



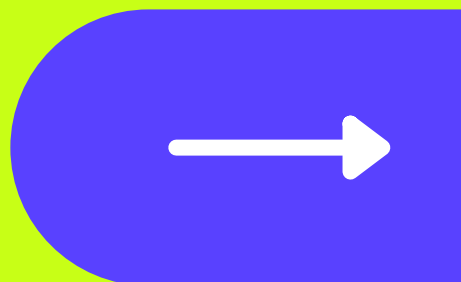
DIY PROJECT

# SAMARITANS

A DEVICE FOR THE BLIND



Date: February 22, 2022



# Meet the Team Members



SHASHANK  
SRIVASTAVA



MANOJ KUMAR



KARTIK NAIK



RAHUL ANWALA

# About the Project



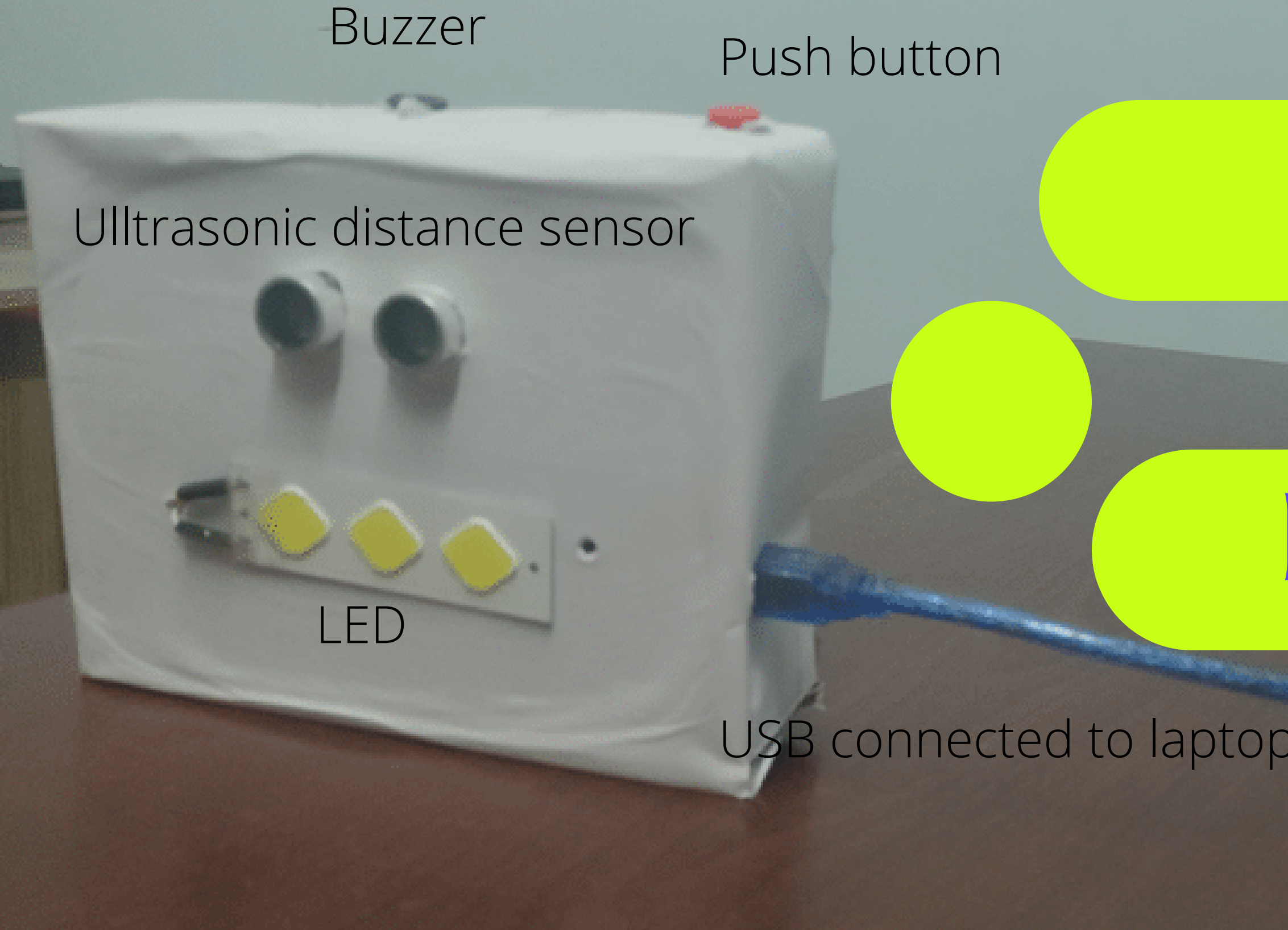
## USE:

- This device is helpful for visually impaired people.
- We might have seen blind people walk with a stick in their hand which might not be easy for them to walk around with.

## OBJECTIVE:

- We have made a device which warns them against the upcoming obstacles.
- It uses ultrasonic distance sensor to detect the obstacles and warns the person.

Let us first have a look at the device.



Device

Prototype

# Components

of the device:



01 Aurdino Uno Board

02 Breadboard

03 Ultasonic Distance Sensor

04 Piezo buzzer

05 Push Button

06 LED Strip

07 Resistors

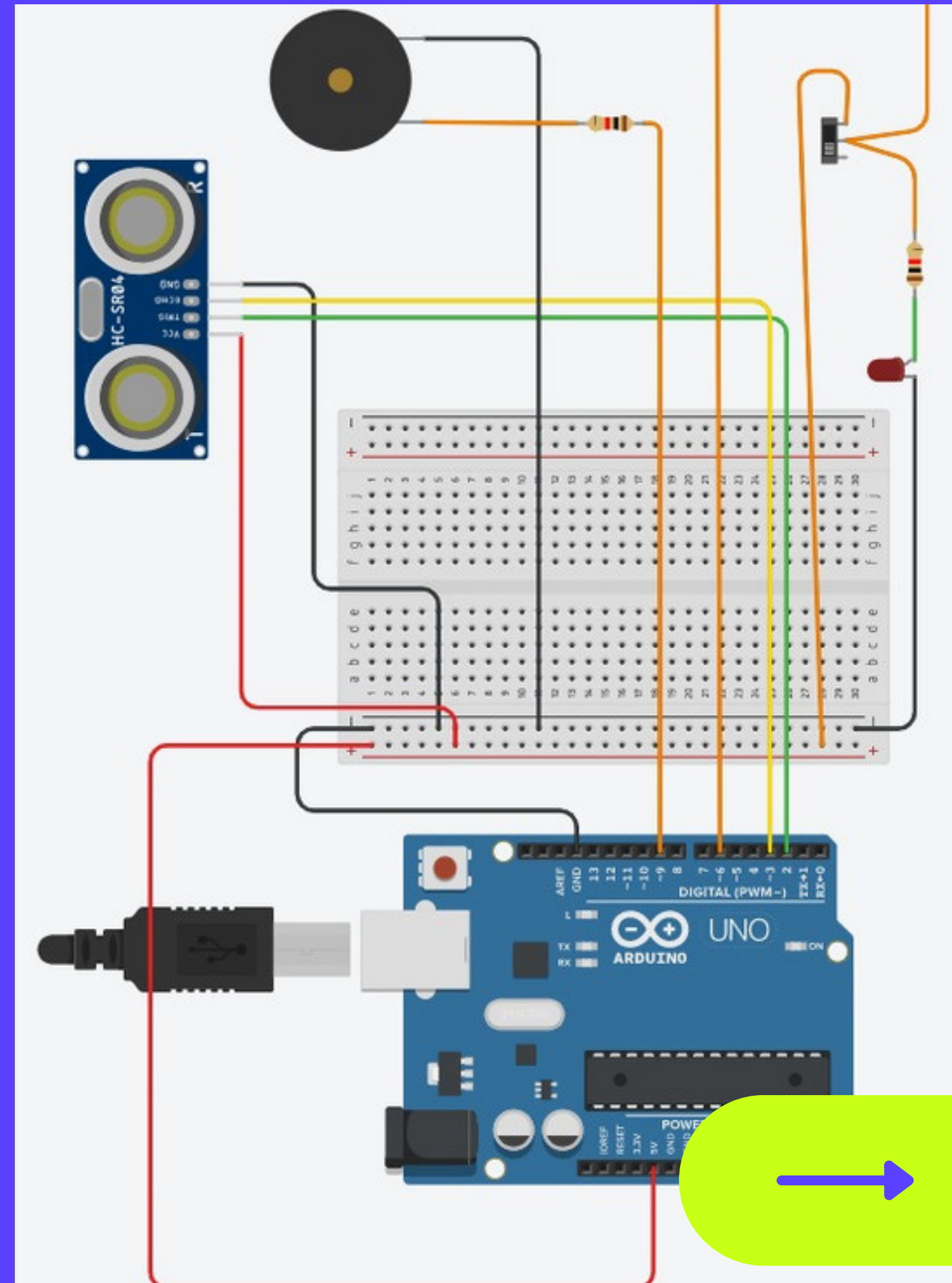
08 Connecting Wires

09 Stick



# About the Circuit

It s a simple Arduino Uno circuit connected to an ultrasonic sensor. We use the frequency of a piezo speaker to communicate with the blind person if an obstacle comes in his/her way.



