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CSE 5410
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Lab 1: Button

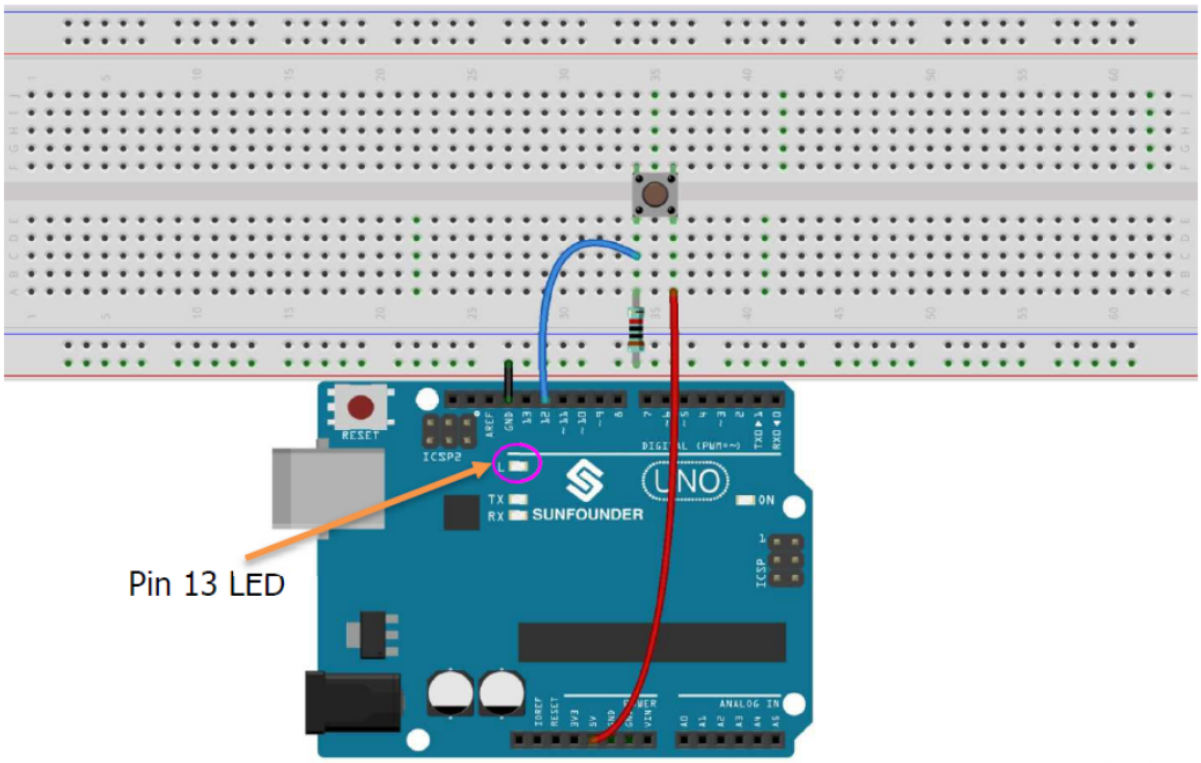
Introduction

In this experiment, we used the arduino board to turn an led on/off by using an I/O port and a button. By using the led that is already on the board we can set up a basic circuit that can make the led light up or not depending on the coding uploaded for the button. Coding is done in the arduino IDE software and uploaded to the arduino by connecting a usb cable to the arduino from a computer.

Components list: Arduino uno board, usb cable, button, resistor(10kΩ), wires, and breadboard.

Experiment

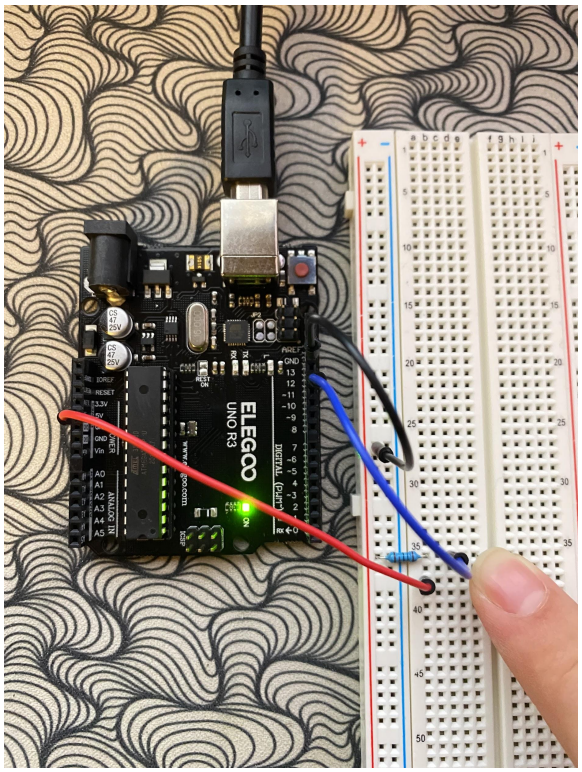
By connecting the components as shown in the picture diagram below we can begin uploading code to the arduino and test with the button

