



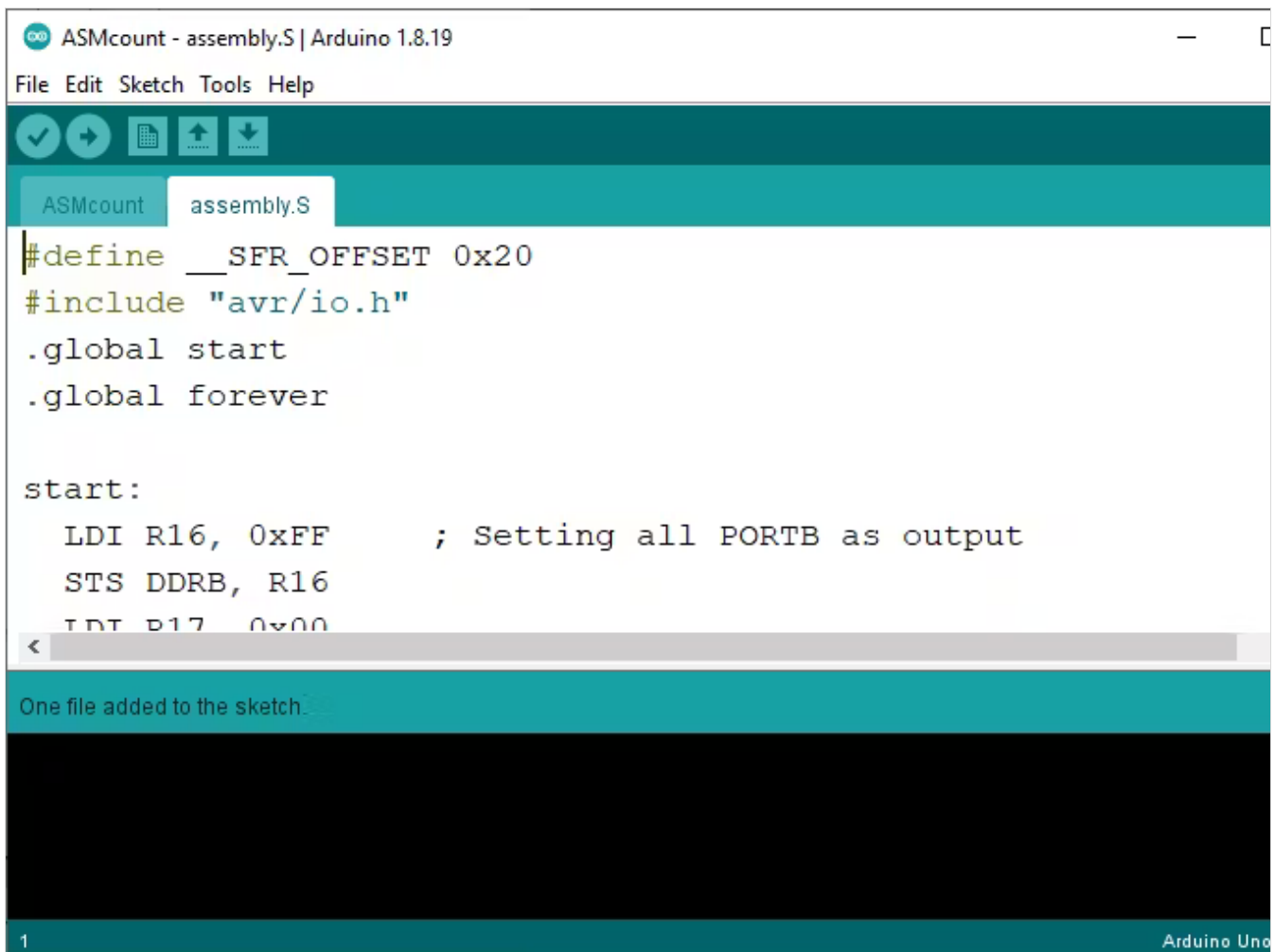
**Patrick Fitzgerald (/patrick-fitzgerald2)**

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# AVR Assembly Code Subroutines in Arduino Programming

Arduino lets you use blocks of assembly language code as subroutines in your sketches.

