

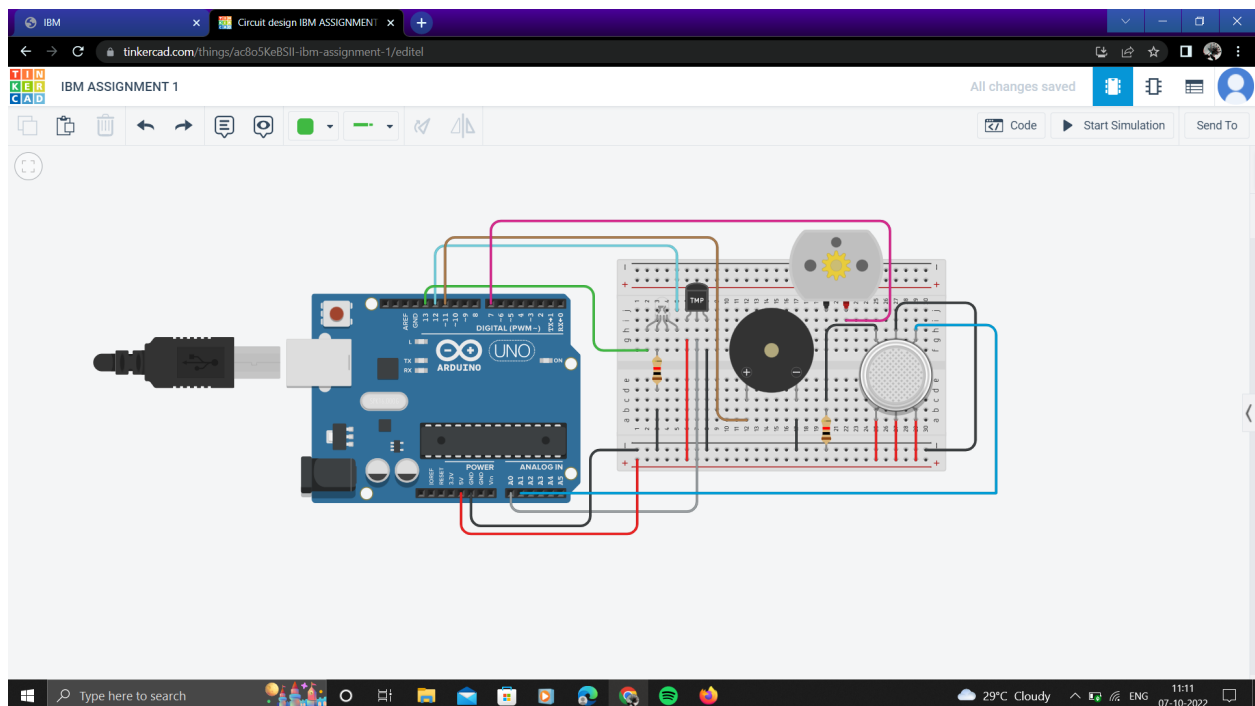
TINKER CAD ASSIGNMENT 1

By
Sandhiya.K

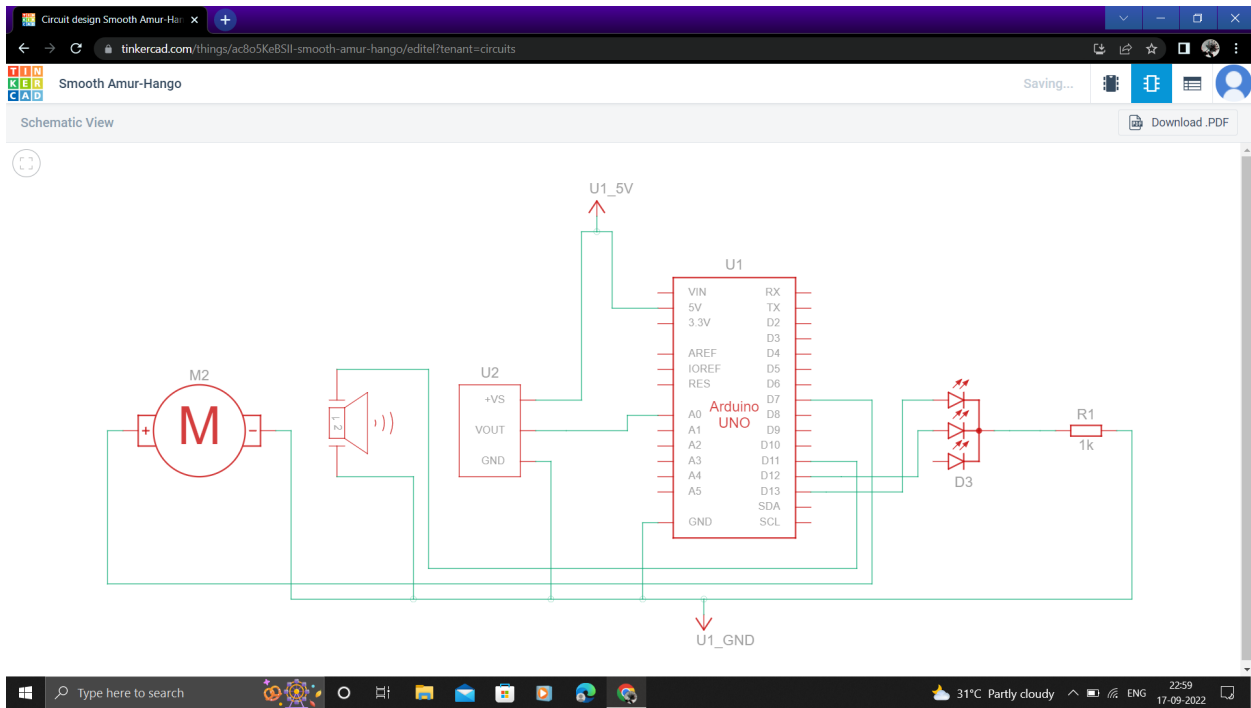
AIM:

The aim of the project is to measure the room temperature and detect the presence of smoke give an alert message to the user.

CIRCUIT DIAGRAM:



SCHEMATIC DIAGRAM:



COMPONENTS LIST:

Name	Quantity	Component
U1	1	Arduino Uno R3
PIEZ01	1	Piezo
R1	1	1 kΩ Resistor
U2	1	Temperature Sensor [TMP36]
D3	1	LED RGB
M2	1	DC Motor

CODE:

/* 1.This code helps the user to find out the Room temperature and alert them, if the room temperature exceeds 25°C with a buzzer sound along with RED LED and turn the motor(fan)ON. If the room temperature is normal it notify with GREEN LED and motor(fan) is OFF

2.This code also detects the presence of smoke, if smoke present it alert the user with a buzzer sound and RED LED along with it turns on the motor to provide water. And the absence of smoke if indicated with GREEN LED*/

```
int led1=13;
int led2=12;
int buzz=11;
int temp=A0;
int motor=7;
int smoke=A1;
void setup()
{
  pinMode(led1, OUTPUT);
  pinMode(led2, OUTPUT);
  pinMode(motor,OUTPUT);
  pinMode(temp, INPUT);
  pinMode(smoke,INPUT);
  pinMode(buzz,OUTPUT);
  Serial.begin(9600);
}
```

```

void loop()
{
  /*    TEMPERATURE SENSING AND FAN    */
  int value=analogRead(temp);
  float volt=(value/1024.0)*5000; //converts input temp to voltage
  float cel=volt/10;           // voltage to Celcius
  Serial.print("Temperature in C = ");
  Serial.print(cel);
  Serial.print(" *C");
  Serial.println();
  if(cel>=25)
  {
    digitalWrite(led1, HIGH);
    tone(buzz,1000);
    digitalWrite(motor, HIGH);
    delay(1000);           // Wait for 1000 millisecond(s)
    digitalWrite(led1, LOW);
    noTone(buzz);
    delay(1000);
  }
  else
  {
    digitalWrite(led2, HIGH);
    digitalWrite(motor,LOW);
    delay(1000);           // Wait for 1000 millisecond(s)
    digitalWrite(led2, LOW);
  }
}