About the Circuit *cont.*

# Algorithm and logic Flow

```
// C++ code
//
long duration = 0;

int distance = 0;

void setup()
{
  pinMode(6, INPUT);
  pinMode(2, OUTPUT);
  pinMode(9, OUTPUT);
  Serial.begin(9600);
  Serial.println("Hello World");
  Serial.println();
}

void loop()
{

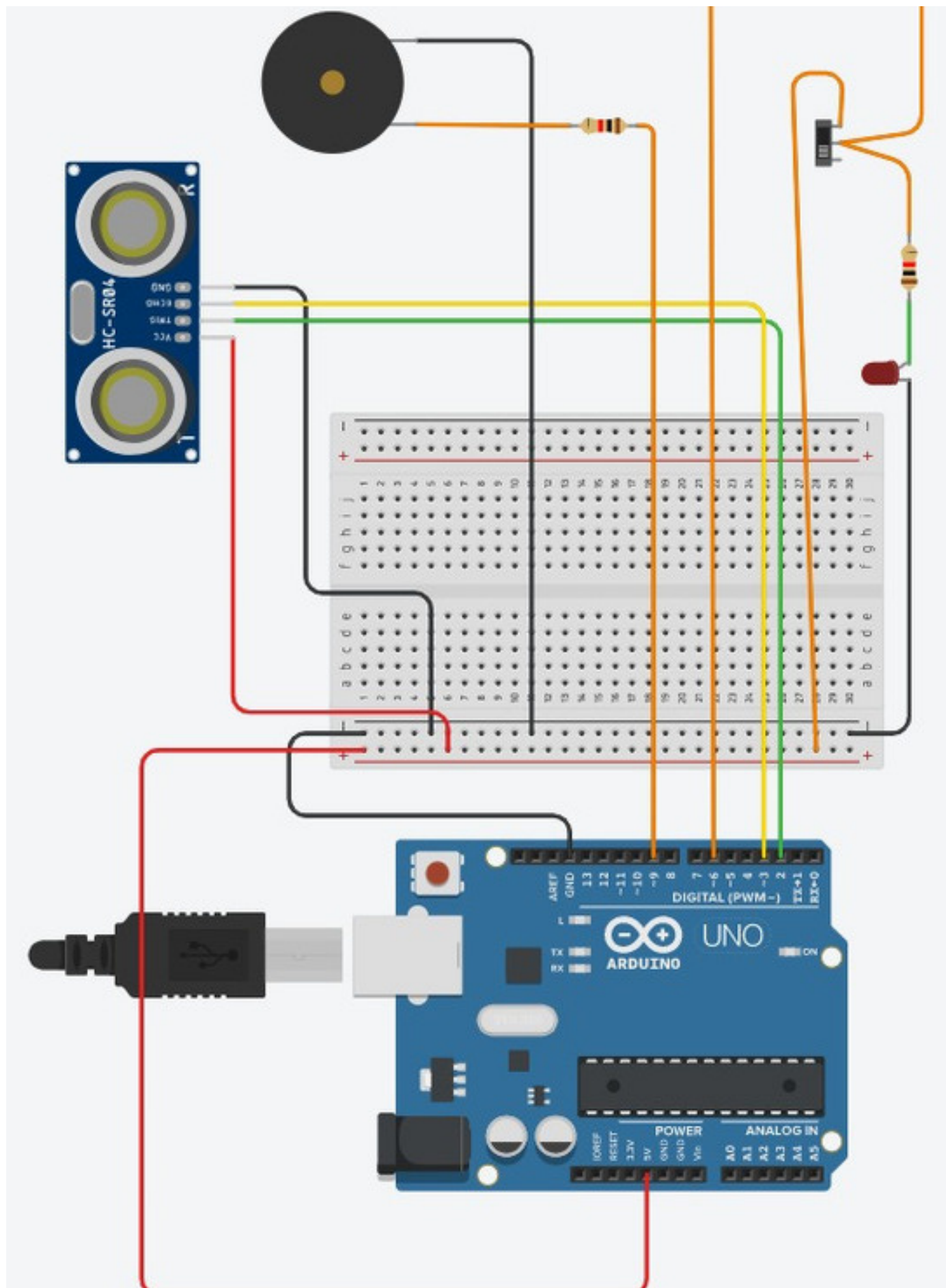
  if (digitalRead(6) == HIGH) {
    distance = 0;
    duration = 0;
    digitalWrite(2, LOW);
    delay(0.002); // Wait for 0.002 millisecond(s)
    digitalWrite(2, HIGH);
    delay(0.01); // Wait for 0.01 millisecond(s)
    digitalWrite(2, LOW);
    duration = pulseIn(3, HIGH);
    distance = duration * 0.034 / 2;
    Serial.print("Distance: ");
    Serial.print(distance);
    Serial.println(" cm");

    if (distance > 100){

    }

  }
}
```





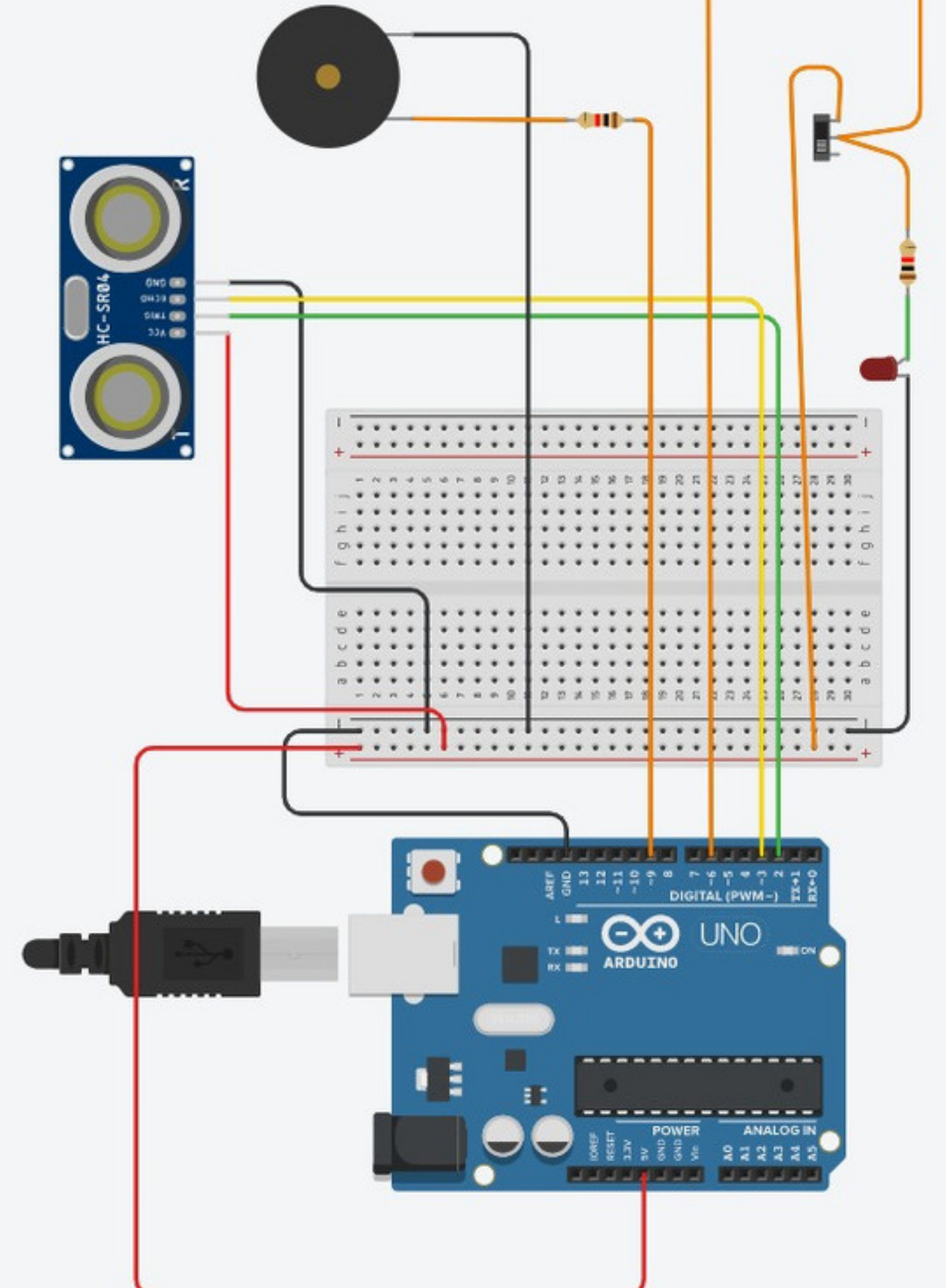
# Code

```
// C++ code
//
long duration = 0;

int distance = 0;

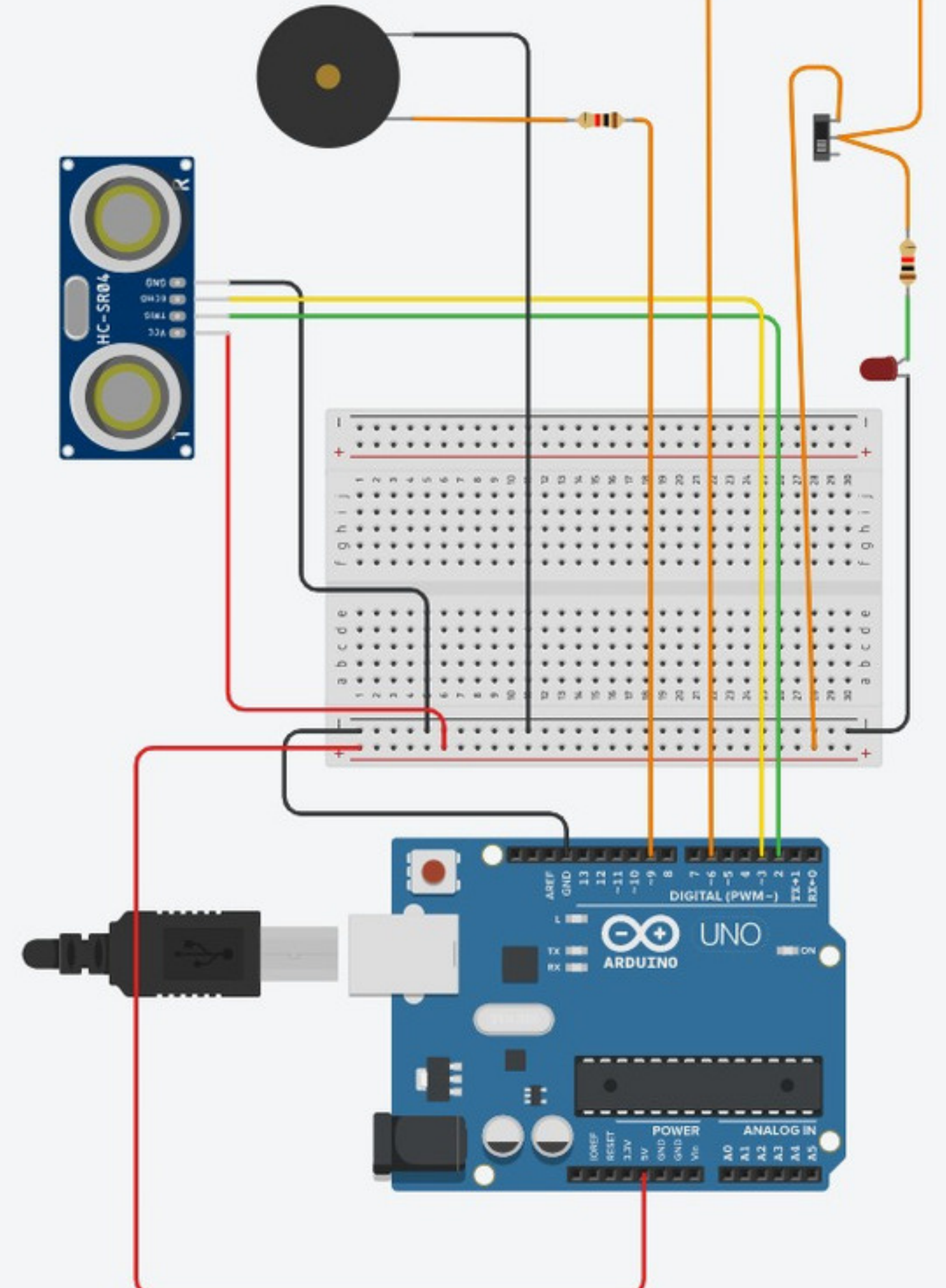
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# Code