🔒 Intermediate(/projects?difficulty=intermediate)   💡 Protip   ⌚ 3 hours   👁 389



```
ASMcount - assembly.S | Arduino 1.8.19
File Edit Sketch Tools Help
ASMcount assembly.S
#define __SFR_OFFSET 0x20
#include "avr/io.h"
.global start
.global forever

start:
    LDI R16, 0xFF      ; Setting all PORTB as output
    STS DDRB, R16
    LDI R17, 0x00
```

One file added to the sketch.

1 Arduino Uno

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## Things used in this project

### Hardware components

	Arduino UNO ( arduino/products/ arduino-uno1? ref=project-3c1a1b)	× 1	<input type="text" value="s=BAhJIhM1MDc2MjksUHJvamVjdAY6BkVG%0A"/>	<input type="text" value=" (/products/buy/42741?ref=project-3c1a1b)"/>
	Marquee LED bar arduino	× 1	<input type="text" value="s=BAhJIhM1MDc2MjksUHJvamVjdAY6BkVG%0A"/>	<input type="text" value=" (/products/buy/109175?ref=project-3c1a1b)"/>

### Software apps and online services

	Arduino IDE ( arduino/products/ arduino-ide? ref=project-3c1a1b)		<input type="text" value=" (/products/buy/109175?ref=project-3c1a1b)"/>	<input type="text" value=" (https://www.arduino.cc/en/main/software)"/>
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## Story

You can't just import an **.asm** assembly program directly into the Arduino IDE. It does have the ability to handle blocks of assembly language. Let's see how.

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```

ASMcount | Arduino 1.8.19
File Edit Sketch Tools Help
ASMcount
// C program sketch declares 2 functions - start and forever
// the functions are defined externally in S file
extern "C" {
  // function prototypes
  
```

Read more

## Code

ASMcount.ino

assembly.S

### ASMcount.ino Arduino


Arduino C language sketch to use Assembly code in External .S file

(/code\_files/649981/download)

```

2 // C program sketch declares 2 functions - start and forever
3 // the functions are defined externally in .S file
4 extern "C" {
5     // function prototypes
6     void start();
7     void forever();
8 }
9 void setup(){ start(); }
10 void loop() { forever(); }
        
```

## Credits



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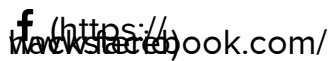
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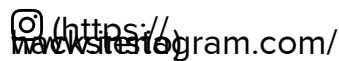
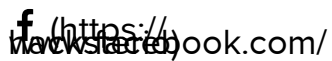
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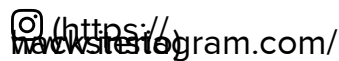
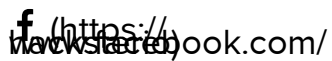
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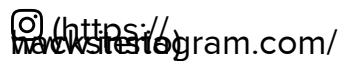
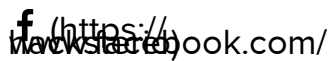
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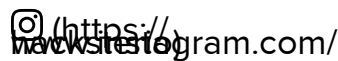
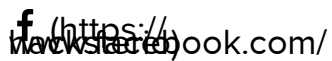
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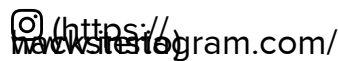
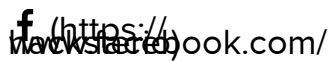
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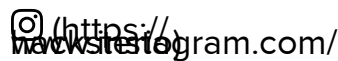
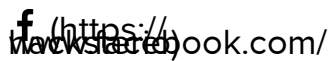
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