#)



I was looking at all those swoopy-zoomy internet connected and controllable thermostats. "Self," I told myself, "we should make one of those." He didn't seem all that excited about that – I mean, what do we know about hardware, firmware, electronics or HVAC? Well, now's..... Listed under: [Temperature Measurement Projects](#)

196. [DIY BioPrinter](#)



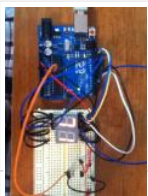
Bioprinting is printing with biological materials. Think of it as 3D printing, but with squishier ingredients! There's a lot of work being done at research labs and big companies like Organovo on print human tissues and human organs, with an eye towards drug testing, and..... Listed under: [How To – DIY – Projects](#)

197. [Simple RC car for beginners \(Android control over Bluetooth\)](#)



This is a simple project of Android Bluetooth Car with Bluetooth control. Arduino controller is used To control the car used Android-device with a built-in accelerometer. Tilt forward – car goes forward, tilt to the left – car turns to the left, tilt back – car..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Internet – Ethernet – LAN Projects](#)

198. [Arduino Digital 7-Segment Thermometer](#)



This a guide for an Arduino version, but I am working on a mini ATtiny84 version. Once I get that working, I will post another Instructable on how to make it. I'm sure you could make this same thermometer with an LM35 also, if that's..... Listed under: [Temperature Measurement Projects](#)

199. [Wi-Fi Body Scale with Arduino Board](#)



In this post we present the design of a scale that connects to the Internet and automatically sends weight info on a Google Document. The project is composed of Arduino Uno board Wi-Fi shield additional shield that we used to manage data collection and I/O with..... Listed under: [Internet – Ethernet – LAN Projects](#), [Medical – Health based Projects](#), [Projects](#)

200. [Playing Wave file using arduino](#)



This is a simple circuit to play wav files using arduino Nano V3.0 ,it consist from 4 buttons ,each one play specific wav file loaded to SD card. Step 1: Parts 1- Arduino Nano V3.0 (I used the chines version called Funduino Nano). 2- SD..... Listed under: [Sound – Audio Projects](#)

201. [Paint Pulse: Digital Water Marbling](#)



Paint Pulse is a project which seeks to build upon the water marbling crafts of Ebru and Suminagashi with digital behavioral additions. The idea is to design intricate, flowing patterns of paint directly on the surface of water which you can capture on the surface of paper. Expert..... Listed under: [Other Projects](#)

202. [Bubblesteen Bubble Machine using an Arduino](#)



Is it a 3D Spherical Atmosphere Encapsulated Phosphorous Printer? YES! Is it a CNC Anti Gravity transparent Orb Machine! YES! Its The Bubblesteen Bubble Machine! The spherical miracle that kids and cats have been waiting for. It comes complete with robotic edge detection(when a bubble hits an..... Listed under: [Game – Entertainment Projects, Projects](#)

203. [Cheap and Easy MP3 Shield for Arduino](#)



This is a follow up to an earlier Instructable for attaching the guts of a cheap clip MP3 player to an Arduino. <http://www.instructables.com/id/MP3-Interface-for-Arduino-Cheap-and-Easy/> The previous Instuctable showed how to use the Arduino to control all of the functions of the MP3 player: volume increase and decrease,..... Listed under: [Projects, Sound – Audio Projects](#)

204. [Charlieplexed Arduino 8x8 LED Grid Display Shield made and simulated in 123D Circuits](#)



edit: Wow, this won an awesome prize! Very many thanks guys! Charlieplexing (<http://wealoneonearth.blogspot.nl/2013/03/design-note-charlieplexing-led-matrices.html>) is a powerful method for driving a large number of LEDs from a relatively small amount of IO pin and without using any extra components. The technique makes use of the fact..... Listed under: [LED Projects](#)

205. [How to make a multi-layered acrylic and LED sculpture with variable lighting levels using Arduino](#)



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..... Listed under: [LED Projects, Projects](#)

206. [Remote control via GPRS/GSM SMS\(Arduino\)](#)



Remote control, especially when this no ethernet or Wifi in the outdoor, has been a very profound things in the past. When I was a child, I always image that I have an equipment which can control all home appliances. Now, this becomes a reality,with..... Listed under: [Home Automation Projects, Phone Projects](#)

207. [Fairly Simple Simon – the evolution of an Arduino game](#)



Important notice: Final (i.e. relevant) version is at the last step of this instructable. If you want to build a Simon, that is the recommended version. The rest of the steps show how this evolved from a bare-bones game for LED 13 and Serial (i.e..... Listed under: [Game – Entertainment Projects, Projects](#)

208. [LilyPad Arduino Totoro Plush with Umbrella](#)

Materials: For Totoro: Felt: 1 black, 3 grey, 1 white, 1 beige Needle Black Thread Poly-fil stuffing Cardstock Scissors Pins Pen or chalk DIY Totoro Plush Tutorial [HERE](#) Totoro Pattern [HERE](#) For Umbrella: 3 or 4 different types of fabric Felt: 1 grey, 1 black..... Listed under:



[Game – Entertainment Projects](#), [Home Automation Projects](#)

209. [Arduino GSM shield](#)



This is a very low cost and simple Arduino GSM and GPRS shield. We use the module SIMCom SIM900 . It's the cheaper module now available in the market. The module is not simple to mount by an hobbyist, so we use the Breakboard TDGSM_900..... Listed under: [Development Board – Kits Projects](#), [Phone Projects](#)

210. [Compact 3-in-1 Stripboard DIYduino with Integrated Sensor and L298N Motor Shield](#)



I am presenting a compact design of a stripboard Arduino board (DIYduino) that includes a 2A motor driver and has additionally the functionality of a sensor shield. The 2-channel version cost approximately \$29.43 and is more affordable compared to \$39.00 for a commercially available system..... Listed under: [Motor Projects](#), [Sensor – Transducer – Detector Projects](#)

211. [Dogduino:The Automatic Dog Feeder using Arduino](#)



Tired of having to find the dog food to feed the dog? Tired of having to get up early so your dog doesn't attack you for his food? Are just plain lazy? If you answered yes to any of these questions, this instructable is for..... Listed under: [Arduino Programmer Projects](#), [Projects](#), [Sound – Audio Project Ideas](#)

212. [Easy Programmable EL-Wire Wall Art Project with Cool-Neon using arduino](#)



Blank space, what to do?, what to do? Our hackerspace has a blank brick wall above the fireplace. It's been a cold winter so we've had a fair number of fires, but there is just something wrong about a blank brick wall. Well in this..... Listed under: [Home Automation Projects](#)

213. [The Arduino OctoSynth](#)



What is the OctoSynth you may ask? The octosynth is a polyphonic synthesizer that is able to produce eight Pulse Width Modulated tones that form together a musical scale. In English terms, it is a 8 key electronic organ that can play more than one..... Listed under: [Projects](#), [Sound – Audio Projects](#)

214. [Microcontrolled AC switch using arduino](#)



Always wanted to take total control of your electric appliances even without being at home? Well, thanks to this instructable you will be able to do that and much more. Some friendly suggestions before starting: Electricity is very dangerous, read and follow the "DANGER:" advices..... Listed under: [Home Automation Projects](#)

215. [Representing audio through vibration with Arduino](#)



This project functions to display sound using vibration. You plug your iPod, computer, or TV into it and get tactile feedback representing the loudness of the audio. It can help deaf people to experience sound. Stuff you need: Arduino USB Cable Computer running Arduino software..... Listed under: [Sound – Audio Projects](#)

216. [How to Build a Robot – The BeetleBot](#)



Welcome! I have been in robotics since I was a kid and I am very passionate by robotics. I learn BEAM robotics around 1997-98 and started building robots for a science faire project call "Insectroides" in 2001.
<http://robomaniac.solarbotics.net> (they change server and the website..... Listed under: [Robotics – Automation Projects](#)

217. [Psycho Scooter Scramble using an Arduino](#)



Psycho Scooter Scramble is a blind-driving electric wheelchair game. It consists of two riders, strapped into electric wheelchairs, and two blindfolded pilots, who remotely control the wheelchairs from the sidelines based on information given over headset by their driver. The basic mechanic is simple: players..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

218. [Mug Music: Turn Water Into an Instrument with Arduino and Chuck](#)



What if you could turn any conductive surface into an instrument? Like, say...a mug of water? Best of all, it's cheap; you'll only need \$1 worth of extra electrical components (not including the Arduino). For this project, my friend Harvest and I combined Disney's Touché..... Listed under: [Home Automation Projects](#)

219. [Making Robots Using Android and Arduino](#)



udar Muthu gives a talk on Making Robots Using Android and Arduino at Droidcon India 2011 by HasGeek. ... Listed under: [Arduino Android](#), [Projects](#), [Robotics – Automation Projects](#)

220. [PORTABLE FORCED-AIR COOLING UNIT](#)



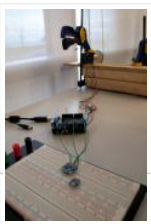
here is growing interest in the commercial production of high-value specialty fruit such as strawberries, blackberries, raspberries, and blueberries. Much of the small fruit grown in North Carolina is currently marketed through pick-your-own establishments or roadside stands. A strong demand for these small fruit items..... Listed under: [Home Automation Projects](#)

221. [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 and embedding..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

222. [A solar tracking automatic motorized window blind retrofit using Arduino](#)



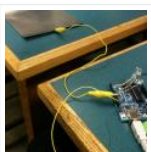
Buildings account for 20-40% of total energy use in developed countries. Window shades (or blinds) can help to reduce building energy use and improve visual comfort (i.e., reducing glare and increasing daylighting). A recent study showed that occupants are fairly inactive when operating manual roller..... Listed under: [Motor Projects](#)

223. [Flashlight tag using an Arduino board](#)



You probably know the game of flashlight-tag. You just run around in the dark on a campsite. You hold your flashlight and try to shine it on one of the other kids, without the other kids shining their lights on you. I wanted to make..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

224. [Fish Sensing](#)



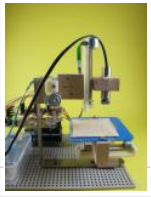
Overview Once again, my project was motivated by my curiosity to explore interesting and unfamiliar territory. I decided to see if I could make my own capacitive sensor and then use it in a project of some sort. After numerous fiascoes with Arduino and computers, I was..... Listed under: [Sensor – Transducer – Detector Projects](#)

225. [StopIt! LED Game \(powered by arduino\)](#)



This project was inspired by this video from YouTube and the Pendulum Challenge Kit from Makershed.com. Its a simple game consisting of five LED lights and one pushbutton switch. The LEDs flash in a sequence and the player must press the button when the middle..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

226. [Arduino 3-axis Mini Lazer Paper-Cutter](#)



Updated : 16/3 Add step 4, about using the stage. Updated : 18/3 Add photos (cutting vinyl adhesive sheet) Updated : 19/3 Add step 5, acting as pen plotter Updated : 20/3 Add laser engraving video (Wood) and photo Updated : 22/3 Add 2 drawings..... Listed under: [Home Automation Projects](#)

227. [Arduino: an easier way to work with seven segment displays](#)



Ever have trouble programming code for seven segment displays? Well they made the 4511 to make things a whole lot easier. What the 4511 does is takes a 4 digit binary input value (ones and zeros), and converts it to a decimal value on a..... Listed under: [LCD Projects](#), [Projects](#)

228. [Buddy the on-screen seal Robot](#)



I've made a video documentation of my midterm project for my 544 class. To keep it shorter, I didn't detail in the video that this is only a completed phase of a larger project: an autonomous robot seal. I was originally going to incorporate a..... Listed under: [Robotics – Automation Projects](#)

229. [Arduino Joystick Breadboard with LCD Output](#)



Want to be able to control a couple of servos with a thumb-joystick? But don't know where to start? I don't have servos, but I can put you on the right track on how to do stuff when you move the thumbstick around. This instructable..... Listed under: [Game – Entertainment Projects](#), [LCD Projects](#), [Projects](#)

230. [LilyPad Arduino Stuffed Fox Toy](#)



For a class on technology in libraries, I had to create a project that used the LilyPad Arduino, and I chose to create a stuffed animal that sings "Jesus Loves Me" while lights flash with the notes. I made a fox, but the pattern to..... Listed under: [Home Automation Projects](#)

231. [PCB on a Box using Arduino Board](#)



Sorry, but I hate cleaning windows, is one of my unfinished business as usual, but I had to do (at least) every time I wanted to etch a circuit board printed by traditional (and perhaps unorthodox) of stick it in cellophane and let natural light..... Listed under: [Development Board – Kits Project Ideas](#), [Projects](#)

232. [Arduino Candygrabber](#)



I've seen a lot of ways to communicate to arduino over the net, but none of them could handle pushing back the messages from arduino to the client(you) in real time and vice versa. In this instructable you will learn how to connect to your..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

233. [Arduino Hardware PWM for stepper motor drives](#)



With our new project, JustAddSharks, we are very keen to support the development of open source control software for laser cutters. We are more than happy for people to modify our laser cutters, replace the control system with something suitably open source and then let..... Listed under: [Motor Projects](#)

234. [How to build your very own Time Fountain using Arduino](#)



We have all seen the sweet videos on the tube! You know the magical water fountains that seems to “freeze” the water droplets in mid air, or even make them go backwards! I've been fascinated by these “magical” thingamabobs for quite some while now, and a..... Listed under: [Clock – Timer Projects](#), [How To – DIY – Projects](#)

235. [MMAE Graduate Robotics](#)



This page provides general information to students enrolled in the EML 6808 course, Analysis and Control of Robot Manipulators. Prerequisites for the course are: EML 4312C, EML 5271, or C.I. Kinematics and dynamics of multibody systems. The topics to be covered include: basic components of..... Listed under: [Robotics – Automation Projects](#)

236. [Control your motors with L293D and Arduino](#)



After long research and trial and error, I have came up to a new walkthrough regarding this nice chip, the L293D. Each project is one project and each one has its own unique power configurations, so you must be aware of the best battery choice..... Listed under: [Motor Projects](#), [Projects](#)

237. [Barista championship brewing stopwatch • Introduction using arduino](#)



Upon the needs of the (2014) World Barista Championship Rules and Regulations, an adequate and precise time measuring is needed during the competition. These measurements are usually done by regular stopwatches with all the benefits (ease of use, common availability) and drawbacks (two stopwatches needed..... Listed under: [Home Automation Projects](#)

238. [Arduino browser based remote control \(linux\)](#)



We have kids. I love them to bits but they keep hiding the remote control for the satellite and TV when they put the children's channels on. After this happening on a daily basis for several years, and after my darling wife allowing me to..... Listed under: [Home Automation Projects](#), [Projects](#)

239. [Tiich System – Prototype Final Report](#)



Introduction: Our main goal with the Tiich system is to design a teaching aid/tool which would replace the conventional whiteboard in a classroom environment. We want our system to be used as an electronic based white board, having all the written information easily be saved..... Listed under: [Sensor – Transducer – Detector Projects](#)

240. [Lilypad Arduino Rocket Ship Cape](#)



I am taking a Children and Technology course for my MLS this semester, and one of our assignments is to create a toy using the LilyPad Arduino development board. The LilyPad Arduino is used to create e-textiles that you can program to do various things..... Listed under: [Home Automation Projects](#)

241. [Web-controlled Twittering Roomba using an Arduino](#)



I wanted to see if I could operate my Roomba remotely and get it to report its status via Twitter while I was away from home. I also wanted to make the device independent of a computer. This is the solution I came up with..... Listed

under: [Internet – Ethernet – LAN Project Ideas](#), [Projects](#), [Robotics – Automation Projects](#)

242. [DIY Arduino Nebulophone Synth](#)



I originally wanted to purchase a Nebulophone but, my El-Cheapo price range didn't like the tag. I realized that I could program my own AtMega 328 by using ArduinoISP Then I found out that if the code was Arduino compatible, why not just use the..... Listed under: [How To – DIY – Projects](#), [Phone Projects](#), [Projects](#)

243. [Social Alarm Clock](#)



What it is: Sometimes we want to send special messages to the ones we love but they are sleeping. Soci Alarm Clock allows you to record a message from your browser and send to your beloved's alarm clock. They just have to put it near..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

244. [Cookies administrator box \[Electronics only\] using arduino](#)



At home the cookies disappear relatively fast. ¿Why? Well, principally because of me and my father. That's why my mother and my sister have to hide some to eat them later. It's embarrassing, I know, but it's because we are like "Oh, I want to..... Listed under: [Home Automation Projects](#)

245. [Arduino Fart-O-Meter](#)



OH NO! He didn't! Yes I did! My project is simple: Farting in a chair and sending the signal wirelessly to a panel that shows the intensity of the fart! Words of caution: Please do not force yourself to fart, you might shit in your..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

246. [One Touch Wardrobe using an Arduino](#)



I use Arduino Duemilanove With Motor Driver Shield Microcontroller ATmega168 Operating Voltage 5V Input Voltage (recommended) 7-12V Input Voltage (limits) 6-20V Digital I/O Pins 14 (of which 6 provide PWM output) Analog Input Pins 6 DC Current per I/O Pin 40 mA DC Current for..... Listed under: [Home Automation Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

247. [Controlling an LED using a switch](#)



Concepts So you know what a switch is, but what can you do with it? One of the uses of a switch is to tell the controller to activate/deactivate different components. In this case we are going to use the switch to turn on and..... Listed under: [LED Projects](#)

248. [Nursery Rhyme Hat using arduino](#)



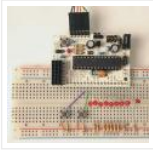
I created the Nursery Rhyme Hat for a class on youth and technology. I'm new to instructables and e-textiles, so please bear with me! This is the first time I have used the Lilypad Arduino or any kind of soft circuit technology, so my coding..... Listed under: [Home Automation Projects](#)

249. [Rainbow Mega Pong Clock using Arduino](#)



This is my take on the classic Pong clock with an RGB back light that changes every time the date is displayed. A big thanks to mrnick1234567 and his <http://www.instructables.com/id/Pong-Word-Clock/> I did want the light to change randomly through the day but it made a mess of..... Listed under: [Clock – Timer Projects](#), [Projects](#)

250. [Artist's Machine](#)



Tutorial 1 Part One Materials needed for tutorial Working BBB, RBBB, Arduino, or other Arduino compatible (BBB shown in photos) Solderless breadboard 22 gauge solid wire for use with breadboard 3 6mm momentary switches 8 LED's, any color 8 1k resistors, (470 ohm or 220..... Listed under: [Video – Camera – Imaging Projects](#)

251. [LilyPad Arduino e-Reader Case](#)



For a youth and technology class, we were assigned the creation of an Arduino LilyPad project. I liked the idea of connecting the LilyPad project to literacy, so I chose to make a Kindle case that would play music [Hedwig's Theme from the Harry Potter..... Listed under: [How To – DIY – Projects](#)

252. [NESBot: Arduino Powered Robot beating Super Mario Bros for the NES](#)



This guide will take you through the steps to build an NES playing robot You will need: An Arduino Duemilanove (other boards will probably work, but you will have to adjust the steps for your device) Working NES Console Super Mario Bros. (Note: this must..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Robotics – Automation Projects](#)

253. [Arduino V-Twin Flux Capacitor](#)



I SHALL CALL HIM " PEE-WEE " Personal Electronics Entertainment With Embedded Education. Basically a project that is fun and I learn a hole lot of stuff from it. . This project started out as just a small robot so I could learn more about..... Listed under: [Robotics – Automation Projects](#)

254. [Tweeting Cat Door using an Arduino](#)



Note: to see everything on one page, please go to: www.tweetingcatdoor.com After receiving many emails requesting Instructions and Kits for building the "Tweeting Cat Door ", I decided to make a version that is stand-alone and doesn't need a computer to be run and that..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

255. [The Photometric Camera and the CCDs](#)



The Photometric System The photometric camera for the SDSS consists of two TDI scanning CCD arrays, one, using 30 Tektronix/SITe 2048 x 2048 CCDs in a 5 by 6 array for five-color photometry, and the other using 24 2048 x 400 chips for astrometry and..... Listed under: [Video – Camera – Imaging Projects](#)

256. [Mechanical Led Matrix Display](#)



First of all we would like to thank everybody that helped organizing the 2nd edition of Arduino Jam, and especially the Jo3ri, who supplied us with some quite cool goodies and kept us safe during the weekend. (Video will come soon!) This project is a..... Listed under: [LCD Projects](#)

257. [Simple and Impressive Business Card Printer](#)



At some point most tinkerers and makers have to take the plunge into the real world – the world of suits and dividends and business cards. Without going completely "American Psycho" on your asses: business cards are important. In many ways they are our keys..... Listed under: [How To – DIY – Projects](#)

258. [Interactive Logo using an Arduino](#)



first of all we would like to thank the organisation and especially the main sponsor, Capgemini, which made all of this possible. This project is a contribution to the first belgian Arduino Jam (2012). During the Arduino Jam 2012, me and two other colleagues put our heads together..... Listed under: [LED Projects](#), [Projects](#)

259. [Vacuum form an Arduino](#)



If you have access to a vacuum former, or have constructed a DIY one to use, simply vacuum form a compact case to house your standalone electronics or arduino project. I made this at techshop! www.techshop.ws Step 1: Bill of materials Material to vacuum form..... Listed under: [How To – DIY – Projects](#), [Projects](#)

260. [Scratch 4 Arduino and Cybot Control \(Rover basics\)](#)



I've had a couple of Cybots as well as the Tom robots for a number of years – every so often they get dragged out and tinkered with. Now is this years turn. I have decided to try my hand at Arduino control of the..... Listed under: [Robotics – Automation Projects](#)

261. [\[Arduino\] Linefollower with photoresistors](#)



I built a linefollower robot that could be used in many different ways, and I summed up my project in some steps. To begin with, all you need is the following parts: Step 1: Robot frame Parts List: -Robot frame -Two wheels -Two DC motors..... Listed under: [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

262. [Gas Cap using an Arduino board](#)



Since you've gotten into electronics, haven't you wondered if there is a fart sensor out there? I sure did. I discovered that if you use a methane sensor, especially the MQ-4, even at very low concentrations, it reads farts. What if you combined that into..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

263. [CrEST](#)



Let's Set Up Your Arduino and Breadboard! Yep, for real: Let's Set Up Your Arduino and Breadboard! (use the instructions here, or flip to page 12 in your book) Step one: Dig through your kit and pull out your: Arduino Wooden Base Breadboard and Jumper..... Listed under: [Other Projects](#)

264. [New animatronic Eyes: Rock On!](#)



Someone had seen Peter Penguin or my Instructables on Animatronic Penguin Torso or Animatronic Eyes, and was working on a sculpture. He wanted to animate the sculpture when someone walked into the room and asked if I could do it. I thought about it for..... Listed under: [Game – Entertainment Projects](#)

265. [Multifunction Digital Thermometer using an Arduino](#)



This instructable will show you how to create a multifunction platform with a thermometer, chronograph (count up timer), count down timer, and light display. It is also intended to be a platform for other analog sensors or any other functions you can think of. Multifunction_Digital_Thermometer.zip71..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

266. [Twitter Controlled Pet Feeder using an Arduino](#)



A great project for busy pet owners. This Twitter-Controlled pet feeder automatically dispenses food in response to activity on your Twitter account. The project is controlled by an Arduino and uses the Arduino Ethernet shield to receive data from Twitter. I hacked this automatic Pet..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

267. [Singing Olaf Bag_\(Frozen\)](#)



For my children and technology class, we were challenged to make a product using a Lilypad Arduino. I am currently obsessed with the movie Frozen, so I decided to create something using one of the most iconic characters of the movie, Olaf. I used a..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

268. [Arduino MicroControllers, Card Readers, 3D Printing, GS4, Flip Camera!](#)



Episode 3 of AndroidTec, Formed by members thamind (Jon) chaostic (Lewis) & Computer Whiz (Jim) and introducing GuyCothal, who discusses about the amazing abilities of Arduino micro controller boards and how they can be used with Androids! Jason also made a guest appearance!... Listed under: [CNC Machines Projects](#), [Development Board – Kits Projects](#), [Memory – Storage Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

269. [Randomized Arduino Drum Machine](#)



I like drum machines. However they are not always the easiest to build. I wanted one that is: A. Simple, Yet Powerful-If it uses lots of components then it is too complicated B. Sound-It's not a a drum machine if it "beeps" C. Easily Modifiable-If..... Listed under: [Projects](#), [Sound – Audio Projects](#)

270. [Arduino Automatic Temperature& Humidity Controller for Pets](#)