```
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{
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        distance = duration * 0.034 / 2;
        Serial.print("Distance: ");
        Serial.print(distance);
        Serial.println(" cm");
    }
}
```



```
if (distance > 100){  
  
}  
  
else if (distance<=100&&distance>60){  
  
    tone(9,100);  
    delay(1000);  
    noTone(9);  
  
}  
  
else if (distance<=60&&distance>25){  
  
    tone(9,311);  
    delay(500);  
    noTone(9);  
  
}  
  
else{  
  
    tone(9,500);  
    delay(10);  
    noTone(9);  
  
}
```

# Case Design

Software used  
is solidworks

Tools used are  
Sketching  
Extrudeing  
Filleting

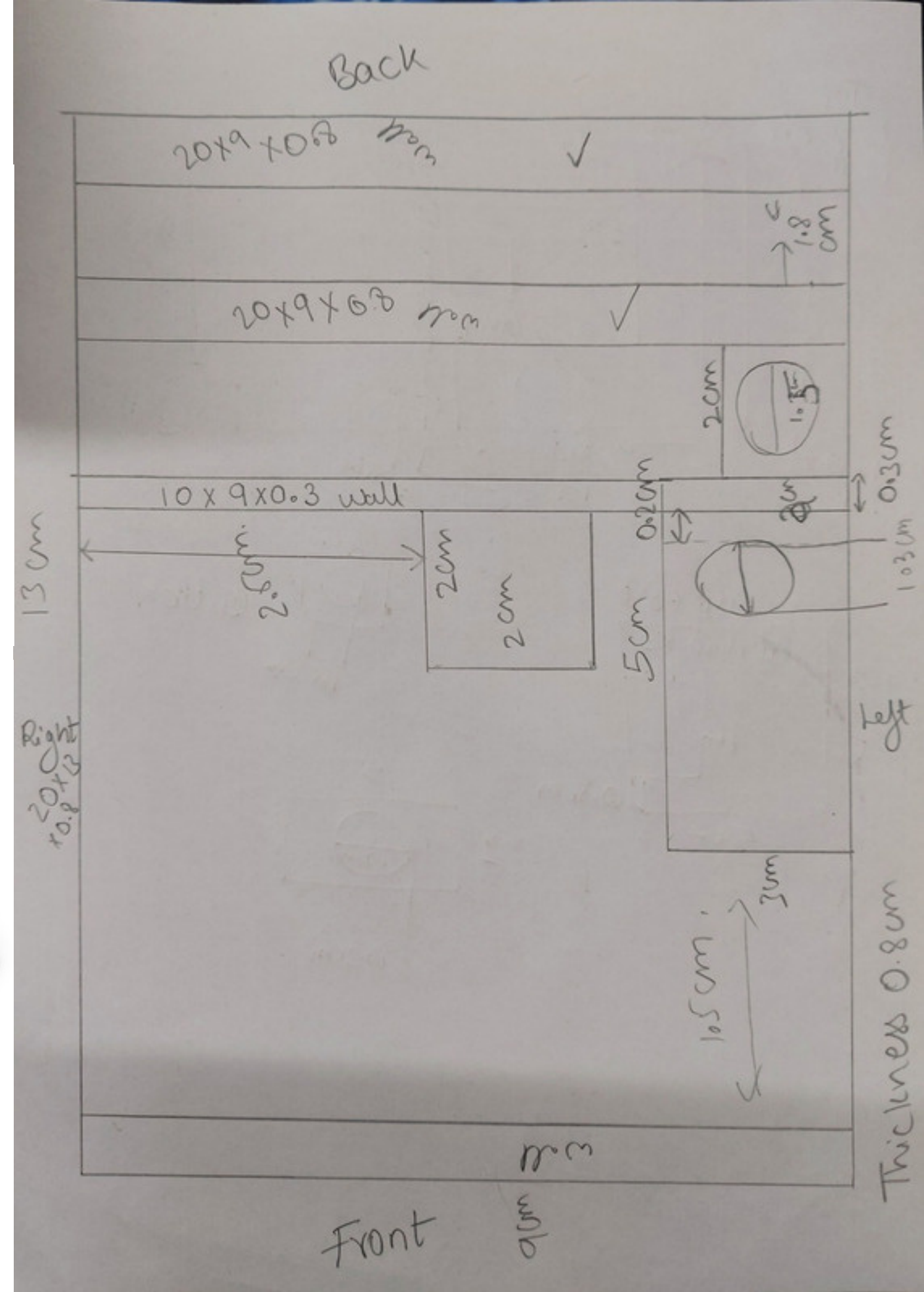
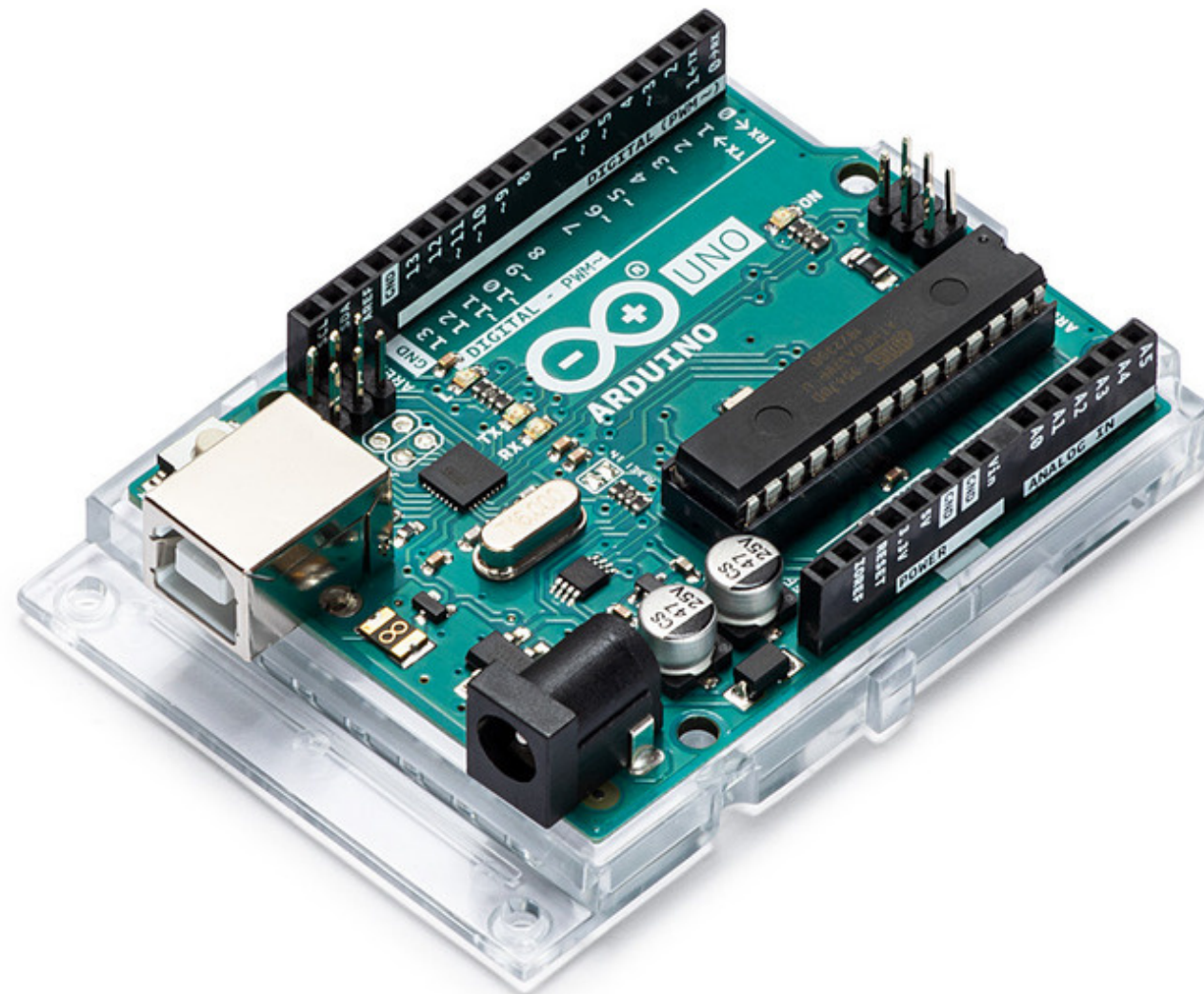


