

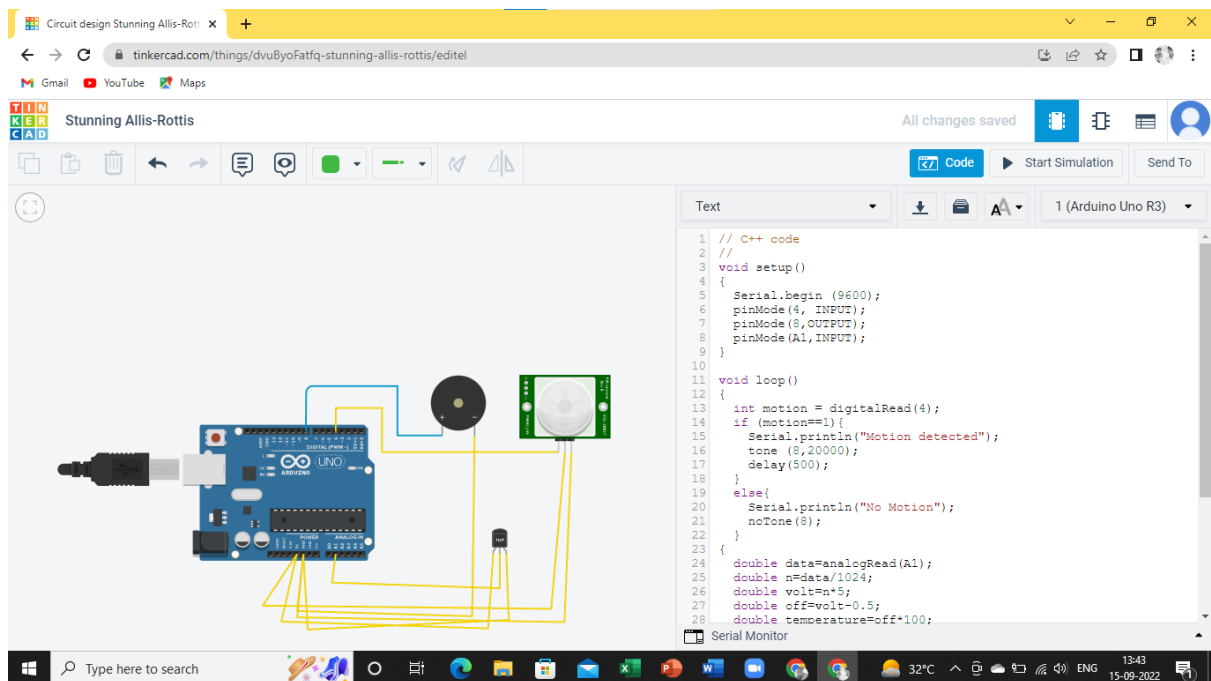
IBM ASSIGNMENT-1

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CIRCUIT LAYOUT :



Coding :

```
void setup()
{
  Serial.begin (9600);
  pinMode(4, INPUT);
  pinMode(8,OUTPUT);
  pinMode(A1,INPUT);
}

void loop()
{
  int motion = digitalRead(4);
  if (motion==1){
    Serial.println("Motion detected");
    tone (8,20000);
    delay(500);
  }
  else{
    Serial.println("No Motion");
```

```
    noTone(8);  
  }  
{  
  double data=analogRead(A1);  
  double n=data/1024;  
  double volt=n*5;  
  double off=volt-0.5;  
  double temperature=off*100;  
  if (temperature>59.99){  
    Serial.print("Temperature data:");  
    Serial.println(temperature);  
    tone(8,10000);  
    delay(500);  
  }  
  else  
    Serial.print("Temperature data: ");  
    Serial.println(temperature);  
    noTone(8);  
  }  
}
```

Output :

1).Passive Infrared Sensor :

The screenshot shows a Tinkercad simulation of an Arduino Uno R3 connected to a PIR sensor. The PIR sensor is configured with the following settings:

PIR Sensor	
Name	1
Target X	3.22
Target Y	-187.85
Target Y	187.85

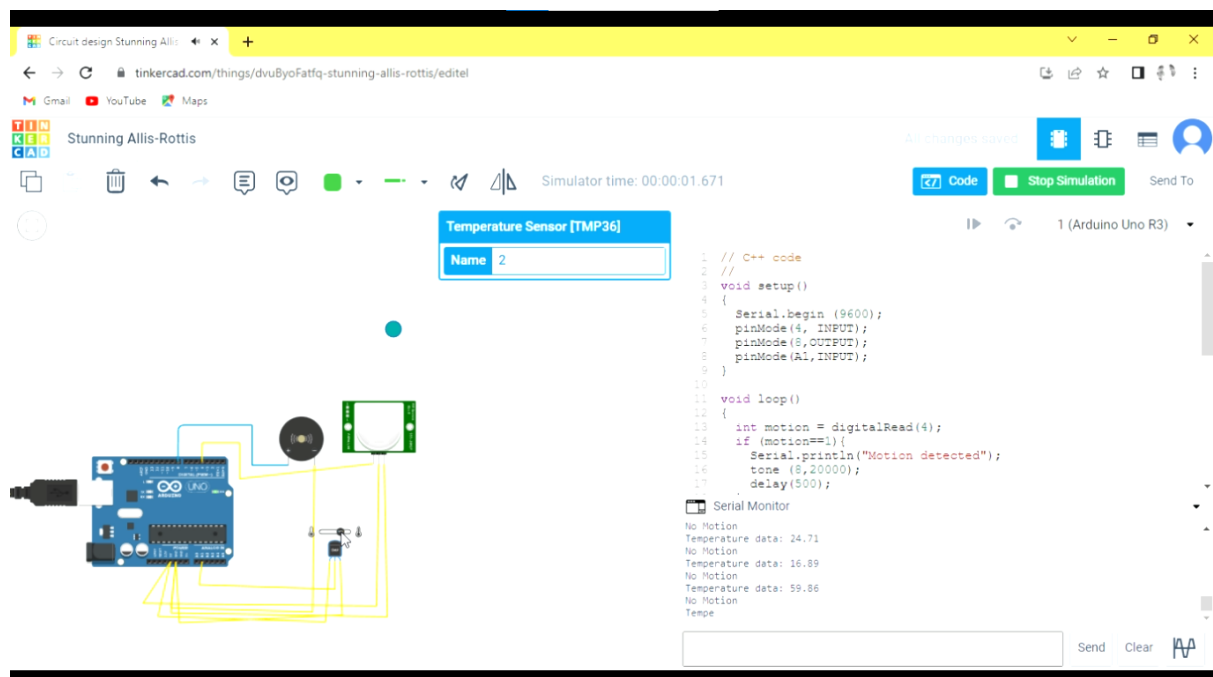
The code in the background is as follows:

```
1 // C++ code
2 //
3 void setup()
4 {
5   Serial.begin (9600);
6   pinMode(4, INPUT);
7   pinMode(8, OUTPUT);
8   pinMode(A1, INPUT);
9 }
10
11 void loop()
12 {
13   int motion = digitalRead(4);
14   if (motion==1){
15     Serial.println("Motion detected");
16     tone (8,20000);
17     delay(500);
18   }
19 }
```

The Serial Monitor shows the following output:

```
No Motion
Temperature data: 24.71
No Motion
Temperature data: 24.71
No Motion
Temperature data: 24.71
No Motion
Temperature data: 24.71
No Motion
Temperature data:
```

2).Temperature Sensor :



The screenshot displays the Tinkercad web interface for a temperature sensor simulation. The circuit includes an Arduino Uno R3 connected to a Temperature Sensor (TMP36) and a buzzer. The sensor is connected to digital pin 4 and analog pin A1. The buzzer is connected to digital pin 8. The code in the editor is as follows:

```
1 // C++ code
2 //
3 void setup()
4 {
5   Serial.begin (9600);
6   pinMode(4, INPUT);
7   pinMode(8, OUTPUT);
8   pinMode(A1, INPUT);
9 }
10
11 void loop()
12 {
13   int motion = digitalRead(4);
14   if (motion==1){
15     Serial.println("Motion detected");
16     tone (8,20000);
17     delay(500);
18   }
19 }
```

The Serial Monitor shows the following output:

```
No Motion
Temperature data: 24.71
No Motion
Temperature data: 16.89
No Motion
Temperature data: 59.86
No Motion
Tempe
```