Atmega328 avr based projects list

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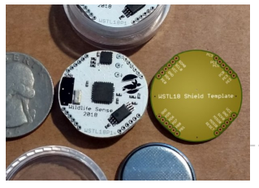
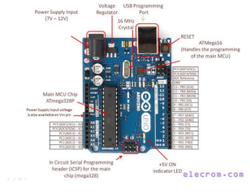
1. 

   A Temperature Logger to Protect Sea turtles Data loggers are small, battery-powered devices used to sense and store information in different situations. They include a microprocessor, data storage, one or several sensors and they can record information...

2. 

   Introduction to Arduino UNO (uses AVR ATmega328) Overview Arduino is an Open Source embedded development platform which is easy-to-use. It comprises of Hardware boards and Software tools. Examples of some of the most popular Arduino Hardware boards...

3. Dintervalometer, A Custom Made Intervalometer For DSLR Cameras If you want to take a timelapse with your camera, it may be helpful to use an intervalometer. It is an attachment or facility on a camera that operates the...

4. 1K LCD Tinyfont Description In under 1kB, this project uses a tiny, custom-made pixel font to write a message to a display. It receives messages from the UART and writes them to the...

5. PWM Fan controller Recently I had the problem some expensive components did overheat in my server rack. The ventilation was not optimal and I had to install additional fans. Because this rack is...

6. Basic User's Experiment Notes The "Basic User's Experiment Note" is based on the popular 8-bit Atmel AVR ATmega328P microcontroller using AVRJazz 28PIN development board. This e-book covering most of the Atmel AVR ATmega328P microcontroller...

7. Franzino is a low cost Arduino standalone board Hardware components: Atmel ATmega328P × 1 16 MHz Crystal × 1 Capacitor 22 pF × 2 Capacitor 100 nF × 5 LED (generic) × 2 Linear Regulator (7805) × 1…

8. Arduino Without External Clock Crystal on ATmega328 Story An Arduino consists of many components like: a linear regulator, USB to Serial microcontroller, debug LED, power LED, reset button, RX & TX LED, crystal oscillator, etc. But a…

9. Reducing Arduino Power Consumption Story When it comes to portable electronics, one of the most important features is how to maximize the battery life. The ATmega328P, used on popular boards like the SparkFun RedBoard,…

10. Chronio – Low power Arduino based (smart)watch Description Chronio is an Arduino-based 3D-printed Watch. By not including fancy Wifi and BLE connectivity, it gets several months of run time out of a 160mAh button cell. The display…

11. Gimmick on Barebones Arduino 16MHz Story Did you see this 8MHz no-crystal Arduino? Arduino on Internal Oscillator Crystal as Clock Source by Naman Chauhan is a great project if you can live with 8MHz using…

12. Goldilocks Analogue – Prototyping 3 Following my initial design article, and the follow up design article, I've put quite a lot of thought into how I can make this Goldilocks Analogue device best achieve my stated goals. Pictured…

13. Arduboy Solar Charge Controller, Inverter, PowerBank, Lamp About this Project I have a few solar panels, 12 Volt batteries, transformers and few more stuff laying around for a while crying out aloud to make some good use…

14. Make your own remote temperature/humidity sensor Hardware components: Atmel atmega 328p-pu × 1 ControlEverything.com SI7020-A20 I²C Humidity and Temperature Sensor ±4%RH ±.4°C × 1 433 MHz transmitter / Receiver kit × 1 AMS1117-ADJ voltage regulator ×…

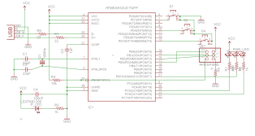
15. Bionic Organs/Devices/Limbs Wireless Charging Hardware components: IDT Qi 5W Transmitter Prototype Kit × 1 IDT Qi 5W Receiver Prototype Kit × 1 Atmel Atmega328p × 1 HC-SR04 Ultrasonic Sensor × 1 Hand tools and...