Jack and Jose, a pair of beautiful hamster, has accompanied me over 100 days and nights. Their soft white fur makes me quiet and warm, especially when I coding in the winner. But the very tragic things happened in the last week. As the cold..... Listed under: [Temperature Measurement Projects](#)

271. [9 Volt battery adapter for Arduino](#)



This is super simple but very useful if you are in a hurry or just like to do things yourself and on the off chance you didn't know, this is about the easiest way to add mobile power to your Arduino. After looking at a..... Listed under: [Battery Projects](#)

272. [Touch Sensitive Audio Desk Trays- Arduino](#)



After having completed my first Arduino project (which can be found here) I wanted to try and create something that had more of a practical use. My idea behind this project was a way of aiding the visually impaired. By the end of this project..... Listed under: [Sensor – Transducer – Detector Projects](#)

273. [RGB lamp with Custom Moodlamp Library using Arduino](#)



I wanted to have an easily programmable RGB light to toss into a Jack 'O Lantern for Halloween. Who really wants a dull pumpkin in these days of pumpkin pimping madness. So I set to work building a pocket tin sized RGB lamp that could..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

274. [Homemade Magic Lamp Card Box using an Arduino](#)



A robot is a virtual or mechanical artificial agent. In practice, it is usually an electro-mechanical machine which is guided by computer or electronic programming, and is thus able to do tasks on its own (<http://en.wikipedia.org/wiki/Robot>). Well, today you will learn exactly how to build..... Listed under: [Home Automation Project Ideas](#), [How To – DIY – Projects](#), [Projects](#)

275. [High Five Camera](#)



Can I tell you a secret? I don't like handshakes. I really don't. Handshakes just make me feel dirty. It's too impersonal. It's a gesture with no soul and reeks of a corporate entity. Why must we limit ourselves to this one boring interaction? Of..... Listed under: [Game – Entertainment Projects](#), [Video – Camera – Imaging Projects](#)

276. [Twitter Mention Mood Light using Arduino](#)



Twitter Mention Mood Light — a mood light that alerts you when @username is mentioned on Twitter. This is a simple intro in how to control your Arduino from Twitter. If you are new to Arduino Twitter / Arduino Processing Twitter / Arduino Python Twitter..... Listed under: [Internet – Ethernet – LAN Projects](#)

277. [Arduino makes 2D Level](#)



This is a project for Arduino to make a 2D Level, aimed at beginners. Arduino draws a circle on an LED Matrix that moves around according to readings from a 2D Accelerometer. Objectives: * Learn how to draw a circle using simple Maths * Learn..... Listed under: [CNC Machines Projects](#), [LED Projects](#), [Projects](#)

278. [CSCE 236 Embedded Systems](#)



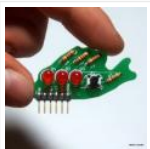
1 Instructions This is a group assignment for you to work on during class. You only need to hand in one copy of this, but make sure that the names of all of your group members are on this sheet to receive credit. Complete all of..... Listed under: [Other Projects](#)

279. [Arduino Etch-A-Sketch Clock](#)



I've seen various Arduino driven Etch-A-Sketch clocks on the web , but none with instructions (is it some kind of secret? Is someone planning on making it rich in the Etch-A-Sketch Clock global market?). I've used Arduino, but never used stepper motors, real time clocks,..... Listed under: [Clock – Timer Projects](#)

280. [Blinky Fish using an Arduino](#)



Assembly instructions for an add-on board for the Arduino. **** FOR INSTRUCTIONS FOR MARCH 2013, KICKSTARTER PROJECT GO HERE <http://www.instructables.com/id/Blinky-Fish-Kickstarter-Project/> ***** It has some LED's and a button. It connects to digital pins 9-13 and ground. My hope is that this will be useful to people that want to..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

281. [Second degree equation solver with Arduino](#)



This instructable is about making sort of a calculator that enables the user by using an analog 12-digit keyboard and 4 buttons to input the a,b,c variables into a equation and get the solution for it if there is any.(well if u don't know what..... Listed under: [Calculator Projects](#), [LCD Projects](#), [Projects](#)

282. [Home Alert: Arduino + Cloud Messaging On A Large Display](#)



In the age of mobile phones, you would expect that people would be responsive to your call 24/7. Or... not. Once my wife gets home, the phone stays buried in her hand bag, or its battery is flat. We don't have a land line. Calling..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

283. [Simple Arduino Book clock](#)



This book clock was inspired by florinc and the impressive selection of clocks like the wise clock3 etc <http://www.instructables.com/member/florinc/> My girlfriend likes reading books and there is always a pile of them around the house, however to be able to build this for her birthday..... Listed under: [Clock – Timer Projects](#), [Projects](#)

284. [DNA Melting Part 2: Lock-in Amplifier and Temperature Control](#)



In Part 2 of the DNA Melting Lab you will make revisions to allow greater control of your instrument and to reduce the effects of noise. You will add a pulse-width modulation (PWM) heater controller to enable careful control of the heating and cooling rates..... Listed under: [Temperature Measurement Projects](#)

285. [Control Any Circuit With a TV Remote \(and an Arduino\)](#)



Most of the buttons on a remote control are never used. So why not use them to control appliances and other electronics around your house. In this project, I am going to show you how to use an Arduino to decode the signal from your..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#)

286. [ElectroFried electronic shock game using Arduino](#)



The ElectroFried is a game with a shocking fun level. ElectroFried is developed for the Global Game Jam 2011 in Antwerp in design center the winkelhaak. The Team Jekkos/ Cinezaster decided to make a simple game based on colliding electrons. With a nasty side effect, a..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

287. [Reginald: a UDP surveillance bot; control via the Internet using Arduino](#)



Reginald started from the simple, yet bold idea to control a bot from anywhere in the world with a live video feed. What I wasn't expecting was for Reginald to develop into an involved, feature rich project. With my work and money, I was able..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Robotics – Automation Projects](#)

288. [Hacking a Powerglove using Arduino](#)



First of all lets get this out of the way... It's so bad This is going to be showing how to hack the Nintendo Powerglove. By hack I mean tap into the flex sensors and use the buttons and d pad and add anything you want. In..... Listed under: [Game – Entertainment Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

289. [Chur-Robot](#)



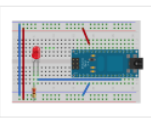
Electrical Components The electrical components are the five motors and their associated circuits, the buttons, and the thermocouple. The Circuit We are controlling two stepper motors, three servos, a thermocouple, and a set of buttons using an Arduino. Our final circuit diagram looks like this:..... Listed under: [Robotics – Automation Projects](#)

290. [Build a Complete AVR System and Play Mastermind using Arduino](#)



The game Mastermind has been around a long time, and I remember getting a board version with colored pegs when I was a kid. I love this game, as it is solvable simply by pure logic. One player (or a computer/microcontroller) chooses a sequence of..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

291. [Sensor Arduino Lab 2013](#)



This lab most recently revamped by Edgar Berdahl and Wendy Ju. Chris Carlson, possibly Bill Verplank, and others have likely contributed. For this lab you need your Satellite CCRMA kit, a laptop computer with Ethernet adaptor to program it, and some headphones with a mini..... Listed under: [Sensor – Transducer – Detector Projects](#)

292. [Universal Remote Laser Tag](#)



Blast away your friends for hours on end with this custom laser tag system. Who needs to pay to play in an arena when you can make your very own game? Best of all, no special equipment is required, because the "guns" are regular universal..... Listed under: [Game – Entertainment Projects](#)

293. [Arduino from Evil Mad Scientist ATmegaxx8 Target Board](#)



I have been making my own Arduino's on strip-board but recently bought some of the Evil Mad Scientist ATmegaxx8 Target Boards. While they weren't designed as an Arduino board they are perfect to use as they have: – places for the crystal and capacitors (XTL..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

294. [Computer Controlled Aiming Method](#)



Design: The rotational motion produced by the motor is transformed into linear motion through the use of a standard 1/2"-13 threaded rod as a lead screw. To account for angular misalignments in the rod the motor is not attached to it directly, but rather through..... Listed under: [CNC Machines Projects](#)

295. [Arduino based Etch A Sketch Laser Cutter](#)



In this project I take an Arduino Mini Pro connect it to a custom made Etch A Sketch panel and use it to control a Blacknose laser cutter. The result is hours of crazy laser cutting fun, which we will be taking round most of..... Listed under: [CNC Machines Projects](#)

296. [Roll-A-Way Rover using an Arduino](#)



Age Group: 13 – 18 My experimental rover that I built from a Roll-A-Way alarm clock that was on clearance for \$5. It can be controlled via the numeric section of a keyboard when the serial port is connected to a computer or a Wii..... Listed under: [Clock – Timer Projects](#), [Projects](#), [Robotics – Automation Projects](#)

297. [The Pick and Place Machine for Surface Mount Devices](#)



¿What questions need to be resolved? ¿How to recognize the origin of the table? — The table is the piece of the machine where you place your board, and is critical for the pick and place operation. I've thinking in a limit switch system. Will..... Listed under: [Other Projects](#)

298. [Beginner Arduino](#)



The Arduino is a pocket-sized computer (also called a “microcontroller”) that you can program and use to control circuits. It interacts with the outside world through sensors, leds, motors, speakers... even the internet; this makes it a flexible platform for lots of creative projects. Some..... Listed under: [Development Board – Kits Projects](#)

299. [Design of small scale smart home system](#)



DESIGN OF A SMALL SCALE SMART HOME SYSTEM Gabriel Johnson and Chance Kelsoe INTRODUCTION Design of a smart home system with a LabView/Arduino interface In this project we made use of an Arduino Duemilanove and LabView to design an easy to use graphical interface to represent..... Listed under: [Home Automation Projects](#)

300. [Arduino WiFi Garage Door Opener](#)



Ever come home in the rain to find the door locked and your keys elsewhere? No? Lucky you then! For those who have had such an experience or never wish to, this project will let you open your garage door with nay but a smartphone/tablet/laptop/WiFi-thing..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

301. [Auduino Lo-fi Synth for Arduino](#)



Hello again. Today I'd like to show you the Auduino. That's right, the Auduino is a Lo-fi Granular Synth that works on arduino. It uses some analog pins and a digital pin. I had loads of fun making and playing with it so I'd love..... Listed under: [Projects](#), [Sound – Audio Projects](#)

302. [Ambient Etch-a-Sketch](#)



We built a pseudo Etch-A-Sketch emulator that modifies its appearance based on the user's environment – the temperature and light conditions. Instead of only drawing horizontal and vertical lines, we can draw curved lines by changing the slope of the current line to be drawn..... Listed under: [Game – Entertainment Projects](#)

303. [The iDial – Critical Making Personal Identity Augmentation Device](#)



In this critical making project, we will be making a personal iDial, which will give you, the wearer, the ability to reflect on your personal identity in a private space, and then spatially and temporally dislocate your 'private self' into public conversation! You might be..... Listed under: [Sensor – Transducer – Detector Projects](#)

304. [Using a laser pointer and a matrix LED as a two-dimensional input device](#)



Laser Command is a game which I build using a 8x8 matrix LED and an Arduino Mini. This game was developed as a "sample" class project in S10-05833 Gadgets, Sensors and Activity Recognition in HCI. The class is taught by Scott Hudson at Carnegie Mellon..... Listed under: [LED Projects](#)

305. [Arduino Model Rocket Launcher for 3D Printed Rockets](#)



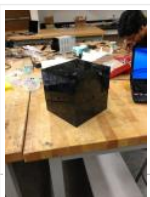
When I was a kid, I loved playing with Estes Rockets, so I decided to get back into the hobby but using all of my maker skizzls. So here's a really cool Arduino Rocket Launcher launching 3D Printed rockets from my MakerBot Rep2! Enjoy! Fully..... Listed under: [Game – Entertainment Projects](#)

306. [LED Super Mario Piranha Plant using an Arduino](#)



We are going to make an Arduino control LED Piranha Plant :) Step 1: What you'll need Arduino Uno 9 Resistors 9 LEDs – Red, Yellow, Orange is best since they need less amperage PIR sensor 9v battery arduino wall plug (you'll be cutting the connection..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

307. [THE CUBE: A 3D Vibration Jigsaw Puzzle](#)



"THE CUBE" is a 3D jigsaw puzzle, with the added feature that a puzzle piece vibrates for approximately a second when it is placed in the correct place in the puzzle. We accomplished this by building an electrical design such that a circuit delivering power..... Listed under: [Game – Entertainment Projects](#)

308. [DIY handmade Hexapod with arduino \(Hexdrake\)](#)



Hello, I'm David and in this instructable I'll show how I made this hexapod whose name is Hexdrake. Since I was 16 I became interested in electronic and later in robotics. After getting some level and programming skills using arduino I decided to build a..... Listed under: [How To – DIY – Projects](#), [Robotics – Automation Projects](#)

309. [Relay Motor Control Circuit](#)



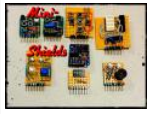
Connect the Arduino outputs with 5 volt power to the relay coils. Use a separate 9 or 12 volt battery for powering the motor. Connect the 9 or 12 volt power to the relay contacts and the motor. Be sure to avoid connecting the 9..... Listed under: [Motor Projects](#)

310. [NFC Computer Unlocker](#)



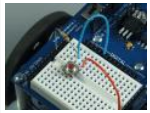
Quit pulling your hair out over incorrect passwords. Using an Arduino Leonardo and Adafruit's NFC shield, you can unlock your computer with an NFC card. The Arduino reads the NFC card's unique identifier and once it receives the correct one, it uses the Arduino Leonardo's..... Listed under: [Arduino Programmer Projects](#), [RFID – NFC projects](#)

311. [Arduino Mini-Shields](#)



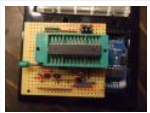
This is a set of simple, small form-factor, mini-shields that I created almost by accident. As I made more and more of them, I realized that they could be really useful. What started out as a way to use some spare parts, turned into a..... Listed under: [Development Board – Kits Projects](#)

312. [Making a program start using a switch](#)



Connecting the Switch To connect the switch to the Arduino, you will need the switch, two jumper wires, and a 10kΩ (brown-black-orange) resistor. Once you have all the required parts, you will need to wire the switch to the Arduino using the breadboard. NOTE: The..... Listed under: [Arduino Programmer Projects](#)

313. [ArduinoISP Bootloader/Programmer Combination Shield](#)



I started recently to get interested in building Arduino based robots. Since it is a traumatizing process to take any creation apart, I am opting to keep mine alive and kicking. To lower the cost of this strategy it seems obvious to switch from the..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

314. [Arduino Light Following Robot](#)



Overview This instructable will use three photoresistors (light dependent resistors) and an Arduino to control the motion of a robot. Any common robot chassis can be used for the robot. The light sensors will be mounted on the left side, right side and front of..... Listed under: [Robotics – Automation Projects](#)

315. [A wireless voice-controllable household system](#)



Motivation top We design a smart home control system which allow people control their home devices by voice command at home. This is a wireless, voice control system. People could control almost all the facilities at home including lights, fans or even back ground music..... Listed under: [Home Automation Projects](#)

316. [Arduino desktop application on java in LAN](#)



Description: here we have created an java desktop application using neatbeans. this application turn on led on arduino. this application also work in your LAN. Step 1: Assigning MAC and IP to Arduino board UPLOAD THIS PROGRAM TO ARDUINO. ALSO CHANGE YOUR MAC AND IP..... Listed under: [RTOS – OS Projects](#)

317. [Magpi: The Micro Arduino Gaming Platform Interface](#)



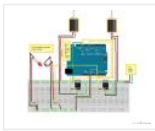
Here's a retro hand-held gaming console I built with my son. It uses an Arduino micro-controller, a small LCD screen, push-buttons, a 3D printed case and home-grown "PC" board. It's really pretty easy to solder and put together. My son & I wrote two games..... Listed under: [Game – Entertainment Projects](#)

318. [Arduino Double Dice Jewelry Box w/ Secret Switch](#)



This was a fun project. Push the red button, watch the dice "ROLL " then stop on a random roll most every time. The hart of this game is the ATMEL ATmega328P on a stand alone board. Powered by 4 AA NiMD batteries. Can you..... Listed under: [Arduino Programmer Projects](#), [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

319. [D.I.Y Pneumatic Linear Actuators](#)



The D.I.Y. movement has many implications for the future of creativity and commerce. The impact of inventing what one needs rather than purchasing it promises to be empowering, fun, and inspirational. In a long term effort to develop dynamic computer controlled surfaces, I began exploring..... Listed under: [How To – DIY – Projects](#)

320. [Flashing LED Top Tube Pad for your bike using Arduino](#)



Well it's that time of year again. That's right, the sun is going down early, and it's getting hard to avoid logging some miles on your bike after dark. You likely have great lights front and rear already, but what about on the sides of..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

321. [Sugarcube MIDI Controller](#)



This project is a portable, Arduino-powered, grid-based MIDI controller that boots up into a variety of apps to do lots of things with sound. It has 16 backlit buttons, used as both inputs and outputs to give the controller some visual feedback. 2 potentiometers give..... Listed under: [LED Projects](#)

322. [Fun Shway Display using an Arduino](#)



Build a nice looking LCD display with buttons for mounting on the wall. Key Features: 2 line by 24 character LCD display controlled with 4 I/O's (74HC164). Back light control of LCD. 6 Buttons connected to 1 analog pin. LM335 and LM334Z temp sensors. Adjustable..... Listed under: [LCD Projects](#), [Projects](#)

323. [Build Your Own Sourcemeter](#)



This is an explanation and set of building plans for a USB-powered sourcemeter with a personal computer interface. The sourcemeter uses an open-source Arduino microprocessor and the user interface uses the open-source Processing environment. The sourcemeter was designed as a homemade current-voltage (IV) tester to measure the IV..... Listed under: [Metering – Instrument Projects](#)

324. [Build a Controllable Coffee Roaster from an Air Popcorn Popper](#)



I have a passion for coffee. I also have a passion for electrical engineering. Why not combine them? This Instructable describes how I transformed a hot air popcorn popper into a completely controllable coffee roaster! Follow these instructions to re-purpose and hack your West Bend..... Listed under: [Home Automation Projects](#)

325. [Xtreme Buzzwire-4-2 Arduino Jam project](#)



This project is part of the Arduino Jam 2012. First of all we would like to thank the organization and especially the main sponsor, Capgemini, which made all of this possible. At the Arduino Jam, during the brainstormsession, we came with the idea to make a classic..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

326. [ESM – ExternalSerialMonitor](#)



Sometimes I needed an external serial monitor like the Serial Monitor in the Arduino Editor, to see what is going on. So I made one. The first picture shows an example how could be it designed. For the ESM I used an Atmel Atmega328 (based..... Listed under: [LCD Projects](#)

327. [Arduino USB](#)



LOG: Made a correction/modification Step 3 and added a picture step 5. So many Arduino users have RBBBs(Really Bare Bones Board (Arduino)) or Anarduinos or Boarduinos that could use a USB interface to program and power them but don't want to spend \$15-20 for a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

328. [Control TV functions using Analog input and Arduino](#)



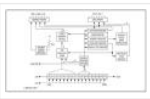
Have you ever wanted to use a good old knob to control your TV volume instead of repeated button pushing? Or make it controlled by light? Do you want your remote to be replaced by an awesome arduino and let it do the hard work..... Listed under: [Home Automation Projects](#), [Projects](#), [Radio Projects](#)

329. [DC Motor Control Using an H-Bridge using arduino](#)



Overview In this tutorial, you'll learn how to control a DC motor's direction using an H-bridge. To reverse a DC motor, you need to be able to reverse the direction of the current in the motor. The easiest way to do this is using an..... Listed under: [Motor Projects](#)

330. [Digital Clock](#)



Introduction This design project utilizes an Arduino MEGA2560 with an ATMEGA1280-16AU microcontroller to create a digital clock. The clock will be able to save time when disconnected from power, and it can be powered from a USB connection or from the wall outlet. The clock..... Listed under: [Clock – Timer Projects](#)

331. [AVR Programming Tutorial](#)



This tutorial introduces programming for AVR microcontrollers. It uses the ATmega328p found on Arduino boards, but works with straight AVR C and a bare microcontroller. It covers the basic information you need to get started, whether or not you've used Arduino or other microcontrollers previously..... Listed under: [Arduino Programmer Projects](#)

332. [Sound Reactive LED Strip](#)



THERE MAY BE 9 STEPS BUT I PROMISE THIS ONE IS QUICK AND EASY! In this Instructable I will be showing you how to create a light reactive LED system. In this clip, I used a single color LED strip, but you you can use..... Listed under: [LED Projects](#), [Sound – Audio Projects](#)

333. [Power your Arduino with a Hand-Cranked Battery](#)



If you've ever wanted to power your Arduino or AVR from a battery for development testing (batteries have different power delivery qualities than, say, transformed AC or even a regulated wall wart in DC) testing but were tired of going through batteries (Hey, I admit..... Listed under: [Battery Projects](#), [Projects](#)

334. [Heat-Seeking Desk Fan \(using Arduino\)](#)



Summary: The following is a step by step guide on how to make a Heat-Seeking Desk Fan from an Arduino microcontroller, a computer fan, a servo, and an infrared temperature sensor. The device scans the room periodically, automatically pointing itself in the hottest direction (ideally towards..... Listed under: [Home Automation Projects](#)

335. [Proximity sensing mouse wheel scroller using Arduino](#)



List of tools: 1. Exacto 2. Arduino Nano / USB chord (Mini-B) 3. Dremel / Drill 4. Paper & Pencil 5. Sharp IR Sensor (2Y0A21 F) 6. Hot glue gun 7. Solder gun / Solder 8. A small mirror Ok so you might ask, why..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

336. [Make a Desktop Tamagotchi](#)



One day I was sitting behind my desk at work and I got that weird need to build something, after looking around for a bit I got my eye on an LED matrix and that sparked an idea in my head : "I WANNA MAKE..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

337. [Twitter Enabled Text to Speech using an Arduino](#)



Let the world know what you're eating for breakfast with an 80's style vocal synthesizer! This project uses an Arduino to send your Twitter stream to a voice generator chip called the SpeakJet. The setup that I use here can also be extended to other..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Sound – Audio Projects](#)

338. [Microcontrollers: The Basics](#)



Different kinds of computers are designed for different purposes. The computer at the heart of your laptop is optimized for different purposes than the one in your phone or the one in your mouse. The simplest computers are those that are designed to take in/out..... Listed under: [Development Board – Kits Projects](#)

339. [Arduino Lilypad Slipper Automatic Foot Massager](#)



I made a little automatic slipper foot massager with the Lilypad Arduino and some of the Lilypad Vibe Boards for the actual massager. The sensor it uses is a Lilypad Accelerometer that I'm only using as a basic tilt sensor. Essentially it detects when the..... Listed under: [Home Automation Projects](#), [Medical – Health based Projects](#)

340. [Holiday Dreidel Light Display for Roof using Arduino](#)



This Instructable details how to build a holiday dreidel display for your roof. It uses coat hanger wire, rope light, and an Arduino controller to control a fading demo mode and a "spin" mode. In the demo mode, the symbols faded in and out, going..... Listed under: [Home Automation Projects](#), [Projects](#)

341. [John Doherty's Lab Notebook](#)



January 9, 2013 (1 hour): Met as a team after class to discuss preliminary project proposal. January 10, 2013 (2 hours): Met as a team after class to finish writing preliminary project proposal. WEEK 01 SUMMARY Accomplishments: Submitted preliminary project proposal. Weekly Work Total: 3..... Listed under: [Internet – Ethernet – LAN Projects](#)

342. [Arduino Robot V2 \(Fast\) Also Voice Controlled](#)



This is my second version of my arduino robot after "Build your first robot". My Second version is slightly complicated as compared to my first one but offers better features. In this instructable I'm going to show you how to build a fast robot which..... Listed under: [Robotics – Automation Projects](#)

343. [Breathalyzer Microphone using an Arduino](#)



The breathalyzer microphone is a system for the inconspicuous collection of blood-alcohol content level data sets. In other words, you can measure a person's sobriety with a device, that for all intents and purposes, looks no different than a standard microphone. This tool adds new..... Listed under: [Medical – Health based Projects](#), [Projects](#), [Sound – Audio Projects](#)

344. [PowerBox: The Safe AC Power Meter](#)



Introduction We designed a device that measures and graphs various aspects of AC power and acts as a computer-controlled remote switch. With the recent push for green energy and environmental friendliness, more and more people are concerned about their personal daily power usage. We developed..... Listed under: [Motor Projects](#)

