Using Arduino MEGA2560 in C

ESW1

Using Arduino MEGA2560

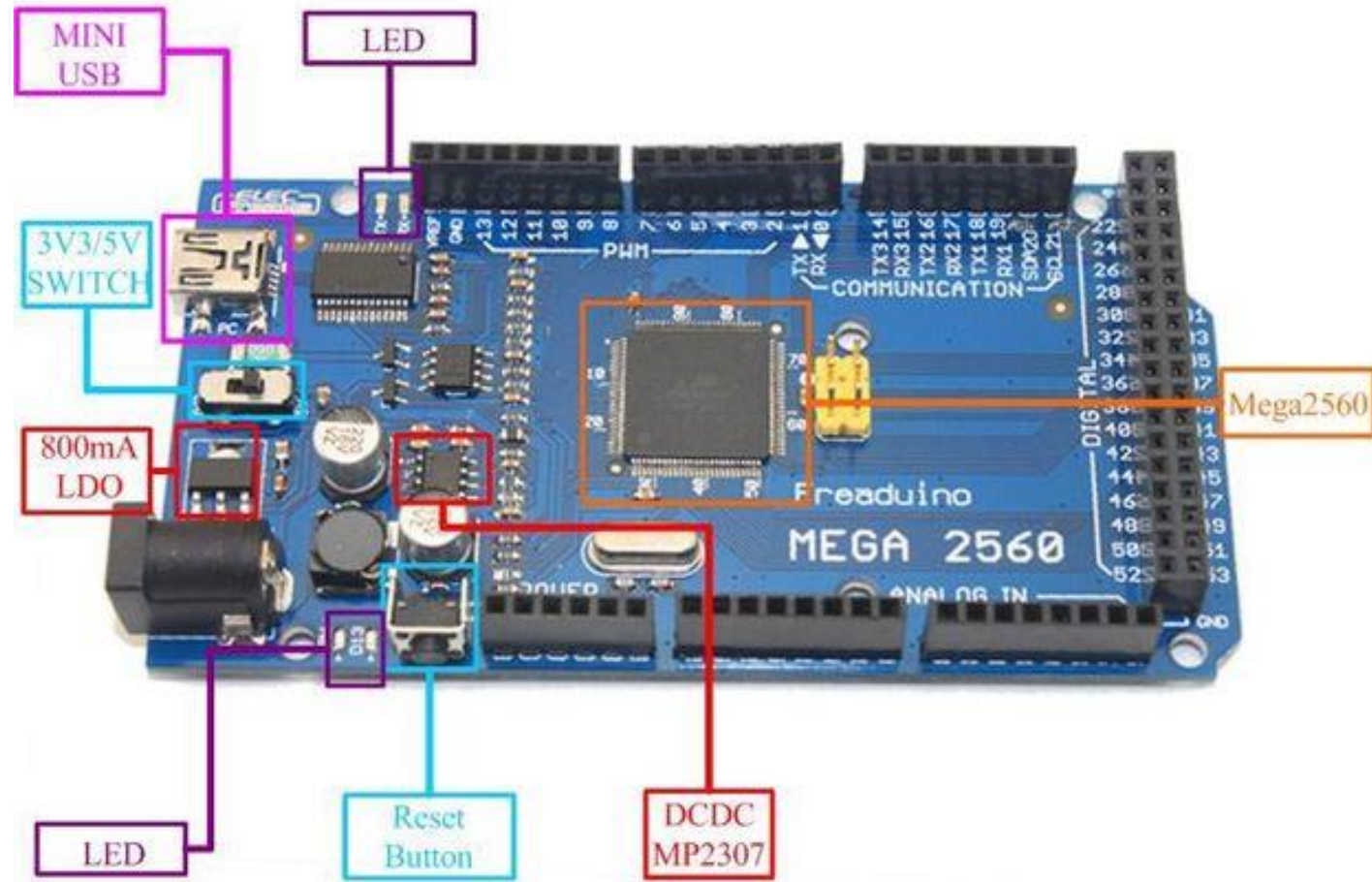**What makes this a Arduino Board?**

It is the footprint – nothing else!

"Software" can be developed with Arduino IDE (.ino files)

Or

In C with professional IDEs

MINI USB

LED

3V3/5V SWITCH

800mA LDO

LED

Reset Button

DCDC MP2307

Mega2560

# Getting ready to C-programming for the ATMEGA2560 MCU

Follow the instructions in: *Your First C-Project with Atmel Studio.pdf*
– **stop before the section** *Using FreeRTOS*

Try to compile it!

Follow the instructions in: *Programming Arduino with Atmel Studio.pdf*
    That makes it possible to upload a program to the MCU from Atmel Studio

Let's try a real example

Build this simple circuit
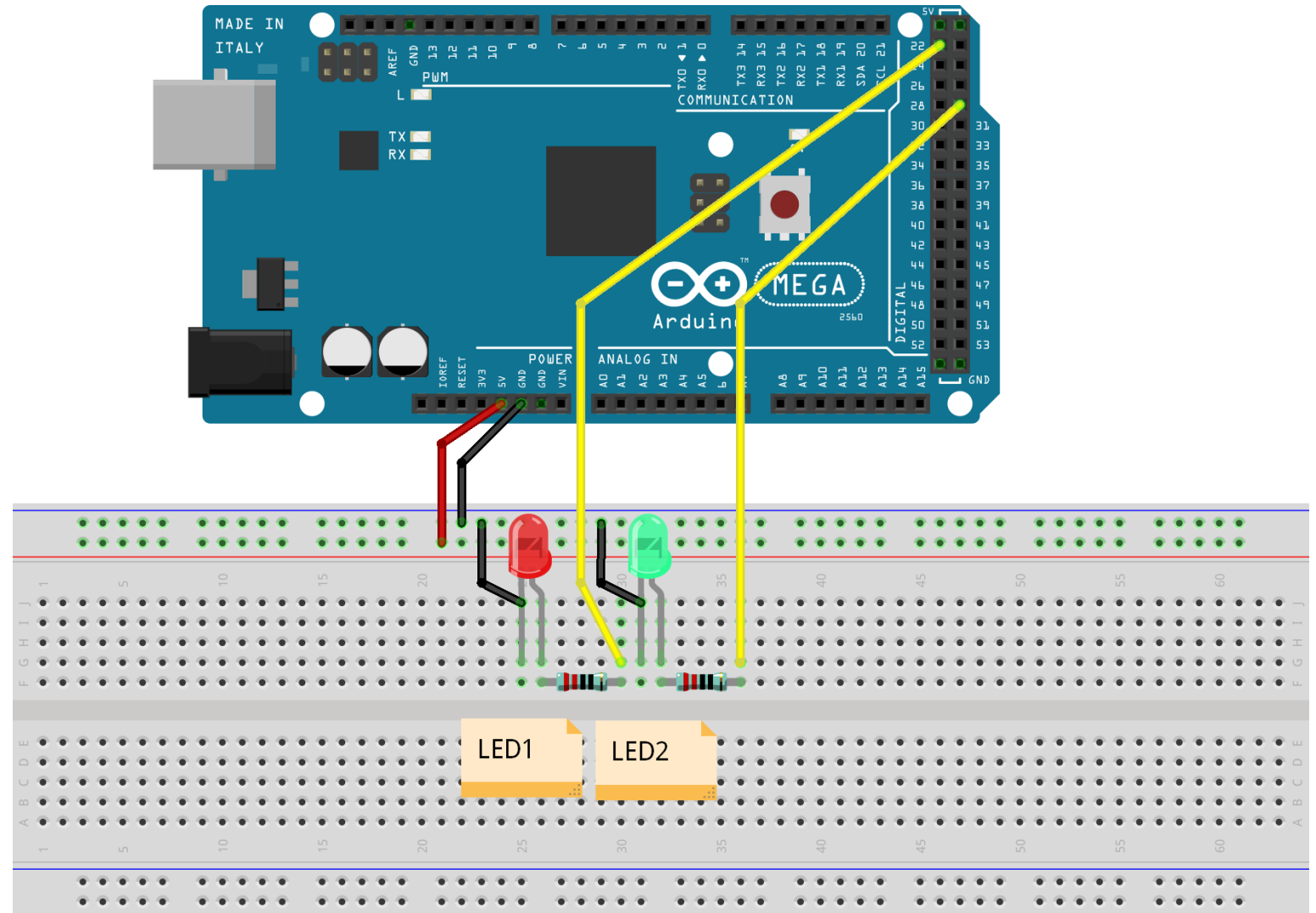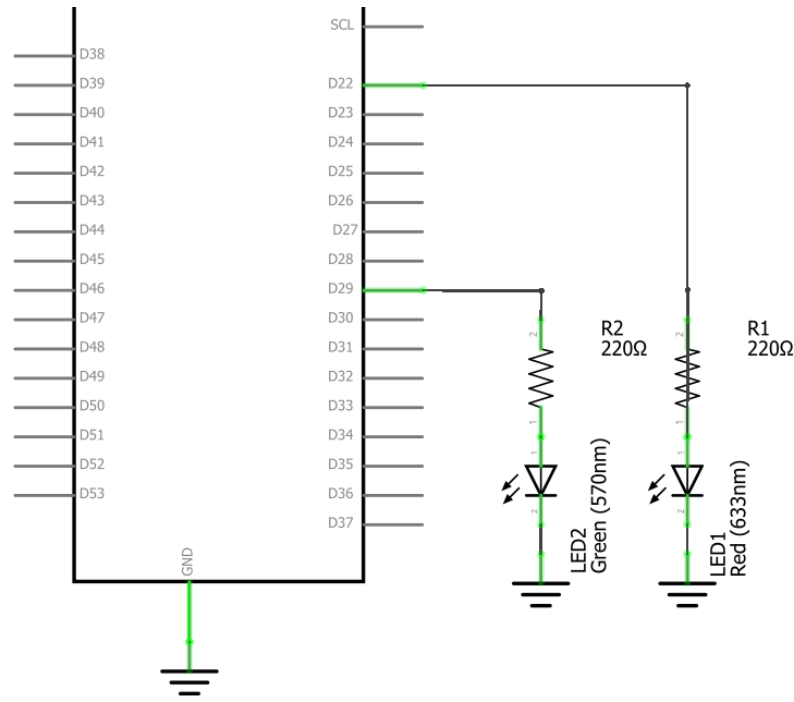
C-Program to blink the leds

```c
/*
 * MyFirstAVRProject.c
 *
 * Created: 21/03/2019 13:41:34
 * Author : IHA
 */

#include <avr/io.h>
#include <util/delay.h>
#include <avr/sfr_defs.h>

int main(void)
{
    DDRA |= _BV(DDA0) | _BV(DDA7); // Set PA0 and PA7 to output

    while (1)
    {
        PORTA ^= _BV(PA0); // Toggle PA0 (LED1)
        _delay_ms(100);
        PORTA ^= _BV(PA7); // Toggle PA7 (LED2)
        _delay_ms(200);
    }
}
```

Stdio from MEGA2560

Follow the instructions in *Using STDIO from MEGA2560 MCU.pdf*

When you have done this you can use all the functions in `stdio.h` in your program

Clone FreeRTOS git Repository

Follow the instructions in *Your First C-Project with Atmel Studio.pdf*
From **the section** *Using FreeRTOS*