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Here is the guide to use an ARDUINO as programmar

Post #1

by Tianyi Yang on January 18th 2019 *at* 1:36pm   Reply to post   Delete post

Yeah, I am here to tell you if you are willing to waste a little bit of your time, you can actually using an Arduino UNO (~$20) as a programmar to do all of our homework instead of purchasing the ATATMEL-ICE-BASIC-ND (~$100, expensive AF isn't it?).

I am using Windows 10 here, but the general instructions and commands are basically the same.

STEP ONE:

Download "Arduino IDE" and install it on your computer.

STEP TWO:

Now we need to program our Arduino UNO into a programmar.

First, connect your Arduino to your PC. Then open the Arduino IDE.

Choose the correct board type by checking the menu **Tools>Board:>Arduino/Genuino UNO**

Choose the correct port by checking **Tools>Ports:>COM?** (A number depends on how many usb deviices you are connecting)

Second, we can upload a sketch to turn our Arduino into an ISP Programmar.

Go to **File>Examples>ArduinoISP>ArduinoISP**. Once the sketch is open, fire the upload button away. That may take some time but you will get a working ISP Programmar at last.

STEP THREE:

Now we can connect our Arduino ISP to the breadboard. The wiring guide can be found here https://www.arduino.cc/en/tutorial/arduinoISP#toc3

We need to use "AVR gcc" to compile our code and upload the binary by using "avrdude". Luckily, both of the tools are included inside the Arduino IDE. However, since we need to execute them individually, we have to dig into the directories to locate these two "exe"s.

In Windows, you can find "avr-gcc.exe" and "avrdude.exe" in the directory **"...\Arduino\hardware\tools\avr\bin"**.

1. Open Powershell or whatever terminal you preferred.
2. cd into that directory which contains "avr-gcc" and "avrdude" (**cd 'C:\Program Files (x86)\Arduino\hardware\tools\avr\bin'**)
3. For compiling, type in **.\avr-gcc.exe -mmcu=atmega32 -o #OUTPUT_FILENAME "#SOURCECODE_PATH"** (.\avr-gcc.exe -mmcu=atmega32 -o blink.elf "D:\OneDrive\2019 Spring\CS 145\HW1\avr.c")
4. For uploading, type in **.\avrdude.exe -p m32 -P #PORT_NUM -c avrisp -b #BAUD_RATE -C ..\etc\avrdude.conf -U flash:w:#OUTPUT_NAME** (.\avrdude.exe -p m32 -P COM4 -c avrisp -b 19200 -C ..\etc\avrdude.conf -U flash:w:blink.elf)
5. For switching internal or external clock, go to http://www.engbedded.com/fusecalc/ and use the Fuse Calculator to get the AVRDUDE arguments. (For the internal 1MHz clk, use the command **.\avrdude.exe -p m32 -P COM4 -c avrisp -b 19200 -C ..\etc\avrdude.conf -U lfuse:w:0xe1:m -U hfuse:w:0x99:m**) (For the external crystal @ 8MHz, use the command **.\avrdude.exe -p m32 -P COM4 -c avrisp -b 19200 -C ..\etc\avrdude.conf -U lfuse:w:0xff:m -U hfuse:w:0x99:m**)

That's all you need if you want to use your Arduino as an ISP Programmar. Good luck

everyone :)

Edited 3 times – last edited on January 18th 2019 *at* 1:43pm

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Re: Here is the guide to use an ARDUINO as programmar

Post #2

by Yohana Tania Yap on January 21st 2019 *at* 3:35pm   Reply to post   Delete post

https://www.amazon.com/gp/offer-listing/B008GRTSV6/ref=dp_olp_new_mbc?
ie=UTF8&condition=new

Is this the one you have?

Re: Re: Here is the guide to use an ARDUINO as programmar

Post #4

by Tianyi Yang on January 23rd 2019 *at* 4:20pm   Reply to post   Delete post

Yep. In fact, any Arduino can be programmed as a programmar.

Re: Here is the guide to use an ARDUINO as programmar

Post #3

by John Charles Jackson III on January 23rd 2019 *at* 11:51am   Reply to post   Delete post

Anybody with a mac tried this yet? Or anybody else can confirm this works as a good
substitute?

Re: Re: Here is the guide to use an ARDUINO as programmar

Post #5

by Tianyi Yang on January 23rd 2019 *at* 4:29pm   Reply to post   Delete post

Oh. The very last part should also work on MacOS as well. You need to
download **avrdude** for uploading and probabiliy **gcc-avr** and **avr-libc** for compiling
your program. The commands to type are basically the same for Mac, the only
differences are format of path and port.

(e.g. You may use

avr-gcc -mmcu=atmega32 -o blink.elf avr.c

for compiling and

avrdude -p m32 -P /dev/ttyS4 -c avrisp -b 19200 -U flash:w:blink.elf

for uploading (if your programmar is connect to ttyS4)

Edited 2 times – last edited on January 23rd 2019 *at* 4:30pm

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Re: Here is the guide to use an ARDUINO as programmar

Post #6

by [Yohana Tania Yap](#) on February 8th 2019 *at* 1:36pm   [Reply to post](#)   [Delete post](#)

How did you complie for multiple header files? Did you create a makefile?

Re: Re: Here is the guide to use an ARDUINO as programmar

Post #7

by [Tianyi Yang](#) on March 8th 2019 *at* 11:25pm   [Reply to post](#)   [Delete post](#)

You can definitely make a Makefile.

For me, I just run something like this in Powershell:

.\avr-gcc.exe -mmcu=atmega32 -o YOUR_OUTPUT_NAME.elf "......\avr.c" "......\keypad.c" "......\lcd.c" "......\player.c" "......\main.c"

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