345. [Make an Oscilloscope Using the SainSmart Mega2560 with the TFT LCD shield and the 3.5 "color touch screen](#)



This instructable will show you how to build a portable Touch Screen Oscilloscope for less than 40 U\$! The oscilloscope is one of the most powerful electronic instruments that is available to electronics hobbyist, experimenters, and engineers. It is mainly used to measure time-varying signals..... Listed under: [LCD Projects](#), [Medical – Health based Projects](#)

346. [Robot shield for Arduino Board](#)



The idea behind this post is to bring together some robot designs and transform them into 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: [Projects](#), [Robotics – Automation Projects](#)

347. [Small DC Motor Pwm Speed Controller](#)



The photo depicts a speed controller, wired on a breadboard which allows you to vary the resistance in the potentiometer in order to, in effect, control the speed of the small DC motor. The big picture problem is creating an efficient PWM motor controller that..... Listed under: [Motor Projects](#)

348. [Capacitive Sensing + Open Frameworks + SPACEBREW](#)



This is a step-by-step on how to connect Arduino to OpenFrameworks using Spacebrew. More specifically our project focuses on the awesomeness of Capacitive Sensing to alter OF projections to create an awesome tactile experience! What the process will involve: Arduino -> Processing -> SpaceBrew ->..... Listed under: [Sensor – Transducer – Detector Projects](#)

349. [Arduino Personal Soundtrack Hoodie](#)



This was inspired by Raj's personal soundtrack shirt in Big Bang Theory S3, E16, "The Excelsior Acquisition". You can now buy them online but it's much more fun to make your own and it's possible now that buttons designed for use in electronic clothing are..... Listed under: [Home Automation Projects](#), [Projects](#), [Sound – Audio Projects](#)

350. [Programming an ATtiny w/ Arduino 1.0](#)



This tutorial shows you how to program an ATtiny45, ATtiny85, ATtiny44 or ATtiny84 microcontroller using the Arduino software. These are small, cheap (\$2-3) microcontrollers that are convenient for running simple programs. The ATtiny45 and ATtiny85 have eight legs and are almost identical, except that the..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

351. [Charliexploded LED Clock – Arduino](#)



One of my clocks stopped working – and it happened to be a clock my wife likes a lot. Went to the repair shop and the guy said that he didn't have the spare parts and could not repair this. So – I thought –..... Listed under: [Clock – Timer Projects](#), [LED Projects](#)

352. [Star Jar Geiger counter triggered LED decoration using Arduino](#)



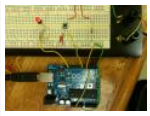
This instructable builds on top of the Geiger counter triggered LED decorations I made last year. This version powers the Geiger counter from the Arduino (itself now powered from a mains adaptor, so I no longer need to keep feeding them batteries) and the LEDs..... Listed under: [Calculator Projects](#), [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

353. [Arduino Cat Detector SD Card Logger](#)



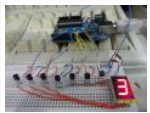
I used: an Arduino Uno a Parallax PIR Motion Sensor and a Seed Studio SD Card Shield Arduino, shield, sd card, logging shield, storage, logger Check out This instructable on PIRs in case you didn't know what it is: <http://www.instructables.com/id/PIR-Motion-Sensor-Tutorial/> Step 1: Connect your PIR..... Listed under: [Memory – Storage Projects](#), [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#)

354. [Physical Computing with Arduino](#)



Digital pins 1-7 are generally used as input pins and Digital pins 8-13 are used as output pins. Digital pins 9-11 can be used as analog output pins. That is, they can send they can send signal of variable voltage. 5/15/2012 Getting started with Arduino..... Listed under: [Calculator Projects](#)

355. [Pi...In A Single Digit using an Arduino](#)



Ah yes. It has been a long time since I posted an Instructable...well here goes: It has been a while since I have been otivated to write an 'ible. During this idle time I have been writing, rewriting and editing code as well as designing..... Listed under: [LED Projects](#), [Projects](#)

356. [Printer to vinyl cutter hack](#)



Vinyl cutters are used in the sign writing industry, and are great for making stickers, signs and graphics. I would like to thank Instructable members silverjimmy and Groover for their fantastic laser cutter instructables, without which I would not of been able to complete this..... Listed under: [CNC Machines Projects](#)

357. [Auto reset stuff with Arduino](#)



Have a problem with my wireless bridge. It works for a some time then, despite it saying everything it fine, refuses to connect wirelessly. All it needs is to be turned off and on again and it works again (for a while!). I decided that..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

358. [Automatically water your small indoor plant using Arduino + pump](#)



Have you ever wanted a little plant to brighten up your desk or home, but you're afraid that you'll forget to water it? Fear no longer! Using an Arduino, a scavenged wall-wart, and a peristaltic pump, you can set up your plant to be watered..... Listed under: [Home Automation Projects](#), [Motor Projects](#)

359. [Solar Module](#)



This page maintains the necessary documentation (hardware & software) for recreating the Solar Hardware Module ("Solar Module") using either Arduino UNO or TI Launchpad. Prior to creating the solar module, we performed several experiments using a custom built solar panel fixture. For more information on..... Listed under: [Solar energy projects](#)

360. [Arduino Vocal Effects Box](#)



This Arduino-powered vocal effects box pitch shifts and distorts incoming audio signals to produce a wide variety of vocal effects. This project is my first experiment with real-time digital signal processing using Arduino. It samples an incoming microphone signal at a rate of about 40kHz, manipulates..... Listed under: [Projects](#), [Sound – Audio Projects](#)

361. [Momentary Switch as Digital Sensor](#)



In many cases switches are just switches. They directly control the flow of electricity to an appliance, flashlight or mains-voltage lamp. An example of this is the switch on the wall in your living room. In many cases nowadays however, switches are digital sensors, meaning..... Listed under: [Sensor – Transducer – Detector Projects](#)

362. [Simple and reasonably accurate pedometer system](#)



Our final project for ECE 4760 provides a simple but effective exercise monitoring system of the user's walk or run. With an increase of the number of health conscious individuals hoping to remain fit, we designed a system that allows the user to keep track..... Listed under: [Metering – Instrument Projects](#)

363. [Smart Thermal + Arduino](#)



Many times we are faced with a heat containing coffee and don't know if the fluid is at the proper temperature and it is impossible to know just by looking at the bottle ended up losing time with a coffee that is cold and we..... Listed under: [Temperature Measurement Projects](#)

364. [Bacon Alarm Clock – Arduino](#)



This is a project I came up with that was inspired by my love for bacon! This is an alarm clock that is designed to wake you up with the smell of bacon. With the help of an arduino the alarm clock will already have..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

365. [Arduino controlled webcam panner](#)



This is an instructable to show how to mount a webcam on a servo in a meccano frame and controlling it via an Arduino board. For a while now I was looking to do something more than blinking LEDs with my Arduino. This idea came..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Video – Camera – Imaging Projects](#)

366. [Robotic Arm Trifecta \(Science Olympiad\)](#)



In the fall of 2012, we set out to construct a robotic arm for the Science Olympiad competition that would be capable of performing the required set of tasks efficiently and to perfection. This instructable will attempt to guide you through the thought processes used..... Listed under: [Robotics – Automation Projects](#)

367. [Arduino FIO Tutorial](#)



Overview The Arduino Fio is a microcontroller board based on the ATmega328P (datasheet) runs at 3.3V and 8 MHz. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 8 analog inputs, an on-board resonator, a reset button, and holes..... Listed under: [Battery Projects](#)

368. [The Motivational Moody Workout T-Shirt using an Arduino](#)



I call this project "The Motivational Moody Workout T-Shirt". Basically what I wanted to do was a t-shirt that makes you want to get out in the open and work out. To make that work, I sewed a LilyPad arduino onto a t-shirt and..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

369. [Self-Balancing Robot](#)



First of all I want to apologize for my English, if you don't understand something, please, ask. I know that a self-balancing robot is not new, but when i started this project i found a lot of information, but never in the same site, i..... Listed under: [Robotics – Automation Projects](#)

370. [Interface and Application Programming](#)



My sensors have not been functioning too well with my computer, as every time I try to connect the hello.light or hello.mic boards and run python through my terminal, I either get the error “resource busy”, or my computer completely freezes! Therefore, I decided to..... Listed under: [Arduino Programmer Projects](#)

371. [Arduino+Stepper Motor Camera Slider](#)



This is a trial and error / design and development process which I followed in developing a camera slider for creating time-lapse video clips on my DSLR camera. The idea came from using standard Aluminium extrusions I have available at hardware stores, and create a..... Listed under: [Motor Projects](#), [Video – Camera – Imaging Projects](#)

372. [Urban Sensing Networks using Arduino](#)



Often government data sets available to us online are taken from major nearby metropolitan areas or infrastructural centers. With an easy to follow introduction to new softwares and technologies the “urban sensor kit” allows anyone to obtain location specific information and share that information with..... Listed under: [Sensor – Transducer – Detector Projects](#)

373. [FINAL Touch sensor with arduino](#)



The tutorials we used. <http://www.instructables.com/id/Touche-for-Arduino-Advanced-touch-sensing/?ALLSTEPS> <http://www.instructables.com/id/Calm-Relaxed-Interaction-Plant-Plus-1/?ALLSTEPS> Download arduino software and the processing software. From their respective websites. Processing.org arduino.cc All of the supplies we used: (we didn't include the water bottle as a sensing object, and used an inductor instead of a coil) Arduino..... Listed under: [Sensor – Transducer – Detector Projects](#)

374. [RFID touch screen Automated Bar – Barduino v2.0 with Facebook Integration!](#)



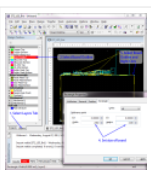
Got an Arduino? Like parties / alcohol? Can't be bothered to make your own bar quality cocktails? Make a Barduino! Its back, with new features in v2.0: Facebook integration – Facebook registration Page to track and graph drink consumption Touchscreen with gesture support RFID user..... Listed under: [Internet – Ethernet – LAN Projects](#), [RFID – NFC projects](#), [Sensor – Transducer – Detector Projects](#)

375. [Stripboard Arduino shield for programming ATtiny45 and ATtiny85](#)



This instructable (entered in the Arduino Challenge contest – you can vote for it above) shows how to make a stripboard Arduino shield for programming either ATtiny45 or ATtiny85 microcontrollers with an Arduino, as per these tutorials from the High-Low Tech group at MIT: Arduino..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

376. [Schematic Entry and PCB layout](#)



In this lab you will be using a program to enter a schematic and lay out a printed circuit board (PCB) that will then be manufactured. At this point of the semester you don't know enough to design your own circuit, so I am giving..... Listed under: [How To – DIY – Projects](#)

377. [Binguino: An Arduino-based Bingo Number Generator](#)

Bingo! My granddaughter enjoys playing Bingo, so I went out and bought her a cheap set at a local discount store. The cards and the markers are fine, but the spinner disk for selecting the numbers is a piece of garbage. It flew apart about..... Listed under: [Clock – Timer Projects](#), [Projects](#)



378. [Intuitive Vibrotactile Feedback Educational Feedback Devices](#)



The goal of the project is to come up with an affordable yet generic vibrotactile feedback device to be used for educational purposes. A chemistry learning environment is developed to demonstrate a specific application of our device, in which users can manipulate ions and feel..... Listed under: [Internet – Ethernet – LAN Projects](#)

379. [Bird Proof Squirrel Feeder & Solar Powered Camera using Arduino](#)



The Solar Powered-Bird Proof Squirrel Feeder w\ Camera will allow squirrels to retrieve seeds, nuts, and corn kernels without worrying about those pesky birds stealing all their food. While your squirrel enjoys the spoils of your feeder, you'll enjoy lovely digital photos to entertain and..... Listed under: [Home Automation Projects](#), [Video – Camera – Imaging Projects](#)

380. [Arduino mood lighting](#)



This instructable will show you how to build a rgb lighting system with an arduino. You can also control it with an ipod/iphone/ipad using touchOSC. In my previous instructable I showed how to control one rgb led in this you can control heaps with a single chip..... Listed under: [LED Projects](#), [Projects](#)

381. [Combination Circuit for Digital and Analog](#)



Goals Understand the Analog Signals and use your knowledge to program your Arduino and let it play music Get known of the Seven-segment display and use your Arduino Board together with the Shift Register to control the number. In the Second Week you will be..... Listed under: [CNC Machines Projects](#)

382. [LilyPad Arduino Sensor Demo Mat](#)



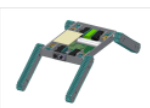
This tutorial shows you how to create a sensor demo mat for the LilyPad Arduino. I wanted a place where I could experiment with the different sensors, but also something that I could use to show examples of what can be done without constantly uploading..... Listed under: [Sensor – Transducer – Detector Projects](#)

383. [Build Your Own BARBOT using Arduino](#)



Ever wanted a robotic liquor server? I purchased a Lynxmotion robotic arm last year and an Arduino (deci) to play around with. I had it serial controlled with a joystick and it was a great way to start in robotics. More recently I wanted to..... Listed under: [Robotics – Automation Projects](#)

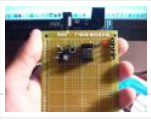
384. [Highly maneuverable search and rescue robot](#)



Finalized Prototype Shown below is the finalized prototype. The purpose of the prototype was to demonstrate the feasibility of a small, highly maneuverable search and rescue robot. As such, the completed prototype was successful. Capabilities include a ground speed of 10 inches per second, battery..... Listed under: [Medical – Health based Projects](#), [Robotics – Automation Projects](#)

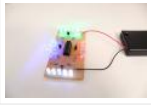
385. [How to make and use the arduino as an Isp for an ATtiny85](#)

In this instructable I will show you how you can make your own Atting programming shield for the arduino and then use the arduino as a programmer. Usually If you don't have a shield you can do a breadboard version to program the ATtiny. (Step1)..... Listed under:



[Arduino Programmer Projects, Projects](#)

386. [DIY Super Bright LED Skate Lights](#)



You might remember my first set of lights that I put on my dad's skates. Well those weren't bright enough and they were a lot of work because I didn't know how to make PCBs. In this i'ble I'll cover how to make your own..... Listed under: [LED Projects](#)

387. [Interactive LED box](#)



Project Goal The goal of this project is to create a low resolution display of graphical art that interacts with people who are handling it. My basic idea is to create such a "magic box" with a LED matrix on one side. It should be..... Listed under: [LED Projects](#)

388. [Brushless Gimbal with Arduino](#)



This is a Spring 2014 Electronics project at Pomona College created by Andreas Biekert and Jonah Grubb. Thanks to Professor Dwight Whitaker, Tony Grigsby and the Pomona Physics Department. Our goal with this project was to create a 2 axis brushless gimbal controlled solely by..... Listed under: [Video – Camera – Imaging Projects](#)

389. [Biometric Sensing Computer Mouse](#)



In the past five weeks, we have considered and built three projects, ranging from: optical sensing, electromyography (EMG), and galvanic skin response detection. Initially, our project was using an optical sensor and EMG to detect finger movement for applications, such as: playing piano and Morse..... Listed under: [Sensor – Transducer – Detector Projects](#)

390. [BabyTrackr](#)



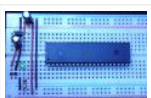
I found a pressure sensor matrix that we could adapt to a pressure sensor patch on the stomach of the women in labor on this webpage (see below). It gives instructions how to build a pressure sensor by using two pieces of cloth and conductive..... Listed under: [Medical – Health based Projects](#)

391. [Custom Arduino Shield and Sensors](#)



Overview: This instructable will construct a series of custom sensor modules and an Arduino shield. Such modules are available from many different sources, but fans of the Instructables website would probably find satisfaction in making their own. Each module will be a set size of..... Listed under: [Sensor – Transducer – Detector Projects](#)

392. [How To Make The Easiest Breadboard Arduino-Compatible Sanguino-Equivalent](#)



Okay so the Title is indeed a bit of a mouthful lol ! Ive been needing to mess around with a desire for MORE Input/Output pins than the Arduino UNO and nowadays the UNO uses an Atmega328 microcontroller, & its limited to only about 20..... Listed under: [Development Board – Kits Projects](#)

393. [Head Mouse – Game controller or disability aid using Arduino](#)



My kids wanted to have a head controlled mouse for playing Minecraft – they wanted to move their heads and have the field of view move. I decided that was a challenge I couldn't resist, so I decided to build a movement controlled

mouse using..... Listed under: [Game – Entertainment Projects](#), [Medical – Health based Projects](#)

394. [Build Your Own Arduino Web server](#)



The Arduino Ethernet Shield is a sweet toy!!! Everybody, from the beginner who got their Arduino yesterday and hasn't slept since, to the hard core pro who learned c as a second language, can learn how to use the Ethernet Shield and have lots of..... Listed under: [Arduino Programmer Projects](#)

395. [Connect 4 Binary Clock using an Arduino](#)



Welcome ladies and gents! As an entrepreneur, I'm always looking for great projects to share. Myself and two other classmates recently put together a project for our Master's of Engineering program in Technical Entrepreneurship, and we're thrilled to share our vision with you. Remember that..... Listed under: [Clock – Timer Projects](#), [Projects](#)

396. [Speech-controlled Game Boy Advance using arduino](#)



This is a project I worked on for my electronics class at Pomona College. Thanks to Professor Dwight Whitaker and Tony Grigsby for their help and guidance throughout this project, and credit to Jonathan Wong for the idea for this project! Also, here's a list..... Listed under: [Game – Entertainment Projects](#)

397. [Sign Language Translator using Arduino](#)



First of all, this project is not finished. We're still trying to improve and fix some problems. Right now, we're only able to translate letters from "A" to "E". The program still have problems while identifying those letters, the values for each of them match..... Listed under: [Other Projects](#), [Projects](#)

398. [AC Dimmer Circuit: 46](#)



Green wire is zero_cross signal, goes to Arduino digital pin 2 in. Yellow wire is light dimming signal, comes from Arduino digital pin 11. The LED on board should dim or fade along with the AC light source. Fading will not work until AC power..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

399. [Extra inputs for Arduino with a keyboard](#)



The Arduino is perhaps the coolest thing on earth. There are many types, the Uno, the Mega, the Pro, the Pro Mini, etc. etc. But one thing that often can be a problem is that you only have a limited number of inputs and outputs..... Listed under: [Game – Entertainment Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

400. [Motion Sensing Digital Camera & Alarm using Arduino](#)



Welcome to my instructable on how to make an Arduino-controlled motion sensing camera and alarm! The motivation behind this project, which I worked on in my electronics class at Pomona College, was the need to keep away varmints (particularly raccoons) that were digging up my..... Listed under: [Sensor – Transducer – Detector Projects](#), [Video – Camera – Imaging Projects](#)

401. [Easy Electronics Organization using Arduino](#)



Like many other electronic enthusiasts I need to have a constant supply of materials in order for us to keep building, hacking, or just playing around with electronics. However as probably any of us have come to realize we need a lot of space and..... Listed under: [Home Automation Projects](#)

402. [A Planar 2-DOF Haptic Device for Exploring Gravitational Fields](#)



For our project, we built a planar, 2 degree-of-freedom haptic device for educational use. The design is based on a 5-bar mechanism. We wanted to build a device that would have the versatility to teach various concepts, but would still be relatively affordable (as the..... Listed under: [Sensor – Transducer – Detector Projects](#)

403. [Make a Musical Bench using Arduino](#)



The Musical Bench is an exhibit which makes music when people touch, kiss, or hold hands. It uses a micro-controller to detect changes in resistance, via the copper armrests, and plays high or low notes depending on how much current flows through you and a..... Listed under: [Sound – Audio Projects](#)

404. [Portable Haptics System Hardware](#)



Mobile Phone There is a wide selection of mobile phones on the market. For our development, we chose Nokia 6210 Navigator due to its ability to run Java, accompanied by Bluetooth communication, and its small form factor. The phone mainly acts as a remote control..... Listed under: [Sensor – Transducer – Detector Projects](#)

405. [Robo-Mobile – A Homemade Bluetooth Robot using arduino](#)



Background This robot is one I built to learn. Before this project I did get my feet wet with a few small scale Arduino projects like an ultrasonic robot, (that would move backwards until it was a certain distance away from the wall,) and I..... Listed under: [Robotics – Automation Projects](#)

406. [Knockdown Warning Indicator \(Redux\)](#)



This week I continued developing a device that warns of the potential of a knockdown – the process by which an over-canvased sailing ship is laid over on her beam-ends during a squall. The potential for sinking at this point is high, especially if there..... Listed under: [Security – Safety Projects](#), [Sensor – Transducer – Detector Projects](#)

407. [Smartphone controlled Arduino tank using Annikken Andee](#)



Hi guys, I am Robin, one of the developers of Annikken Andee. Just a few weeks back we were invited to be a part of Arduino Day Singapore 2014. On the day of the event, we showcased a missile-firing lego-crushing smartphone controlled Tank built using..... Listed under: [Phone Projects](#)

408. [Bitcoin Price Ticker \(almost\) from scratch using Arduino as ISP](#)



Hello everyone! I decided to create this tutorial on how to make a Bitcoin Price Ticker. Well, this is only a prototype and I will make a smaller edition with a more pleasant design and some other features at a later time. However, this serves..... Listed under: [Internet – Ethernet – LAN Projects](#)

409. [Machine Design](#)



The assignment for this week is to automate the machine assembled two weeks ago. For this Roxanna milled the Arduino's shield for controlling the steppers, but Alejandro found that we haven't all the components for stuffing, specially the A3982 – stepper motor driver, so as..... Listed under: [How To – DIY – Projects](#)

410. [Tracking Cat Eyes via Kinect using Arduino](#)

This instructable was made as part of the CS graduate course “Tangible Interactive Computing” at the University of Maryland, College Park taught by Professor Jon Froehlich. The course focused on exploring the materiality of interactive computing and, in the words of



MIT Professor Hiroshii Ishii,..... Listed under: [Game – Entertainment Projects](#)

411. [Simon Game](#)



High Level Description: For part 3 of the lab, our group decided to build a “Simon” game. Our game setup uses 3 buttons and 4 LEDs. Each button corresponds to one LED and the 4th LED is used to indicate an error. The game starts..... Listed under: [Game – Entertainment Projects](#)

412. [Musical Exercise: Workout Shirt MP3 Player Powered by Exercise using Arduino](#)



People love listening to music while exercising. Music provides the motivation needed for individuals to keep exerting energy and get in shape. So, because people enjoy listening to music while exercising, what if an MP3 player only played an individual's music while they are active?..... Listed under: [Game – Entertainment Projects](#), [Sound – Audio Projects](#)

413. [ANDROID BASED ROBOTICS](#)



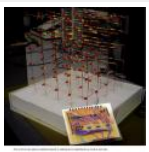
While the field of robotics is continuously expanding at a remarkable rate and better performing robots are created every year, robotics still remains out of reach for many students and researchers. The main reasons for this difficulty are the high complexity of the hardware and..... Listed under: [Robotics – Automation Projects](#)

414. [Bird Feeder Monitor using Arduino](#)



This is a project to monitor the number of birds that visit my bird feeder, as well as record the amount of time spent feeding. I used an Arduino Yún and a capacitive touch sensor, Adafruit CAP1188, to detect and record the birds feeding. On..... Listed under: [Home Automation Projects](#)

415. [5x5x5 LED Cube – Orientation Independent 3D Display](#)



Introduction Our project, in one sentence, is an orientation independent 3D LED display. We were inspired by various videos on youtube of similar cubes but also by the idea of creating an interactive 3-dimensional display. We built a 5x5x5 LED cube display and controller..... Listed under: [LED Projects](#)

416. [Talking Arduino Heart Rate Monitor](#)



My partner and I wanted to make heart rate monitor that does more than simply measure a user's heart rate. Our heart rate monitor talks! Each button gives a verbal description of its functionality and makes the measurements visible on the screen. This monitor will..... Listed under: [Medical – Health based Projects](#)

417. [SoundBox](#)



Group #1 Avneesh Sarwate (asarwate@) John Subosits (subosits@) Joe Turchiano (jturchia@) Kuni Nagakura (nagakura@) Yaared Al-Mehairi (kylal@) Ideas and Sketches Squat Coach – Detects the depth of your squats and assesses your form. Flex sensor is positioned to run up the back of knee..... Listed under: [Sound – Audio Projects](#)

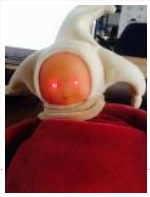
418. [Digital I/O with Arduino Boards](#)



