

ASSIGNMENT – 1

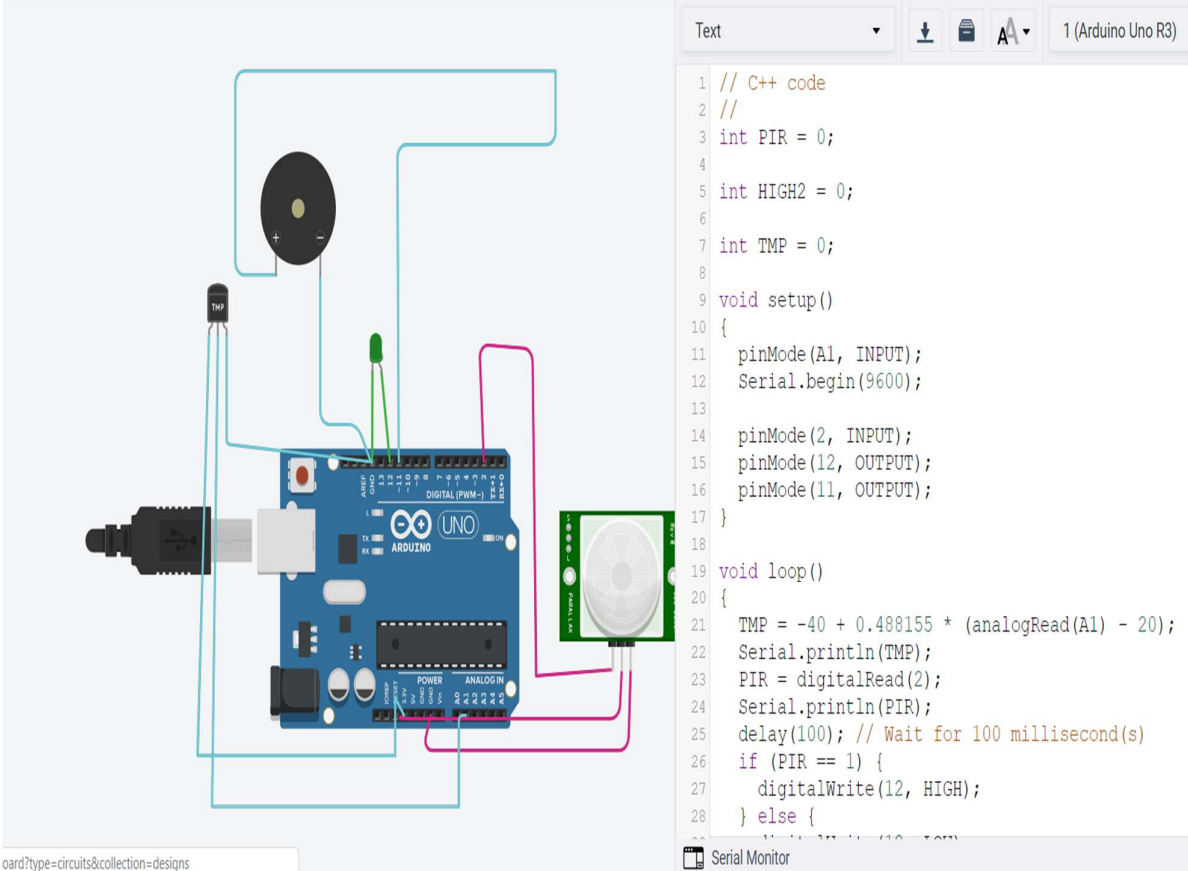
Home Automation

Assignment Date	8th September, 2022
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Register Number	2019504016
Maximum Marks	2Marks

Question

Home Automation using Tinkercad.

Design



The image shows a Tinkercad workspace with a circuit diagram and a code editor. The circuit diagram features an Arduino Uno R3 board connected to a temperature sensor (TMP), a PIR sensor, and a fan. The code editor displays the following C++ code:

```
1 // C++ code
2 //
3 int PIR = 0;
4
5 int HIGH2 = 0;
6
7 int TMP = 0;
8
9 void setup()
10 {
11   pinMode(A1, INPUT);
12   Serial.begin(9600);
13
14   pinMode(2, INPUT);
15   pinMode(12, OUTPUT);
16   pinMode(11, OUTPUT);
17 }
18
19 void loop()
20 {
21   TMP = -40 + 0.488155 * (analogRead(A1) - 20);
22   Serial.println(TMP);
23   PIR = digitalRead(2);
24   Serial.println(PIR);
25   delay(100); // Wait for 100 millisecond(s)
26   if (PIR == 1) {
27     digitalWrite(12, HIGH);
28   } else {
29     digitalWrite(12, LOW);
30   }
31 }
```

The circuit diagram shows the following connections:

- Arduino Uno R3 board.
- Temperature sensor (TMP) connected to analog pin A1.
- PIR sensor connected to digital pin 2.
- Fan connected to digital pin 12.
- Power supply connected to the Arduino board.

Serial Monitor

Components Used

Name of the component	Quantity
Arduino ide	1
PIR Sensor	1
LED	1
Peizo	1
TMP36	1

Arduino Code

```
int PIR = 0;
int HIGH2 = 0;
int TMP = 0;
void setup()
{
  pinMode(A1, INPUT);
  Serial.begin(9600);
  pinMode(2, INPUT);
  pinMode(12, OUTPUT);
  pinMode(11, OUTPUT);
}
void loop()
{
  TMP = -40 + 0.488155 * (analogRead(A1) - 20);
  Serial.println(TMP);
  PIR = digitalRead(2);
```

```
Serial.println(PIR);  
delay(100); // Wait for 100 millisecond(s)  
if (PIR == 1) {  
    digitalWrite(12, HIGH);  
} else {  
    digitalWrite(12, LOW);  
}  
if (TMP > 35) {  
    digitalWrite(11, HIGH);  
} else {  
    digitalWrite(11, LOW);  
}  
}
```