 **SOLIDWORKS**

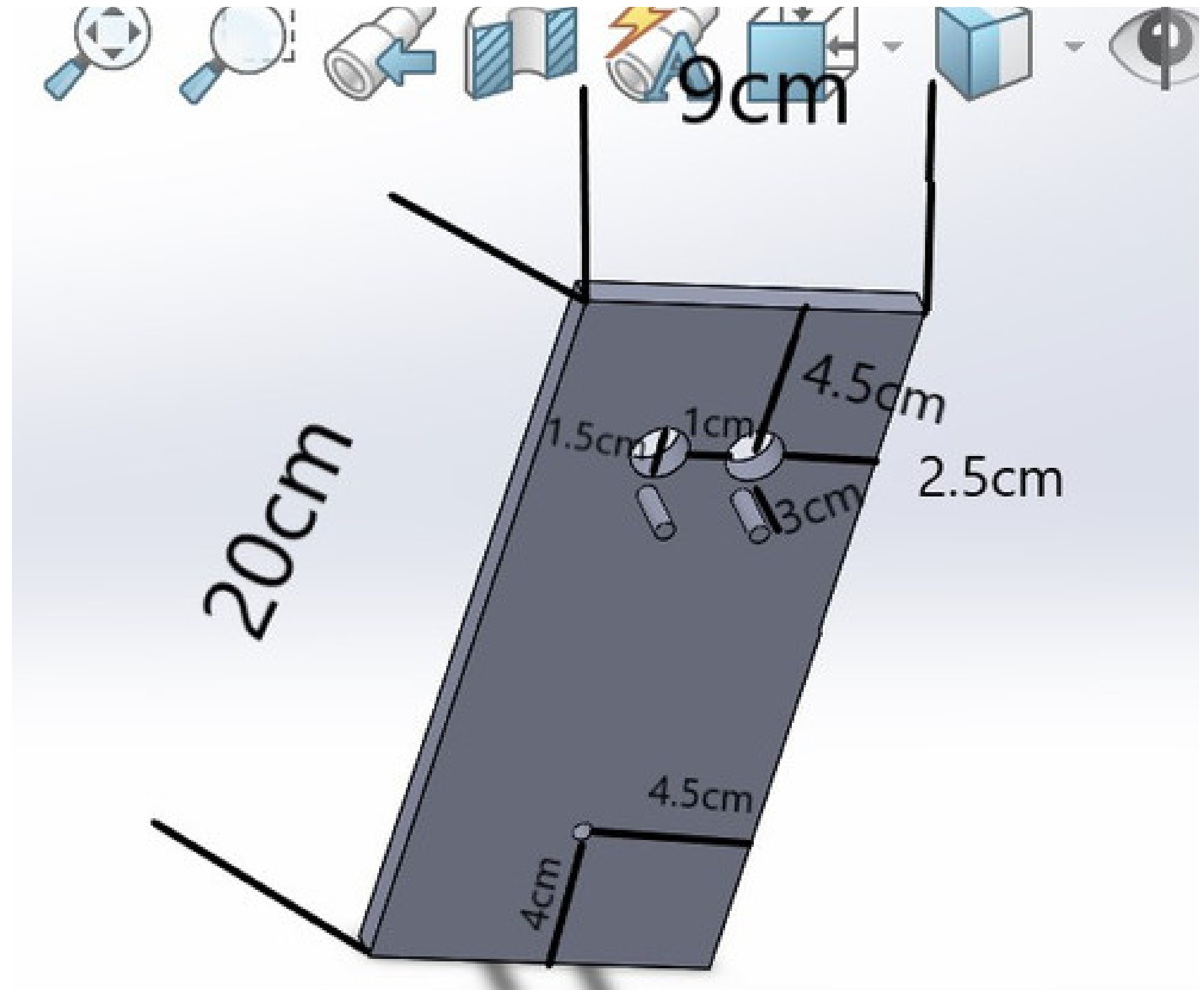




# Sketch

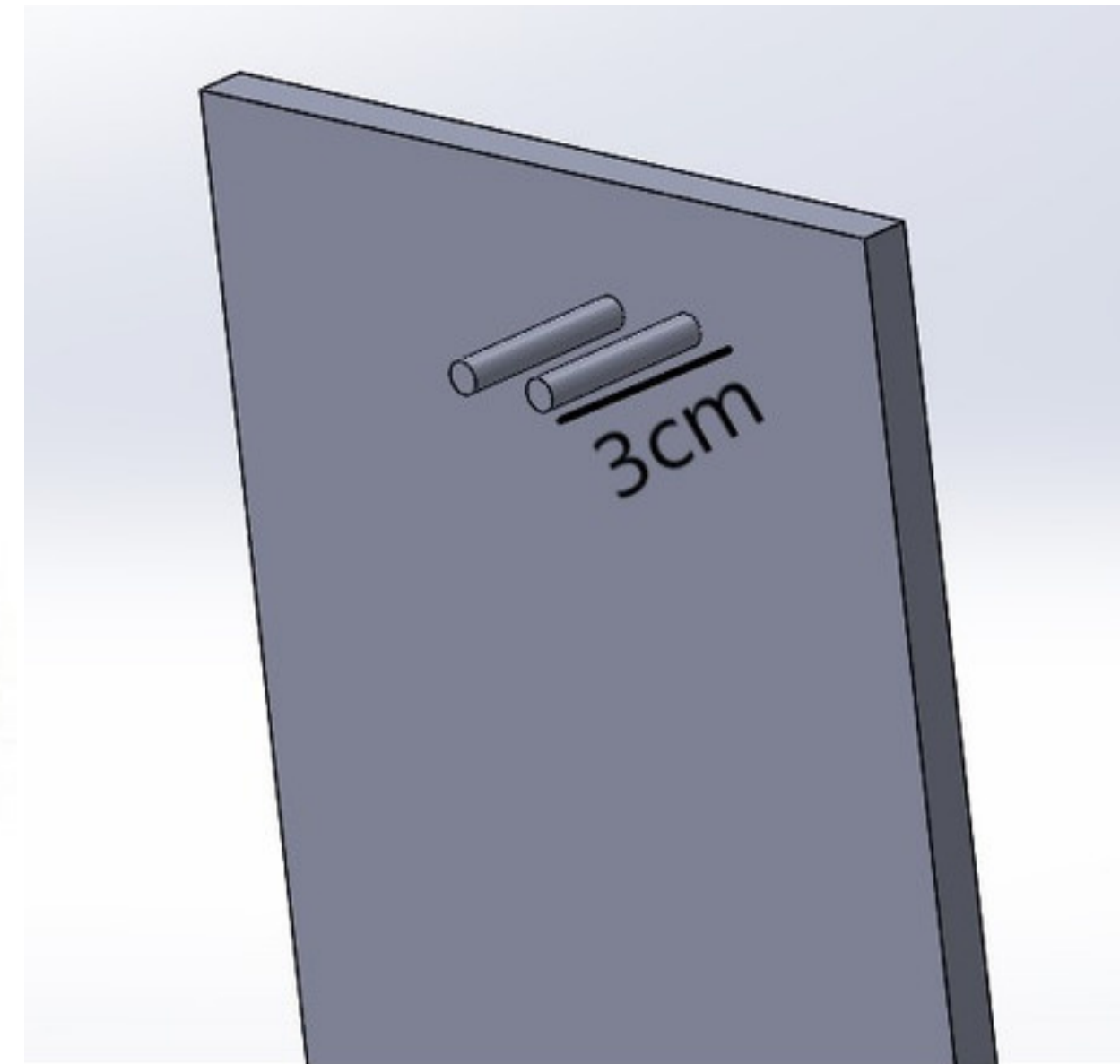
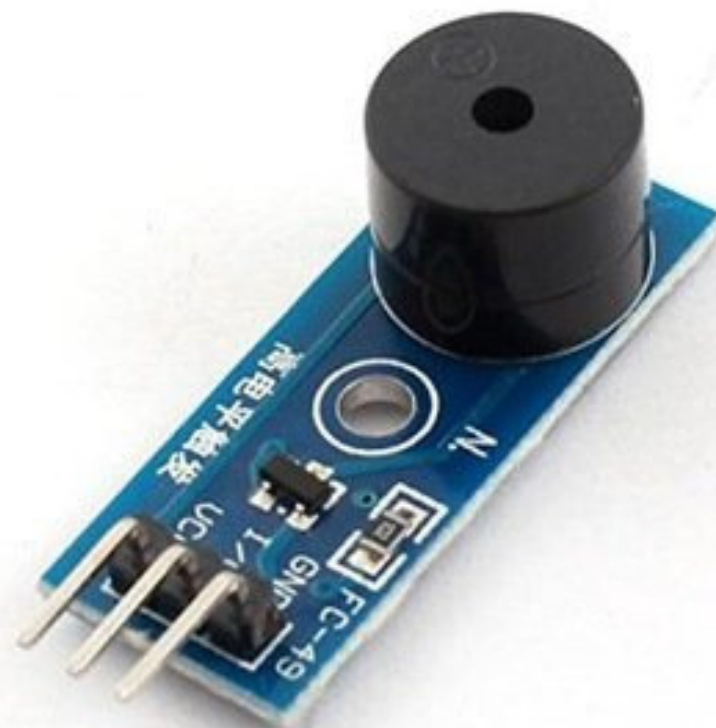
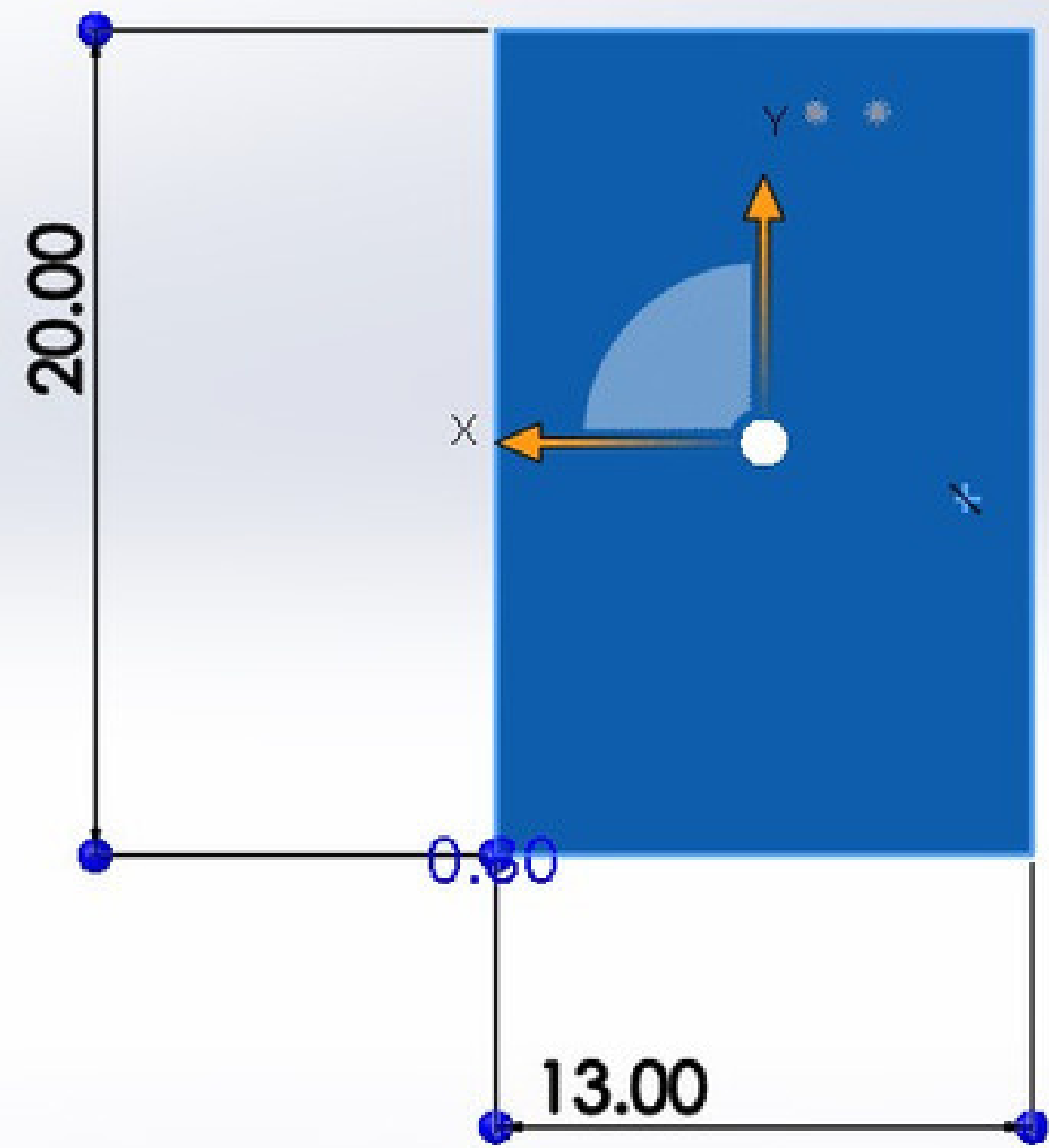


# Front





# Left



# Top

9cm

2cm

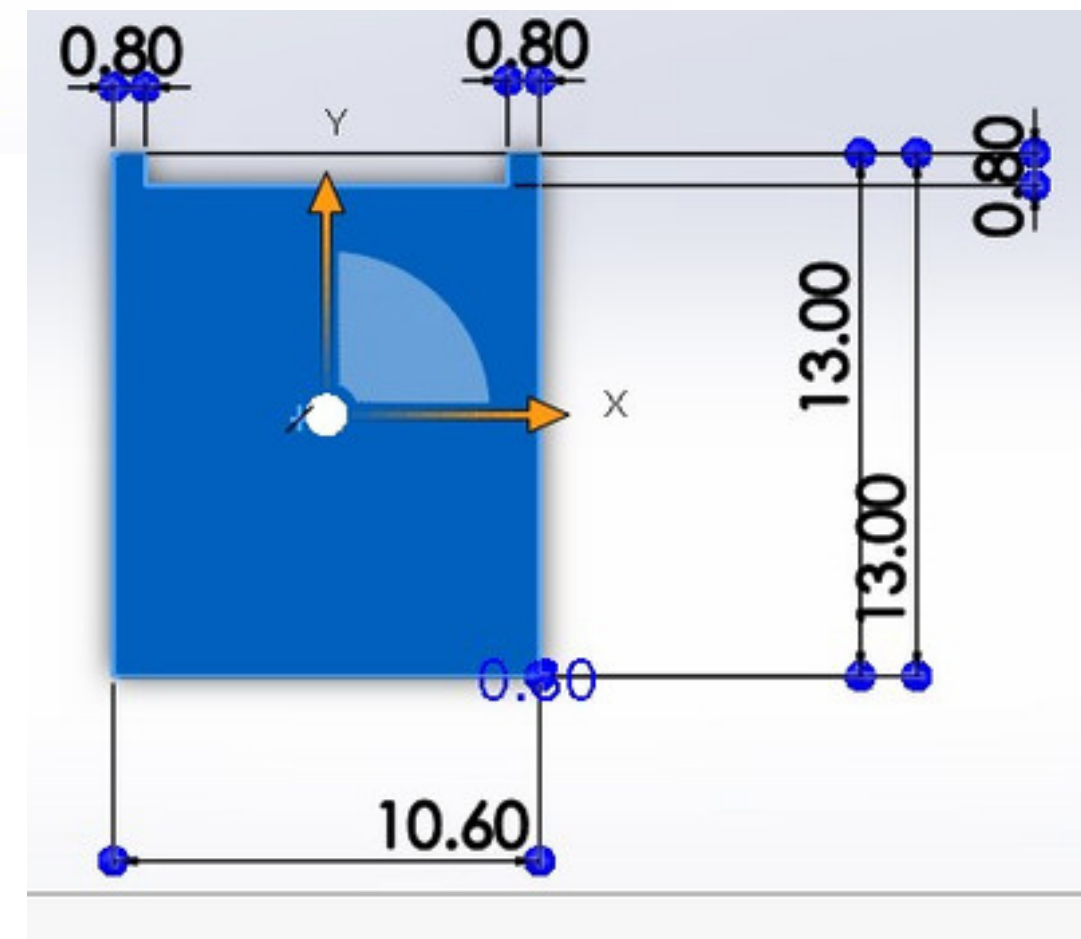
