

Chapter 1 : The PIC16F84A - A Beginners Microcontroller | Teach Me Microcontrollers!

PIC microcontroller is based on Harvard Architecture and these microcontrollers are widely used for industrial purposes due to its high performance and low power consumption. Applications of this microcontroller mainly involve PIC microcontroller. This article discusses about the PIC microcontroller projects, that are listed below.

Browse through our list of latest electronics projects ideas for beginners to final year students. We provide this free list of varied electronics project ideas. These are microcontroller as well as non microcontroller based projects for beginner electronics engineering students. Nevonprojects is where your electronics dreams come to reality. Our researchers and developers daily compile fresh ideas that can be developed as electronics projects. Our researchers compile fresh electronics projects topics and ideas based on upcoming electronics concepts and technologies. These ideas are listed here on this page for engineering students, researchers and enthusiasts to build their projects and learn about electronics development in the projects. These electronics projects ideas are to help students find their electronics final year project topics to be implemented in their final years. This page consists of a combination of the latest projects built from to arduino microcontrollers that help students select ideas and implement them. We possess a list of the best microcontroller based projects required for diploma as well as degree final year implementations. Get diploma final year project ideas for eee as well as ece final year engineering branches. We give you a repository of electronics projects simple to implement as well as complicated projects ideas for those needing it. Nevonprojects proper training kits for students along with project components for self practice. Our developers constantly research about electronics based ideas for final year implementations. Our list of electronics project ideas is for helping students choose the best electronics projects topics to suit their needs. These microcontroller based project topics are to help students who run out of ideas for final implementation. Implementing and providing latest Electronics project ideas is a part of our work. We constantly research on new electronic technologies to provide the best ideas to be used as final year projects by students. Your search to find the latest electronics projects for beginners ends here. Our developers continuously scan latest technologies to keep this list updated with latest electronics projects for final year for and implementations. Also find eee projects for engineering diploma as well as degree courses. These are potential project ideas yet waiting to be implemented in the real world. Perfect innovative concepts for upcoming years and Find simple electronics projects as well as power electronics projects as per your desire only at NevonProjects. Now browse through our list of top electronics project ideas and select your project on the go.

This hands-on book covers a series of exciting and fun projects with PIC microcontrollers. For example a silent alarm, a people sensor, a radar, a night buzzer, a VU meter, a RGB fader, a serial network, a poetry box and a sound super-compression.

Pic microcontroller tutorials for beginners: Due you want to learn about microcontrollers? Do you have a passion to start your career in embedded systems field? Do you want to work on embedded systems projects? Do you ever wonder how intelligent devices works automatically? Do you want to learn embedded systems programming? If answer to these questions is yes, you are at right place. This is complete list of pic microcontroller tutorials for beginners and also for those who knows the basics of pic microcontroller and want to improve their knowledge. After reading and doing these pic microcontroller tutorials, you will be able to write you own code for your pic microcontroller based project. I have written a complete list of pic microcontroller tutorials, starting from introduction to pic microcontrollers , how to use Mikro c for pic for programming of pic microcontrollers, how to use Mikro c for pic and how to write your first program using pic microcontroller for blinking of a LED. I am sure after reading these tutorials, you will get enough knowledge about pic microcontroller that you will be able to write your own code for pic microcontroller based projects. I will start with beginners level pic microcontroller tutorials and then go to intermediate level pic microcontroller tutorials. At the end I will also mention some advance level pic microcontroller tutorials. So a complete list of pic microcontroller based tutorials is given below: Before you start your journey with pic microcontrollers, one should have basic knowledge of c programming. If you know about c programming, you should also know about basic differences between c language and embedded. Getting started with pic microcontroller: This pic microcontroller tutorial is on introduction to pic microcontroller. History, different series of microcontrollers. General overview on pic microcontroller built in functions and hardware modules. In this second pic microcontroller tutorial, you will learn about famous and widely used controller. You can also apply same explanation to other pic microcontrollers. T ype of memory used in pic microcontroller: In this tutorial, I have explained about types of memory types used in pic microcontrollers and feature or function of each memory type. How to set configuration bits of pic microcontroller: In this article, I have written about configuration bits of controller. Configuration bits are used to set operating modes of microcontroller like frequency mode selection etc. For more details read this tutorial. How to write your first program in Mikro c for pic: In this pic microcontroller tutorial, you will learn how to write your first program for pic microcontroller using Mikro c pro for pic compiler. There are other compilers are available, but in these series of tutorials, I have decided to use only Mikro c for pic. Because it is easy to use for beginners and you can easily jump start to working on pic microcontrollers. In this tutorial, I have guided you how to use input output ports of pic microcontroller. How to configure any pin as a input and how to configure any pin as a output? How to used these pins of interact with external world. For example, you can use LED and switches with these pins. LED blinking using pic microcontroller: This pic microcontroller tutorial is about how to blink a led with different delays. In fact, this tutorial is a start of writing your first code and control LEDs connected with microcontroller. LCD interfacing with pic microcontroller: This article is about how to use and interface liquid crystal display with pic16fa. LCD can be used to display different digital values. After you done with this tutorial, you will be able to write your own LCD display code for different things. Scrolling text on LCD: In this pic microcontroller tutorial, I have explained how to scroll text on lcd. Exact same thing, you can do with LCD. Read this tutorial to know more about it. Keypad interfacing with pic16fa: This pic microcontroller tutorial will teach you how to use any keypad with pic16fa to take input from external world in the form of numbers or letters. This tutorial is about how to interface stepper motor with pic microcontroller with complete step by step guide and explanation of code. Servo motor interfacing with pic16fa: As you know servo motor has many applications in industry and process control systems. In this guide, I have tried to explain how to control servo motor with pic microcontroller. Dc motor interfacing and speed control: In this tutorial I have explained how to control speed of dc motor by interfacing it with pic microcontroller. LD motor

driver or a transistor can be used to interface dc motor with controller. It is very commonly used communication protocol in embedded system. I recommend you to learn programming of this module very well. Because there are many wireless communication modules which works on serial communication.

Optocoupler interfacing with pic microcontroller: In this article, you will learn how to interface a optocoupler with pic18f Opto isolator is used when we want to isolate high side voltages from low side voltages. It is also used for protection of microcontroller.

Intermediate level pic microcontroller tutorials Below is a list of intermediate level pic microcontroller tutorials:

- How to use timers of pic18f This tutorial is about how to used timers of PIC18F Timers has many applications. For example, they are used to generate delay. They are also used a counter. Timers also used to measure frequency and pulse of PWM.
- How to use external interrupts of pic18F In this tutorial you will learn how to use external interrupts of pic18f External interrupts are used to detect external events. For example it is used to measure frequency and speed of motor etc.
- How to use CCP module of pic microcontroller: In this tutorial you will learn how to use capture compare and pulse width modulation of pic18f It has many application in power electronics projects.
- How to generate PWM using pic16fa: This guide is about how to generate PWM signals using pic microcontroller? How to set frequency of PWM? How to set timer period of PWM.
- Seven segment display counter using pic microcontroller: In this tutorial you will learn how to use seven segment display counter with pic microcontroller? How to interface seven segment display with pic16fa.
- In this tutorial you will know how to interface relay with pic controller. Relay interfacing has many applications in home automation based project s.
- How to use watchdog timer of pic microcontroller: In this pic microcontroller tutorial, you will know how to watchdog timer of microcontroller. Watchdog timer is used to go into sleep mode when microcontroller is doing nothing and it helps us to reduce power consumption of microcontroller.
- How to use built in comparator module: In this article, you will learn how to use built in comparator modules of pic microcontroller. Comparator modules are used to compare voltage with defined voltage.
- LED matrix interfacing with pic microcontroller: In this tutorials I have explained how to interface any LED matrix display with pic18f LED matrix displays are used for digital display purposes.
- USB communication with pic microcontroller: Some advance level pic microcontrollers supports USB communication also. It is used to communicate with other devices through USB communication protocol.
- SPI communication using pic microcontroller:

Chapter 3 : Projects For Beginners DIY Projects Craft Ideas & How To€™s for Home Decor with Videos

The PIC Projects website features projects that I've created since They use Microchip PIC micro-controllers from the mid-range 12F and 16F ranges such as the 16FA and 12F, as well as the newer enhanced mid-range devices like the 16F