Readings in Physical Computing Ch 6. pgs 87-136 (this week and next week) Ch 7: Serial Communication [137-143; 149-150; 153-161] Before the lab You should have already successfully installed the Arduino environment on your laptop, built the LED circuit, and successfully load/run the “blink” program to..... Listed under: [Development Board – Kits](#)

[Projects](#)

419. [The Creepy Doll using Arduino](#)



Here at Mikamai, we often organise events and hackathons. After the last hackathon, someone left an old doll, and it was kinda creepy... so why not make it even creepier? I decided to put two red LEDs instead of the eyes, and a vibration sensor..... Listed under: [Game – Entertainment Projects](#)

420. [Capture the image of a falling object](#)



The aim of this project is to create a setup to capture the image of a falling object or any object in motion at a precise time using a DSLR and Arduino microcontroller. It can be done in many different ways, but the method I..... Listed under: [Video – Camera – Imaging Projects](#)

421. [Catchin' time using Arduino](#)



This tutorial will show you how to build an interactive toy for children. This toy wants to give a boost to children to move and play with friends at home or in a park, instead of watching TV and playing videogames. Catchin' time is a..... Listed under: [Game – Entertainment Projects](#)

422. [Sleep n' Tweet](#)



Step 1: The Sleep n' Tweet Now I am lucky enough to work at the greatest company in the world as a University of Waterloo, co-op student. It might not even be a company you've heard of yet. They're named Upverter and we are trying..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

423. [Password access with arduino](#)



~~ The complete kit for this tutorial is now for sale at www.razvantech.com Get one! ~~ This instructable will show you how to make a pass-code lock system using the Arduino Mega board. When you type the right code, an LED lights up on the servo..... Listed under: [Security – Safety Projects](#)

424. [Make your pet dishes tweet](#)



You give your pets everything: Food, water, a home, toys, and love. Why not give them a twitter account? This project allows you to monitor your pets' eating habits and receive alerts when their supplies are low. It's also a cute, fun way to learn..... Listed under: [Internet – Ethernet – LAN Projects](#)

425. [Animatronic Green-Winged Macaw Papercraft](#)



Hello everybody! This macaw was part of a work of biology at the college of my daughter, who was attempting to educate people not to buy wild animals. This beautiful animal, natural tropical forests of South America, is highly coveted by smugglers. In captivity, unlikely..... Listed under: [Game – Entertainment Projects](#)

426. [AlarmingTweet](#)



This project will add tweeting capabilities to the GE 45142 Choice-Alert Wireless Control Center Alarm system. The alarm system allows you to connect up to 16 different sensors across 4 zones and with the addition of the Arduino powered AlarmingTweet you can enable it to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

427. [Maze Solving Robot](#)



In this instructable I will be showing you how to build a maze solving robot. This is actually my 3rd attempt at making one. The first was a complete failure. The second was alright at finding the end of the maze, but it could not..... Listed under: [Robotics – Automation Projects](#)

428. [USB Mouse Made Out Of A Wii Nunchuck](#)



This instructable will describe how to convert a Nintendo Wii Nunchuck controller into a USB 2-button mouse using a Teensy USB. The Teensy USB is a very user-friendly development board that can be programmed in an Arduino environment. The Teensy USB development board and necessary..... Listed under: [Interfacing\(USB – RS232 – I2c - ISP\) Projects](#)

429. [Reddit Controller, USB Upvote/Downvote button](#)



Not too long ago I saw the “Awesome Button” video on the Make Magazine podcast. In the video Matt Richardson shows how you can take a Teensy development board and turn it into a simple USB keyboard. In his example everytime a button is pressed..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

430. [Electric Turtle Robot](#)



Be sure to check out my new instructable , the ‘little Tank!’ Really nice tracked design complete with cut files! update: I’ve had so much response on this instructable, thanks to all. If you end up making one, please let me know! I’d love to..... Listed under: [Robotics – Automation Projects](#)

431. [LED Microcontroller Debug Module](#)



When it comes to debugging a microcontroller circuit, there aren’t a lot of simple options. Since a microcontroller circuit might have multiple things going on at the same time, measuring voltages with a DMM isn’t an option. Using an computerized In-Circuit-Debugger solution is expensive and..... Listed under: [Development Board – Kits Projects](#), [LED Projects](#)

432. [Wise Clock 3 – Arduino-based geeky alarm clock](#)



Wise Clock 3 is an open-source, highly hackable geeky clock that shows a lot more than the time. Its main function is to display user-editable quotations retrieved from an SD card (like those used in photo cameras). In addition, Wise Clock 3 can show the..... Listed under: [Clock – Timer Projects](#)

433. [Giant Leaf Planetarium](#)



Have you ever wanted a mini-planetarium for your room? Well now you can! This instructable will help you create a fairly portable planetarium leaf that you can put over a bed, a couch, or anywhere else in your house. All you need is an IKEA..... Listed under: [Game – Entertainment Projects](#)

434. [Universal Gripper – Syringe Powered](#)



The “universal gripper” developed by researchers from Cornell University, the University of Chicago, and iRobot inspired me to create my own version. The YouTube video is quite impressive. The gripper can form around very asymmetrical and smooth shapes and still pick up the object. I..... Listed under: [Robotics – Automation Projects](#)

435. [Arduino Project Board](#)



The Arduino Project Board is basically a board to transfer your ATMEGA168/328 to when you have completed your project and no longer need to use the Arduino as a development board. Simply transfer the programmed chip from the Arduino board to the Arduino project board..... Listed under: [Development Board – Kits Projects](#)

436. [Turn your Arduino Uno into an USB-HID-Mididevice](#)



While building an Arduino Uno based Midi-Controller for Ableton Live, I came across the HIDUINO project (<http://code.google.com/p/hiduino/>). It allows you to turn your Arduino Uno (or any other device using an AVR-USB chipset like the 8u2) into a driverless HID/Midi device. It's much..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sound – Audio Projects](#)

437. [Rave Rover – Mobile Dance Stage](#)



Rave Rover was designed and built to be a portable dance platform for parties, raves, and any other trouble we can get into! I will go into as much detail as I can explaining the entire build process, and where to find parts and other..... Listed under: [Game – Entertainment Projects](#)

438. [How to hack EEG toys with arduino](#)



i had heard a few years back about the ability of hooking up toy EEGs so you can interface them with your computer. I was reminded of this for a project i wanted to do for a class (instructable coming soon ;-)), and i also..... Listed under: [Game – Entertainment Projects](#)

439. [Building a Portal Turret with motion controlled audio and lighting](#)



In this Instructable I'm going to show you how I went about building my very own life size talking Portal Turret from start to finish. This is a fairly in depth project that will cover every stage of construction and all the techniques I used..... Listed under: [Sound – Audio Projects](#)

440. [Pan/Tilt Motion System for Control Education](#)



Pan/Tilt Motion System for Control Education Ricardo G. Sanfelice, University of Arizona Project supported by Mathworks Website developed by Colin Lasharr, University of Arizona Contents Introduction Instructions for Building the System Installation Instructions The Arduino Board Simulink Initial Parameter Identification System Identification for Zenith..... Listed under: [Arduino Programmer Projects](#)

441. [Hack the Nabaztag using Arduino](#)



This is a Nabaztag – Armenian, apparently, for “hare”. It’s an adorable bunny rabbit packed with sensors and communication devices.... and it’s completely unusable. There’s people who wrote some interesting software to hack it, and I applaud them: however, I could never actually get my..... Listed under: [Game – Entertainment Projects](#), [Robotics – Automation Projects](#)

442. [DIY Parking Sensor using Arduino](#)



The last time I was home visiting my parents I noticed bumper imprints caused by my mother suburban on the stairs leading up from the garage. Their garage it turns out is just barely long enough to fit their gigantic vehicles. So I decided it..... Listed under: [Car Projects](#), [How To – DIY – Projects](#), [Sensor – Transducer – Detector Projects](#)

443. [Using Mozzi Library with 5 potentiometers using arduino](#)

Getting Started The goal of this project was to create filters and controls to that can manipulate sound that is being generated through an Arduino. Normally Arduino can only generate simple tones that are not useful if you are trying to achieve complex sounds and..... Listed under: [Metering – Instrument Projects](#)



444. [Arduino Quilting Machine](#)



The Arduino Quilting Machine combines the mechanics of a sewing machine, CNC technology and Arduino as an operating system. The project is designed to translate a vector file from a computer into G-code and subsequently into Arduino language which then moves the machine. The project..... Listed under: [CNC Machines Projects](#)

445. [Diy Xbox wireless controller adapter for Pc](#)



This instructable will go over the steps to connect a RF module from an RROD xbox to your computer so you can use a wireless controller with your computer. *****DISCLAIMER***** DONT TRY THIS IF YOU DONT HAVE ANY EXPERIENCE WITH ELECTRONICS/SOLDERING OR COMPUTERS IM NOT..... Listed under: [How To – DIY – Projects](#), [Internet – Ethernet – LAN Projects](#)

446. [Make a digital “meow” from analog clock using arduino](#)



Is your analog clock just not doing enough stuff? Want to do digital things with an analog clock? This tutorial will show you how to make a Kit Cat Clock play a “meow” sound clip, at precise time intervals, using the Atmega 328P-PU via the..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

447. [DIY Telepresence Documentation](#)



This is the documentation page for the Spring 2012 DIY Telepresence project. Here you will find schematics, software, and guides for the robot. The goal of the project was to design a low-cost, easy to build telepresence robot. Some of the features include: Segway based..... Listed under: [Robotics – Automation Projects](#)

448. [Total Recall- Arduino Simon Says on steroids](#)



Total Recall is a Simon based game for the Arduino. Your basic Arduino Simon Game consists of 4 buttons, 4 LEDs, an Arduino, some code and maybe a speaker and sound effects. Total Recall takes things a step further by adding an LCD display and..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

449. [Voice Activated LED Lighting with Arduino](#)



This project is an extension to the Speech Recognition with Arduino by leandro4b (<http://www.instructables.com/id/Speech-Recognition...>). However, instead of using 3 separate colored LEDs, I used a multicolor 4-channel RGBW LED Emitter. I had the opportunity of working at LED Engin last summer, which is why I..... Listed under: [LED Projects](#)

450. [The Wondrous Weather Cube](#)



We created an Internet-enabled companion cube for your computer, which displays different kinds of information by glowing red or green. Depending on its orientation, and which labeled face is oriented upwards, our companion cube displays either stock readings of the NASDAQ or the outside temperature..... Listed under: [Home Automation Projects](#)

451. [Laser Pointer Switch using arduino](#)



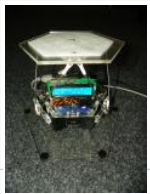
This instructable will detail how to make a switch that uses an arduino to sample light. When the light sample reaches a threshold it will trigger a relay that can be used to turn on/off a small appliance (light, radio, fan, etc...) The parts for..... Listed under: [Home Automation Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

452. [FabECG: a simple electrocardiogram board](#)



Technologies for rudimentary physiological sensing are getting cheaper and easier to implement. Consider, for instance, these non-contact sensors from UCSD which can be used to take an EEG through hair or an ECG through a T-shirt! One can even make a simple oscilloscope to digitize,..... Listed under: [Medical – Health based Projects](#)

453. [Arduino controlled Rotary Stewart Platform](#)



This instructable is about building a Rotary Stewart Platform. It allows to position its moving platform in six degrees of freedom. This specific platform is designed to be able to position a DSLR or any other digital camera. This version of Stewart Platform uses instead..... Listed under: [Video – Camera – Imaging Projects](#)

454. [DC motors Relays](#)



Let's get the math over right off the bat. There are a LOT of attempts to describe how Ohm's Law works, each one nerdier than the last. Here' one I like. Warning: SFWBN (safe for work but nerdy). V = voltage measured in volts -..... Listed under: [Motor Projects](#)

455. [ATTiny85 POV Display using arduino](#)



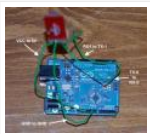
The first time I saw a POV (Persistence Of Vision) display was on a show called FAQ on TV. The POV display consisted of an oscillating shaft with 6 LED's mounted on the end of the shaft. Since then I have always wanted to make..... Listed under: [LED Projects](#)

456. [making art interactive](#)



Unfortunately, due to my need to reclaim my arduino and breadboards, we don't have photographic documentation of our circuit. However, the structure of it was rather self-evident. Although we arranged the circuit in a such a way that we could program other functions, but we..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Phone Projects](#)

457. [Control Keyboard & Mouse Android app via Arduino](#)



This instructable will show you how to control your computer's keyboard and mouse with an Android app via bluetooth to an Arduino BACKGROUND Ever wanted to control your computer's mouse/keyboard functionality without having to actually sit in front of it? I do all the time..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

458. [Augmented Water using arduino](#)



The Augmented Water device helps you save water by turning red after one Liter. The device, built by @tamberg during a water hackathon, is made from an Arduino, a flow sensor and coloured LED pixels. Video <https://www.flickr.com/photos/tamberg/14346321456/> (thanks kiilo) In case you want to build..... Listed under: [Home Automation Projects](#)

459. [Blind Maze Navigation using 2-DOF Haptic Joystick](#)

The domain of haptics has immense potential as a technology to assist visually-impaired individuals with their navigation of the physical world. In this project, we sought to develop a 2-DOF haptic joystick to provide force-feedback to a user as she attempts to



navigate a maze..... Listed under: [Game – Entertainment Projects](#)

460. [Temperature Displayed on 4 Digit 7 segment using Arduino](#)



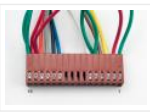
In this project I'll display the temperature in a 4 digit 7 segment display (common anode). The sensor is the cheapest you can find so actually the temperature changes pretty easily which makes the display to show always different temperatures. But the idea is to..... Listed under: [Projects](#), [Temperature Measurement Projects](#)

461. [A compact, Arduino altimeter for RC Planes](#)



Please vote for this Instructable if you think it deserves it! Thanks! The Ultimate Altimeter is a super-compact, Arduino controlled altimeter capable of measuring the altitude with an accuracy of 0.3 meters, and saving the highest and lowest values it has measured. It is powered..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

462. [Wiring Harness for the LCD Panel](#)



Assembly of the Female Connector Block The wiring harness has a male and female end. The gender of electrical and mechanical parts is described on this Wikipedia page. The header pins that are soldered into the circuit board for the LCD panel are plugged into..... Listed under: [LCD Projects](#)

463. [Android Accessories Made Easy With Arduino](#)



The Android Open Accessory Protocol makes it possible for you to create custom Arduino-based accessories for your Android phone or tablet. Attend this session to learn how to get started, the hardware & software required and how Handbag makes development easier. Content will be useful..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

464. [Huge Arduino Animatronic LED Eyeball using arduino](#)



I'm currently in the process of making a Halloween contraption that has a few components that are worth documenting. The Huge Arduino Animatronic LED Eyeball is one of them. Background Most animatronic eyeball projects that I found were more or less life-size. They were usually..... Listed under: [LED Projects](#)

465. [Brain-Computer Interface](#)



Introduction Our goal was to build a brain-computer interface using an AVR microcontroller. We decided that the least invasive way of measuring brain waves would be using electroencephalography (EEG) to record microvolt-range potential differences across locations on the user's scalp. In order to accomplish this,..... Listed under: [Medical – Health based Projects](#)

466. [Happy Androids with Arduino Video instructions](#)



Arduino + Android Normally smartphone events are tightly coupled to your phone device itself. When your cell phone is ringing, your phone speaker plays a ringtone. When you get a new text message, your phone displays it on its screen. Wouldn't it be thrilling to..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

467. [Hack an old iPod using an Android and an Arduino](#)

This tutorial shows you how to use an Arduino to turn that old dusty music player into a Bluetooth controlled docking station. Even if it has a cracked screen or a dead battery it can still be used. The following instructions will show you how..... Listed under: [Arduino Android](#)



468. [Finalized Prototype](#)



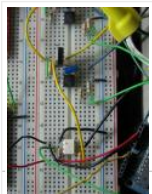
Shown below is the finalized prototype. The purpose of the prototype was to demonstrate the feasibility of a small, highly maneuverable search and rescue robot. As such, the completed prototype was successful. Capabilities include a ground speed of 10 inches per second, battery life of..... Listed under: [Development Board – Kits Projects](#)

469. [Line Following Robot using arduino](#)



This is a Line Following Robot. It follows a black line that is drawn. It is able to detect the black line through one photocell and one analog light sensor. There is an LED in between the two sensors that gives off red light when..... Listed under: [Robotics – Automation Projects](#)

470. [AC Dimmer Circuit](#)



Overview Simple AC Dimmer circuit for incandescent bulbs. 128 levels of brightness. Parts are relatively cheap! How it Works This is an AC Chopping Circuit. The dim level sets where the AC waveform gets chopped on. More of the cycle makes the bulb brighter, less..... Listed under: [Development Board – Kits Projects](#)

471. [Traffic Signal Wiring with Arduino Controller](#)



I always wanted an old traffic signal and finally got one recently. However, it was very simply wired so that all the lights were fixed on. What fun is that? I also wanted to try out an Arduino controller and thought this would be a..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Other Projects](#), [Projects](#)

472. [Make a High-Altitude Balloon Tracker \(Arduino\)](#)



One of the coolest projects I have done so-far with my kids is a “near-space” balloon. That’s not quite into space itself (100Km+) but so high that the sky looks black and you can start to see the curvature of the earth below you. The..... Listed under: [Other Projects](#)

473. [Zigbee Wireless Relay Control and Power Monitoring System](#)



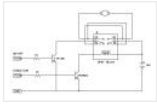
Introduction We designed a system for wirelessly controlling relays and monitoring current. This is used for a home load simulation. By wirelessly turning relays on and off by sending commands from a PC to a microcontroller we can change the total load (current) to our..... Listed under: [Metering – Instrument Projects](#)

474. [Balancing Instructable Robot using arduino](#)



In this Instructable I wanted to show to you how to make a self balancing robot. What makes it unique is that its exterior is made to look like the Instructables Robot. Internally it works in the principle of PID, it is a very popular..... Listed under: [Robotics – Automation Projects](#)

475. [Bidirectional motor control](#)



One of the simplest ways to get a motor to turn in both directions is by using a double-pole, double-throw (DPDT) relay. Along with the relay, this hookup requires two transistors and two Stamp pins, one for on/off control and the other for direction control..... Listed under: [Motor Projects](#)

476. [Fab Lab Barcelona SuperNode](#)



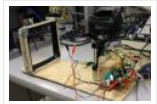
[assignment] Add an output device to a microcontroller board and program it to do something. Class syllabus:: http://academy.cba.mit.edu/classes/output_devices/index.html [what i learned /am learning] _ Relearned Arduino installation. _ Work with DC motors and H-Bridge IC with Arduino; and its general concepts. _ About the various..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

477. [LED Matrix Bike Safety Backpack using arduino](#)



Biking around cars can be a frightening thing, and staying visible at night is crucial for your safety. This tutorial will teach you how to make a custom LED Matrix Backpack that is much larger and brighter than traditional rear bike lights. Parts You'll Need:..... Listed under: [LED Projects](#)

478. [An FTIR Touchscreen Device](#)



The DJ Touch is a portable turntable touchscreen and interactive LED display. Our end goal was to produce a low cost touchscreen device, and demonstrate its application in a common consumer application. Out of an interest in electronic music, and with the knowledge of deejaying's..... Listed under: [Sensor – Transducer – Detector Projects](#)

479. [Arduino Scouting Robot](#)



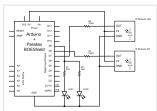
Summer Project: Arduino Scouting Robot [video id="P6PVLhjQ5FY" type="youtube"] Arduino Scouting Robot Part 1 * 12,9,5 volt power supply recharge it with a 12-volt charger keep power switch on to charge * 2 DC motors operate at 7.2V with a maximum current draw of 3 amps..... Listed under: [Projects, Robotics – Automation Projects](#)

480. [Rubik's Cube Solver using arduino](#)



This robot that can solve a Rubik's cube using Arduino. I learned how to solve a Rubik's cube last year, and I was also into Arduino, so eventually I ended up with an idea to make my own Rubik's cube solver. Like many people searching..... Listed under: [Robotics – Automation Projects](#)

481. [Connecting an IR Sensor](#)



Schematic Since the IR Sensor uses a light sensor, the schematic is very similar to that of the light sensor. The only difference is the addition of an IR LED and that the IR detector requires connection to 5V and ground. Breadboard Setup To setup..... Listed under: [Sensor – Transducer – Detector Projects](#)

482. [Learn how to use 7-Segment LED Display using Arduino](#)



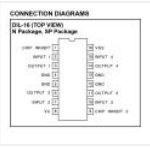
7-Segment LED Display is a very useful component, but also a very confusing and difficult piece to use for beginners. It won't be difficult once you get it working for the first time. This is what you will get at the end of the tutorial (part..... Listed under: [LED Projects, Projects](#)

483. [Bass Master 3000 Carnival Game using arduino](#)

The Bass Master 3000 is a game that I built for a work carnival along with a small and very talented team of co-workers. I've seen this type of game on the net, but I wanted to kick it up a notch with some Arduino..... Listed under: [Game – Entertainment Projects](#)



484. [L293 Motor Driver and H-Bridges](#)



The most common method to drive DC motors in two directions under control of a computer is with an H-bridge motor driver. H-bridges can be built from scratch with bi-polar junction transistors (BJT) or with field effect transistors (FET), or can be purchased as an..... Listed under: [Motor Projects](#)

485. [How to connect a servo to the Arduino](#)



Servo Cable The continuous rotation servos that come with the BOE Shield-Bot have a 3-wire cable for connecting it to the power and controller. The black wire is the ground, the red wire is the power (positive) and the white wire (sometimes yellow, depending on..... Listed under: [Motor Projects](#)

486. [Conversational Gloves using arduino](#)



This is what came out of my attempt at combining some of my favorite tools and themes...Grasshopper, 3D printing, kinetic motion, and linguistics. I put these gloves on my friends, asked them to tell me a story, and used Grasshopper to record the data from..... Listed under: [Radio Projects](#)

487. [Pneumatic Inverted Pendulum](#)



Construction Mechanical structure Compressed air comes from air compressor and goes in the proportional valve. Coming out from the proportional valve, there are two branches of air flow (one is compressor air, the other one is exhausted air) which connect to the air cylinder (pneumatic..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

488. [Make your own TV ambilight using Arduino](#)



This is a very easy project. Here is the result I won't go into too much detail how each part works, because I have written some information on my blog. But you should be able to make it work with the information given on this..... Listed under: [LED Projects](#)

489. [Step Sequencer Drum Machine](#)



Overview [top] As avid audiophiles, we wanted to apply our newly acquired knowledge of microcontrollers to build a fun consumer electronic device. Our project is a step sequencer drum machine. The user is able to program a 16-step percussion pattern using one of a wide..... Listed under: [Sound – Audio Projects](#)

490. [Build your own 4x4x4 RGB LED Cube using arduino](#)



LED Cubes are awesome. The first one I created was a 8x8x8 blue led cube. It still works like a charm. But being able to display every colour in the spectrum is much more spectacular. Let's start with a small and simple 4x4x4 RGB LED..... Listed under: [LED Projects](#)

491. [Programming an ATTiny13A using Arduino & servo interpreter](#)



So there I was, browsing eBay, looking for some cheap deals on Atmel chips when i came across a pair of ATTiny13 chips for £2.50. I just had to have them! After all, how hard can it be? I needed a small chip to read..... Listed under: [Arduino Programmer Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Motor Projects](#), [Projects](#)

492. [Retablillo de las Maravillas v1.0](#)



4./ Interactivity & electronics 4.1/ Switches / characters 4.2/ Screen / interface 4.3/ Motor controller 4.4/ I/O controller & interface [4./ electronics] [4.1/ switches / characters] The characters on top of the moving platform function, as interfaces, actually as on-off switches. While standing in its..... Listed under: [Robotics – Automation Projects](#)

493. [How to control a Servo using Arduino](#)



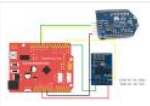
In this one, servo is programmed to be controlled by two buttons, one turns servo to the left and the other one turns it to the right. When the servo is turning, corresponding LED will be switched on to indicate the operation. Result: Because Arduino..... Listed under: [Motor Projects](#), [Projects](#)

494. [Desktop Fist Bumper using arduino](#)