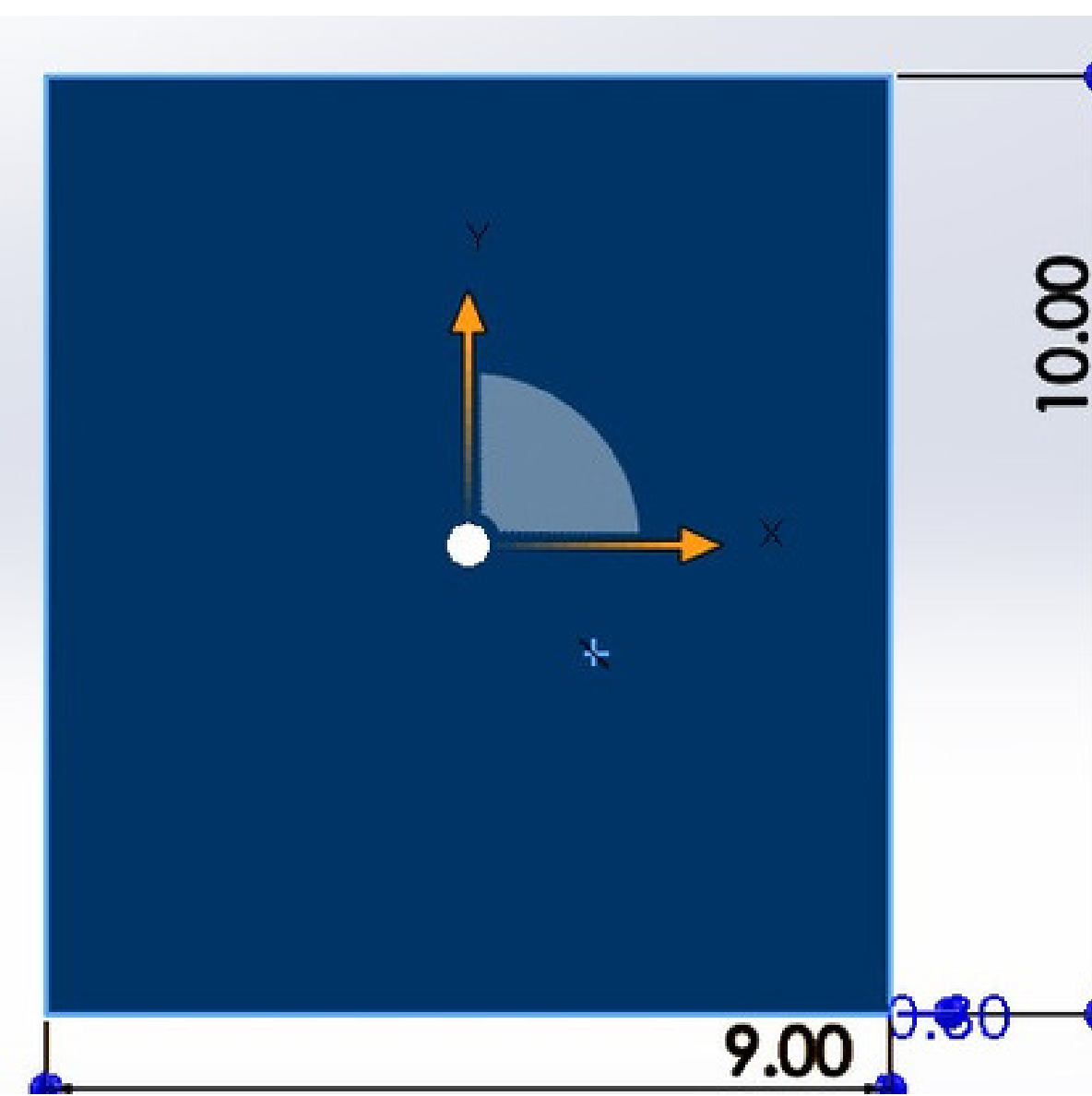
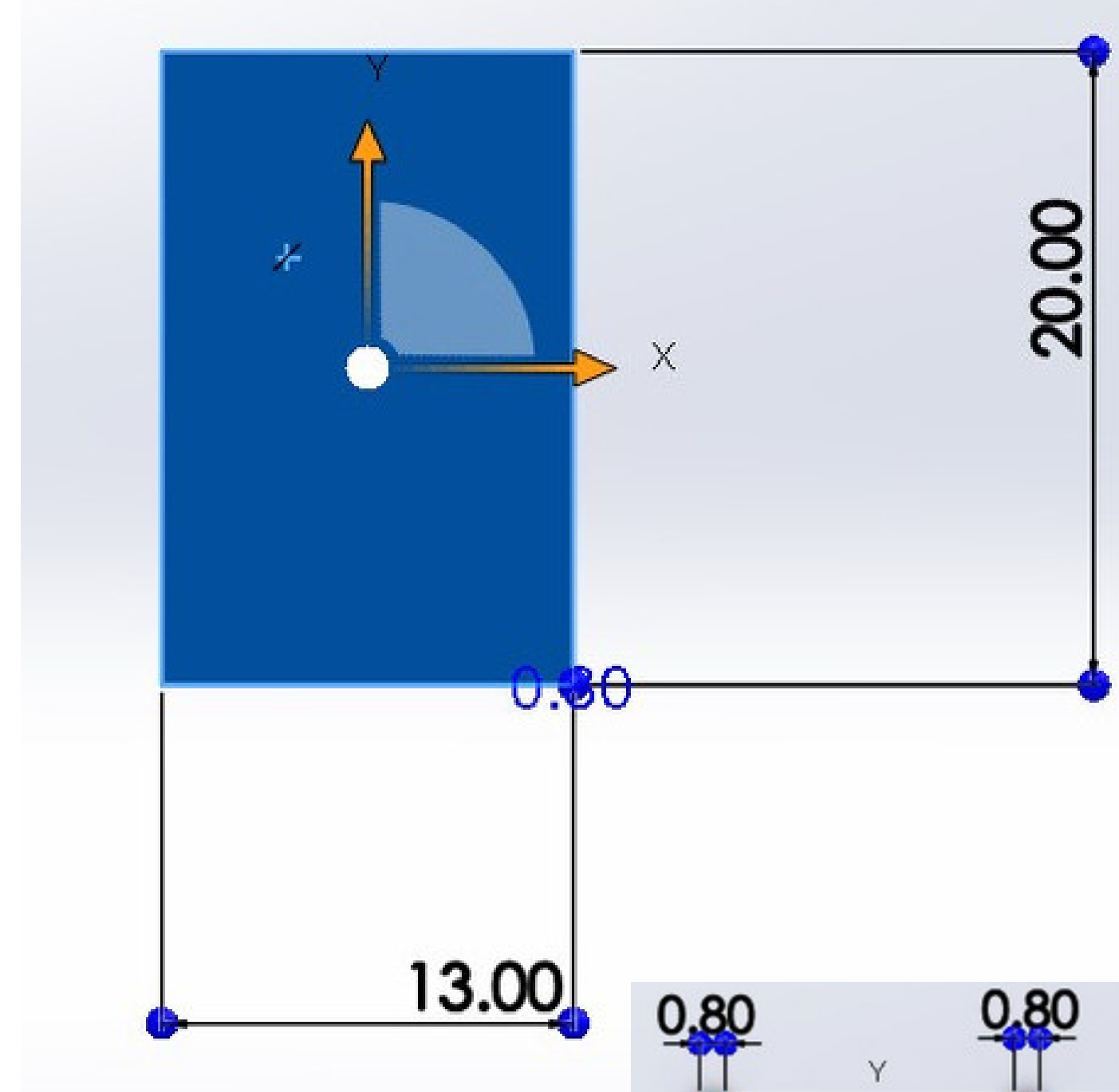
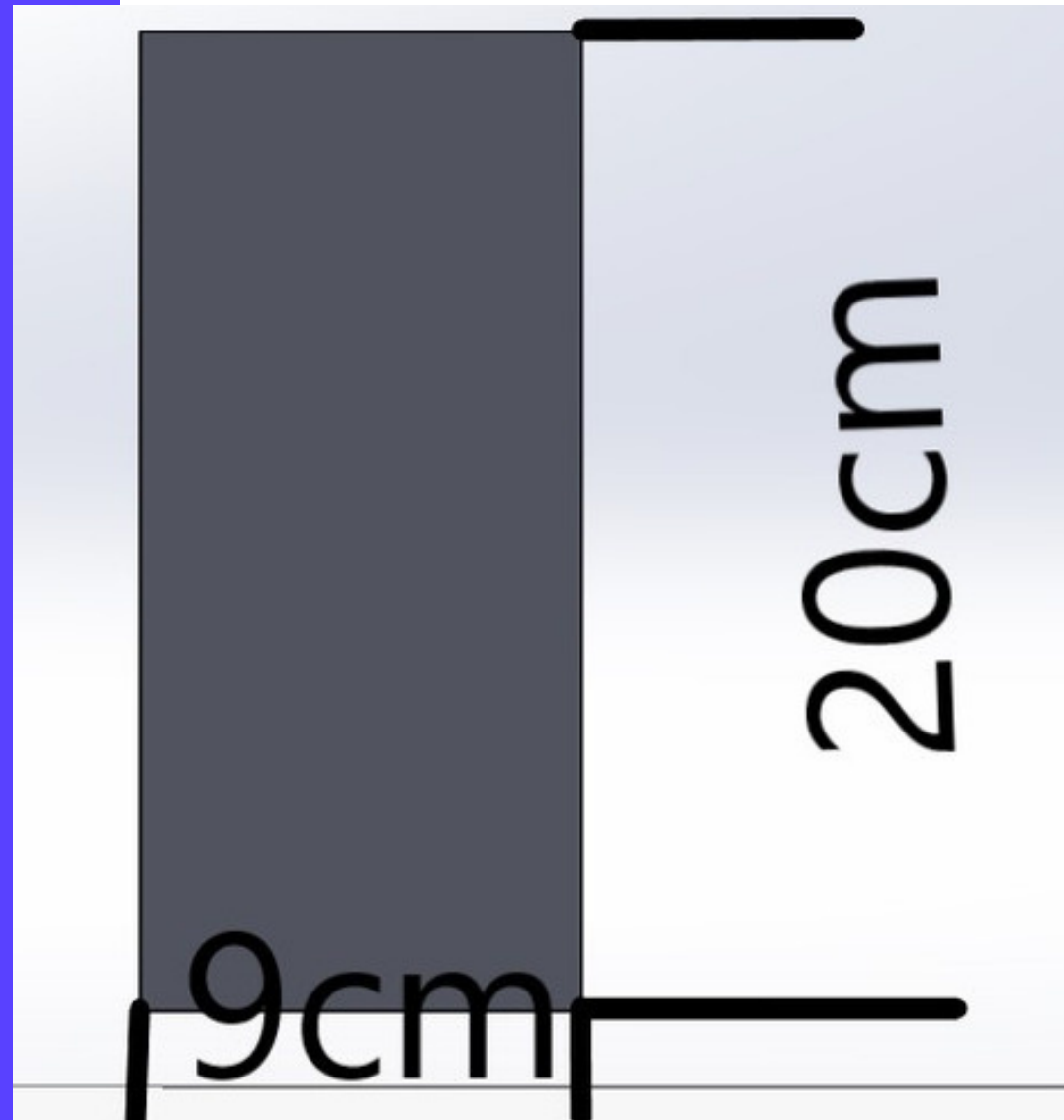
1.30cm

1.50cm

8.80cm

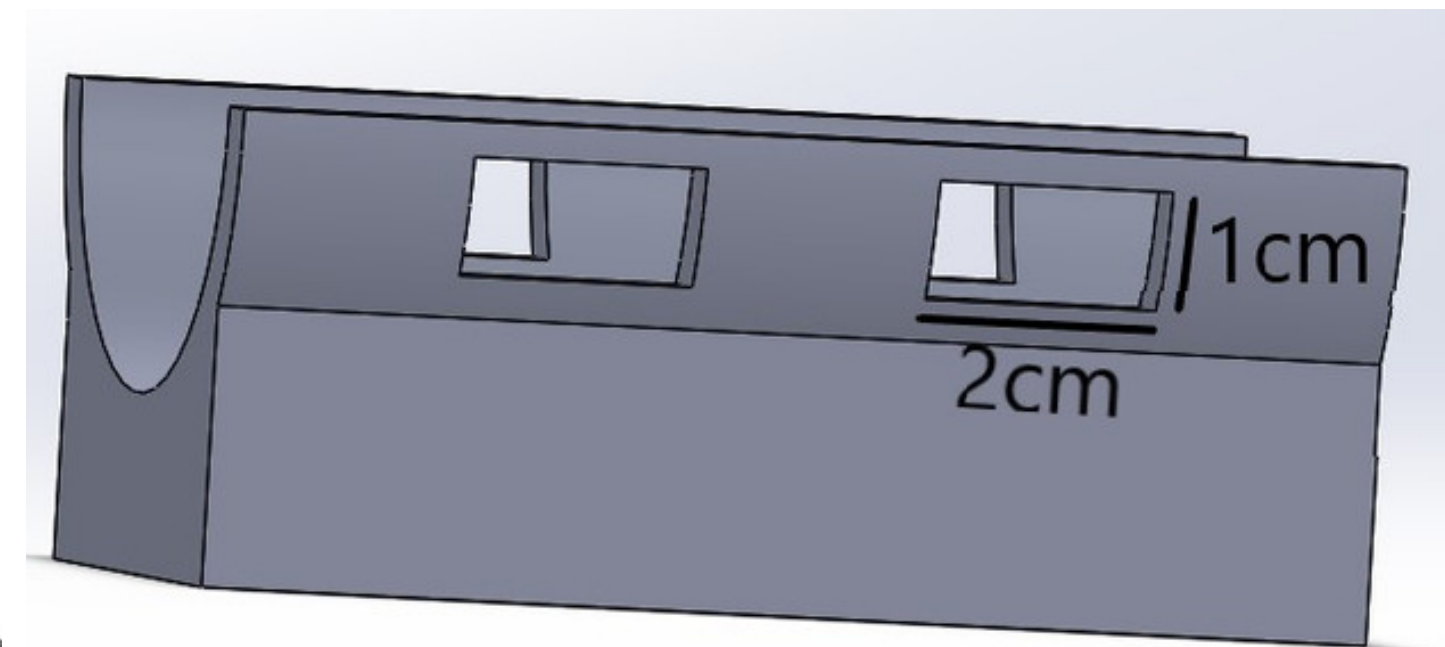
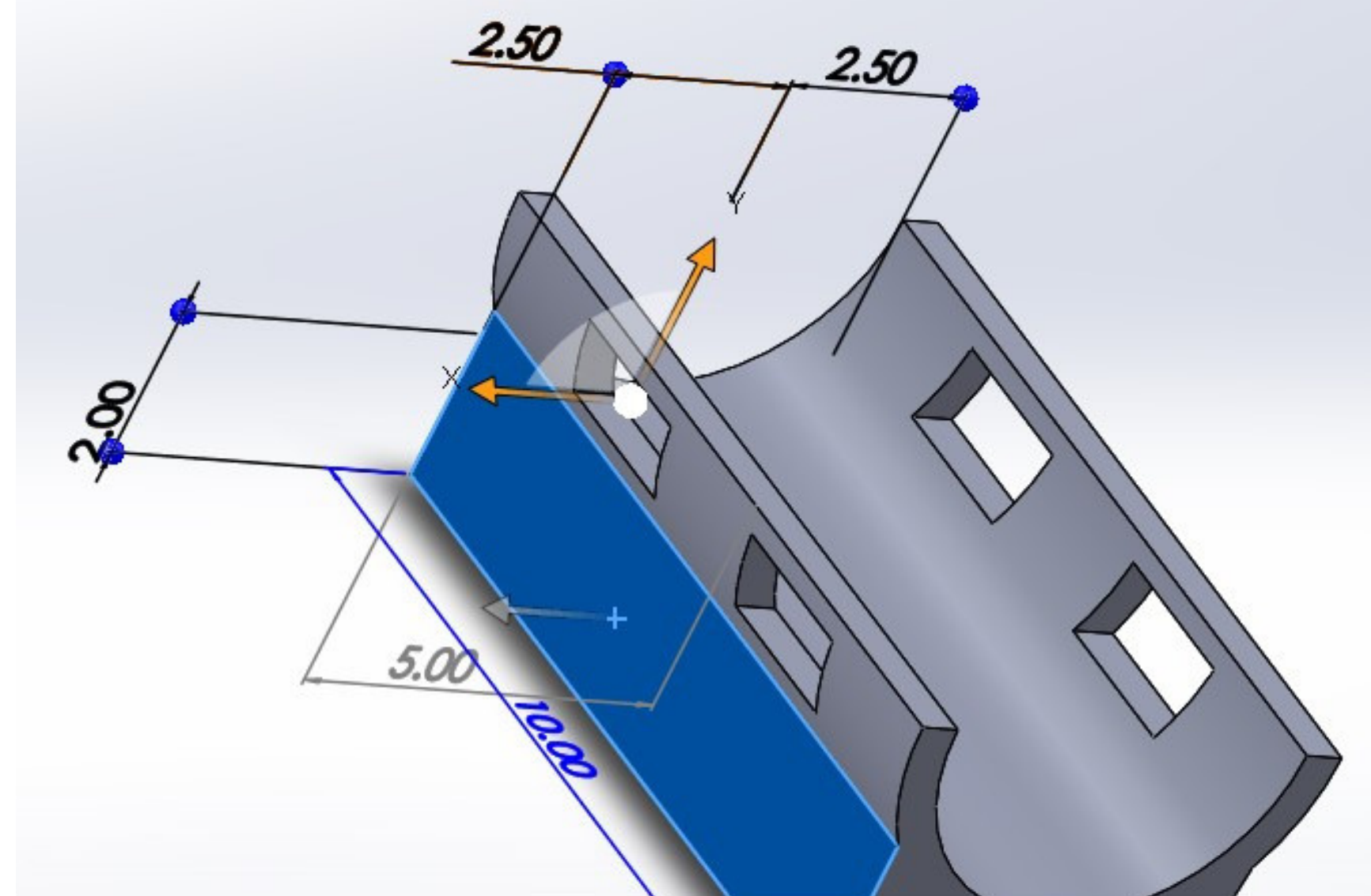
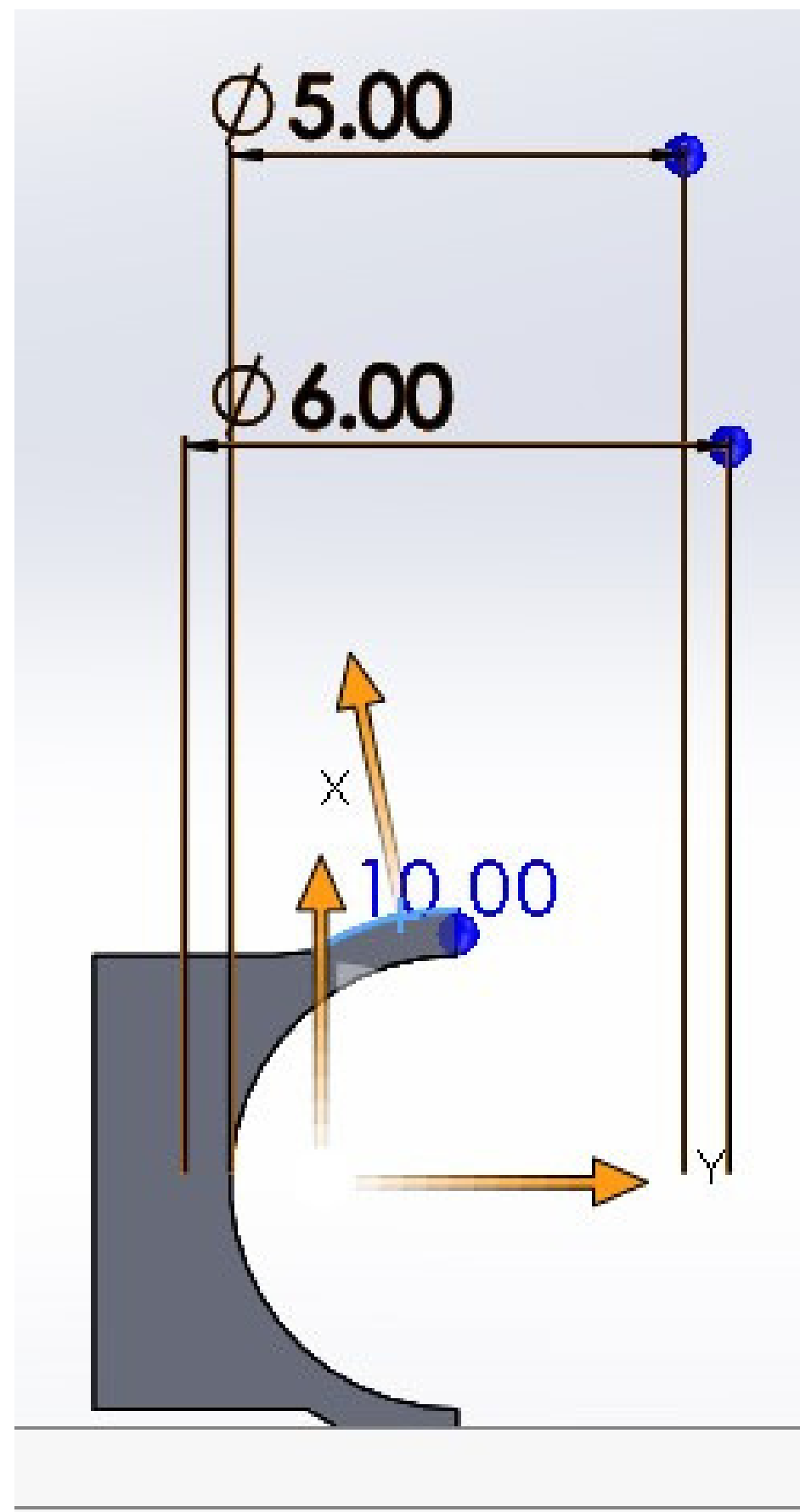