16. Transforming your AVR Microcontroller to the I2C or TWI Slave I/O Expander Project The I2C bus (read as I squared C) is one of the most important embedded system serial bus interface first introduced by Philips in 1980; using just two lines called...

17.

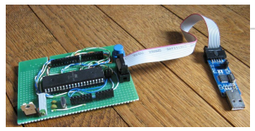
Build your own stopwatch using Maxim MAX7219 Serially Interfaced, 8-Digit LED Display Drivers One of the basic usage of the TIMER peripheral on every microcontroller is to provide the accurate timing mechanism. Using the TIMER peripheral as the basic timing, we could easily...

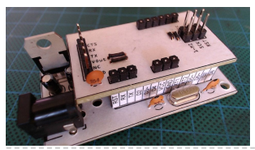
18.
A DIY A4 Laser Engraver made from a scanner and a printer on ATmega328 This "Get Ready For Win98" Laser Engraving Machine it's built using an old scanner, and an old printer. A laser engraving machine is a tool that uses lasers to engrave an...

19. 
Weeks 11-12: AVR USB Devices and Programming One of the relatively unexplored topics in this week's lecture was USB, the ubiquitous protocol that allows computers to communicate with peripheral devices (containing microcontrollers). Creating a USB device allows...

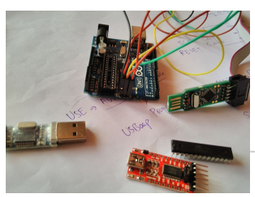
20.
DIY Double Sided 60W LED UV Radiation Unit With Vacuum Pump Summary This is a description of how I designed and built my UV exposure box. After experimenting a bit with dry-laminate photo-resist and liquid UV hardened solder mask I decided...

21. Arduino atmega644/1284 clone This project is about to DIY an Arduino board wth an ATMEGA644P or 1284P to have more INPUTS/OUTPUTS than on the atmega328P. You can buy an arduino mega but it's...

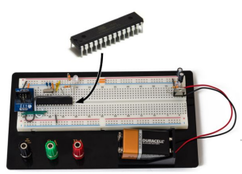


22. 

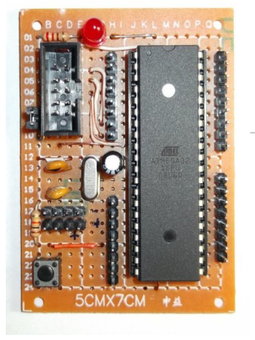
Small Footprint ATMega328P Board For my Word Clock project, for which I built a custom 8 x 8 LED Matrix with controller, I needed a much smaller footprint DIY-Duino (board for an ATMega328P microprocessor),...

23. 

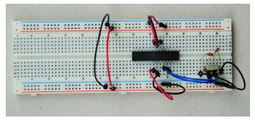
Easy Technique for Bootloading Atmega328pu and Atmega328p-pu# Xolcano it is very difficult to bootload Atmega chips when you don't have proper knowledge about device signature ! each chips are associated with its own Signature.at the beginning I found...

24. 

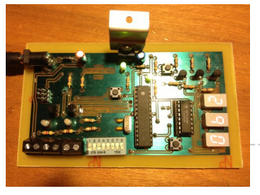
Getting Started With the ATMega328P In the Internet of Things movement, people across the globe are connecting their stuff – TVs, pets, even houseplants - to the internet and transmitting all sorts of data. If...

25. 

ATmega DIP40 Minimal Board After I wrote several articles about using ATmega microcontrollers (DIP40) in Arduino environment I had some feedback that I was asked how to be effectively put into operation this project....

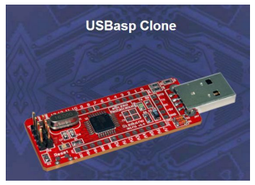
26. 