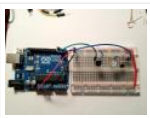
This simple device sits on your desk at work, ready to give you fist bumps throughout the day as you need them. A 3D printed "fist" is moved by a servo attached to a rack and pinion mechanism. An ultrasonic range finder detects when you..... Listed under: [Battery Projects](#)

495. [Arduino Basic Wifi Project using ESP8266 wifi module](#)



Overview ESP8266 is a highly integrated chip designed for the needs of a new connected world. It offers a complete and self-contained Wi-Fi networking solution, allowing it to either host the application or to offload all Wi-Fi networking functions from another application processor. ESP8266 has..... Listed under: [Internet – Ethernet – LAN Projects](#)

496. [\\$1.50 Arduino TV Annoyer](#)



Hey Arduino fans! Here is an 'ible for making a device that turns TVs on when you want them off, and off then you want them on! If you hide it in something inconspicuous, it would make a great April Fools joke or gag gift..... Listed under: [Home Automation Projects](#), [Projects](#)

497. [Katrina And Maya](#)



bOunce is a haptics-based learning game system that teaches the concepts behind wave dynamics, and in particular, resonance. The bOunce device (an adaptation of the Haptic Paddle) allows a user to "bounce" a ball in a virtual environment. By feeling the haptic force feedback from..... Listed under: [Robotics – Automation Projects](#)

498. [Stereo Audio with an Arduino](#)



Recently I've been posting a lot of projects that use an 8 bit resistor ladder digital to analog converter(DAC) and an Arduino to make sound. (see the Arduino vocal effects box, the Arduino drum sampler, and my audio output tutorial). The technique I've been using to make these DACs is..... Listed under: [Projects](#), [Sound – Audio Projects](#)

499. [Arduino All-In-One Remote](#)



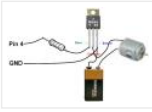
Now you can have all the remotes of your house in a device that fits in your hand with Arduino, never fight for who has the TV remote again! To make it you will need: Arduino (I used a cheap copy of the arduino UNO)..... Listed under: [Robotics – Automation Projects](#)

500. [Just Veggin with an Arduino Beetbox](#)



Bring Touch Control to the Arduino. Use interesting touch sensors like Carrots or Beets to make a “Beetbox”. In this instructable you will learn: * How to use the Cap Sense library to make Arduino responsive to touch * How adding a Wave Shield (and..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

501. [MOTOR SWITCH LED](#)



Here is how to connect a motor, a switch and an LED to your Arduino and how to do some checking to make sure that everything works The strategy is to get the circuit going in stages, testing each part as you go. Once everything..... Listed under: [LED Projects](#), [Motor Projects](#)

502. [Arduino Controlled Lighthouse](#)



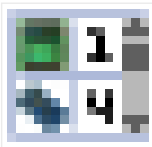
Overview: I've often thought that a lighthouse would make a great project for an Arduino, and so I decided to give it a try using one of the local lighthouses here in Erie, Pennsylvania as inspiration. I chose the North Pierhead Lighthouse that guards the..... Listed under: [LED Projects](#)

503. [LittleGoal: World Cup Match Notifier using Arduino](#)



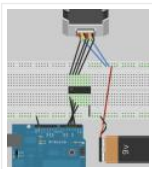
[This Instructable was made at the Taipei Hackerspace littleBits Instructables Build Night.] Can't watch the World Cup football games, but want to know when important game events (ie. goals) happen? Then littleGoal is for you! The littleGoal setup will monitor the game's progress,..... Listed under: [Game – Entertainment Projects](#)

504. [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](#)

505. [Stepper Motors](#)



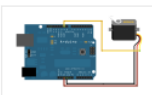
Stepper motors are not smooth – they move in “steps”. Different motors have a different number of steps to make one complete rotation. You use software to step the motor forward or backward at different speeds. There are two kinds of stepper motor bipolar and..... Listed under: [Motor Projects](#)

506. [DIY FPV RC Tank V2 \[2km RANGE upgrade!\] using Arduino](#)



Lets build An FPV tank that could be controlled within 2 kilometers! With the help of my best friend ASCAS I was able to borrow his old parts for this updated version. Ok So Roverbot version 2 is a highly educational Arduino based ATV-drone. It's..... Listed under: [Game – Entertainment Projects](#)

507. [Sweep](#)



Sweeps the shaft of a RC servo motor back and forth across 180 degrees. This example makes use of the Arduino servo library. Hardware Required Arduino Board (1) Servo Motor hook-up wire Circuit Servo motors have three wires: power, ground, and signal. The power wire..... Listed under: [How To – DIY – Projects](#), [Motor Projects](#)

508. [DIY GPS Tracked Bike Lock using Arduino](#)



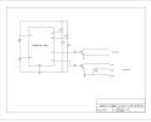
Having just purchased a half decent bicycle, and living in a city with a bike theft rate almost as high as New York, I wanted to have some peace of mind that if a thief with an angle grinder were to cut through my U-lock..... Listed under: [Car Projects](#), [GPS Based Projects](#), [Security – Safety Projects](#)

509. [Critter Twitter Trap using Arduino](#)



Havahart traps are really nice if you have pests to rid your home of but you don't feel the need to do this through means of killing the animal. The problem we are faced with is constant monitoring of the trap. If you forget to..... Listed under: [Internet – Ethernet – LAN Projects](#)

510. [Capture the image of a falling object using Arduino](#)



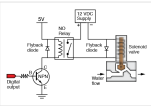
The aim of this project is to create a setup to capture the image of a falling object or any object in motion at a precise time using a DSLR and Arduino microcontroller. It can be done in many different ways, but the method I..... Listed under: [Video – Camera – Imaging Projects](#)

511. [LED Binary Clock using an Arduino](#)



A Binary Clock! I was recently looking at some binary clocks and I felt like Why not? I have everything to make one and I don't have a clock in my room. So I decided to build one and here it is. Hope you Like..... Listed under: [Clock – Timer Projects, Projects](#)

512. [Wiring of the Solenoid Valves](#)



Overview of Wiring for the Salinity Sensor Other pages describing fish tank wiring: Connect electrical power to the pump and the breadboard Connect the salinity sensor to the breadboard and Arduino Connect the solenoids to the cascade control circuit (this page) Return to the main..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

513. [Cheap wireless transmission between two Arduinos with Infrared](#)



Hi all, For a project, I was looking for a cheap solution to send data from an Arduino to an other one. The serial port was already taken, and my transmission (unidirectional) needed to be wireless. My researches has brought me to discover these kinds..... Listed under: [Internet – Ethernet – LAN Projects](#)

514. [Bug-Catching Spider in Web using Arduino Part 2](#)



This project is a collaboration between idesigner4 and bhasudha(me), students in the Fall 2012 course Things That Think (CSCI 7000) at The University of Colorado – Boulder. The story of our bug-catching spider automaton goes like this: A giant evil spider resides in a big..... Listed under: [Internet – Ethernet – LAN Projects, Projects, Security – Safety Projects](#)

515. [Hack a TowerPro Micro Servo to Spin 360 / Continuous Rotation](#)



Hey guys! Since I've got my servos, I've had two that I set aside for hacking. So, coming to my favorite website for help, I was sorely disappointed when I couldn't seem to find any instructables on how to mod a micro servo. After viewing..... Listed under: [Motor Projects](#)

516. [Arduino R/C Lawnmower](#)



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: [Home Automation Projects, Projects](#)

517. [RGB LED Tutorial \(using an Arduino\)\(RGBL\) using arduino](#)



LEDs are great. But with any project there comes a point where flashing is simply not enough. For these cases an RGB (Red, Green, BLue) LED is the answer. With an RGB LED you'll be able to produce any colour glow your heart desires. At..... Listed under: [LED Projects](#)

518. [Darkness Map Data Collection Device](#)



The Darkness Map encompasses both data collection and visualization of nighttime light levels. You can add to the map by downloading the app for iPhone or Android, but you can also contribute data by creating your own data collection device. This tutorial will cover how..... Listed under: [Sensor – Transducer – Detector Projects](#)

519. [Arduino-based line follower robot using Pololu QTR-8RC line sensor](#)



UPDATE FEB 2012: This guide is featured on Adafruit's blog <http://www.adafruit.com/blog/2012/02/14/arduino-based-line-follower-robot/> This is Faz3a II, my first line-following robot, which I also hope to use for maze-solving. I used the Arduino Uno, Adafruit motor shield, Pololu's QTR-8RC line sensors and motors. You can build a..... Listed under: [Projects](#), [Robotics – Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

520. [RGB LED Rainbow Fader using an Arduino](#)



Introducing the RainBoard: A simple RGB LED Rainbow fader using an Arduino Uno and a few simple components. Believe it or not, we will control 45-channels of RGB LEDs at 32 brightness levels using only 3 digital pins from the Arduino! How is this possible..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

521. [Window Painting Robot \(arduino, processing, accelerometer\)](#)



The idea for this project came from one of my favorite 'ibles: the polargraph. I loved the drawing style and thought how cool would it be to do this on the side of a building? Unfortunately the challenges to setting up such a large polargraph..... Listed under: [Home Automation Projects](#), [Robotics – Automation Projects](#)

522. [Kaleiduino: A Battery Powered Arduino LED Kaleidoscope](#)



Hello everyone, and welcome to my Instructable! This instructable will show you how I made the first ever DIY Arduino controlled "LED Kaleidoscope"! What is an LED kaleidoscope? Well, our traditional kaleidoscopes used 3 mirrors joined as a triangle with stuff like sequins and stolen..... Listed under: [Battery Projects](#), [LED Projects](#)

523. [Using The PCF8575 i2c i/o Expander To Read Inputs With Arduino](#)



This Instructable will show you just how easy it is to add extra inputs to your Arduino. You can use this technique to add hundreds of extra inputs to your Arduino with only two wires by using a fancy communication protocol called i2c (eye-squared-see). Step..... Listed under: [Sensor – Transducer – Detector Projects](#)

524. [Robotic Spider V8](#)



I needed a project that would use all my servos, so I decided to make the do-nothing, worthless spider. If you have fischertechnik and servos to waste, this is the project for you! Really, this flopping spider makes for a great learning project. The main..... Listed under: [Robotics – Automation Projects](#)

525. [Laser Cut Sphere-O-Bot using Arduino](#)



The Sphere-O-Bot is a simple 2 axis CNC machine that can draw on most spherical surfaces. You can use it to decorate ping pong balls or eggs. This design is based on the 3D printable Sphere-O-Bot. By building your Sphere-O-Bot using a laser cutter, you can..... Listed under: [Robotics – Automation Projects](#)

526. [Arduino controls cheap RC car transmitter](#)



OBJECTIVE Cheap Chinese RC toy cars can be had for about 5 Euros in the local market. The wireless brains behind the majority of these cheap RC toys is a pair of very cheap ICs the TX2 and the RX2. Yup, that's what they are called. So this..... Listed under: [Car Projects](#), [Projects](#), [Radio Projects](#)

527. [Arduino Ping Ultrasonic Range Finder Code](#)



The Ping))) is an ultrasonic range finder from Parallax. It detects the distance of the closest object in front of the sensor (from 2 cm up to 3m). It works by sending out a burst of ultrasound and listening for the echo when it bounces..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

528. [Internet Devices for Home Automation](#)



This instructable shows the principles involved in making devices to control home automation over the internet. We're going to construct a device (or several of them), that talk to each other over the internet to control lights, motors for curtains/blinds, power sockets etc. In contrast..... Listed under: [Home Automation Projects](#), [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

529. [Arduino based Bi-color LED Matrix Audio Spectrum Visualizer](#)



After we came up with the Bi-color LED Matrix Driver Module kit, we have been looking around for interesting projects to work with it. You may be interested in some of the projects we have put up at instructables using this LED Matrix kit. Instructable..... Listed under: [LED Projects](#), [Sound – Audio Projects](#)

530. [Breathalyzer using an Arduino](#)



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](#), [Projects](#)

531. [Magic Light Capacitance Sensor using an Arduino](#)



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

532. [LED Flipbookit: full color and brightness control with an Arduino](#)



Step 1: Gather the materials Materials: – addressable RGB LED strip : I used a new variety of three conductor WS2811 strips. – an Arduino : I used a Arduino Leonardo. Any 5vdc Arduino should be adequate. – 4 AA batteries and a battery holder..... Listed under: [LED Projects](#)

533. [Infinity Mirror Clock using Arduino](#)



Ever since my addressable RGB LED strips (WS2812B) came from Aliexpress, I've been fascinated with LED projects. Following up on my success with my Charlieplexed LED clock, I wanted to create something with more Jazz.. While browsing google images, I came across an instructable for..... Listed under: [Clock – Timer Projects](#)

534. [How to Make a PIP-Boy using an Arduino](#)

So what exactly is a PIP-Boy, you ask? For those unfamiliar, a PIP-Boy is a device used by the protagonist in the popular Fallout series of video games for navigation, radiation detection, data storage/playback, and inventory management. Being a major fan of the franchise,



I..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

535. [Experimenters Guide for Arduino as Performed at OIT](#)



Resources Adafruit ARDX – v1.3 Experimentation Kit for Arduino Experimenters Guide for Arduino (PDF) Bread Board Layouts (PDF) Arduino Tutorial Bundle (Instructable) This Arduino Tutorial is going to be very similar to the Arduino Tutorial Bundle Instructable but because we are working on this in..... Listed under: [Other Projects](#), [Projects](#)

536. [ZAPPelin, or how to train your blimp with an Arduino and IR remote](#)



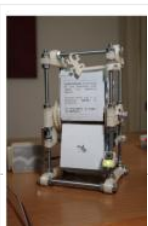
Is it flying seal? A flapping alien? No it's a ZAPPelin, an Arduino controlled indoor blimp, setup to learn in the signals from an IR remote to command it. This project came to life at the third Arduino Jam Februari 15th to 17th 2013, at Timelab,..... Listed under: [Game – Entertainment Projects](#), [Radio Projects](#)

537. [Digital Zoetrope using Arduino](#)



A zoetrope is a mechanical device that animates a series of pictures by spinning them fast enough that the images appear to merge together and move, My digital zoetrope works on a similar principal, by flashing the LEDs while they are spinning it is possible..... Listed under: [Video – Camera – Imaging Projects](#)

538. [The machine of answers](#)



Should you ask your boss for a raise? Call that cute guy you met at a party? Sell your stock? Wouldn't it be nice to have a handy method of handling some of life's more pressing dilemmas? This machine give you the answer to all..... Listed under: [How To – DIY – Projects](#)

539. [ABC 123 Toddler Trainer using Arduino](#)



Here is a kid tested and teacher approved trainer for the kids in your family and / or extended family that are learning their ABCs and their 123s. It was kid tested on my granddaughter, who really loves it, and was approved by my wife, Listed under: [Home Automation Projects](#)

540. [Aergia: Android controlled TV Remote\(with Speech Recognition\) using Arduino](#)



Have you ever faced this situation while sitting on your favorite spot on the couch or recliner, comfortably watching your favorite TV program? You're snugly tucked under the blanket, the air conditioning is pleasantly cool, the sun outside is shining it's delicate warm golden rays..... Listed under: [Arduino Android](#)

541. [The Arduino AA Undershield](#)



I recently bought an Arduino Diecimila board. It's awesome and the applications, you can use it for or with is almost unlimited. However there's a problem when you want to use it in portable applications. You can use the Liquidware lithium backpack, which is a..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

542. [Bluetooth RGB Shelf Lighting using Arduino](#)

Being the giant fan of LED's that I am i'm always trying to come up with new ways I can put them throughout my house. Today i'm going to show you how to create a simple, yet extremely eye catching, RGB Bluetooth controlled Shelf lighting..... Listed under: [Home Automation Projects](#), [LED Projects](#)



543. [L.O.G. \\$10 Arduino](#)



There are probably thousands of articles on making an Arduino. So who needs another Arduino? Well, this Lazy Old Geek(L.O.G.) needs one. Here's the features I would like: Features: Low cost More permanent than a breadboard Not a custom PCB More prototyping area than a..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

544. [Love Gauge](#)



I'm working together with my wife. But sometimes one of us has an external appointment. So, if one of us is thinking about the other, we want to show it together. For this, I have made an Love Gauge for us. It stands on our..... Listed under: [Other Projects](#)

545. [Arduino Powered Autonomous Vehicle](#)



A few months back I started playing around with Arduino micro controllers as a learning exercise (and for fun); this project is the culmination of that. The goal of the project was to create a vehicle that can autonomously navigate through a series of waypoints..... Listed under: [Car Projects](#)

546. [Emotidora: Hats with Emotions using Arduino](#)



This project, Emotidora, will help a user express his/her emotions about events in day-to-day life. Weve all been in situations where something very exciting or unfortunate has happened to us and we want to share it with other people. This usually involves the expression of..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

547. [Traffic Signal / Stop Light Wiring with Arduino Controller](#)



I always wanted an old traffic signal and finally got one recently. However, it was very simply wired so that all the lights were fixed on. What fun is that? I also wanted to try out an Arduino controller and thought this would be a..... Listed under: [Other Projects](#)

548. [WAVEbuoy using Arduino](#)



The WAVEbuoy is a arduino lamp connected to the internet that displays the current wave height of any of the National Data Buoy Centre's wave buoys. This lamp is currently connected to the Sevenstones Lightship buoy that gives an indication of swell approaching Cornwall in..... Listed under: [Home Automation Projects](#)

549. [Arduino Keyboard and Mouse Control Code](#)



This example illustrates the use of the Mouse and keyboard libraries together. Five momentary switches act as directional buttons for your cursor. When a button is pressed, the cursor on your screen will move, and a keypress will be sent to the computer. Once you..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

550. [Arduino ADK LED Lighting](#)



Have you ever wanted to control electronics with your smartphone? The Arduino ADK (Android Development Kit) is the Arduino Mega with a built in USB host device, ready for your smartphone to be plugged in! We'll make a simple introductory project with a few LED..... Listed under: [LED Projects](#), [Projects](#)

551. [Pixel Drop Ceiling using Arduino](#)



In our living room we have a small patch of drop ceiling right in the middle of the room, basically a giant piece of duct tape to cover up bad carpentry. It was constantly getting water damage from what looks like a giant hole in..... Listed under: [Home Automation Projects](#)

552. [Arduino Leonardo Pinout Diagram](#)



Arduino Leonardo Introduction: The Arduino Leonardo is a microcontroller board based on the ATmega32u4 (datasheet). It has 20 digital input/output pins (of which 7 can be used as PWM outputs and 12 as analog inputs), a 16 MHz crystal oscillator, a micro USB connection, a power jack, an ICSP..... Listed under: [Pinouts](#)

553. [Push-button using an Arduino](#)



Pushbuttons or switches connect two points in a circuit when you press them. This example turns on the built-in LED on pin 13 when you press the button. image developed using Fritzing. For more circuit examples, see the Fritzing project page Connect three wires to the Arduino..... Listed under: [How To – DIY – Projects](#), [Projects](#)

554. [Create an internet controlled robot using Livebots](#)



Here you will learn how to create an internet controlled robot or other installation using Livebots. Livebots is a project I'm working on which consists of an easy to use website for all the robots that people can interact with through the internet. As an example I..... Listed under: [Robotics – Automation Projects](#)

555. [Model Airplane Autopilot using Arduino](#)



Hi All! 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..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

556. [Using the Arduino Uno to program ATTINY84-20PU](#)



Using the Arduino Uno to program ATTINY84-20PU (Newark item # 68T3783). This Instructable shows how to use the Arduino platform to work with physically smaller processors, such as the ATtiny84 (84/44/24), ATtiny85 (85/45/25), and ATtiny2313. This example is specifically for the ATtiny84-20PU processor (Newark item..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

557. [Home Made Bezel / Window for LCD, LED, TFT Displays.](#)



I've been working on a project that used a 16x2 LCD display and wanted a nice finish that also allowed me to seal against water and other liquids. I also needed impact resistance, low cost and the ability to be changed easily if worn or..... Listed under: [LCD Projects](#), [LED Projects](#)

558. [MaKey MaKey Monome using Arduino](#)



Objective: build a monome – a complex electronic music instrument – using easy-to-learn, inexpensive components and a process that's so easy a kid could do it. Gist: This touchscreen music instrument is essentially 4 parts: MaKey MaKey (or Arduino) Neopixels copper tape cardboard Sound is..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sound – Audio Project Ideas](#)

559. [Arduino and Xbee wireless setup](#)



The Arduino Wireless shield allows your Arduino board to communicate wirelessly using Zigbee. This documentation describes the use of the shield with the XBee 802.15.4 module (sometimes called "Series 1" to distinguish them from the Series 2 modules, although "Series 1" doesn't appear in the official name..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects, Projects](#)

560. [Arduino or Twitter Mets Apple](#)



Whenever I go to Citi Field with my kids to see the Mets, they go crazy for the Home Run Apple. To me, the Apple is part of what makes baseball exciting for kids. Even though my kids may not watch most of the games, I..... Listed under: [Internet – Ethernet – LAN Projects](#)

561. [Control Fluorescent Lights with a Laser Pointer and an Arduino](#)



A few members of the Alpha One Labs Hackerspace do not like the harsh light given out by fluorescent fixtures. They wanted a way to be able to easily control the individual fixtures, perhaps with a laser pointer? I got right on it. I dug out a..... Listed under: [Sensor – Transducer – Detector Projects](#)

562. [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, How To – DIY – Projects, Projects](#)

563. [Polydexter: Arduino Robotic Translation Arm](#)



Polydexter was the introductory project in the Creative Architecture Machines (CAM) advanced options architecture studio at the California College of the Arts (CCA), taught by Jason Kelly Johnson (co-founder of Future Cities Lab) and Michael Shiloh. Parts developed for this robot would go on to..... Listed under: [Robotics – Automation Projects](#)

564. [Boot Bot Arduino Bootload Shield](#)



The Boot Bot Shield lets you burn the Arduino bootloader onto a blank Atmega 328 chip. The bootloader is that magic piece of software that turns a mundane chip into the open source programmable miracle known as the Arduino. Blank chips cost a few dollars..... Listed under: [Projects, Robotics – Automation Projects](#)

565. [Arduino Power outlet with exposed pins](#)



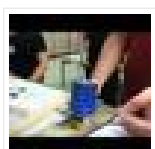
I found myself often trying to plug stuff at home with Arduino. So I thought it would be good to have a system that you can just plug your sensor, plug the appliance and code something to see how it goes. I never liked..... Listed under: [Home Automation Projects, Sensor – Transducer – Detector Projects](#)

566. [Arduino Orb Build Warden](#)



An Arduino based Ambient Orb designed explicitly for monitoring Source Code Autobuild systems. This orb can easily be repurposed for monitoring really anything that can have alerts from time to time. Step 1: Purpose Some time ago a co-worker passed me an article about "Extreme..... Listed under: [Other Projects, Projects](#)

567. [Spinning Tardis with blinking LED \(Powered by littleBits\) using Arduino](#)



Construct a Tardis that spins and blinks! Total Build Time: 30 mins · Coding: 5 mins · Construction of the Tardis: 20 mins · littleBits LED and motor assembly: 5 mins Tardis.wmv(320×240) 10 KB Step 1: Gather all needed parts. LittleBits: · (2) Wires ·..... Listed under: [LED Projects](#)

568. [4x4x4 RGB LED Cube using Arduino](#)



A while ago, when I first started using Arduino, my first project was a 4x4x4 LED cube, I built it from a Guide I found here in Instructables, I didn't know anything about programming, and little about electronics, yet I was able to build it..... Listed under: [LED Projects](#), [Projects](#)

569. [Simple Basement Security System using Arduino](#)



In this project I will show you how to build a very simple security system for all kinds of rooms. It might be simple but still effective. It is based around an Attiny85 and uses a reed switch and a key switch as inputs to..... Listed under: [Security – Safety Projects](#)

570. [Monitor – Thinking Skins using Arduino](#)



This project was part of Multimodal Media Madness 2014, hosted by the chair for Computer Aided Architectural Design (CAAD) and the Media Computing Group of RWTH Aachen University. For more Thinking Skins, please check this page: http://hci.rwth-aachen.de/m3_ss14 Given were small shared space containers for 6/8..... Listed under: [LED Projects](#)

571. [Make Voice Call using Arduino](#)



This sketch connects a voice call from your GSM shield and Arduino to a remote phone number entered through the serial monitor. You'll need to attach a speaker and microphone to hear the connected phone and send your voice. First, import the GSM library..... Listed under: [Phone Projects](#), [Projects](#), [Sound – Audio Projects](#)

572. [Arduino Peak Power Tracker Solar Charger](#)