Simple Napkin Holder 1. Simple Pallet Shelf The best projects are those that can be completed quickly, but still look incredible and have people asking "where did you buy that?! Check out Pallet University to learn how to make this and 9 other simple pallet projects. Makers Kit Wood Craft The photo above is an example of a wood craft box from Makers Kit, which is an amazing service that sends you different crafts to make each month that are very beginner-friendly. Literally, if you can put three pieces of wood together and cut a hole in it, you can make this wooden sofa sleeve cup holder. Rustic Candle Holder From Adina Johnson at Simple Country Life , we bring you an awesome rustic candle holder that brings a little southern charm into any home. The use of the horseshoe for the legs just pushes it over the top. This address number wall planter is simply blooming with style, and is sure to add a boost to your curb appeal. Wooden iPad Dock I am always amazed by the things people come up with using one simple piece of wood. David Bakker is one of those people who has earned my respect. Click here to learn about the best router for woodworking. The USB drive project from Offseid , however, is rather simple. It will take patience and a steady hand, but I have the utmost confidence in your ability. David Blaine is my favorite for sure. However, optical illusions have always vexed me. Seriously, they make me feel so dumb, and I hate feeling dumb I assume I am not alone. Simple Boxes Photozz provides us with the basics. Simple boxes are the perfect place to start for the woodworking beginner. Building boxes will educate you in the basic forms and engineering , and give you the tools to take on more complex projects. This project will neither break the bank, or stress your mind. Skip to my Lou shows us an easy way to have fun, and share a unique experience with our kids. Wood Plank Wine Rack Have an extra plank of wood lying around? A wood plank wine rack from Camille Styles is the perfect solution. Displaying wine bottles has become a kind of art of its own. My favorite ideas are the ones that seem too easy. This world is complicated enough I think. Dorsey Designs is the perfect place to start. But, Ashley at Domestic Imperfection gives us another option. Her wooden doormat is unique and a great way of welcoming visitors into your home. The truth is, many inventions stem from our constant ambition to make things easier. The Lazy Susan has been around for a long time. Remodelaholic shows us how to make a simple version from scratch. We all thank you Susan. Baseball Coat Rack Perfect for the kids room, these baseball coat racks are not only easy, but creative. Visit Minwax for the full tutorial. I had to use another Shanty2Chic project. We all know you can just hang your baskets above your porch. But, who wants to do what everyone else does? This hanging basket frame will give your porch a warm and inviting feel. Make your own, and maybe you can create memories that will last a lifetime. I suggest staining each layer of wood with a different finish before assembling to further customize and make this project your own. The rustic bookends from ehow fit the bill. Primitive Wooden Spoons This is a different kind of simple. Fairgoods presents the art of primitive woodworking with these wooded utensils made with just a few simple non-power tools, Woodworking without power tools is definitely a challenge. There is just such an intimate knowledge you develop after working with wood in this discipline. If nothing else, it will help you appreciate how far technology has come. So, when I saw this mid-century inspired hanging planter, I knew I had to add it to the list. The mixture of simple design and industrial materials from the creative folks at DIY Ready is perfect for the modern professional. Office Supply Tray Here we have a project that takes some patience. You will have to make plenty of cuts, and of course, measure twice before each of them. The end result will certainly be worth it. For the ultra-organized, Build-Basic shows us where everything needs to go, and gives us the plans to build it. However, to satisfy those who prefer books with pictures, there is plenty of visual instruction to guide our path. Simple Napkin Holder Perfect for keeping the napkins on the table during your outdoor picnic, Dan Harmon of Hub Pages gives us this little napkin holder treat of simplicity. This project represents exactly what this post is all about. Easy, simple, minimalist, and functional, this is why I fell in love with woodworking.

Chapter 4 : Microcontroller Projects For Beginners: HOME PAGE

Really great PIC beginner's guide Hello. I'm quite new to the PIC microcontroller and I am seeking some help. I have a robot that I printed up on a 3D printer that used a BASIC stamp but I ran out of things I could do with it so I upgraded to a PIC 16F because of it's excellent IO.