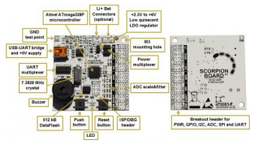
Program an ATmega168/328 with codebender If you want to use an inexpensive ATmega168 or ATmega328p for your project, but you want the simplicity of the arduino code and codebender, this tutorial will guide you through!...

27. 

AVR Chronograph from concept to PCB A chronograph is a device used to measure the speed of a passing object. In it's simplest form, this involves two sensors of some kind that 'see' the object, some...

28. USBASP Bootloading a ATMega328p with a 8mhZ internal clock What are we going to do is program an ATMega328P without an external crystal by using USBASP programmer and the Arduino IDE. Why would we want this? It uses less...

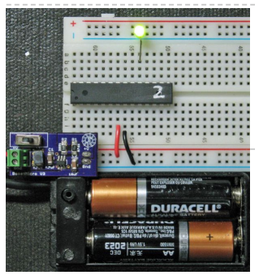


29. 

Atmel ATmega328P Scorpion Board R180.00 LOOKS CAN BE DECEIVING! This minimalistic board is packed with features and comes with an extensive ecosystem of documentation and firmware. It will quickly become your favourite go-to board...

30. Setup Arduino Software for Atmega328P with Internal Crystal on Breadboard A breadboard Arduino will require an Atmega328P controller for these instructions. Note the “P” at the end of the name. You cannot use an Atmega328 because it has a slightly...

31. “9 Degrees of Freedom” IMU I'm working on a project that requires full orientation information, so I built an Inertial Measurement Unit from scratch. I really like the 9DOF IMU board that Sparkfun makes -...

32. 

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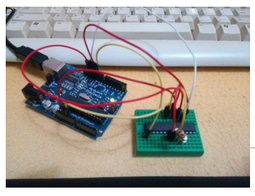
33. 

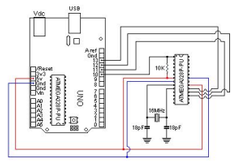
Burn BootLoader into Atmega328P using Arduino Diecimila I have an old Arduino Diecimila and some new Atmega328P-PU chips. Shouldn't have but I brounght some without bootloader to save some dollars. What next? search instructables to see if...

34. Bootloading and Mounting Arduino Atmega328 – I made it at TechShop This Instructable shows how to bootload and mount an Atmega328, Atmega328p or Atmega328p-pu for any project. This is a great way to save money by purchasing Atmega328 DIP package microcontrollers...

35.

Use ATmega328 Chip as a Storage Device and Store Text and Images in it Hi everyone! In this instructable, I am going to show you how to store text and images in a small ATmega328P chip. Lets get started! This article is also available...

36. Burning atmega328-pu and atmega328p-pu bootloader Burning the boot loader in an atmega328 could be somewhat tricky but if u follow these steps correctly youll be able to bootload any type of atmega328 micro controller .....

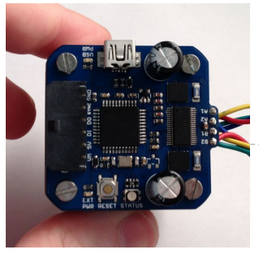


37.

Ultrasonic Spheroid Levitation Device Using Atmega16 Introduction The goal of this project was to design and build a gaming device capable of levitating a ping pong ball at varying heights based on the proximity of the...

38.

Simple 6x USB charger with current monitor This is a simple 6 port USB device charger with a individual current monitor on each port. The charging current is indicated using RGB LEDs. Blue means slow charge (under...

39. 

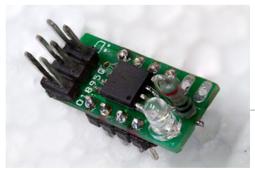
ATMEGA Core Temperature Sensor Abstract: I recently stumbled across an interesting fact in the datasheet for the ATMEGA32u4, the microcontroller I am using for my Einstepper Project. I was surprised to find that Atmel...

