

Name : Tanishq Gupta

Roll No : 21168

Subject : Internet of things

Class : SE(A)

Branch : AI&DS

Assignment No : 09

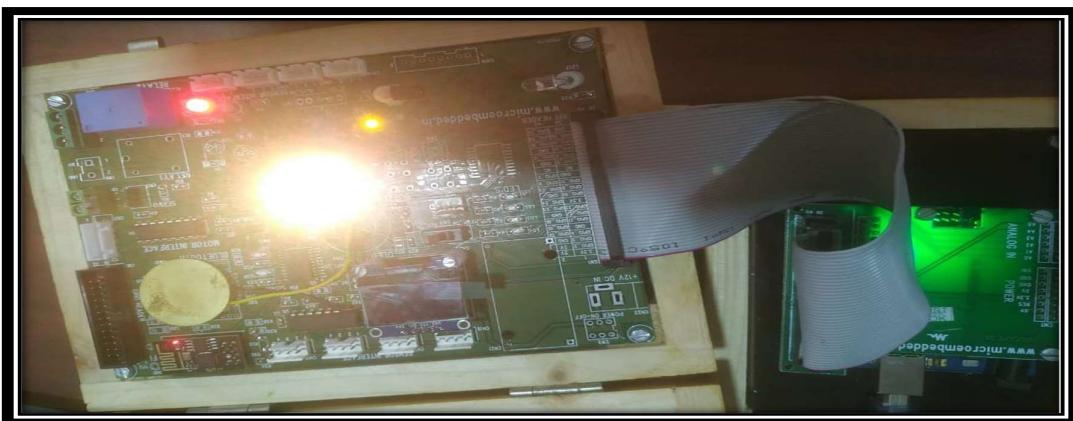
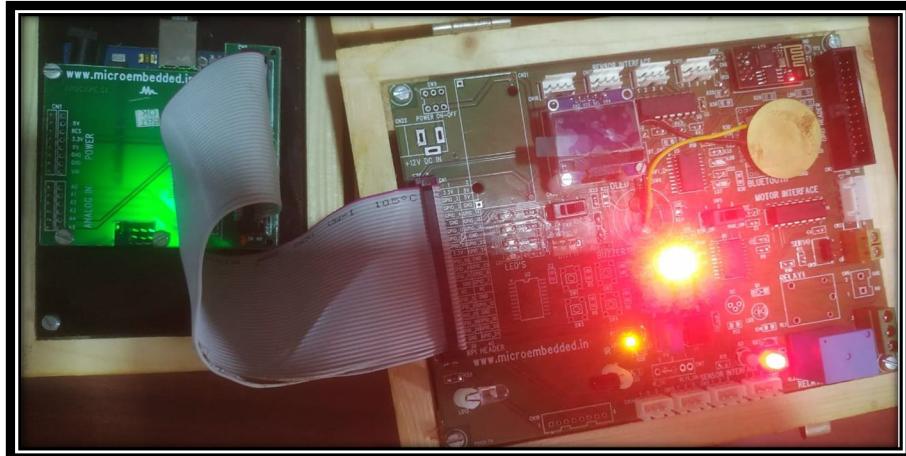
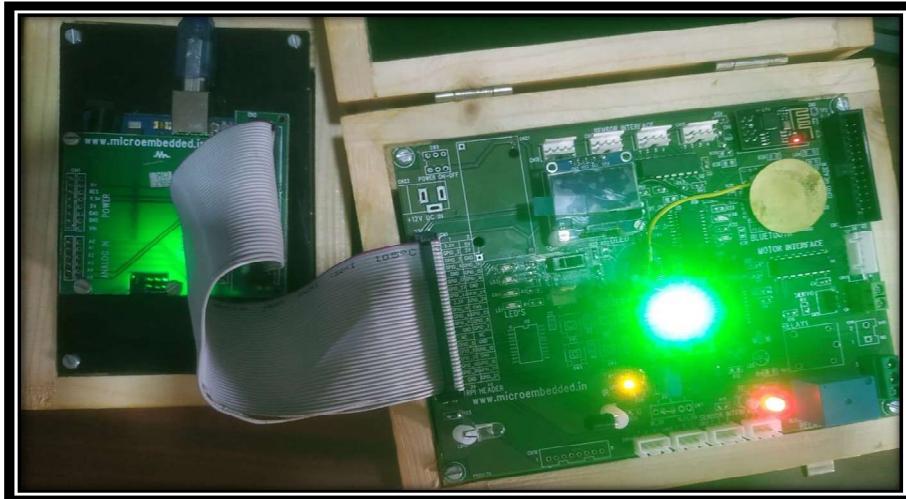
Write a program to control the color of the LED by turning 3 different potentiometers. One will be read for the value of Red, one for the value of Green, and one for the value of Blue.

Code:

```
int red_light_pin = 5;
int green_light_pin = 6;
int blue_light_pin = 3;
unsigned int red,green,blue;
void setup() {
    pinMode(red_light_pin,OUTPUT);
    pinMode(green_light_pin,OUTPUT);
    pinMode(blue_light_pin,OUTPUT);
}
void loop() {
    red = analogRead(A0);
    red = (red/4);
    green = analogRead(A0);
    green = (green/4);
    blue = analogRead(A0);
    blue = (blue/4);
    RGB_color(255-red,255-green,255-blue);
    delay(1000);
}
void RGB_color(int red_light_value,int green_light_value,int blue_light_value)
{
```

```
analogWrite(red_light_pin,red_light_value);  
analogWrite(green_light_pin,green_light_value);  
analogWrite(blue_light_pin,blue_light_value);  
}
```

OUTPUT:



Name : Tanishq Gupta

Roll No : 21168

Subject : Internet of things

Class : SE(A)

Branch : AI&DS

Assignment No : 10

Write a program read the temperature sensor and send the values to the serial monitor on the Computer.