Want to become a craft tool reviewer for DIYProjects. Enter your email address for a chance! Start your journey to becoming a DIY expert today! Until one day I discovered that I have the ability to make stuff myself, and life has never been better! I no longer have to be stressed about the limited choices, the long lines, the tight budget, or that one thing we all have that keeps having to be fixed! DIY projects changed my life and it can do the same for you! The only requirement is knowing what to do with your yarn and some embroidery hoops – and the possibilities are endless! Just look at these yarn wall hanging ideas! Saving money is one of the best benefits of DIY projects. Here, thoughts, memories, and emotions will be retained and re-read forever. Plus, you can always fashion them to reflect who you really are, and these DIY journal ideas are here to help. So, why not try making these easy bohemian gypsy dreamcatchers? Check out my favorite DIY dreamcatcher kit here. Take your pick from these easy crafts! Our homes are a witness to every moment no matter how mundane or special. Be the best homeowner you can be with these quick and easy DIY home projects! In need of supplies? We know just the place. Making something with your kids will be more meaningful to them. For your next bonding session, see this list of easy DIY projects you can make with your kids. Low on craft supplies? Check out what Michaels has to offer. And I can see why! So many different things take on a whole new fabulous look when given the washi tape makeover. Start using them on your stuff today! Your little ones can start taking after your interest for DIY projects even in their teens! Be their mentor and partner as you make these cool DIY projects for teen girls! But I say, my best friends are DIY projects that can get me close to looking like I can afford diamonds! They are easy to make and very useful. Learning how to make your own candles is pretty easy, too. Get the best of both worlds with this DIY fairy garden! It easily improves the appeal and ambience of your home. This DIY project is the perfect fun start for beginners! But of course, adding color is an important process as well. Why not make some more with fabric? Like I said, DIY projects are about creativity, expression, and innovation! This easy guide to making your own fabric wall will have you feeling like an expert in no time! Nothing will be left unused! Check out this DIY guide to find out how! Wind Chimes are perfect for completing the aesthetic of your home! Make your favorite among these DIY wind chimes! Before spending too much money on big cosmetic brands, you might want to try the makeup recipes on this list first. Who knows, you might not need to buy makeup anymore! Make yourself a handy DIY make-up brush organizer to make sure you know where everything is! They are an innocuous condition that nonetheless has to be taken care of! So, make your own lip scrub and never worry about having to face people with dry lips! Often, to get it right, you have to do it yourself. So walk the extra mile and make the ingredients yourself too! This is much easier than it sounds! This guide will help you make your own vinegar. Let them choose their favorite from the list! Easy DIY projects are to change that! Are you having a cozy and lazy Sunday? Sometimes, it can be so expensive that even throwing our food jars break your heart a little. Well, worry no more because this list of clever uses for baby food jars will save you from your maternal woes! A mason jar oil lamp adds to the list of things you can do with a mason jar. Try one or all of the cool DIY photo booth props on this list! Sometimes all anything needs is a little touch-up. Your novice self will instantly be happy! Replenish your mason jar set here. Construction Paper Flowers image via thecraftaholicwitch There are many ways to say I love you and there are also just as many to make flowers! Real fragrant flowers are nice but something made with your own hands can be just as special. So to save some money, here are easy DIY sewing projects you can give to teens as gifts! No need to throw them all out! Here are easy DIY projects for your old magazines! Awesome DIY Uses for Pill Bottles image via Crafts Unleashed Just like your magazines, empty medicine bottles after months or years of buying them lie around the house without you noticing it! There are many different ways to re-use them and this list will show you the best and most exciting ones! So, in your own little way, as a budding DIY craftsman, you can help make this

planet greener! These DIY projects for cereal boxes are easy and environment-friendly! DIY Lotion image via Homesteading It can be frustrating to keep going to stores for years and not finding a product that suits you. Our skin is as unique as our DNA and so not everyone can find products which have good and lasting effects. But finally, you can make your own lotion! DIY projects truly are our savior! This is your reward for opening yourself to a whole new adventure with DIY projects! And nothing will remind you of your fulfillment in the most soothing way than making your own bath bomb! Watch this video from Mist8k for more DIY projects: The best part about being a novice when it comes to DIY projects is finding the joy and fulfillment in making things yourself. With every small step, you are reminded of the value of hard work and dedication! They are doors that lead to a more meaningful understanding of yourself. Which of these DIY projects is your favorite? Let me know in the comments below! Our partners below have you covered:

Chapter 5 : Mechatronics for Beginners: 21 Projects for PIC Microcontrollers By As Imam E-Book

Microcontroller4beginners is the best site for the beginners to start learn doing microcontroller projects from basics to advanced.