This project is an update of my original Peak Power Tracker Battery Charger Project. It is designed to control a 12V solar panel charging a 12V lead acid battery. The updated version of this project uses the Arduino Duemilanove development board (from www.sparkfun.com) as the..... Listed under: [Battery Projects](#), [Projects](#)

573. [Ping Organ using an Arduino](#)



I was trying to think of a quick toy I could build for my kids. I came up with this idea of an ultrasonic range finder, an Arduino, and a speaker. Basically the Arduino plays a tone out of the speaker based on the distance..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

574. [Papercraft Automata Race Game littleBits Circuit using Arduino](#)



This instructable will show you how to create a game using littleBits. The game will start with a sound trigger. Each player will have to press a button repeatedly. The first person to press their button 25 times wins. A buzzer will sound to end..... Listed under: [Game – Entertainment Projects](#)

575. [Arduino decision box \(Attiny85\)](#)



So I was a bit bored this weekend (actually I wrote this some months ago) and since I had ordered a bunch of Attiny85 chips the week after I decided to make a quite random project with them. This is a decision box, it takes..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

576. [RGB LED with Arduino 101](#)

To Learn about the basic LED usage practice, read here. What is a RGB LED? With an RGB (Red Green Blue) LED you'll be able to produce any colour that is flashing everyone's eyes. At first glance, RGB LEDs look just like regular LEDs, however, inside the usual..... Listed under: [LED Projects](#), [Projects](#)



577. [SmartMesh – Arduino and Android Controlled Pneumatic Facade](#)



This project was part of Multimodal Media Madness 2014, hosted by the chair for Computer Aided Architectural Design (CAAD) and the Media Computing Group of RWTH Aachen University. For more Smart Skins, please check this page: http://hci.rwth-aachen.de/m3_ss14 During this project, the students were asked to..... Listed under: [Arduino](#) [Android](#)

578. [LED Pattern Hat using an Arduino](#)



This is a (moderately) simple Arduino project that is a spectacular display from LEDs – that you can wear on your head! It also uses a program that is not intricate at all, so you can modify it for different patterns and cycles. It's also..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

579. [DIY Android Home Automation Box](#)



Here's a little show and tell of my Android controlled home automation box. It's a small extension box that's controlled by an Android smartphone. You can turn the individual outlets on by tapping a button from the app or use the speech recognition app, found..... Listed under: [Arduino Android](#), [Home Automation Projects](#)

580. [Use foot switch to open Linux terminal using an Arduino](#)



So here is how i made my foot pedal used to start Linux terminal using an Arduino. It's made because I am board of pressing the terminal icon with my mouse. P.S. Sorry for my English. I am from Croatia. Tools needed: -Soldering iron and..... Listed under: [Projects](#), [RTOS – OS Projects](#)

581. [Musical Table using Arduino](#)



The Musical Table is a toy table that allows kids to play musical phrases by moving toys around the surface. Each of seven switches can play different musical phrases in four bases, making 27 different musical phrases in total. Some of the phrases are..... Listed under: [Home Automation Projects](#), [Projects](#), [Sound – Audio Projects](#)

582. [ARDUINO WIRELESS HOME SECURITY SYSTEM](#)



In this project I will discuss how you can make a cheap wireless home security system. Though during starting of this project the main objective was only for security alarm but later I found this device can be used to solve several problems. These are the few..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)

583. [Assembling the ZIFduino USB 1.2](#)



The ZIFduino, for all intents and purposes, is an Arduino with a ZIF socket. It's geared toward those that want to do prototyping on the platform, but then move the ATmega chip to a stand-alone environment. The pin layouts are exactly the same, so it..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

584. [Using Servo Motors with Arduino](#)



In this instructable, I am going to show you what a servo motor is, how to use it, and ideas for starting projects using it. I used arduino to control my servo, I added how to use a 555 in some of the later steps..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Motor Projects](#), [Projects](#)

585. [How to build a whole home energy monitor using Arduino](#)



This page and linked pages detailed below document how to build whole house energy monitor that has a display for easy, quick access to current energy use information, usb datalogging for detailed long term data storage and Internet connectivity for online graphing. First a quick..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [Metering – Instrument Projects](#), [Projects](#)

586. [Internet-Controlled RC Car using Arduino](#)



The Internet Controlled RC Car allows you to remotely drive around a small rc car from wherever you may be and see where it is going. This is fun because you can remote explore whatever space you leave it in, or hand over the keys..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Internet – Ethernet – LAN Projects](#)

587. [Arudino- No Blinky](#)



So you just bought this Arduino kit or Arduino-clone kit. You spent hours inserting parts and soldering components. You connect everything up and turn it on and stare at the little LED. You wait a second and nothing happens. You wait a minute and still..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

588. [Arduino Seismic Activity Monitor – Ethernet Shield](#)



Have you ever wanted to impress your friends by saying something crazy like, “I think there’s going to be an earthquake soon” moments before an earthquake hits? Or do you just want some warning, a few seconds that could save your life. This project will..... Listed under: [Internet – Ethernet – LAN Projects](#), [Metering – Instrument Projects](#), [Projects](#)

589. [Arduino Traffic Light Controller with Remote Control](#)



I had a traffic light that I was refinishing. The only thing left to do was to build the controller for the light’s signal patterns. To give it a twist I incorporated a remote control. This was also the perfect opportunity for me to try..... Listed under: [Car Projects](#), [Projects](#), [Radio Projects](#)

590. [Light-Up Disco Table using Arduino](#)



Every apartment needs awesome furniture, so why not make your own? This coffee table contains LED strips that light up into various customizable patterns and colors. The lights are controlled by an Arduino and a hidden button, and the entire thing is battery powered so..... Listed under: [Game – Entertainment Projects](#)

591. [DIY Arduino FM Radio \(Part 2\)](#)



If you have read my first blog on the topic, than you already know what I’m experimenting with. Low price FM Radio, build with TDA7088 / YD 9088. It was obvious, that technology from the early 90-x is outdated. I mean, simple “search and hold” function of..... Listed under: [Projects](#), [Radio Projects](#)

592. [Theremin Toy using Arduino](#)



I wanted to make a little toy for my granddaughter to play with when she visits. I know like most kids, she enjoys things that make sounds and have different colored lights on them and if she does something, the toy does something. I thought..... Listed under: [Game – Entertainment Projects](#)

593. [Using Servos with Arduino made easy !](#)

Servomotors or simply servos are essential components of a robot which convert electrical energy into mechanical energy. They are widely used in the field of RC hobby and robotics. But unlike simple geared motors, these servos are made by integrating a geared



motor with a..... Listed under: [Motor Projects](#)

594. [Face detection and tracking with Arduino and OpenCV](#)



UPDATES Feb 20, 2013: In response to a question by student Hala Abuhasna if you wish to use the .NET Serial class, use the naming convention “\\.\COMn” and replace n with a number > 9 to define your com port for COM ports above 9..... Listed under: [Internet – Ethernet – LAN Projects, Projects, Sensor – Transducer – Detector Projects](#)

595. [Teensy MIDI USB foot controller for controlling Mobius Looper using Arduino](#)



Motivation: Playing in a 2 piece band, with the drums and lots of other samples being played back as backing tracks, there was a need to use a looper to add in more elements to the tracks. A hardware based looper fails in this respect, Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

596. [Under \\$8 Arduino Serial Data Logger – Record to SD Card](#)



Disclosure: This project operates the ATmega328P-P-U outside the published ATmel specifications: According to ATmel, the 328P requires slightly over 3.3V to reliably start the oscillator at 16MHz and to otherwise perform acceptably. Lab testing here at SofKinetics has shown that the ‘board-duino’ 328P-P-U can withstand..... Listed under: [Memory – Storage Projects, Projects](#)

597. [DIY Solar Tracker using Arduino](#)



Introduction We aim to introduce young students to engineering and teach them about solar energy; by having them build a Helios as part of their curriculum. There is an effort in engineering to push energy generation away from the use of fossil fuels and towards..... Listed under: [How To – DIY – Projects, Sensor – Transducer – Detector Projects, Solar energy projects](#)

598. [AndroidRemote – Control Android mobile using an Apple Remote](#)



I love to integrate devices which are not supposed to be integrated and this guide shows you how you can control an Android mobile using Apple's Remote. (Who said Apple devices work only with Apple products ☺) Also this is my entry to the..... Listed under: [Internet – Ethernet – LAN Projects](#)

599. [Arduino Digital Switch Code](#)



This is basic for your arduino projects, input switch read from digital input. When ever switch pressed, LED will turn on. [caption id="attachment_4235" align="aligncenter" width="600"] PushButton_arduino_code[/caption]
Instruction; 1) Connect cathode lead of LED (shorter lead) to ground pin and anode lead of LED..... Listed under: [How To – DIY – Projects, Projects](#)

600. [Hacking my RC Car using Arduino and Android Smart Phone](#)



Have an old toy car? I hacked mine using Arduino and an H bridge circuit to control the motors, used my Sony Z1 Android phone to control it with the recent 1Sheeld I got from Kickstarter. I thought to use the Gyroscope sensor in to..... Listed under: [Arduino Android, Car Projects, Phone Projects](#)

601. [Analog reading box using an Arduino](#)



I made this box for my music project to our school. This is only tutorial for the box, no for playing melody. It's based on serial connected switches. You will need: Some wire 6x switch 1x LED 1x 330 ohm resistor 5x 2000 ohm resistor..... Listed under: [Metering – Instrument Projects, Projects](#)

602. [Washing machine countdown timer using Arduino](#)



Hello, and welcome to my instructable for a washing machine countdown timer. The timer is operated with the very popular Arduino micro controller. See here for more information. Arduino Home Page Aim The aim of this project is to be able to delay the start..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

603. [Nintendo Keyless Entry System using an Arduino](#)



Use a Classic Nintendo controller to lock and unlock your door! The output from the Controller is read by an arduino and it looks for a particular combination of buttons, once the combination is entered it sends a signal to eject a Cd-Rom Drive which..... Listed under: [Home Automation Projects](#), [Projects](#), [Security – Safety Projects](#)

604. [DIY Infrared Sensor Module using Arduino](#)



Have you ever wanted to make a line following robot but the infrared sensors were too expensive for you? Do you want to upgrade the robot in my other instructable? Well this instructable comes in two stages, Stage 1 is the prototyping stage, where you..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

605. [Rock Paper Scissors Spock Lizard using Arduino](#)



Introduction: Okay, I cheated. Any similarities between previous Instructables uploaded by me and the graphics, pictures, text and / or programming code is purely intentional. It certainly made putting this one together a whole lot easier. This Instructable is my Arduino version of the Rock..... Listed under: [Game – Entertainment Projects](#)

606. [ADXL3xx Accelerometer using an Arduino](#)



This tutorial shows you how to read an Analog Devices ADXL3xx series (e.g. ADXL320, ADXL321, ADXL322, ADXL330) accelerometer and communicate the acceleration to the a personal computer. This tutorial was built using the breakout boards from Sparkfun. The adafruit accelerometer breakout board also works, though..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

607. [Make your plant smile using Arduino](#)



This is a funny project that makes our plants “talk” to us. It’s very simple and you can create it in few hours. We use a sensor to read the soil moisture of our plant and a led matrix to display how the plant “feel”..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

608. [Auto Fish Feeder using Arduino](#)



How often do you ever forget to feed your fish? Well, for me I don't forget that much. I just couldn't go out town for a couple of days and also be ridiculous if I should bring my tank along. When I won a Sparkfun..... Listed under: [Home Automation Projects](#)

609. [PS/2 Keyboard Or Mouse using Arduino](#)



Arduino isn't limited to taking input from sensors: you can even connect up a full-size PS/2 keyboard just as if it were a “real” computer and type away! Connecting a keyboard to an Arduino may sound a bit odd (after all, it's just a little..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

610. [Laser-guided Ghost Climber using an Arduino](#)



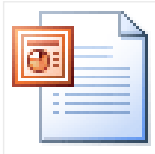
Almost inevitably, when I try to climb the same route I'll forget exactly what sequence of holds they used and end up following a slightly different path. Even when I remember exactly which course to follow, I'll still wonder whether I'm doing it as quickly..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

611. [The Jack'O Lantern Early Warning System using Arduino](#)



This was originally going to be a tutorial on how to hook up a pumpkin to the internet so that the lights inside it could be controlled via twitter, text message, motion or more. To get started I carved a pumpkin for the first time..... Listed under: [Security – Safety Projects](#)

612. [Homemade Dual H-Bridge – L298 Breakout Board using Arduino](#)



This is my homemade Dual H-Bridge using the IC L298N. For control DC motors or step Motors or other purposes just like you need. Breakout L298N.ppt1 MB Step 1: Hardware and Materials COMPONENTS: 1 x perf board 13x26 holes (3,5 x 7,0 cm) 2 x..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

613. [Make your own 1x1 22 IO pin Arduino Compatible](#)



Tested ExtraCore boards and kits are now available for sale from Rugged Circuits. What is it? This Instructable will give you all the files and information you need to make your own Arduino Compatible in small surface mount package. It requires a board manufactured to..... Listed under: [How To – DIY – Projects](#), [Projects](#)

614. [Led Star with Arduino and WS2811 Neopixels](#)



Description This little project makes a great ornament to hang in your window at Christmas time. It is a 20" wide star with 50 "neopixel" leds around the perimeter. Each led is individually addressable and it is controlled by an arduino device which can be..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

615. [4x4x4 LED-cube based Arduino and Flower protoboard](#)



This instructable will teach you how to build your 4x4x4 LED cube with Flower ProtoBoard and control by Arduino. Why is Flower ProtoBoard ? not ProtoBoard ? Because of I often use protoboards to test out if a new idea works in practice. I do not use..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

616. [Arduino The 5\\$ KarduinoSS pad](#)



So, looking at these Kaoss pads and alike hardware, I found that there is hardly any point in this device being so expensive, when you just want to use it as MIDI controller. Going through my parts bin, I found a Synaptics touchpad from an old..... Listed under: [Sensor – Transducer – Detector Projects](#)

617. [Arduino Joystick Mouse Control Code](#)



Using the Mouse library, you can controls a computer's onscreen cursor with an Arduino Leonardo, Micro, or Due. This particular example uses a pushbutton to turn on and off mouse control with a joystick. Cursor movement from the Arduino is always relative. So every time..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

618. [Arduino Modules – Flame Sensor](#)



Quick and simple start guide for using and exploring the Flame Sensor module with an Arduino. The model in the example I am using is from Deal Extreme [DX] and can be found HERE. (The instructable for the Rain Sensor is now available!) Materials needed:..... Listed under: [Sensor – Transducer – Detector Projects](#)

619. [Arduino Row-column Scanning to control an 8×8 LED Matrix Code](#)



LED displays are often packaged as matrixes of LEDs arranged in rows of common anodes and columns of common cathodes, or the reverse. Here's a typical example, and its schematic: These can be very useful displays. To control a matrix, you connect both its rows..... Listed under: [LED Projects](#), [Projects](#)

620. [Read ASCII String using Arduino](#)



This sketch uses the Serial.parseInt() function to locate values separated by a non-alphanumeric character. Often people use a comma to indicate different pieces of information (this format is commonly referred to as comma-separated-values), but other characters like a space or a period will work too. The values..... Listed under: [LED Projects](#), [Metering – Instrument Projects](#), [Projects](#)

621. [Arduino Controlled Lego Lighthouse](#)



Lighthouses have been guiding boats to safety for thousands of years. One of the earliest and most notable of these was the Pharos of Alexandria. This huge structure stood for nearly two thousand years. When deciding on a lego project, I wanted to build something..... Listed under: [Game – Entertainment Projects](#)

622. [4x4x4 LED Cube \(Arduino Uno\)](#)



In this tutorial I'll show you how to make a 4x4x4 LED cube for around \$15.00. The cube has 64 green LEDs which make up it's 4 layers(positives) and 16 columns(negatives). These are all wired to a Arduino Uno. An Arduino is a single-board microcontroller,..... Listed under: [LED Projects](#)

623. [Arduino Chicken Coop Controller](#)



Over the last few years my family has been keeping ex-battery hens – they are about 18 months old and have had a horrendous life kept cooped up in small cages in large warehouses. As much as we love these little bundles of joys and..... Listed under: [Home Automation Projects](#), [Projects](#)

624. [Debounce an input using Arduino](#)



This example demonstrates how to debounce an input, which means checking twice in a short period of time to make sure it's definitely pressed. Without debouncing, pressing the button once can appear to the code as multiple presses. Makes use of the millis() function to keep track..... Listed under: [How To – DIY – Projects](#), [Projects](#)

625. [Arduino Calculator](#)



In this Instructable I will show you how to make an Arduino calculator that is just as good as any other calculator (well... sort of). Even though it's probably not practical due to it's size, repetitive use of the equals button (due to the lack..... Listed under: [Calculator Projects](#)

626. [DIY AM Radio with Arduino](#)



After I finished my last project, I couldn't stop thinking how to build an AM receiver, that would also operate in conjunction with my little friend Arduino. To minimize a workload and complexity, especially with RF part of the circuitry, I come up to conclusion,..... Listed under: [How To – DIY – Projects](#), [Projects](#), [Radio Projects](#)

627. [Blink Without Delay using Arduino](#)



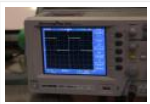
Sometimes you need to do two things at once. For example you might want to blink an LED (or some other time-sensitive function) while reading a button press or other input. In this case, you can't use delay(), or you'd stop everything else the program while..... Listed under: [LED Projects](#), [Projects](#)

628. [DIY navigation device for blind people using Arduino and Android smart phone](#)



In this project you can cover your eyes and let your smartphone navigate you to avoid obstacles, the application is mainly a DIY navigation device for blind people. I knew that 1Sheeld is about to launch a new text to speech shield, and so I..... Listed under: [Arduino Android](#), [Home Automation Projects](#), [How To – DIY – Projects](#), [Medical – Health based Projects](#), [Phone Projects](#)

629. [Arduino Timer Interrupts](#)



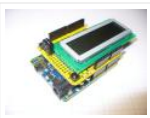
Timer interrupts allow you to perform a task at very specifically timed intervals regardless of what else is going on in your code. In this instructable I'll explain how to setup and execute an interrupt in Clear Timer on Compare Match or CTC Mode. Jump..... Listed under: [Clock – Timer Projects](#), [Projects](#)

630. [Quiz Game Show Buzzer using Arduino](#)



A good friend of mine who's a teacher was doing quizzes in her class making students compete to answer questions... resulting in them complaining they raised their hands before the others. I decided to give her this quiz show type buzzer for Christmas to solve..... Listed under: [Game – Entertainment Projects](#)

631. [Make an Arduino LCD shield](#)



In this short tutorial we make an Arduino LCD shield. Updated 18/03/2013 Today we are going to make an Arduino shield with an LCD module. More often than not I have needed to use an LCD shield in one of my projects, or with the..... Listed under: [LCD Projects](#), [Projects](#)

632. [Web Client using Arduino](#)



This example shows you how to make a HTTP request using an Ethernet shield. It returns a Google search for the term "Arduino". The results of this search are viewable as HTML through your Arduino's serial window. Circuit The Ethernet shield allows you to connect..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

633. [LED Head Arduino TED](#)



LED HEAD TED meet the world. I have always been interested in a bare-bones Arduino but never really saw the point if it was not practically useful, This is my entry into Little Bits contest, I tried to stay true to the "little bits"..... Listed under: [Game – Entertainment Projects](#)

634. [Arduino Esplora Remote](#)



This example is designed to be used with a Processing sketch. Processing is an open source programming environment. The application on the computer reads the sensors on the Esplora board and controls the buzzer and the RGB LED through a graphical interface. The image in..... Listed under: [Projects](#), [Radio Projects](#)

635. [Access control with Arduino plus Keypad 4x4 plus Servo](#)



Hi guys, I bring a new instructable for arduino, the control access with password, 4x4 keypad and a servo. We will use the Password and Keypad librarie for arduino, besides using the servo library, but this project can also be modified by

changing the servo,..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Motor Projects](#), [Projects](#)

636. [Animatronic Eyes and Wii Nunchuck Part 2 using Arduino](#)



After I built the animatronic eyes in PART 1, I wanted to complete the face with a voice and possibly moving eyebrows. If you look back at my PART 1, you'll see that for the base I used a model from Thingiverse. Once you have..... Listed under: [Game – Entertainment Projects](#)

637. [iPod Information Screen using Arduino](#)



My girlfriend, a music buff, asked me to come up with a better way for her to look at the track information of the current song playing on her iPod touch while she was using it in the car. Those of you that have or..... Listed under: [Phone Projects](#), [Projects](#)

638. [Autonomous Race Car using Arduino](#)



Build this autonomous driving robot car based on a old RC toy car. I removed the radio control board from the car and replaced it with a brain in the form of an Arduino UNO board (plus a motor driver board) and gave it an..... Listed under: [Car Projects](#)

639. [Arduino powered GLCD \(Graphic LCD\)](#)



Displays are always nice. So far I've just been demonstrating how to use 7-segmented displays to display numbers using very few resources. But what if you want to display text? Or pictures? Or both? Well in order to do that, you're going to need a..... Listed under: [LCD Projects](#)

640. [ATTiny powered Arduino Projects](#)



Arduino is a great platform. No question. But what if I told you that you could take your entire board and compact it into tiny package. And I mean really small. The chip in the picture is an ATtiny84, and that is the big version..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

641. [Irrigation logic controller/project log using Arduino](#)



Hello, I am going to explain my project in just a minute, but first I wanted to explain how I became involved in this project. I like to save money were I can, so it is not hard to understand why I carpool to work..... Listed under: [Home Automation Projects](#)

642. [Keyless Entry / Arduino](#)



Keyless Entry System Enter the correct code into the keypad and the servo will unlock the door. Enter the incorrect code and Sorry you stay out. There was a couple of stipulations i wanted in my Keyless Entry system: Helper Light. A light that would..... Listed under: [Calculator Projects](#)

643. [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](#), [Projects](#)

644. [Qtechknow Robot Obstacle Course using Arduino](#)



Have you ever thought of controlling your FuzzBot wirelessly? Do you want to make a real – life video game? Do you want to learn about the tech behind NFC and RFID? – the Qtechknow Robot Obstacle Course How – To Guide is for you!..... Listed under: [Robotics – Automation Projects](#)

645. [Twitter Physical Client](#)



In this project I'm building a physical Twitter client using Arduino and a flag, basically an arduino powered retweet indicator, whenever any of my tweets is retweeted some physical action will happen to notify me of that. You'll need: 1. Flag. 2. Arduino. 3. Laptop..... Listed under: [Internet – Ethernet – LAN Projects](#)

646. [Simple RFID access system using Arduino](#)



In this tutorial you can make an RFID access system. It's very simple and can be used with a wide variety of end-uses. Updated 18/03/2013 The purpose of this project is to prototype a basic RFID access system. Although it is not that complicated, this..... Listed under: [Projects](#), [RFID – NFC projects](#), [Security – Safety Projects](#)

647. [Clock Four – Scrolling text clock using Arduino](#)



Introduction Time for another instalment in my highly-irregular series of irregular clock projects. In this we have "Clock Four" – a scrolling text clock. After examining some Freetronics Dot Matrix Displays in the stock, it occurred to me that it would be neat to display..... Listed under: [Clock – Timer Projects](#), [Projects](#)

648. [The Pill Reminder using Arduino](#)



Back in January 2014 I was at a meetup of Baby Boomer Makers at TechShop in San Carlos, California. We were going around the table, each taking a turn to talk about projects we'd like to do. Bob spoke up to describe a problem his..... Listed under: [How To – DIY – Projects](#)

649. [Bear With Me](#)



This instructable teaches how to make our Bear With Me system, a prototype that allows two users to tangibly send and receive hugs (as well as motion) in near real-time. The bears will be able to send tweets when physically hugged. Their hearts will glow..... Listed under: [Game – Entertainment Projects](#)

650. [Using switch to control Piezo speaker with Arduino](#)



In this project, we will learn how to use a speaker (piezo sounder) and use switch button to change the pitch of the sound. Sorry about this one, you might find it a bit difficult to digest at first, and I didn't realise it's actually..... Listed under: [Projects](#), [Sound – Audio Projects](#)

651. [DIY Arduino FM Radio Shield](#)



I've been visiting local convenience store (Dollarama, here in Montreal, Canada) and notice nice looking FM Radio, just for only \$3. Why not to try to interface it to my lovely Arduino? Idea looks quite challenging, the same time what is the point in interfacing..... Listed under: [How To – DIY – Projects](#), [Projects](#), [Radio Projects](#)

