

IBM ASSIGNMENT- I

TEAM ID : PNT2022TMID2663

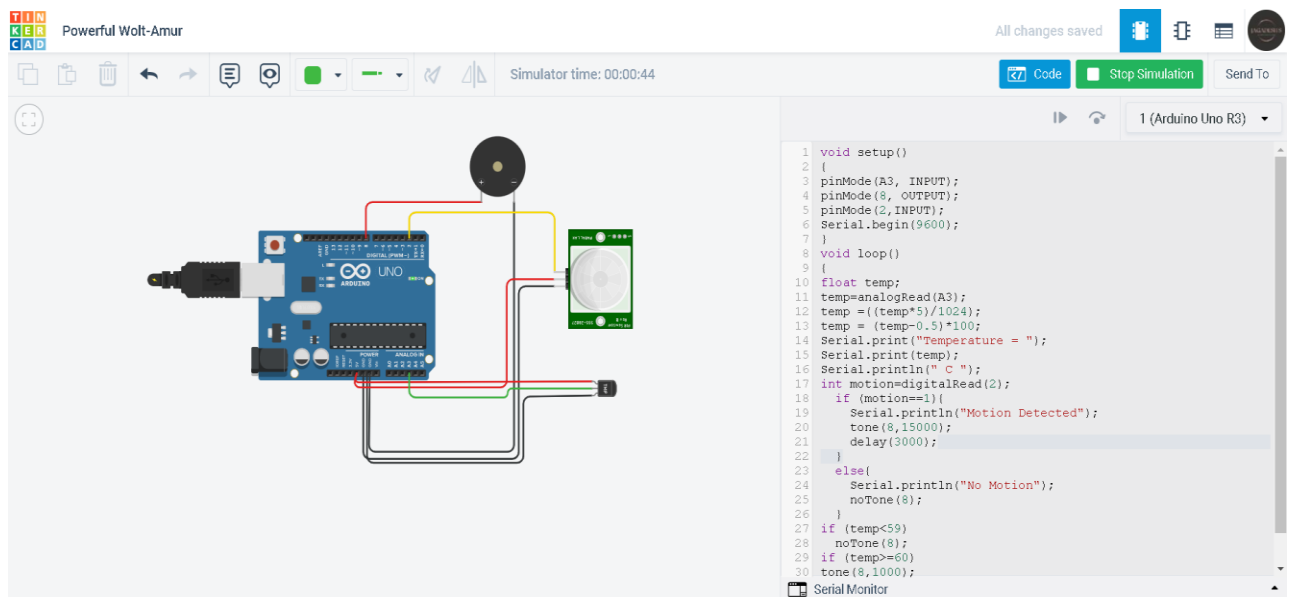
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Create a circuit with Piezo alarm, PIR Sensor, TMP Sensor with below functionalities:

1. Alarm should sound in one manner if temp is above 60C
2. Alarm should sound with another frequency if motion is detected in PIR Sensor.

CIRCUIT LAYOUT:

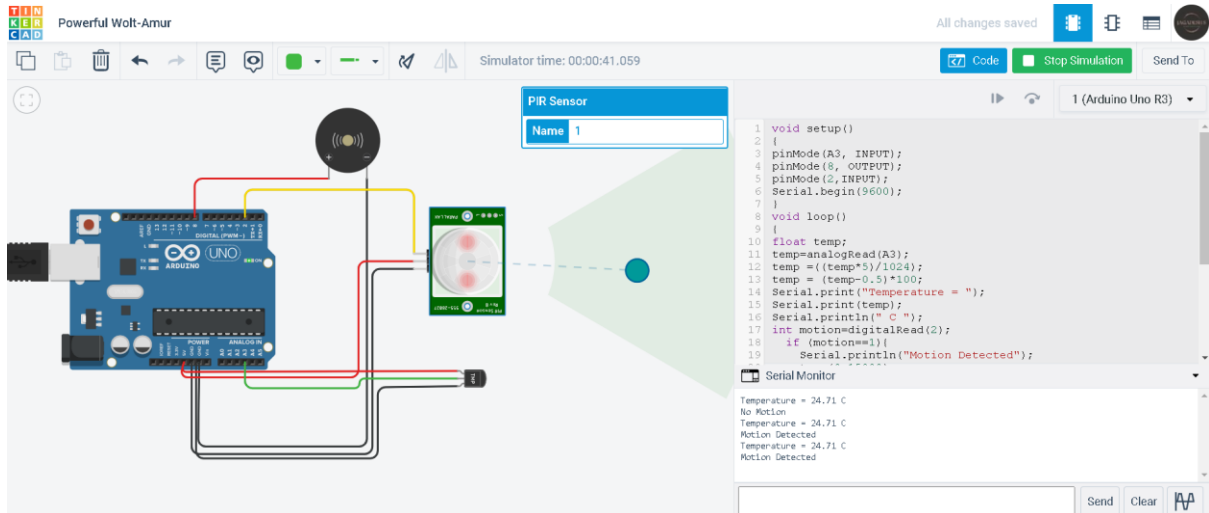


CODE:

```
void setup()
{
  pinMode(A3, INPUT);
  pinMode(8, OUTPUT);
  pinMode(2,INPUT);
  Serial.begin(9600);
}
void loop()
{
  float temp;
  temp=analogRead(A3);
  temp =((temp*5)/1024);
  temp = (temp-0.5)*100;
  Serial.print("Temperature = ");
  Serial.print(temp);
  Serial.println(" C ");
  int motion=digitalRead(2);
  if (motion==1){
    Serial.println("Motion Detected");
    tone(8,15000);
    delay(3000);
  }
  else{
    Serial.println("No Motion");
    noTone(8);
  }
  if (temp<59)
    noTone(8);
  if (temp>=60)
    tone(8,1000);
    delay(5000);
}
```