Code:

```
#include <SimpleDHT.h>

int pinDHT11 = A1;
SimpleDHT11 dht11(pinDHT11);

void setup()
{
    Serial.begin(115200);
}

void loop() {
    // start working...
    Serial.println("=====");
    Serial.println("Sample DHT11...");
    // read without samples.
    byte temperature = 0;
    byte humidity = 0;
    int err = SimpleDHTErrSuccess;
    if ((err = dht11.read(&temperature, &humidity, NULL)) != SimpleDHTErrSuccess)
    {
        Serial.print("Read DHT11 failed, err=");
        Serial.print(SimpleDHTErrCode(err));
        Serial.print(",");
    }
}
```

```
Serial.println(SimpleDHTErrDuration(err));  
delay(1000);  
return;  
}  
Serial.print("Sample OK: ");  
Serial.print((int)temperature); Serial.print(" *C, ");  
Serial.print((int)humidity); Serial.println(" H");  
// DHT11 sampling rate is 1HZ.  
delay(1500);  
}
```

OUTPUT:

```
=====  
Sample DHT11...  
Sample OK: 33 *C, 61 H  
=====  
Sample DHT11...  
Sample OK: 33 *C, 61 H  
=====  
Sample DHT11...  
Sample OK: 33 *C, 59 H
```

Name : Tanishq Gupta

Roll No : 21168

Subject : Internet of things

Class : SE(A)

Branch : AI&DS

Assignment No : 11

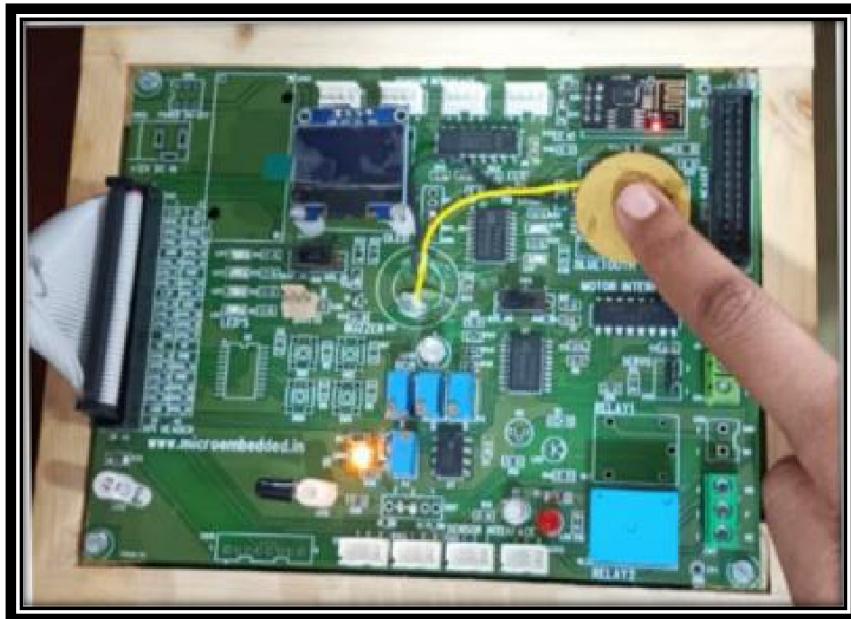
Write a program using piezo element and use it to play a tune after someone knocks.

Code:

```
// these constants won't change:  
const int buzzer = A1;    // LED connected to digital pin 13  
const int knockSensor = A1; // the piezo is connected to analog pin 0  
const int threshold = 400; // threshold value to decide when the detected sound is a knock or not  
  
// these variables will change:  
int sensorReading = 0;    // variable to store the value read from the sensor pin  
  
void setup() {  
    pinMode(buzzer,INPUT);  
}  
  
void loop() {  
    // read the sensor and store it in the variable sensorReading:  
    pinMode(buzzer,INPUT);  
    sensorReading = analogRead(knockSensor);  
    // if the sensor reading is greater than the threshold:  
    if (sensorReading >= threshold) {  
        pinMode(buzzer,OUTPUT);  
        tone(buzzer,261);  
        // Waits some time to turn off  
        delay(200);  
        // Turns the buzzer off  
        noTone(buzzer);  
    }  
}
```

```
// Sounds the buzzer at the frequency relative to the note D in Hz  
tone(buzzer,293);  
delay(200);  
noTone(buzzer);  
  
// Sounds the buzzer at the frequency relative to the note E in Hz  
tone(buzzer,329);  
delay(200);  
noTone(buzzer);  
  
// Sounds the buzzer at the frequency relative to the note F in Hz  
tone(buzzer,349);  
delay(200);  
noTone(buzzer);  
  
// Sounds the buzzer at the frequency relative to the note G in Hz  
tone(buzzer,392);  
delay(200);  
noTone(buzzer);  
}  
delay(100); // delay to avoid overloading the serial port buffer  
}
```

OUTPUT:



Name : Tanishq Gupta

Roll No : 21168

Subject : Internet of things

Class : SE(A)

Branch : AI&DS

Assignment No : 12

Understanding the connectivity of Raspberry-Pi /Beagle board circuit / Arduino with IR sensor.

Write an application to detect obstacle and notify user using LEDs.

Code:

```
void setup() {  
    // put your setup code here, to run once:  
    pinMode(4,OUTPUT);  
    pinMode(9,INPUT);  
    digitalWrite(4,HIGH);  
}
```

```
void loop() {  
    if(digitalRead(9)== 1)  
        digitalWrite(4,HIGH);  
    else  
        digitalWrite(4,LOW);  
}
```

OUTPUT:

