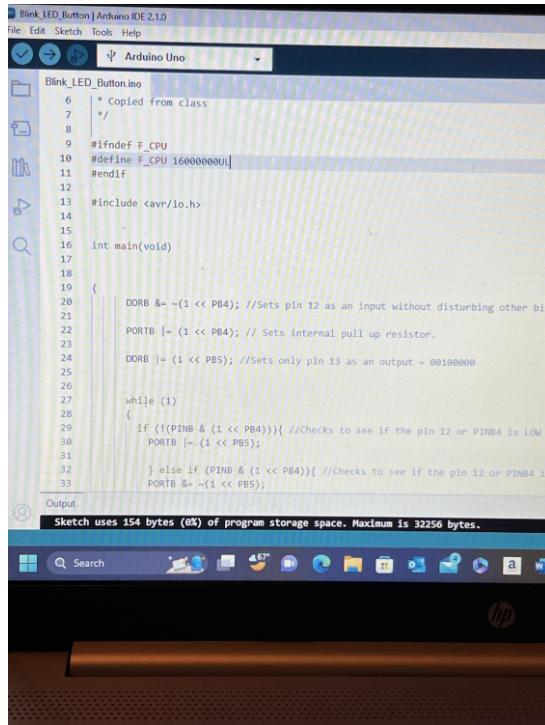


## Blink LED with Button

I will work it in Tinkercad first. I made the circuit in Arduino IDE and it worked. I have it setup in Microchip and that is the next experiment.



The screenshot shows the Arduino IDE interface with the file "Blink\_LED\_Button.ino" open. The code is as follows:

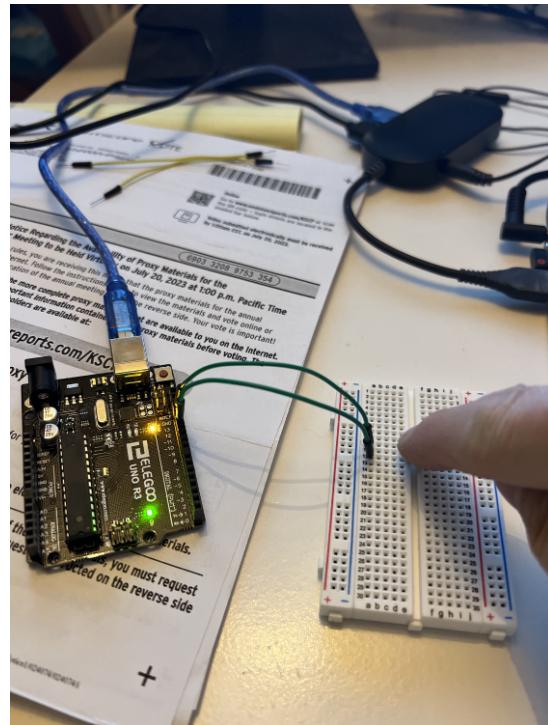
```
#include <avr/io.h>

int main(void)
{
    DDRB &= ~(1 << PB4); //Sets pin 12 as an input without disturbing other bits
    PORTB |= (1 << PB4); // Sets internal pull up resistor.

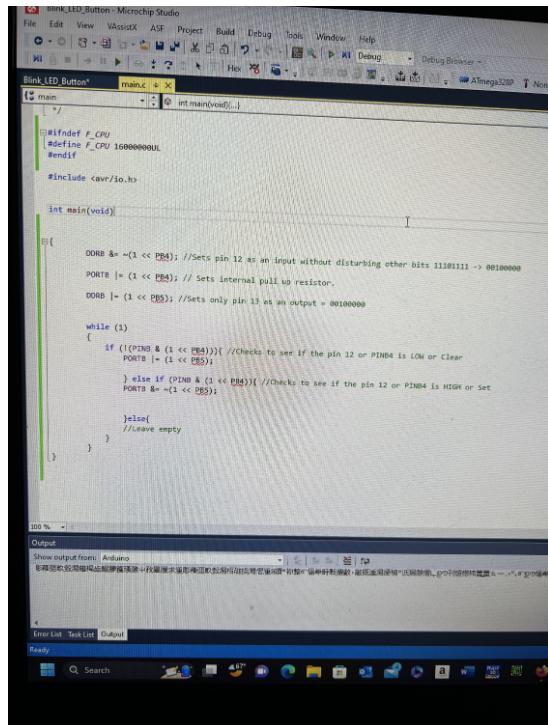
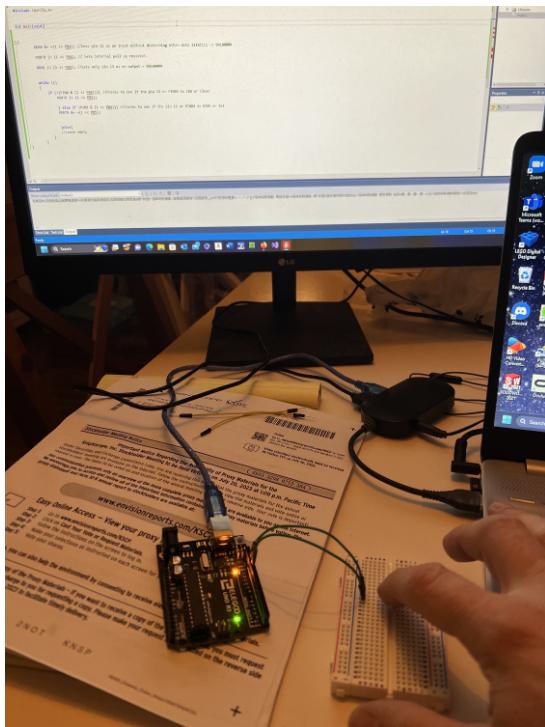
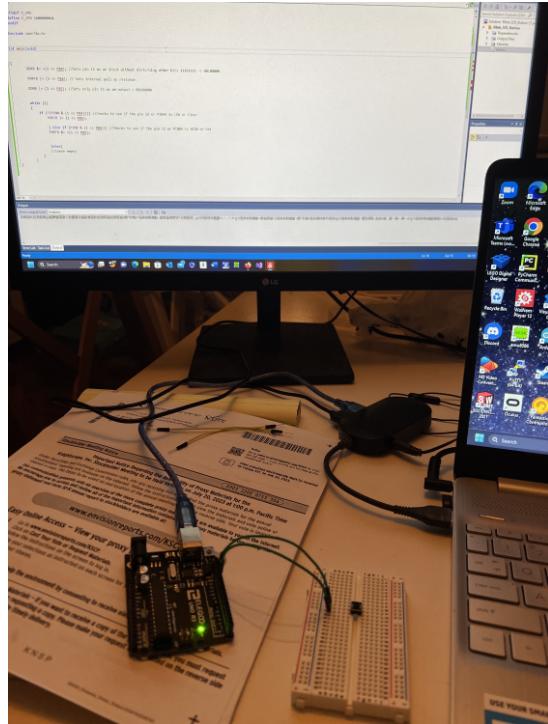
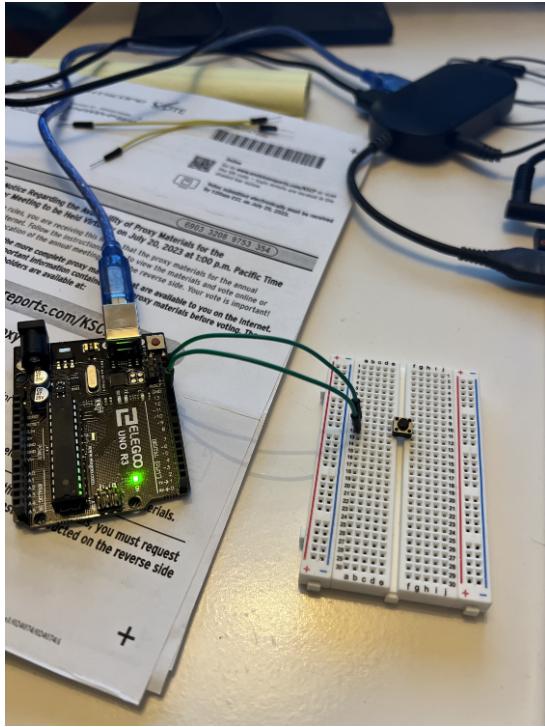
    DDRB |= (1 << PB5); //Sets only pin 13 as an output - 00100000

    while (1)
    {
        if (!(PINB & (1 << PB4))){ //Checks to see if the pin 12 or PINB4 is LOW
            PORTB |= (1 << PB5);
        }
        else if (PINB & (1 << PB4)){ //Checks to see if the pin 12 or PINB4 is HIGH
            PORTB &= ~(1 << PB5);
        }
    }
}
```

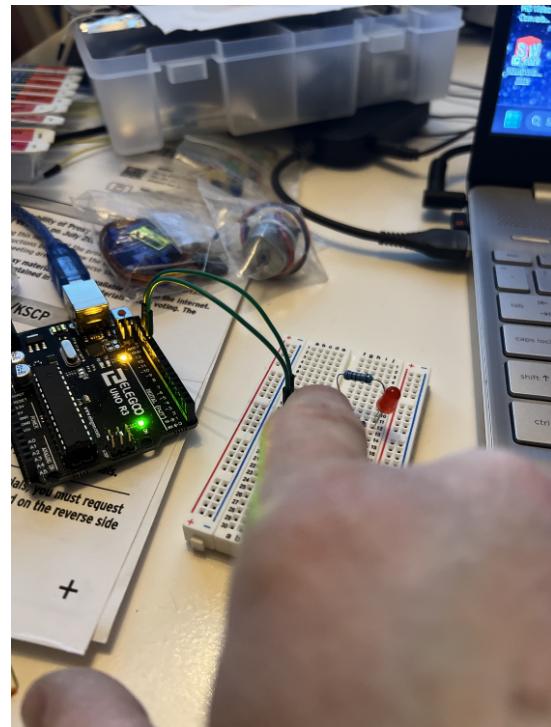
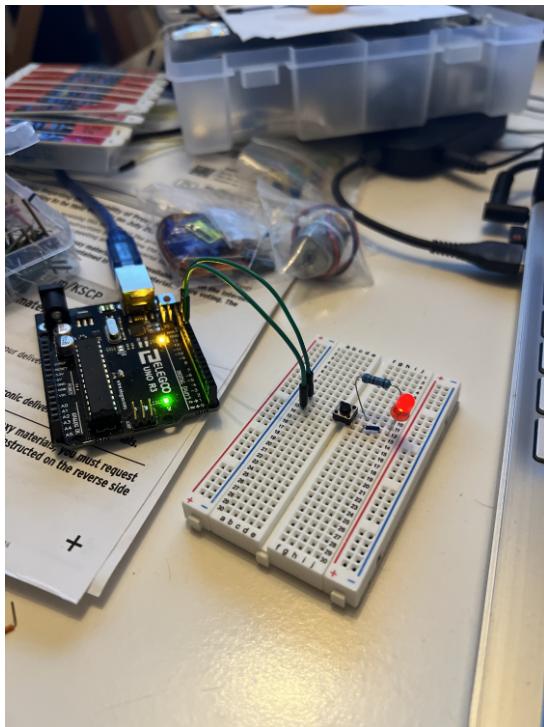
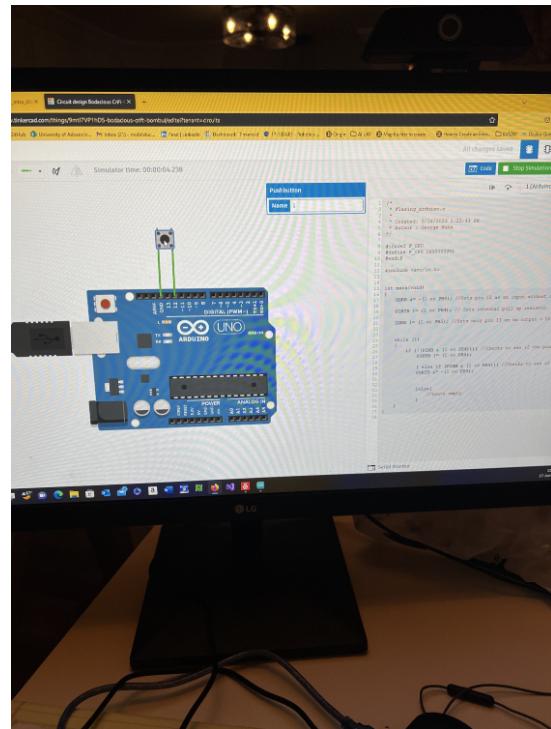
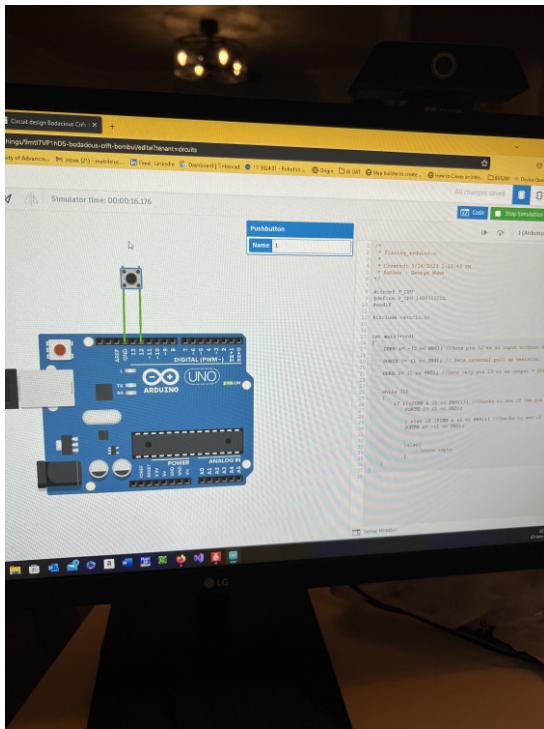
Output:  
Sketch uses 154 bytes (0%) of program storage space. Maximum is 32256 bytes.



The pictures above are the project in Arduino IDE. The code worked fine.



The above pictures are of the project in Microchip. It works fine. The first picture on the top left is just the setup with a breadboard. The setup was also used for the Arduino IDE portion. For the Microchip project I closed the Arduino IDE so that it wouldn't interfere with Microchip. The pictures below are of the project in Tinkercad. All projects worked as they were supposed to work.



Here is a configuration that when the button is open, both lights are on and when the button is closed, one light goes out. What I wanted to do was be able to have both lights go out when the button was pushed. I know there is a reason why the onboard light stays on while the light on the breadboard turns off when the button is pressed. It has something to do with extending the circuit, but I'm not exactly sure. There also may be some code missing. But I didn't burn out a LED and there was a reaction, even though it wasn't what I wanted. Just some extra fun.