OUTPUT:

PASSIVE INFRARED SENSOR:



The screenshot shows a Tinkercad simulation environment. An Arduino Uno R3 is connected to a PIR sensor (Passive Infrared Sensor) and a temperature sensor (TMP36). The PIR sensor is connected to digital pin 2, and the temperature sensor is connected to analog pin A3. The code in the Serial Monitor shows the following output:

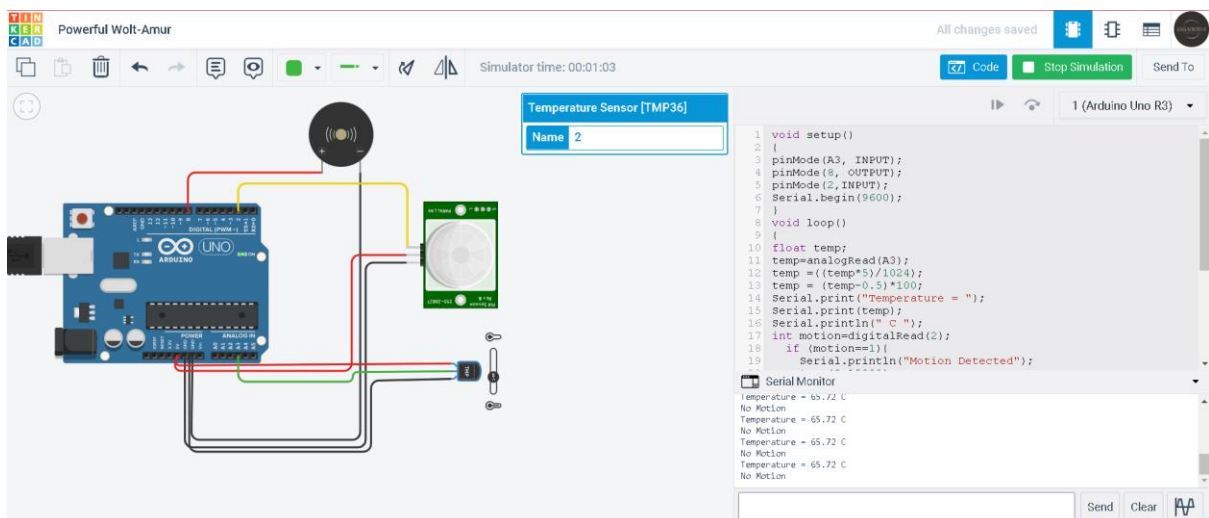
```
void setup()
{
  pinMode(A3, INPUT);
  pinMode(8, OUTPUT);
  pinMode(2, INPUT);
  Serial.begin(9600);
}

void loop()
{
  float temp;
  temp = analogRead(A3);
  temp = (temp * 5) / 1024;
  temp = (temp - 0.5) * 100;
  Serial.print("Temperature = ");
  Serial.print(temp);
  Serial.println(" C ");
  int motion = digitalRead(2);
  if (motion == 1) {
    Serial.println("Motion Detected");
  }
}
```

The Serial Monitor output shows:

```
Temperature = 24.71 C
No Motion
Temperature = 24.71 C
Motion Detected
Temperature = 24.71 C
Motion Detected
```

TEMPERTURE SENSOR (60 C):



The screenshot shows a Tinkercad simulation environment. An Arduino Uno R3 is connected to a PIR sensor (Passive Infrared Sensor) and a temperature sensor (TMP36). The PIR sensor is connected to digital pin 2, and the temperature sensor is connected to analog pin A3. The code in the Serial Monitor shows the following output:

```
void setup()
{
  pinMode(A3, INPUT);
  pinMode(8, OUTPUT);
  pinMode(2, INPUT);
  Serial.begin(9600);
}

void loop()
{
  float temp;
  temp = analogRead(A3);
  temp = (temp * 5) / 1024;
  temp = (temp - 0.5) * 100;
  Serial.print("Temperature = ");
  Serial.print(temp);
  Serial.println(" C ");
  int motion = digitalRead(2);
  if (motion == 1) {
    Serial.println("Motion Detected");
  }
}
```

The Serial Monitor output shows:

```
temperature = 65.72 C
No Motion
Temperature = 65.72 C
No Motion
Temperature = 65.72 C
No Motion
Temperature = 65.72 C
No Motion
```