652. [Word Clock in German using Arduino](#)



While in Germany last year, I saw a world clock in a store similar to this one in a store that was priced at 900€. I read several instructables online on how to create a World Clock so I decided to give it a shot..... Listed under: [Clock – Timer Projects](#), [Home Automation Projects](#)

653. [How to set up a Public Window](#)



Public Window (<http://www.publicwindow.net>) is an open source project which allows artists to display their creations in a window and have people from all around the world interact with it. This is a step-by-step guide on how to set up a Public Window of your own. A..... Listed under: [Home Automation Projects](#), [Video – Camera – Imaging Projects](#)

654. [Sonar For The Blind using Arduino](#)



This is a project I'm calling Tacit. No, I didn't bother making an awkward backronym for it, it just seemed like an appropriate name that's a lot shorter (though less descriptive) than "Hand-Mounted Haptic Feedback Sonar Obstacle Avoidance Assistance Device". It measures the distance to things and translates that into pressure..... Listed under: [Medical – Health based Projects](#), [Projects](#)

655. [Backpack Anti-Theft Alarm using Arduino](#)



If you're a student, like me, then you have heard of all the theft that occurs on campuses today. I can't even leave my backpack alone for five minutes without worrying about it getting stolen. To ease my mind and to help fellow students, I've..... Listed under: [Home Automation Projects](#), [Security – Safety Projects](#)

656. [Arduino Breadboard Shield](#)



Are you tired of having a hard time trying up a circuit on a breadboard because your arduino takes up a lot of space? This shield can be a solution to your problem! The Arduino breadboard shield is again, an accessory for your arduino board..... Listed under: [Development Board – Kits Projects](#)

657. [Arduino Serial Communication Code](#)



Arduino can send output through serial communication to your computer over USB. The output can be anything such as status, text, sensor reading, value, number etc. You can view the status output by clicking Serial Monitor button at Arduino Environment software. Instruction; 1) Connect your..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

658. [Connect several digital inputs to one analog input using Arduino](#)



I often run out of digital pins on my Arduino. Anything as complicated as, say, a video game controller, was near impossible with the amount of pins I had available. Multiplexing buttons works, but it requires lots of connections and soldering. So, I put together..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

659. [RC tank with a moving FPV camera using Arduino](#)



In this instructable I show you how to build remote control tank with FPV camera. At the beginning I build only RC tank without FPV camera but when I was driving it in the house I have not seen where it is. So I came..... Listed under: [Video – Camera – Imaging Projects](#)

660. [Arduino home energy monitor shield](#)



Although products are becoming more and more available for monitoring your home power usage, I'm one of those idiots who can't leave well enough alone and who would rather shell out \$100 and hours of my time in order to save \$20 and learn something..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

661. [Quiz Game Controller using "Lights and Sounds Buzzers" and Arduino](#)



Jeopardy style quiz games are favorites for creating excitement and educational instruction at the same time. Teachers, summer camp counselors, and even industry educators find this type of game to help generate interest and

involvement from the participants. The idea behind the game is simple,..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#), [Sound – Audio Projects](#)

662. [Arduino Phone Book](#)



Ever wanted to have a Phone Book, controlled using a microcontroller, which is very easy to use, and you can use it while talking on phone, and is saving data on SD Card? then this instructable is for you. In this instructable you will learn..... Listed under: [Phone Projects](#)

663. [Soundgraffiti with arduino mega](#)



So we haven been working on the new soundgraffiti board. This is an installation wich creates sounds using sprayed water. The connection is made with water. We used copper plates as our sensor. the plates had a cutout line in the middle of 0,1 mm..... Listed under: [Sound – Audio Projects](#)

664. [Arduino: Electrical Engineering Basics](#)



In this week's arduino tutorial, we take a bit of a detour and focus on some key elements of electrical engineering design that we'll be using in future episodes. [box type="note" color=" #202020 " bg=" #ffbb00 " font="verdana" fontsize="14" radius="20 " border=" #000" float="right" head="Attributes"]Thanks to..... Listed under: [Other Projects](#), [Projects](#)

665. [Temperature Sensor for Shower using Arduino](#)



With this device you diminish the use of water in your house or work. Instead of waiting to see vapor in the shower to get in, this device help you to know when the water its at the temperature you want and you can instantly..... Listed under: [Home Automation Projects](#), [Projects](#), [Temperature Measurement Projects](#)

666. [Fifty Dollar Box Bot](#)



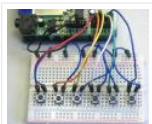
The objective is to construct a programmable hobby bot that is affordable and simple to make. The parts will be purchased from places such as Wal-Mart, Radio-Shack, any Hobby Store, or online store that is accessible to the public. The price range is 50 dollars..... Listed under: [Robotics – Automation Projects](#)

667. [Motion Controlled Ultrasonic Lamp using Arduino](#)



Recently I've been learning about Ultrasonic waves and how to harness their power. It's simple enough to make some type of sonar device, but I wanted to take at a step cooler and see if I could use Ultrasonic waves to not only detect movement,..... Listed under: [Home Automation Projects](#), [Sensor – Transducer – Detector Projects](#)

668. [Arduino Interrupts and Debouncing](#)



Interrupts are an extremely useful, yet often feared element of microprocessors. Interrupts allow you to run a program, while still being able to react to asynchronous input from the outside world. [box type="note" color=" #202020 " bg=" #ffbb00 " font="verdana" fontsize="14" radius="20 " border=" #000" float="right" head="Attributes"]Thanks to..... Listed under: [Other Projects](#), [Projects](#)

669. [Chat Server using Arduino](#)



A simple server that distributes any incoming messages to all connected clients. To use, open a terminal window, telnet to your devices IP address, and type away. Any incoming text will be sent to all connected clients (including the one typing). Additionally, you will be..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

670. [Monkey Automaton!](#)



This instructable will guide you through the process of building a set of automaton monkeys in the style of "Hear No Evil, See No Evil, Speak No Evil." Our design ends with two monkeys reacting at the push of a button located in the Speak..... Listed under: [Game – Entertainment Projects](#)

671. [SOLAR POWERED ARDUINO WEATHER STATION](#)



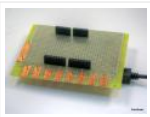
In country like India most of the people are dependent on agriculture. For effective planning in agriculture weather forecast is of utmost importance. So farmers are always interested in the Weather Forecasts. As farmers stay in remote areas, they have to wait for the news updates in tv,..... Listed under: [Solar energy projects](#)

672. [Arduino Controlled Motion Sensor](#)



In this Instructable, I'll be explaining how to build a motion activated alarm! It uses an Arduino microcontroller, a PIR (passive infrared) sensor, and a type of alarm. You can use an LED indicator, a buzzer, or a piezo. That's the easy part. I will..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

673. [MaKey MaKey Shield for Arduino](#)



MaKey MaKey is a project created by Eric Rosenbaum and Jay Silver. It's an Arduino based keyboard. A very special keyboard, because you can use apples, bananas or Play Doh as keyboard keys. Sounds strange, but it works very well. How it works: The trick is..... Listed under: [Development Board – Kits Projects](#), [Projects](#)

674. [Classic Joystick to USB Adaptor using Arduino](#)



If you grew up in the early 1980's and were into video games, you probably had an Atari 2600, ColecoVision, or similar game console. The controllers or joysticks for each of these systems had a distinct feel that is different from today's game consoles or..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

675. [LEGO T-Intersection LED Traffic Light using Arduino](#)



Video not playing? See it on YouTube: <http://www.youtube.com/watch?v=q0tiiWwC6Zo> Background Every Christmas we set up a large LEGO train layout in a section of the living room. This year, I ended up winning an eBay auction for a number of older-model LEGO road plates, one of..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [LED Projects](#), [Projects](#)

676. [Six wheeled All Terrain Vehicle \(6WD\) using Arduino](#)



Hello, In this post we'll be making a Six wheel drive all terrain vehicle (ATV). These are rare and hence expensive robots (at least in India). I made this ATV as my summer project. Dagu manufactures a similar 6WD chassis but its way too expensive..... Listed under: [Robotics – Automation Projects](#)

677. [The CoaTracker](#)



Has this ever happened to you? You wake up in the morning and realize that you're terribly late for work/class/your weekly pedicure/whatever. You throw on a t-shirt and flip flops, sprint around your warm, heated house grabbing your belongings, and race out the door...where you..... Listed under: [Sensor – Transducer – Detector Projects](#)

678. [Model Police Car using an Arduino](#)

We wanted to build a model police car with working lights and sirens. Then we decided to add a motor and instead of using a switch to turn everything and off we used a photodiode. For our car the photodiode signal is a simple on off..... Listed under: [Game – Entertainment Projects](#), [Projects](#)



679. [Open a box with the flick of a switch!](#)



Have you ever given something to someone and wished that the box you gave it in opened automatically? No? Well neither have I (well, maybe) :D. However if you have, this is the guide for you! With just a flick of a switch the box.....

Listed under: [Robotics – Automation Projects](#)

680. [How to turn inkjet printer to print on Coffee using Arduino](#)



The aim of this project is to make latte printer, I used 1 printers and 1 scanner , it prints one line a time, all what I have done is hacking the sensors of the printer and I used Arduino Uno to send different values..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#)

681. [Arduino + fischertechnik TX-C – Connecting I2C True Colour Sensor](#)



Colour reading is a real issue for industrial models. I've been working on it for more than 12 months now, since December 2009. After many months of hard work, • starting with the standard colour reader (season 1) with features a red LED, •..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

682. [The 4x4x4 LED cube using an Arduino](#)



In this instructable I will show you how to make a 4x4x4 LED cube that will be controlled by an Arduino Demulionove. now yes you might say” that Arduino has only 14 I/O pins well also the 6 analog pins can be used as pins..... Listed under: [LED Projects](#), [Projects](#)

683. [Froggy World 3 The Seesaw](#)



Froggy put on a little eye makeup before heading out for the new ride, “The Seesaw.” The Seesaw is the third ride in the amusement park for adventurous plastic frogs. This ride received Froggy from “The Boot” and slides him over to a waiting rail..... Listed under: [Game – Entertainment Projects](#)

684. [Arduino DIY SD Card Logging Shield](#)



Ready-made SD card logging shields for the Arduino typically cost in the range of \$15 – \$25. This is quite reasonable, but we might save a couple of bucks if we make our own. Not to mention all the fun in building it. Forget about.....

Listed under: [Other Projects](#), [Projects](#)

685. [Virtual USB Keyboard Using Arduino](#)



Communicating with a host computer can allow a simple Arduino-based system to gain access to a wide variety of devices and information. Most people link an Arduino to a host using serial communications across a USB connection with custom code running on the host to..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

686. [Smart Homer Web-enabled TV remote using Arduino](#)



Smart Homer, a Web-enabled TV remote puppet Smart Homer is a Web-enabled puppet that turns on your TV when Simpsons is on. As Homer is too lazy to browse the Web himself, a script in the cloud checks the online TV program for him. If..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

687. [The Musical FootBall](#)



This project is to construct a musical football. The reason for my project is that I was inspired by a little kid with autism who loves sports and music. So what better way to have fun than have a ball that you can play with..... Listed under: [Game – Entertainment Projects](#)

688. [Simple Arduino L.E.D Police Lights](#)



This was one of the first programs I wrote for the Arduino after having it a few days ☐ we will be making LED police lights with minimal materials Step 1: You will need. You will need Arduino (or suitable clone) Breadboard 2x 240ohm resistors..... Listed under: [Car Projects](#), [LED Projects](#), [Projects](#)

689. [Lightning Shutter Trigger for a Camera using Arduino](#)



I knew there were devices that could trigger a camera to fire during a lightning strike, but their circuits were more complicated than I wanted to make. I'm a software guy not a hardware guy so I decided to use an Arduino and that allowed me to write a..... Listed under: [Projects](#), [Video – Camera – Imaging Projects](#)

690. [Dr Blinkenlights...\(or how I learned to afford the BlinkM\)](#)



I love the idea of the BlinkM (individually addressed RGB LEDs controlled with 2 pins), but not so much the price (nearly 15 quid each!). Luckily, the hardware is open source and somebody has brought out an alternative firmware (although if you know where to..... Listed under: [LED Projects](#)

691. [Arduino wall avoiding robot](#)



This instructable assumes very little with respect to prior knowledge. If there are any areas you feel could be improved or clarified, please feel free to message or comment and I will update. Here are all the details you need to produce a simple wall..... Listed under: [Robotics – Automation Projects](#)

692. [Power Quality Meter \(PQ Monitor\) using Arduino](#)



Arduino UNO project, Power Quality Meter, someone would call it's PQ Monitor or PQ Analyzer. I had already published one blog devoted RMS voltage measurements on full band 20 – 20 000 Hz audio signals. (Following my own style, I'd refer to already published..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

693. [Audio VU meter with Extra wide Dynamic Range 69 dB using Arduino](#)



O'K, after having some fun with stereo version of the VU meter I described in my previous blog-post, now it's time to do a serious stuff. Studio grade VU meter !!! 24 steps, equally spaced every 3 dB, covering Extra wide Dynamic Range from -63 up to..... Listed under: [Metering – Instrument Projects](#), [Projects](#), [Sound – Audio Projects](#)

694. [Light Suit](#)



Why build a light suit? Probably because I've watched Tron a few too many times (the 1984 version of course). I'd just discovered Arduino and was very excited, I'd made LEDs flash and buzzers sound but now I wanted to make something new and interesting..... Listed under: [LED Projects](#)

695. [Dot Matrix Printer from a CD/DVD Reader with Arduino](#)



Hey! Some time ago while going through the pages here in Instructables, something caught my attention, a printer made of a CD reader, and I was amazed. I thought: "This is incredible, I have to make one!" I know that these kind of projects don't..... Listed under: [CNC Machines Projects](#), [Video – Camera – Imaging Projects](#)

696. [Arduino powered hangman giftbox/lockbox](#)



A medium sized box that requires the user to succeed in a game of hang man in order to gain access to the contents of the box. Great gift Idea!!! my Arduino sketch will be included in this instructable sorry for the poor quality pictures!..... Listed under: [Game – Entertainment Projects](#)

697. [Measure RPM – Optical Tachometer using Arduino](#)



This Instructable will show you how to make a Portable Digital Optical Tachometer using an Arduino Uno. This project is inspired from This instructable and is an enhanced version of it with an LCD display and a modified code. Instead of a slotted sensor ,..... Listed under: [Metering – Instrument Projects](#)

698. [How to build an Arduino WiFi 4x4 with Android Controller](#)



RC cars can be WiFi Cars...? RC cars are cool, but cheap RC cars have limited range and can only be controlled with the particular controller that was included with the car. I purchased a RC jeep, complete with 4 wheel drive, flexible suspension, and..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

699. [Autonomous Control of RC Car Using Arduino](#)



This instructable shows how to modify an inexpensive RC car so it can be controlled by an on-board microcontroller. You can program the controller to make the car do any number of driving patterns and stunts. Once you have the car being controlled from the..... Listed under: [Car Projects](#), [Game – Entertainment Projects](#), [Projects](#)

700. [How to make a robotic dart shooting sentry](#)



Tools: Hot Glue Gun Laptop with Arduino software 22 awg hookup wire (black, red, yellow) wire strippers usb cable drill 1/16th drillbit exacto knife Parts: 2 tongue depressors 1 clothespin 1 rubber-band 1 dart 1 cup (paper or plastic) 1 arduino 1 breadboard 1 led 1 momentary button..... Listed under: [Robotics – Automation Projects](#)

701. [Controlling Hand Drill with Roboduino using Arduino](#)



This will explain how we re-purposed a hand drill to re-spool solder using a roboduino (arduino compatible), two servos, and a DIY encoder. While one could use TRIACs to play with the AC power going into the drill, just using a servo to control the throttle..... Listed under: [Motor Projects](#), [Projects](#)

702. [Adding CV inputs to the Auduino granular synth](#)



When I first got into the Arduino I went looking for audio projects. One of the first things I built was TobaTobias' Auduino granular synth. I was so impressed I built a permanent unit in a heavy duty enclosure and incorporated it into my occasional..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#)

703. [GoFly – paragliding/hangliding/gliding altimeter-variometer from Your car navigation using Arduino](#)



GoFly is a project based on PNA (car navigation devices with Windows CE), LK8000 tactical fligh computer software and variometer (altimeter) external input based on Arduino board and pressure sensor. Why? -You can build this for about 150\$, -Your ordinary PNA (Personal Navigation Assistant) changes..... Listed under: [Car Projects](#), [Metering – Instrument Projects](#), [Projects](#)

704. [Quick and Easy Arduino Nightlight](#)

Honestly, how many people have been in this scenario (leave a yes or no in the comments) : It is 2:30 in the morning and you wake up with a need to do something whatever that may be (bathroom, forgotten homework assignment, project due in..... Listed under: [LED](#)



[Projects](#)

705. [Using an Arduino to Control an Infrared Helicopter](#)



In this Instructable we will explain how infrared signals are used by a remote to control a toy or device, then show how a simple circuit can be added to an Arduino to operate the same device through free, Open Source software. This document is part of..... Listed under: [Game – Entertainment Projects](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

706. [USA Flag made with diffused LED using Arduino](#)



USA flag constructed using a total of 2,301 diffused red, white and blue LEDs completed with Arduino sketch animations, I hope this instructions helps anyone who wants to try this out. This flag can be displayed during the 4th of July, memorial day or during..... Listed under: [Home Automation Projects](#), [How To – DIY – Projects](#), [LCD Projects](#)

707. [Arduino Skateboard Speedometer](#)



Using an Arduino, it is easy to make a speedometer/tachometer for virtually any man-powered vehicle. I made one for my skateboard that used a small magnet to count revolutions and utilized an LCD display screen. This Instructable will show you how you can do the..... Listed under: [Game – Entertainment Projects](#), [Metering – Instrument Projects](#), [Projects](#)

708. [Automate Your Garage Opening Times](#)



1. Background My 1st project with Apduino Online was about to solve a simple problem, close the garage door after sunset, when it has been left open. We have a garage in the basement, which is used not only for car parking, but gardening tools..... Listed under: [Home Automation Projects](#)

709. [How to control arduino board using an android phone and a bluetooth module](#)



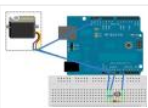
In this tutorial you'll learn how to use a bluetooth module and MIT's app inventor to create a wireless serial link between an android phone and an arduino board. Here is a short video showing an example app I created. I'll describe how to do..... Listed under: [Arduino Android](#), [Internet – Ethernet – LAN Projects](#), [Projects](#)

710. [Quantifying Access to your Mind using Arduino](#)



So, I manage a creative technology lab at California College of the Arts. It's essentially an educational hackerspace for art and design students. Pretty awesome, right? After graduating from the University of Minnesota with a degree in mechanical engineering, I was desperately trying to find..... Listed under: [How To – DIY – Projects](#)

711. [Control Servo with Light using Arduino](#)



Hello! In this Instructable i will teach you how to control a servo using a Photocell. This is very simple and good for beginners. Step 1: Materials 1 x Photocell 1 x 10k Resistor 1 x Arduino 1x Breadboard 1x Servo and some jumpers Step..... Listed under: [Motor Projects](#), [Projects](#)

712. [Arduino Wireless Animatronic Hand](#)



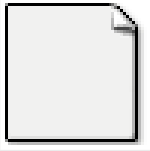
BTW!!!! This instructable is awsomeeeeeeeThis is a very simple but at the same time a very hard project depending on your skill level. Lets get to building! What this is, is a wireless animatronic hand that doesn't need a computer to operate. The user wears..... Listed under: [Projects](#), [Sensor – Transducer – Detector Projects](#)

713. [Binary/ Analog Clock](#)



I was inspired by the digital/ analog clock to make my own special clock as my second instructable. I browsed the internet and found that servo clocks are rare and binary are common. So i decided to combine the two and this is what I..... Listed under: [Clock – Timer Projects](#)

714. [Control anything remotely with Infrared signals using Arduino](#)



Who would have thought that just about every Arduino attachment can be controlled in some way with a TV remote? Now its time to find out how. Arduino.skp141 KB Step 1: Setup and Materials The setup for this is quite basic. The real challenge is..... Listed under: [Projects](#), [Radio Projects](#)

715. [How to make an Arduino from scratch](#)



Frugal Engineering is the best way forward for science. If you're interested in making some arduino's from scratch , you've come to the right place. You can see a video tutorial of this instructable : here It will supplement any loopholes or doubts you may..... Listed under: [How To – DIY – Projects](#)

716. [Arduino Bluetooth Serial Connections](#)



This is an introduction on how to setup, make a basic connection, and send data to and from an Arduino using Bluetooth! Bluetooth is great for transmitting data over medium distances and what's more, Arduino just treats it like a serial data connection. This means..... Listed under: [Other Projects](#), [Projects](#)

717. [To blink LED from mobile phone or iPod or another computer via WiFi](#)



Hello Everyone, I like this site too much, the site really played very important role in awakening my enthusiasm and creativity. This is my first project and its really for the first timers project. I got this project from Instructible site , modified to access..... Listed under: [LED Projects](#)

718. [RGB LED Strip Circuit with Arduino](#)



This Instructable covers the assembly of a circuit capable of PWM-ing (pulse width modulating) a high-power RGB LED strip and programming an Arduino to cycle through a range of colors. In this context, "high power" is 9-12 volts. I will discuss how to mount a..... Listed under: [LED Projects](#)

719. [Arduino – Control LEDs with a Remote Control](#)



Step 1: IR library First you need to go to this page and download the IR library. You just need to follow the read me file to install. I think that any IR remote control can do this, I'll be using a Philips Universal one..... Listed under: [LED Projects](#)

720. [‘Knock Back’ – A Knock Echoing Arduino](#)



This is a simple Arduino sketch that was originally designed to experiment with arrays and the built-in timing functionality. I based it on the tutorial sample code <http://www.arduino.cc/en/Tutorial/Knock> The system consists of a piezo sensor connected to an analog pin that listens for a knock from..... Listed under: [Sensor – Transducer – Detector Projects](#)

721. [How to Build a Robotic Hand with Haptic Feedback using Arduino](#)



For science fair this year, I felt like building something instead of doing an experiment. All I needed to do was look around Instructables for a project idea. I was inspired by njkl44's robotic hand since it reminds me so much of stuff out of..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

722. [Arduino Tutorial: Capacitive Touch Sensors](#)



Hello everyone! This instructable is a tutorial that will guide you on using the Capacitive touch sensors with Arduino. A Capacitive sensor is a kind of touch sensor, that requires little or no force to activate. In this Instructable about capacitive touch sensing, I'll show..... Listed under: [Sensor – Transducer – Detector Projects](#)

723. [Make Wired Robotic Arm Edge to "Wireless" with DIY Arduino and XBee](#)



UPDATE: Added Schematic, Top Layer PCB, Bottom Layer PCB, and both Top, Bottom PCB images When I finished the "RevIO" – an Arduino Clone that has the different way of exposing pins usage. I decided to go further to the next project. To test my..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

724. [7-Key Slider/Wheel Tutorial with Synthesizer](#)



This is a tutorial for using the 7-Key Slider/Wheel Breakout from Rachel's Electronics. I'll show you how to solder up the header pins for maximum usability. Rachel's has the QT1106 datasheet on their site, and a great arduino library for this breakout. The kit from..... Listed under: [Sensor – Transducer – Detector Projects](#), [Tutorials](#)

725. [Arduino Watch with Nokia 3110 screen](#)



My goal for this project is to make a watch with selectable dials, stopwatch and millidays. This idea started with an Aprils fools prank about metric-time. (<http://www.youtube.com/watch?v=K35xG1buyFA>) First I wanted to make a metric clock but soon this idea evolved from a metric watch into..... Listed under: [Clock – Timer Projects](#), [Phone Projects](#), [Projects](#)

726. [Uber Home Automation w/ Arduino & Pi](#)



A few years ago, I became a dog owner for the first time. I didn't like leaving Cody in the kennel alone all day. I had a webcam on him, but I couldn't watch it all day long. What if he was in some kind..... Listed under: [Home Automation Projects](#)

727. [Come Home! Connecting Distant Spaces EASILY over Web using Arduino](#)



Can you believe that we live in an age where you can touch an object (any object – if it has metal on it) and a light will turn on in your loved-one's space – even if they live in a different city, state, or..... Listed under: [Home Automation Projects](#), [Internet – Ethernet – LAN Projects](#)