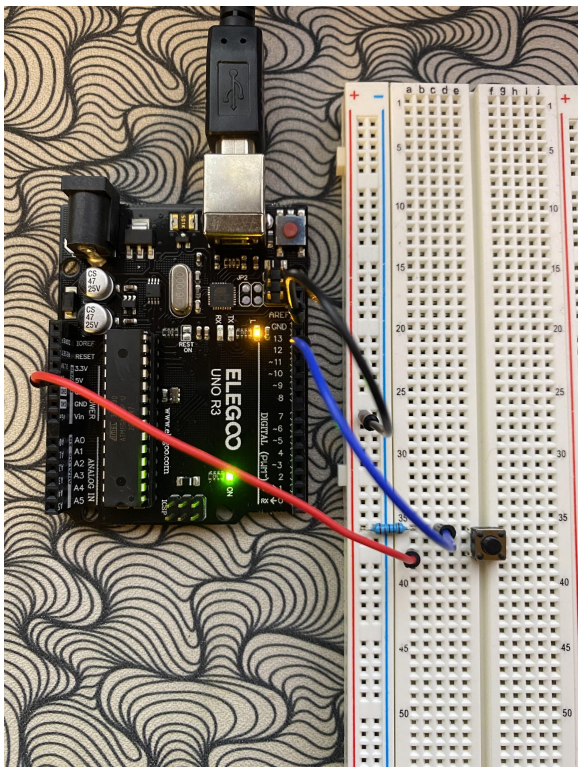


Test

Using the code below we get the led to turn off when the button is pressed and on otherwise.

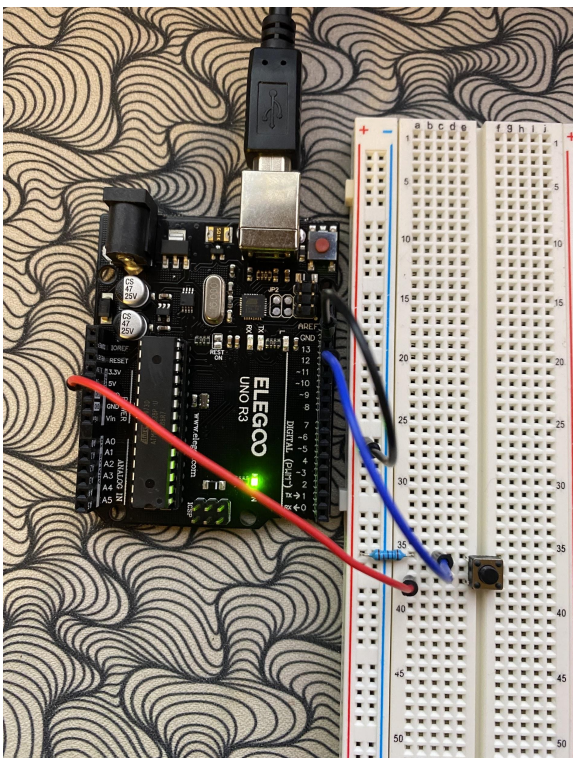
```
/**********************************/
const int keyPin = 12; //the number of the key pin
const int ledPin = 13;//the number of the led pin
/**********************************/
void setup()
{
pinMode(keyPin,INPUT);//initialize the key pin as input
pinMode(ledPin,OUTPUT);//initialize the led pin as output
}
/**********************************/
void loop()
{
  //read the state of the key value
  //and check if the key is pressed
  //if it is,the state is HIGH
  if(digitalRead(keyPin) ==HIGH )
  {
digitalWrite(ledPin,HIGH);//turn on the led
  }
  else
  {
digitalWrite(ledPin,LOW);//turn off the led
  }
```

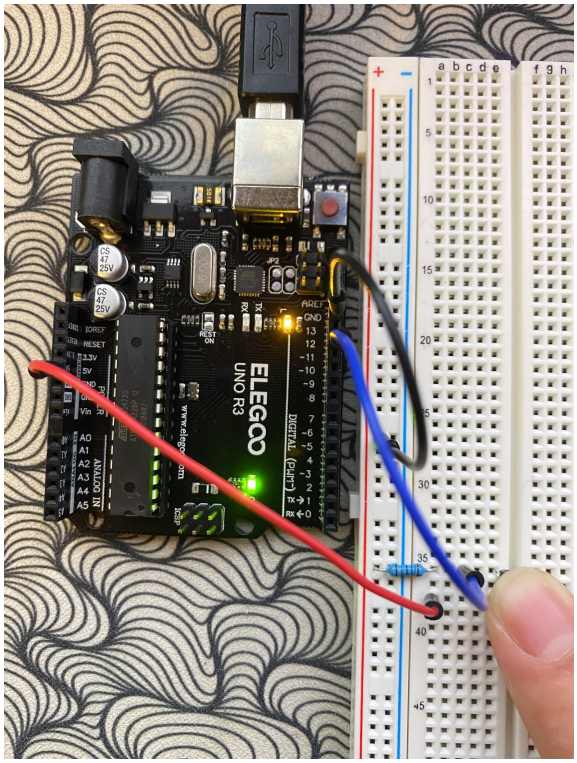




Using the code below we get the led to turn on when the button is pressed and off otherwise.

```
/**********************************/
const int keyPin = 12; //the number of the key pin
const int ledPin = 13;//the number of the led pin
/**********************************/
void setup()
{
pinMode(keyPin,INPUT);//initialize the key pin as input
pinMode(ledPin,OUTPUT);//initialize the led pin as output
}
/**********************************/
void loop()
{
  //read the state of the key value
  //and check if the key is pressed
  //if it is,the state is LOW
  if(digitalRead(keyPin) ==LOW )
  {
digitalWrite(ledPin,HIGH);//turn off the led
  }
  else
  {
digitalWrite(ledPin,LOW);//turn on the led
  }
}
```





Conclusion

During this lab, I learned the basics of using an arduino board and the coding involved in making a basic function. Although the function of this experiment is simple, I did find it interesting.