These pages will take you from the basic structure of the device, right through to programming methods and techniques. Also, there will be suggestions on how to modify the code so that you can adapt the PIC to suit your applications within Cybot. We will not be including any internal architecture diagrams, as this may only lead to confusion. To start, let us take a look at the PIC. You can see the range of their microcontrollers here. There are many different flavours available, some basic low memory types, going right up through to ones that have Analogue - To- Digital converters and even PWM built in. We are going to concentrate on the 16F84 PIC. Once you have learnt how to program one type of PIC, learning the rest is easy. We are going to show you the Assembly Language. There are only 35 instructions to learn, and it is the cheapest way to program the PICs, as you do not need any extra software other than the freebies. We will go through each pin, explaining what each is used for. That is, it can be configured as an input or an output. The number following RA is the bit number 0 to 4. So, we have one 5-bit directional port where each bit can be configured as Input or Output. It behaves in exactly the same way as RA, except there are 8 - bits involved. The maximum supply voltage that you can use is 6V, and the minimum is 2V. In normal use it is connected to the positive supply rail. INT This is an input pin which can be monitored. If the pin goes high, we can cause the program to restart, stop or any other single function we desire. T0CK1 This is another clock input, which operates an internal timer. It operates in isolation to the main clock. Now, you want to know how to program the PIC, but apart from learning the assembly code instructions, how do you go about actually programming the information in? Well, there are two ways - the easy way, and the DIY way. Software for programming the PIC can also be downloaded from this site, under Download If you want to go down an easier route, then check out this site. Here you can either buy a kit of parts or a ready made unit. Either method will do, as they both result in the same thing - program a PIC. The next thing you will need is an assembler. This converts the program that you write into a format that the PIC understands. It is windows based, and includes an editor, simulator, and assembler. We also recommend using Breadboard to make your circuits up, while you are playing with the PIC. There are various sizes available, which come with their own costs. Check out the Maplin Electronics links on the home page for more details of prices etc. Next, we will look at how to connect up a simple circuit for PIC development. To report broken links or to submit your projects please send email to Webmaster Circuits.

Chapter 6 : N5DUX Ham Radio PDFs

This book provides a unique approach to teaching how systems or processes can be automated without having prior knowledge of any computer programming language. It presents step-by-step practical guidelines on how sensors, actuators, and other electronic components can be interfaced to.