```

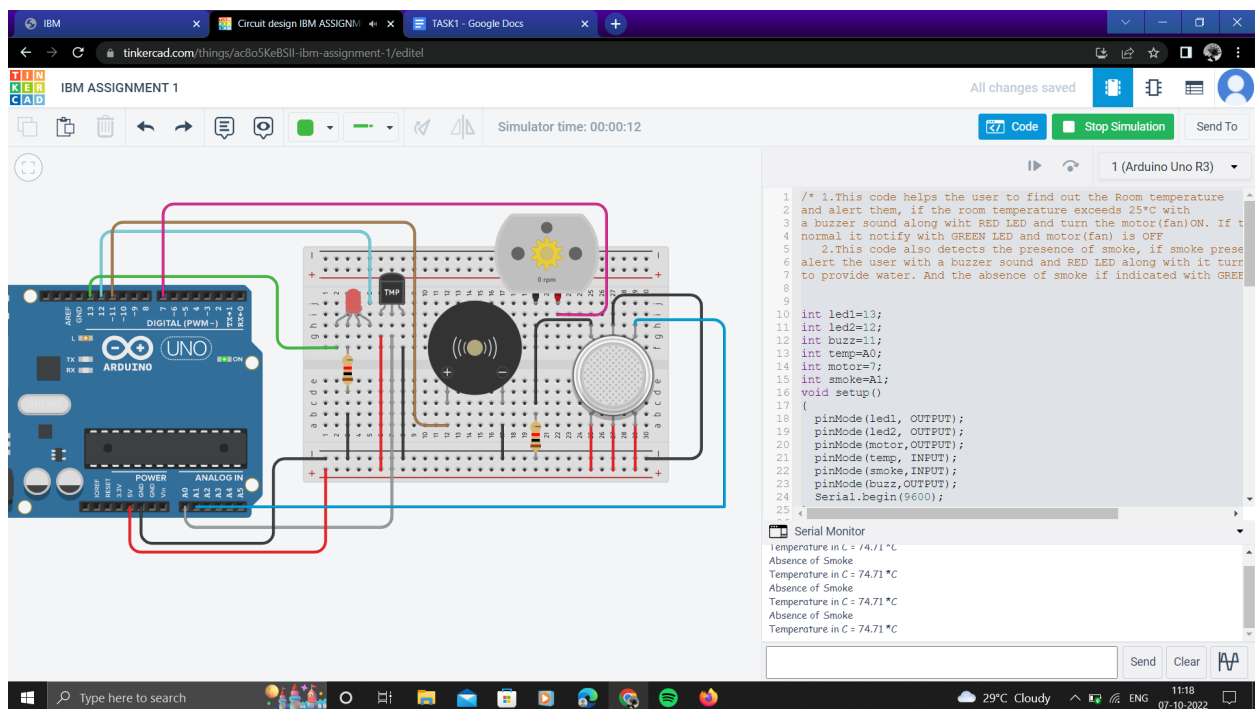
```

    delay(1000);
}

/*      SMOKE DETECTION      */
int smokein=analogRead(smoke);
int threshold=400;           //threshold value for smoke sensor
if (smokein>threshold)
{
    Serial.print("Presence of Smoke");
    Serial.println();
    digitalWrite(led1, HIGH);
    tone(buzz,1000);
    digitalWrite(motor, HIGH);
    delay(1000);           // Wait for 1000 millisecond(s)
    digitalWrite(led1, LOW);
    noTone(buzz);
    delay(1000);
}
else
{
    Serial.print("Absence of Smoke");
    Serial.println();
    digitalWrite(led2, HIGH);
    digitalWrite(motor,LOW);
    delay(1000); // Wait for 1000 millisecond(s)
    digitalWrite(led2, LOW);
    delay(1000);
}

```

SIMULATION:



IBM ASSIGNMENT 1

Simulator time: 00:00:14

Code Stop Simulation Send To

1 (Arduino Uno R3)

```
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2 and alert them, if the room temperature exceeds 25°C with
3 a buzzer sound along with RED LED and turn the motor(fan) ON. If t
4 normal it notify with GREEN LED and motor(fan) is OFF
5 2.This code also detects the presence of smoke, if smoke prese
6 alert the user with a buzzer sound and RED LED along with it turn
7 to provide water. And the absence of smoke if indicated with GREE
8
9
10 int led1=13;
11 int led2=12;
12 int buzz=11;
13 int temp=A0;
14 int motor=7;
15 int smoke=A1;
16 void setup()
17 {
18   pinMode(led1, OUTPUT);
19   pinMode(led2, OUTPUT);
20   pinMode(motor, OUTPUT);
21   pinMode(temp, INPUT);
22   pinMode(smoke, INPUT);
23   pinMode(buzz, OUTPUT);
24   Serial.begin(9600);
25 }
```

Serial Monitor

Absence of Smoke
Temperature in C = 74.71 °C
Absence of Smoke
Temperature in C = 74.71 °C
Absence of Smoke
Temperature in C = 74.71 °C
Absence of Smoke

Send Clear