# Other Parts

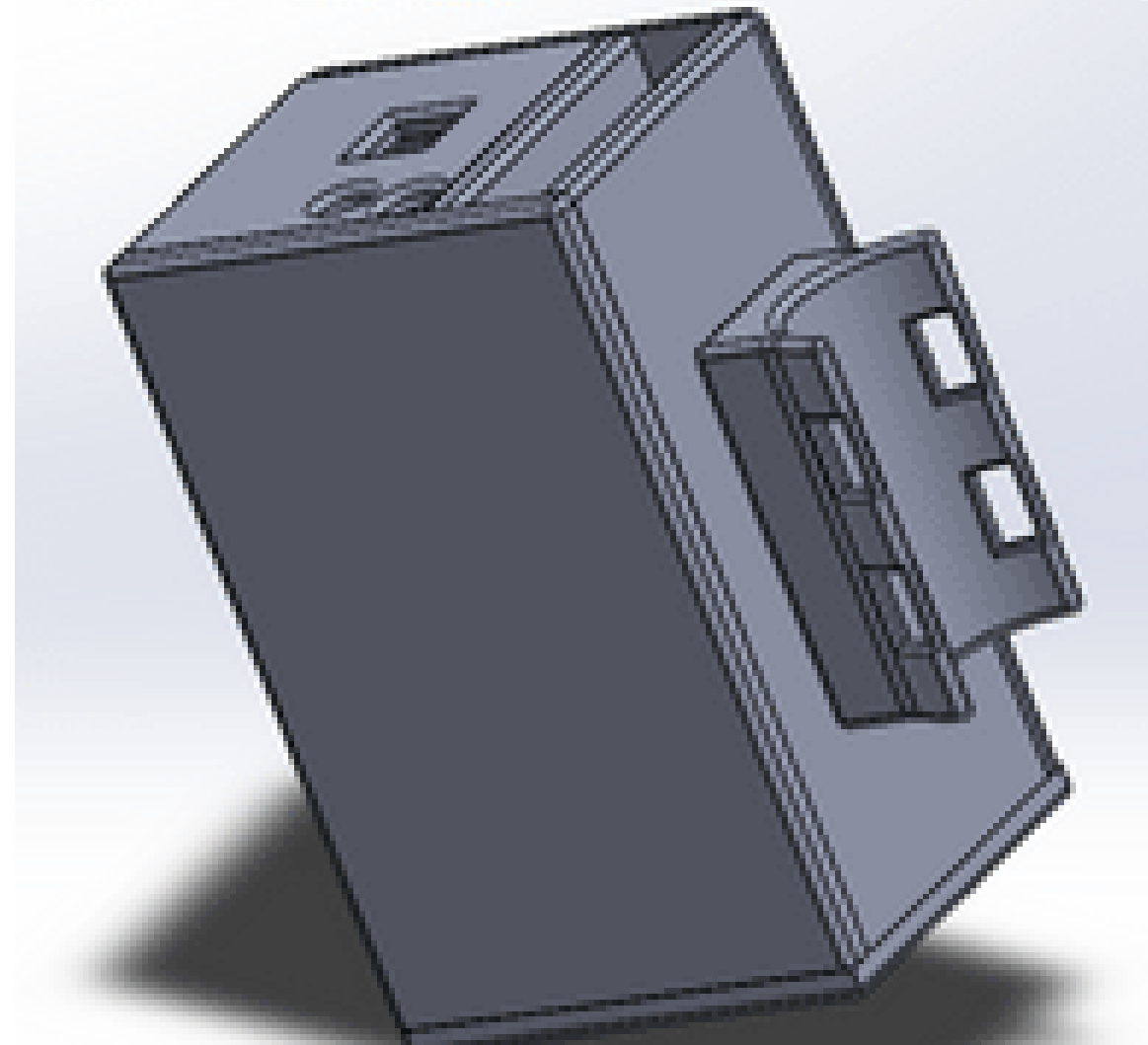
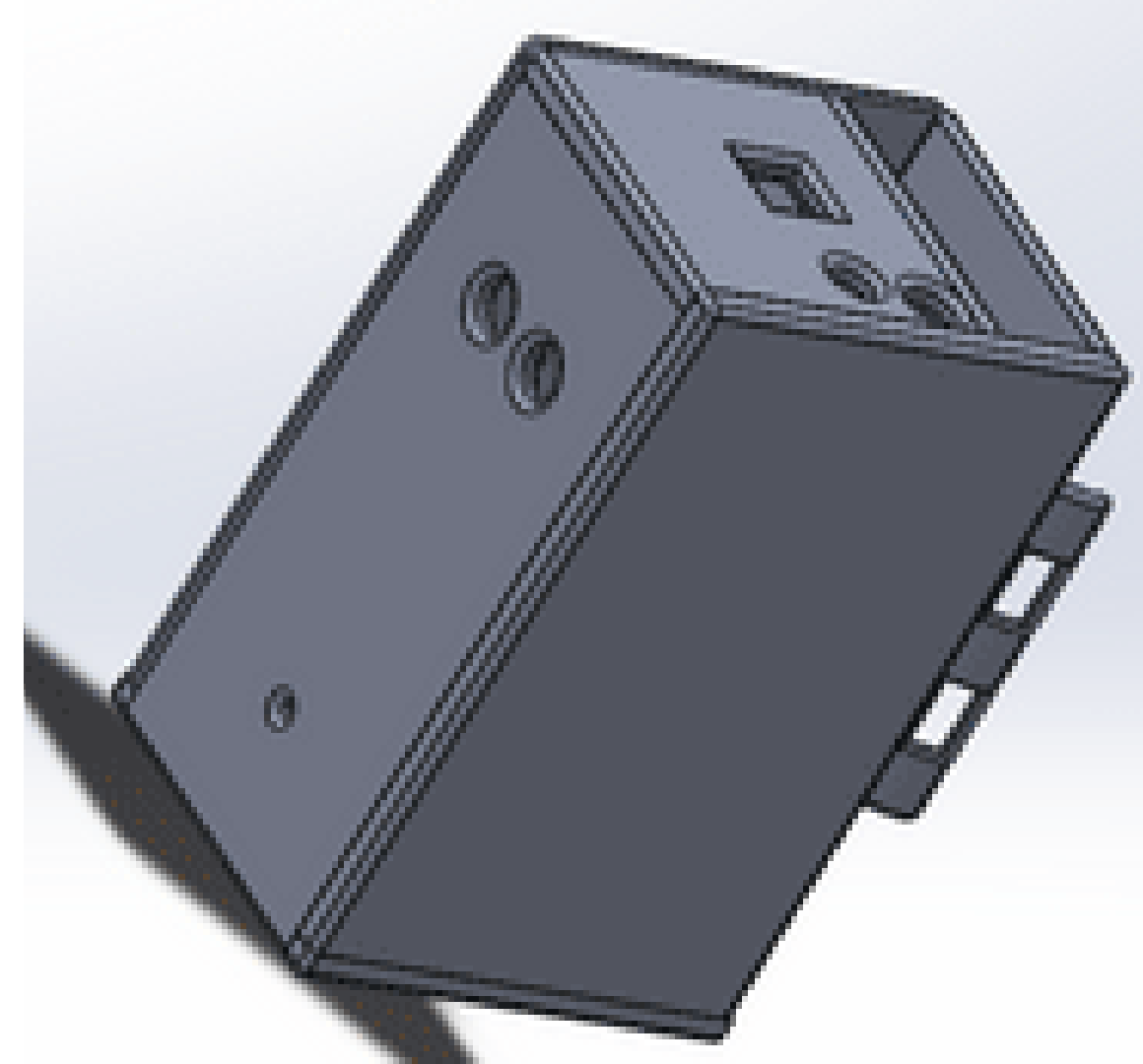
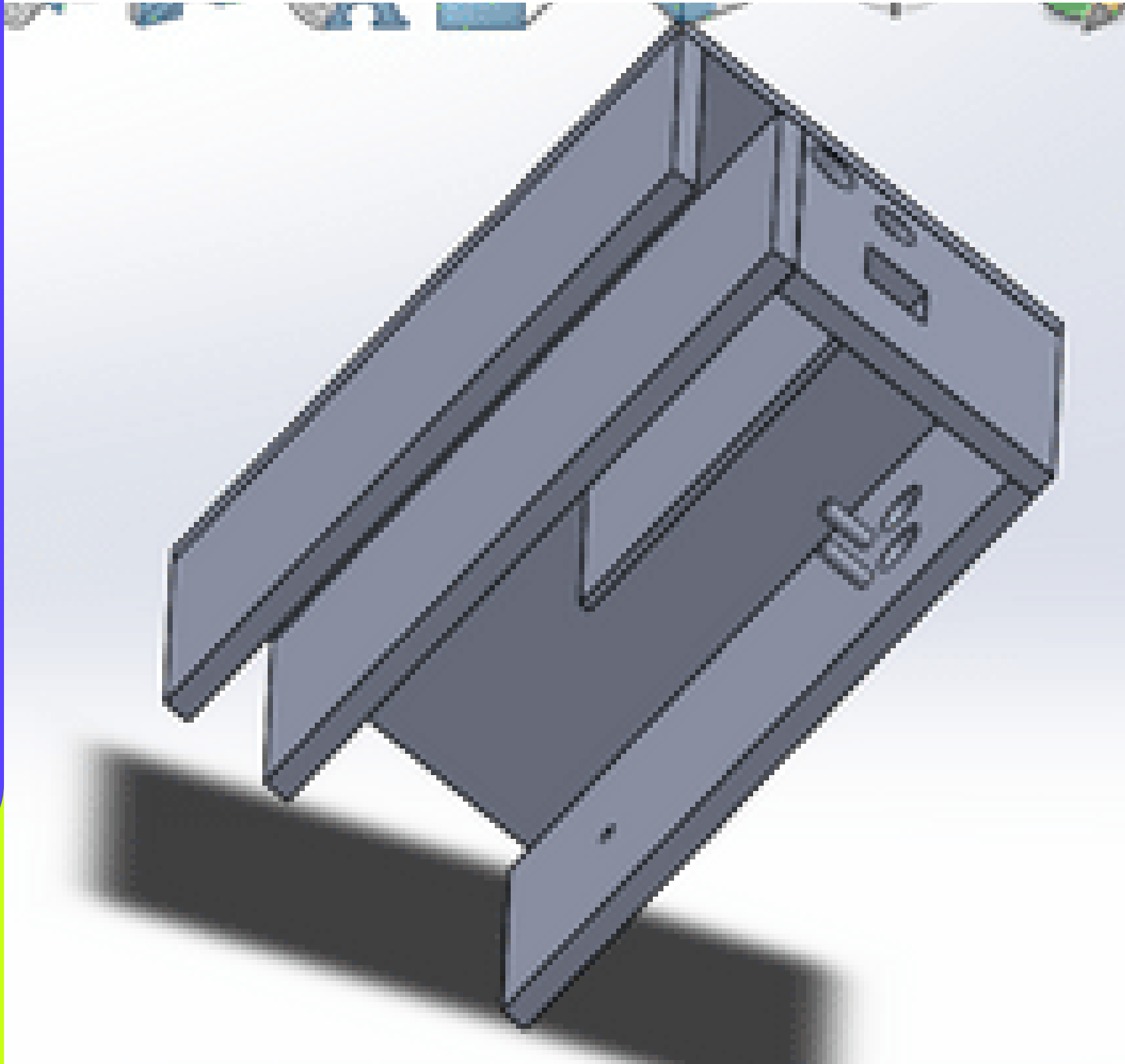




# Handle

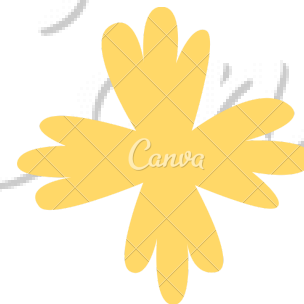


# Assembled and Semi assembled





**Thankyou**



**Team Samaritans**