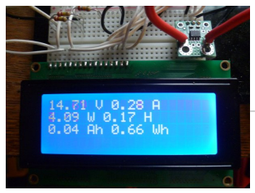
40. DIY Digital Wristwatch Introduction The main incentive behind this project was to see how much I could cram, in terms of both hardware and software, into a wristwatch-like device that is no larger...

41. BLDC motor control using Atmega328 As part of my 3D printer project, one of the big electronics hurdles to overcome was a motor controller for a BLDC (BrushLess Direct Current) motor. Searching for a cheap, off...

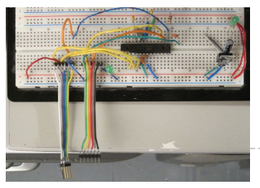
42. Datalogger in an Altoids can This is pretty much one of those required projects; everyone builds a datalogger in an Altoids can. But each is different and I enjoyed making mine. Features: Uses ATmega328P (low...

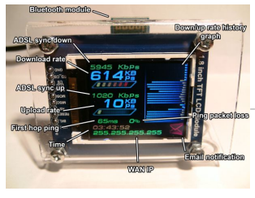
43. Make a Desktop Tamagotchi One day I was sitting behind my desk at work and I got that weird need to build something, after looking around for a bit I got my eye on...

44.  BareDuino Micro For some Arduino projects, you don't actually need that many IO pins. That's exactly the case when I tried to build a simple RGB throwie that would cycle through colours. I...

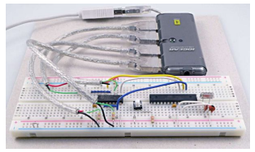
45.  DIY Amp Hour Meter – Arduino If you like this instructable, please vote for it! For my off-grid Ham Radio and Solar projects, I needed a way to measure volts, amps, watts, amp hours and watt...

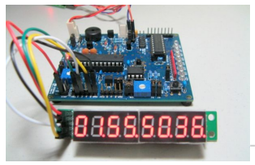
46. Honey I Shrunk The Arduino using ATmega328p As you might be able to tell from recent posts, I've been doing quite a bit of work with an Arduino. I've now got at at least one project that I'd...

47.  Minimalist Arduino using ATMega328P microcontroller Overview Here at the Transistor, we love the Arduino platform, so we decided to make our own Arduino Clone. The Minimalist Arduino is designed for use in permanent or custom...

48.  Bluetooth Net Monitor Whenever I want to see why a download is going a little slow or getting lag on an online game I'd have to log in to my routers web page...

49. HUB ISP – Solving the USB-Only "Chicken or Egg" Problem using ATMEGA328P Many excellent ISP (In System Programming) designs exist for 8 bit AVR microcontrollers. However, most require a pre-programmed microcontroller, or the "Chicken or Egg" problem: you can't program microcontrollers unless...



50. 

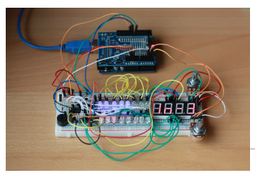
Build your own stopwatch using Maxim MAX7219 Serially Interfaced, 8-Digit LED Display Drivers One of the basic usage of the TIMER peripheral on every microcontroller is to provide the accurate timing mechanism. Using the TIMER peripheral as the basic timing, we could easily...

51.

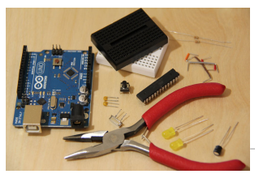
AVR-GCC LCD library – mixed pin support using Atmega328P Some time ago we have posted alphanumeric AVR-GCC LCD library. It works fine in 8-bit and 4-bit modes. But it has some limitations that some people may find annoying. One...

52.

Dutchtronix AVR Oscilloscope Clock using Atmega328 microcontroller Hardware features: Connects to your analog scope in X-Y mode using BNC cables or probes (1x, 10x) Uses the Atmel AVR Atmega328p with 32KB flashmemory On board 5V power...

53. 

Analog audio panel for PC using ATMega328 microcontroller Have you ever struggled with audio settings in control panel in middle of a VoIP call? Or, wondered if the other guy can hear you properly? I have. My work...

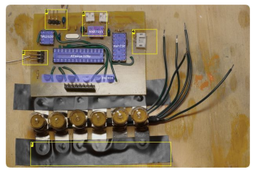
54. 

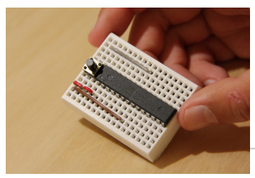
The $9 Quasi-duino (Almost-duino) using ATmega328 microcontroll Do you currently have an Arduino and want to make it smaller for cheap? The Quasi-duino is for you (Italian for almost-duino). This makes a functional "almost" Arduino, in a...

55.

Programming Arduino Bootloader without Programmer using ATmega168 microcontroller OH NO!!! You've screwed up and now the Arduino bootloader on your 'duino is gone! What are you going to do? Go spend money for a programmer??? Well don't! I've...

56. Vintage Toothbrush Timer using ATMega328p My last visit to the dentist convinced me that I should really brush my teeth at least two minutes. I decided to build a special toothbrush timer: it would detect...



57. 

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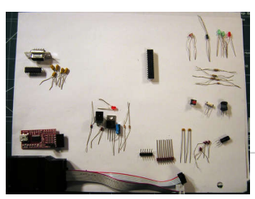
58. 

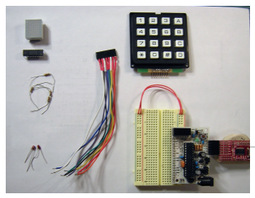
Build a Complete AVR System and Play Mastermind using ATmega328p microcontroller The game Mastermind has been around a long time, and I remember getting a board version with colored pegs when I was a kid. I love this game, as it...

59.

How to Read Binary/Hex Thumbwheel Switch with an AVR Microcontroller This instructable will show you how to read the number on a binary pushwheel or thumbwheel switch using LED's or an AVR microcontroller (I'm using an ATmega328p but this can...

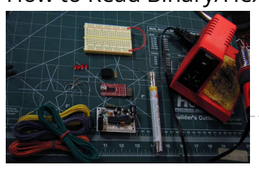
60.

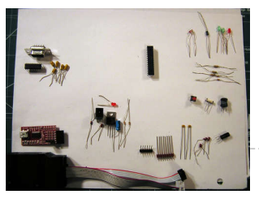
Telnet to your Arduino/AVR! The other day I was wanting to check on one of my AVR's but I was upstairs and god knows it was too much of a hassle to go downstairs...

61. 

16-key Keypad Decoding with an AVR MCU This instructable will show you how to interface a 16-key keypad to your AVR microcontroller and read the key when a key is pressed. I'll introduce the keypad first, then...

62. How to Read Binary/Hex Thumbwheel Switch with an AVR Microcontroller using ATmega328p microcontroller This instructable will show you how to read the number on a binary pushwheel or thumbwheel switch using LED's or an AVR microcontroller (I'm using an ATmega328p but this can...



63. 

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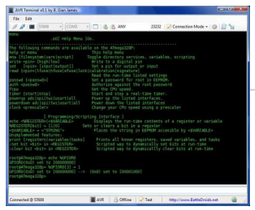
64. 

AVRSH: A Command Interpreter Shell for Arduino/AVR. Ever wanted to be "logged in" to your AVR microcontroller? Ever thought it would be cool to "cat" a register to see its contents? Have you always wanted a way...

65.

Box with a Music Lock using ATMega328P Microcontroller There are a lot of locks out there. There are locks open with a key, with a combination of digits, with various bodily parts, or with a correct geolocation. I...

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