Pic microcontroller projects are very popular among Electrical and electronics engineering students. PIC microcontrollers are family of microcontrollers designed by microchip. Pic microcontrollers used Harvard architecture. PIC microcontrollers are available in wide range starting from 8-bit to bit microcontrollers. Dspic microcontrollers are also very famous in digital signal processing field. PIC16F family of pic microcontroller is very famous among engineering students and professionals. Pic microcontroller projects list is given below. PIC16F series of microcontrollers are used in almost all projects in this list. Pic microcontrollers are very famous among engineering students. PIC microcontrollers are easy to use due to easy to use compiler Mikro C. In this article, I have listed a best pic microcontroller projects. These projects contain complete circuit diagram, simulation and programming. I tried to cover each and every thing in these articles. If you want to include your project in this list, write in comments. I will love to share your project with others. Liquid crystal display shows values of ac current. Difference amplifier and shunt resistor is also used in this project. This project can be used to measure voltage up to volt AC. Digital AC watt meter: Digital AC watt meter is used to measure AC active power with the help of pic microcontroller. Liquid crystal display is used to show power values on lcd. Zero crossing detection, power factor measurements circuits are also used in this project. Speed control of dc motor: Digital temperature sensor is designed to measure temperature using LM35 temperature sensor and pic microcontroller. LM35 temperature sensor measure temperature and pic microcontroller reads temperature using analog to digital converter. This project is designed to measure frequency of different waves using pic microcontroller. Microcontroller interrupt and timer is used to measure time period of square wave which is converted into frequency using time and frequency relationship. Digital humidity sensor is designed to measure humidity level in air. HS capacitive humidity sensor is used in this project. HS capacitance changes with change in humidity of air. Micorontroller reads change in frequency and converts frequency into humidity level. Green house intelligent control system: This is designed to automatically control green house lights, water pumps, fans and sprayer. Light sensor, humidity sensor, temperature sensor and moisture sensor are used in this project. Microcontroller PIC16FA reads values of all these sensors and take necessary action according to build in programming instructions. Automatic control of street lights: Street lights will turn on automatically in evening and turn off automatically in morning. LDR based light sensor is used to measure intensity of light in this project. Relay according to signal provided by microcontroller turn on or turn off street lights. Line follower robot using: Line follower robot is designed with the help of pic microcontroller. Line follower robot follows a back line. Seven IR sensors are used to track black line and keep update microcontroller about the position of robot. LD dc motor driver ic is used to control motors. Auto intensity control of street lights: This is designed to control intensity of street lights from evening to morning. This project controls intensity of street lights with the help of LDR based light sensors. Intensity of street light starts increasing, when intensity of light start decreasing in evening. When light level falls below a invisible level, street lights glow with full intensity. Solar power auto irrigation system: This is designed to control water pumps automatically. Moisture sensor reads moisture level using moisture sensor and automatically turn on water pump if water level is low a specified level. Solar system is used to provide power to water pump. Metal detector robot using: This project has two parts, transmitter and receiver. Transmitter circuit detection metal and inform to receiver through RF communication. Power factor measurement meter: PF meter is designed to measure power factor of electrical loads. Zero crossing circuit is also used in this project. LCD displays power factor. Automatic transfer switch for generator: This is used to transfer load from main ac supply to generator automatically. This project also turn on generator automatically in case of outage of main ac power supply and turn off generator when main power supply restored. This is designed to protect electrical devices from under voltage and over voltage. In case of under and over voltage, it automatically isolates loads

from ac power supply and connect ac supply to load again when voltage come back to normal level. Time based solar tracking system: Solar tracking system based on time is designed ro extract maximum possible power from solar panels. Stepper motor rotates solar panels in the direction of sun light according to time using pic microcontroller and real-time clock DS Solar energy measurement system: Smart solar charge controller: PWM base solar charge controller is designed int this project. Solar charge controller is used to charge batteries from solar panel. It also provides protection from over charge of batteries Pure sine wave inverter: Automatic power factor correction: Liquid crystal display is used to display voltage on LCD. Digital Ohmmeter circuit and project: Simple voltage divider rule is used to measure resistance. LCD is used to display resistance value. PIC16FA microcontroller is used to design digital ohmmeter. Microcontrollers based Digital DC watt meter: Simple shunt resistor and voltage divider concepts are used in this project digital clock: It shows time and date on LCD. Binary coded decimal real DS IC is used in this project. Speed control of induction motor: This is designed to control speed of induction motor using variable frequency variable voltage method. Three phase Diode bridge rectifier, Three phase H bridge, Mosfet driver circuit is used in this project. Automatic electronic school bell using pic microcontroller: Automatic electronic bell rings automatically at pre selected time. This project is designed to measure temperature using DS18S20 digital thermomter.

Chapter 7 : Introduction to PIC - PIC Microcontroller Tutorials - PIC Tutorial Resource - Connect to the PIC

It also taught me the value of simple design and I can honestly attribute my minimalist style to those "poor man's" projects. To pay homage to those character building years, I have compiled a list of 27 of the easiest woodworking projects for beginners.

Chapter 8 : Part 1: Beginners guide to the PIC Microcontroller.

The simplest chip to program, find code for, learn on is the 16F84, More bang for the buck is the 16F and it is mostly code compatible with the 'F The most bang for the buck is the 18F series chips and they have many new and advanced features.

Chapter 9 : Easy PIC'n,Beginner Microchip, Getting started PIC, PIC Microcontroller

Even if you're a beginner, trees are a cinch. It's hard to go wrong because there are so many types of trees and so many ways to portray trees that are recognizable. Whether it's a simplified triangle turned into a Christmas tree or a cloud-like puff atop simple linear trunks, trees are accessible to artists at any level.