728. [Simple 2-way motor control for the arduino](#)



When I say simple, I don't mean use a speed control. But control the motor directly without any external circuitry. Here's how: How this came about: I recently was working on an instructable about charlieplexing with an arduino. And I was wondering if the same principle..... Listed under: [Motor Projects](#), [Projects](#)

729. [Assembling the 8x8 LED Board Kit](#)



These are step by step instructions for assembling the 8x8 LED Board kit from moderndevise.com. I had never played with LED displays before using this kit. I suggest reading through all the assembly steps BEFORE starting to solder because assembly order DOES matter with this..... Listed under: [LED Projects](#)

730. [CatGenie: A smart, resettable SaniSolution cartridge](#)



The project This project follows on from the excellent work by ScotSEA and his Arduino reset program (see <http://www.instructables.com/id/CatGenie-Resetting-a-SaniSolution-Cartridge/>). I had never taken my CatGenie apart as Scott did, but had built a small contact board instead. I had previous updated Scott's program to..... Listed under: [Security – Safety Projects](#)

731. [My Ninth Project: Robot Arm with Joystick Shield using Arduino](#)



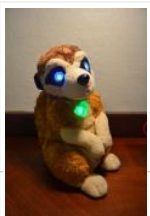
Although it is great controlling the robot arm with computer or mobile phone, I think using joystick is also cool, so I've bought a joystick shield and make a new project. This joystick shield is compatible with Arduino. It also support Nokia 5110 LCD module,..... Listed under: [Robotics – Automation Projects](#)

732. [Beat Sync using an Arduino](#)



Beat Sync is a single frequency audio spectrum volume meter. It can isolate around a certain frequency (I choose the bass) and display it on a creative 8 segment LED bar graph. This is meant to be quite simple, yet allowing room for..... Listed under: [Projects, Sound – Audio Projects](#)

733. [Laser Tag Stuffed Animals](#)



Ever feel like there aren't enough toys at the intersection of cuddly and terrifying? Wish your stuffed animals could double as weapons? Then I've got the toy for you. These Laser Tag Stuffed Animals easily transform from being a cuddly night light to the world's..... Listed under: [LED Projects](#)

734. [Arduino and L293D Robot \(Part 1 \)](#)



Here is part 1 of the Arduino and L293D Robot.This is part of a series of instructables leading to a Line follower Robot. This is a basic Robot made by controlling two motors via the L293D chip through an Arduino Board. I have done this project in..... Listed under: [Projects, Robotics – Automation Projects](#)

735. [Mini BillBoard using Arduino](#)



Designing a Mini BillBoard using LED Lights(different colors) , Arduino and Bread Board. Thought of creating a mini billboard, that could display my name ("Josh") . This is for one of the build nights (required us to use LED lights). This billboard would blink in..... Listed under: [Game – Entertainment Projects, LED Projects](#)

736. [D-Led Shield v1.0 \(for monitoring\)](#)



Good day fellow enthusiast! Here is one of my latest and simplest shield designs for an arduino board. The thing here is, sometimes we have a hard time checking out which I/O pins are LOW or HIGH, especially when we are dealing with LED, motors,..... Listed under: [LED Projects](#)

737. [How to Make Musical Floppy Drives using an Arduino](#)



My brother posted a video about this on facebook almost a year ago. Some old floppy drives playing Bach's masterpiece Toccata & Fugue and it got me really interested. So I read about it when the author posted a how-to on his blog and did a couple of tweaking..... Listed under: [Game – Entertainment Projects, Projects, Sound – Audio Projects](#)

738. [Pimp My Zoomobil using Arduino](#)



I recently put together the Playmobil Zoomobil for my kids. As I was busy snapping all the pieces together, I became more and more convinced that this cart had been made to have lights. It's hard for me to believe the original product designers at..... Listed under: [Game – Entertainment Projects](#)

739. [Using a Dot Matrix LED with an Arduino and Shift Register](#)



The Siemens DLO7135 Dot matrix LED is one amazing piece of optoelectronics. It's billed as a 5x7 Dot Matrix Intelligent Display (r) with Memory/Decoder/Driver. Along with that memory, it's got a 96-character ASCII display set with upper and lower case characters, a built-in character generator..... Listed under: [LED Projects](#), [Projects](#)

740. [SYNTHDUINO](#)



The synthduino is a fun arduino project to do and as a beginner it is a great way to learn new things about arduino's many features. With only using household items to build the synthduino you will be satisfied with the finishing project and feel..... Listed under: [Game – Entertainment Projects](#)

741. [Arduino Controlled ATX Power Supply](#)



Can a microcontroller control its own power? Well nearly! An ATX power supply, either new or from an old PC, is a great way to power Arduino and other microcontroller projects. That is covered in several 'ibles such as this one. However, because of some..... Listed under: [Other Projects](#), [Projects](#)

742. [Reading Digital Callipers with an Arduino](#)



How to use an Arduino to read the signal from a set of digital callipers and send the reading over USB. Why? This might be useful for accurate position sensing in home made / hacked computer aided manufacture systems. Adds USB functionality to your callipers..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

743. [Personalised Word Clock using Arduino](#)



Build a unique personalised gift that's cool and reflects the character of the recipient. What's different about this Word Clock is that it is small enough to sit on a bedside desk, displays the recipients name and has personalised messages that appear at different times..... Listed under: [Clock – Timer Projects](#)

744. [Arduino String Instrument](#)



Sure you can use LDR's, potentiometers and buttons to generate sounds, but what about strings? When I began thinking about an Arduino string instrument, I realized what I wanted to create was a soft potentiometer. I found my inspiration from Hannah Perner-Wilson's Fabric Potentiometer <http://www.kobakant.at/DIY/?p=543>. Step..... Listed under: [Metering – Instrument Projects](#)

745. [Autonomous Paintball Sentry Gun using Arduino](#)



Make your own, custom AUTONOMOUS SENTRY GUN! A Microcontroller Contest Finalist and Runner Up Winner. This instructable is out-of-date. For the most recent version of the tutorial, see the website . Cheers! This sentry gun autonomously tracks, aims, and shoots at targets, using: -An airsoft or..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

746. [BUGBot – Light Follower Robot using Arduino](#)



The figures above shows the basic idea of any robot, where we have some inputs and output devices connected to the brain and some outputs controlled by the brain. In our case we will have the Arduino like the brain. The central Brain, controls all..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

747. [The “all in one box” aquarium feeder using Arduino](#)



Step 1: Things you will need the images show you what you need. you will also need (but is not shown in picture soldering iron shrink tubes lighter 5 volt power supply usb cable (to program you're arduino) info on the foamed pvc sheet..... Listed under: [Home Automation Projects](#)

748. [Dirt cheap Arduino LED light bar](#)



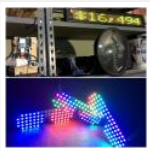
This instructable was designed for beginners in mind, but advanced users can easily adapt it to fit their needs and wants. It only uses a few common components, so you shouldn't have much trouble putting this together. It's a good waste of 5 minutes with..... Listed under: [LED Projects](#), [Projects](#)

749. [Intelligent Solar Garden Light using an Arduino- Part 1](#)



I bought a solar powered garden light. The solar panel charges the batteries and when it gets dark the lights (3x LEDs) turn on until it either gets lights again or the batteries run out. It has a small amount of intelligence (turns on when..... Listed under: [Battery Projects](#), [Home Automation Projects](#), [Projects](#)

750. [Kickstarter Backer Alert with Stats Scroller, using Arduino Yun](#)



The Arduino Yún is a curious addition to the Arduino family. There is a fairly widespread community surrounding the Arduino concept, platform and software. There's another popular community dedicated to hacking and improving inexpensive wireless routers, which often run Linux. The Yún combines the two...it's..... Listed under: [Car Projects](#)

751. [Interactive Stereoscopic Installations: visual rupture with the Diplopiascope](#)



What is it? This is an ongoing project that i've been working on to see the potential of interactive stereoscopic installations in examining the perceptual process. I use a setup that i've called a Diplopiascope to investigate this. The Diplopiascope has gone through a few..... Listed under: [Video – Camera – Imaging Projects](#)

752. [Make a 24X6 LED matrix using an Arduino](#)



After making a 8X10 matrix a lot of people asked me about expanding the matrix to some thing bigger, and some wanted to write stuff to the matrix via a PC, so one day I looked at a pile of LEDs that I had leftover..... Listed under: [LED Projects](#), [Projects](#)

753. [8x8 LED Matrix Animations using an Arduino](#)



For a party we were about to have I wanted a cool light display to use with my new Xmas present – an Arduino Uno. Having looked at the LED matrix's here I wanted a bigger one that I could hang on the balcony. I also wanted..... Listed under: [LED Projects](#), [Projects](#)

754. [Arduino-Based Blue Box \(Phone Phreaking\)](#)



History and Story In the 1950s, 1960s, 1970s, 1980s and even up into the 1990s phone phreaking was an amazingly cool way to explore an unknown world of phone switching networks. To “phreak” a telephone switch, can be done by using frequencies, or tones to..... Listed under: [Phone Projects](#)

755. [Serial Servo Controller with Arduino](#)



I'm going to show you how to use your Arduino to control up to 12 servos at once with minimal jitter. Using a simple serial interface you can control the position of up to 12 servo channels. Up to 10 snapshot positions can be saved..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Motor Projects](#), [Projects](#)

756. [LED Watch using an Arduino](#)



This instructable will show you how to make your own arduino based watch that tells time using a matrix of LEDs. This is my first instructable, so if something is unclear leave me a comment or send a message! I was inspired by all the.....
Listed under: [Clock – Timer Projects](#), [LED Projects](#), [Projects](#)

757. [DIY a Spelling Game with an Interactive Robot using Arduino](#)



Did you hear before about Social Robot? Did you see the Pepper Robot or Jibo robot? These kinds of robots that can hear you, understand you and make a social contact with you via sound, facial expressions and body gestures. Social robots have various..... Listed under: [How To – DIY – Projects](#), [Robotics – Automation Projects](#)

758. [DinoCalc Version 1.0](#)



(Arduino Pro Mini Protoboard Version) Latest Release: <http://code.google.com/p/dinocalc/> Development: <https://github.com/WeaselJones/DinoCalc> This is a calculator without a LCD that tells you if your math answer is right or wrong, without giving you the answer. This instructable will show you how to make this simple math checking.....
Listed under: [Calculator Projects](#)

759. [MP3 Interface for Arduino](#)



I have added a follow-on to this Instructable: <http://www.instructables.com/id/Cheap-and-Easy-MP3-Shield-for-Arduino/> The follow-on shows you how to design, etch and build a PCB shield to connect the MP3 to the Arduino. Replaces the analog switches with a 74HC244. Single layer board with large surface mount component design. Only..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#), [Sound – Audio Projects](#)

760. [Ethernet Switching – with Arduino](#)



Aim: Switch relays from the ethernet or the internet, using your mobile, tablet or computer with a nice graphical user interface. Update V4.06 Please read the below steps to Step 2 if you are viewing this article for the first time. Please go to step..... Listed under: [Internet – Ethernet – LAN Projects](#)

761. [Virtual Etch A Sketch](#)



The Etch A Sketch: famous, creative, and unique. Unfortunately I have no clue where the one from my childhood is, so I decided to make my own virtual one! Check it out (and my awful drawing skills) below. This Etch A Sketch is quite like..... Listed under: [Game – Entertainment Projects](#)

762. [ATtiny programmer using Arduino ISP](#)



Thanks to: <http://jeonlab.wordpress.com/> For relatively small (less number of pins than ATmega328) projects, ATtiny series, ATtiny45 or Attiny85 are good choice in terms of its physical size (8-DIP or 8-SOIC) and low power consumption. There are many ways to program it. One of the popular..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

763. [TurtleDuino Object Avoidance Robot using Arduino](#)



Hello, in this instructable I'll be showing you step by step how to build the TurtleDuino, an object avoidance robot, with an Arduino UNO microcontroller on board. I designed the TurtleDuino using material from the hardware store (Home Depot) and all the electronics from sparkfun.com..... Listed under: [Projects](#), [Robotics – Automation Projects](#)

764. [Home Automation: Drapes using Arduino](#)



Hate having to manually open and close your drapes? Hate getting back from work/school and your room is dark and dreary? Do you want curtains that open and close themselves? Then you need Dr. Drape! Dr. Drape is an easy DIY project using an Arduino..... Listed under: [Home Automation Projects](#)

765. [Convert a toy piano to work as a midi device and use it with Synthesia](#)



Goal of this project: Convert a cheap toy piano to work as a midi device and use it with Synthesia (<http://www.synthesiagame.com/>) Other programs that use midi inputs can also be used. Approach: The pushbuttons of the piano are used to make a simple pull-down circuit..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Sound – Audio Projects](#)

766. [Tankbot – Internet Controlled Tank Robot using Arduino](#)



Do you remember a game called Tank Wars? This is an attempt to make a physical version of that classic arcade game. You, the player drive an Arduino powered tank and fire a laser at a target. This project uses an Arduino to control a tank..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#), [Robotics – Automation Projects](#)

767. [Guitar Tuner for the Blind \(using an Arduino\)](#)



How to modify a guitar tuner so it can be used by a blind person This build uses an Arduino Pro mini microcontroller, (all code is provided). This project was undertaken for the charity Remap, which provides custom-made equipment for people with disabilities. Summary Begin with..... Listed under: [Sound – Audio Projects](#)

768. [An FM Stereo Broadcaster PLL using Arduino](#)



I have two good AM transmitters – one I'd built using a single 6888 Tube plus an old KnightKit Broadcaster that I'd refurbished, as well as a high-quality solid state transmitter from SSTRAN that I use to play music over the several antique AM radios I've repaired..... Listed under: [Projects](#), [Radio Projects](#)

769. [AC Arduino dimming circuit](#)



THANKS TO CONCERNED VIEWERS, I HAVE LEARNED THAT THIS IS NOT SAFE AND SHOULD NOT BE REPLICATED. SO PLEASE DONT TRY THIS □ THANKS TO EVERYONE WHO COMMENTED, I LEARNED A LOT I am not an engineer, just an experimenter and hacker and prototyper etc,..... Listed under: [Home Automation Projects](#), [Projects](#)

770. [Tiny Altoid Tin Robot With Personality](#)



I love robots. Normally the ones I build are quite large and wouldn't fit in your pocket, but for a change of pace I decided I would try something small and fun! This robot is exactly that, and in fact fits inside of an altoids..... Listed under: [Robotics – Automation Projects](#)

771. [5x5 LED Cube using Arduino Uno](#)



This is a step by step explanation of how to build a 5x5 LED cube using an arduino. I did this project for my undergraduate electronics class and it took me about 2 weeks to complete. Note: Apparently, some of the links for the supplies..... Listed under: [LED Projects](#), [Projects](#)

772. [Self-Watering Plant using an Arduino](#)

Plants liven up any space by adding a sense of airiness and life. That is – of course – when you don't forget to water them, and they shrivel up and die. I am very bad at remembering to water plants. That is why I..... Listed under: [Home Automation Projects](#), [Projects](#)



773. [Froggy World 5 The Coffee Gripper](#)



In Froggy World, the amusement park for adventurous plastic frogs, it became necessary to move the frog from a train car back to the catapult. Because I couldn't know whether the frog would be upright or sideways—and in what orientation—the gripper was a challenge..... Listed under: [Home Automation Projects](#)

774. [Dual H-Bridge – Arduino L298 Breakout Board](#)



This is my homemade Dual H-Bridge using the IC L298N. For control DC motors or step Motors or other purposes just like you need. Breakout L298N.ppt1 MB Step 1: Hardware and Materials This is the basic schematic. It works perfectly. A more advanced schematic and..... Listed under: [Arduino Android](#)

775. [Interfacing a Digital Micrometer to a Microcontroller](#)



We had a project that required connection to a digital micrometer with a data output jack. The idea was to connect a microcontroller to the micrometer, to read the measurements and make decisions based on the readings. The micrometers that we used are made by..... Listed under: [Metering – Instrument Projects](#)

776. [Bubble Wall | Interactive, Inflatable Panel](#)



Bubble Wall | Breathing Wall Panel System Interactive, Inflatable, Playable Wall Brief Project Description This was an artistic piece installed for a digital fabrication show at the University of South Florida School of Architecture and Community Design. While this brief is specific to this panel,..... Listed under: [Game – Entertainment Projects](#), [LED Projects](#)

777. [Big Spectrum Analyzer with Arduino](#)



Let's put together a pixel strip with an HL1606, an Arduino UNO and the Spectrum Shield to build a seven bands "large" Spectrum Analyzer of simple construction. The Strip used uses the HL1606 controller to allow direct management of each of the LEDs. The chip..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [Projects](#)

778. [Wii Nunchuk Controlled Model Train using Arduino](#)



Using an Arduino microcontroller, an Adafruit motor shield, and a Wii Nunchuk, you can create a intuitive, programmable, model train controller to run your layout. Amaze your friends. Entertain your kids. Not quite DC, not quite DCC. You're headed for the hacker lands of PWM..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

779. [A Facebook-Connected, Arduino-Powered Music Party](#)



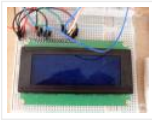
Music party is a new way to listen to music with others. By tapping an RFID/NFC device that is synced to a Facebook account on an Arduino RFID reader shield and sending that unique ID to Music Party server using the Arduino WiFly shield, we..... Listed under: [Internet – Ethernet – LAN Projects](#), [Sound – Audio Projects](#)

780. [DIY Arduino Board Water Meter](#)



Working with the interaction design team, a bunch of us at Teague have been tinkering with measuring water, analyzing usage data in realtime to affect behaviors, and storing it to see patterns over time. At the heart of the exploration was a need to cheaply measure water..... Listed under: [How To – DIY – Projects](#), [Metering – Instrument Projects](#), [Projects](#)

781. [Arduino LCD Metronome](#)



Connecting the LCD The first step is to wire up the LCD. The HD44780 has 16 pins: Pin 1 – Vss Pin 2 – Vdd Pin 3 – Vo Pin 4 – RS Pin 5 – R/W Pin 6 – E Pin 7 – DB0..... Listed under: [LED Projects](#)

782. [Custom Large Font For 16×2 LCDs using Arduino](#)



A couple of years ago i was learning to use the Ardiuno and started playing around with an Hitachi HD44780 based 16×2 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](#), [Projects](#)

783. [Garduino-Automated Gardening System using Arduino](#)



This instructable is a guide for setting up an automated gardening system using an arduino and other cheap electronic parts. It allows sustainable gardening by using sensors to determine soil moisture, as well as a webscraper to determine future weather. It uses this information to save water by only..... Listed under: [Home Automation Projects](#), [Projects](#)

784. [Self-Contained 7x7x7 LED Cube](#)



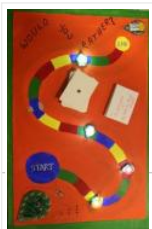
LED cubes are true 3D displays that work by lighting up points in a 3D lattice of LEDs. On the 3D display you can produce some truly mesmerizing animations. This Instructable will walk you through creating an LED cube for yourself that is completely self-contained and powered..... Listed under: [LED Projects](#)

785. [Burning the Bootloader on ATmega328 using Arduino UNO as ISP](#)



I had one remote controlled project that needed an Arduino running 24/7 but I didn't want to leave my \$32 Arduino UNO, so I decided to buy some pieces and created my own Arduino. The most important part was buying the microcontroller. These were my..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Projects](#)

786. [How To Make A Board Game Using Arduino](#)



In this Instructable, we'll teach you how to create your own "Would you rather..." board game using conductive paint, an Arduino microcontroller, and some electronics components. Players take turns moving along the game path as directed by an electronic dice roll. Along the way,..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

787. [FuzzBot](#)



The FuzzBot is an awesome, fast, fully autonomous small Arduino robot that everyone loves!!! It uses the compact Pololu ZumoBot Chassis kit for a great drive system, and uses a Parallax Ping sensor to sense proximity, to make the FuzzBot fully autonomous. I like to..... Listed under: [Robotics – Automation Projects](#)

788. [Arduino camera Lens 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: [Projects](#), [Video – Camera – Imaging Projects](#)

789. [Capacitive touch Mood light using Arduino](#)



This instructable is a quick write-up of my experience creating a multifunctional moodlight. Some basic knowledge of electronic circuits is expected. The project has not yet finished, some adding functionality and tweaking has to be done but it is already functional. If you guys are..... Listed under: [Game – Entertainment Projects](#), [Home Automation Projects](#), [LED Projects](#), [Projects](#)

790. [Arduino-plex 2.0: Modular Plexiglas Arduino Work Surface](#)



Last year I needed a board that I could stick my breadboards to, that would also securely hold my Arduino. I used some Plexiglas I picked up at Skycraft in Orlando and I glued everything together with Crazy Glue. This worked well, but it didn't..... Listed under: [Development Board – Kits Projects](#)

791. [The morse code generator by a PS/2 keyboard using Arduino](#)



Hi, all! Today I'm trying to explain you my last project: "The morse code generator by a PS/2 keyboard" I've used an PS/2 keyboard to send input to my Arduino board (like described in here) and transform it in morse code that activate..... Listed under: [Arduino Programmer Projects](#), [Projects](#)

792. [Nokia LCD & Sensors using an Arduino](#)



Arduino: Nokia LCD & Sensors PROBLEM: Making my Arduino, a Temperature-Relative Humidity sensor and a Nokia3310LCD screen work together. Now, I'm a Lazy Old Geek, so what I wanted was an Arduino kit that would take shields. This Freeduino was the cheapest that I could..... Listed under: [LCD Projects](#), [Phone Projects](#), [Projects](#), [Sensor – Transducer – Detector Projects](#)

793. [Program an ATtiny with Arduino](#)



Follows are directions for programming the ATtiny microcontrollers using the Arduino IDE. In plain English, this is how to program 8-pin Atmel chips as you would normally an Arduino. This is cool because the ATtiny is tiny, and – well – this allows you to..... Listed under: [Arduino Programmer Projects](#)

794. [Stupid Simple Arduino LF RFID Tag Spoofer](#)



RFID tags are all over the place. They're used in building access control systems, passports, inventory tracking . . . This instructable will show how you can use an Arduino and a few simple components (wire coil, transistor, capacitor, resistor) to make a device..... Listed under: [Projects](#), [RFID – NFC projects](#)

795. [Ultrasonic Tape Measure using Arduino](#)



Have you ever wanted an ultrasonic tape measure, like this Stanley? (See picture). Well, I have but then I am a Lazy Old Geek. I don't really need one but I thought I'd try to make one. And naturally, I thought of an Arduino. August..... Listed under: [Metering – Instrument Projects](#), [Projects](#)

796. [Interface Arduino to MySQL using Python](#)



Here's a brief tutorial that should get you up and running interfacing your Aduino with a MySQL database. For the sake of this tutorial, I am assuming you know how to set up and use MySQL. This tutorial does not require much Python experience, but..... Listed under: [Interfacing\(USB – RS232 – I2c -ISP\) Projects](#), [Internet – Ethernet – LAN](#)

[Projects](#)

797. [LDR Robot using an Arduino](#)

LDR Robot with IR and a Servo The LDR/IR Robot is designed to seek out light and avoid obstacles. The robot uses the Light Dependent Resistor to seek out light and the Infrared Sensor to detect and avoid objects in its path. The following are..... Listed under: [Projects](#),



[Robotics – Automation Projects](#)

798. [Jeopardy Ring-in Buttons with Built-in Rules using Arduino](#)



There are several good Jeopardy/Game Show lockout buttons/buzzers, but none incorporate the timing rules of Jeopardy. I am learning about the Arduino and I thought that this would be a great project to practice with. The rules include a question reading period with no timeout..... Listed under: [Game – Entertainment Projects](#), [Projects](#)

799. [Frankenstein Laser Engraver](#)



This Frankenstein Laser Cutter was built out of an old scanner and printer. The whole thing evolved around the instructable of Groover and his 'Pocket Laser Engraver'. This is a Making-Of. Although a lot, if not everything, of the mechanical construction requires ingenuity I tried..... Listed under: [Metering – Instrument Projects](#)

800. [Low cost Ethernet shield with ENC28J60 using Arduino](#)



Economical alternative to original Arduino ethernet shields, allows data rates up to 10 Mbps and is achieved with a traditional assembly components. One of the most interesting shield that you can mount on the Arduino platform is certainly the ethernet shield, because enable numerous networking..... Listed under: [Internet – Ethernet – LAN Projects](#), [Projects](#)

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