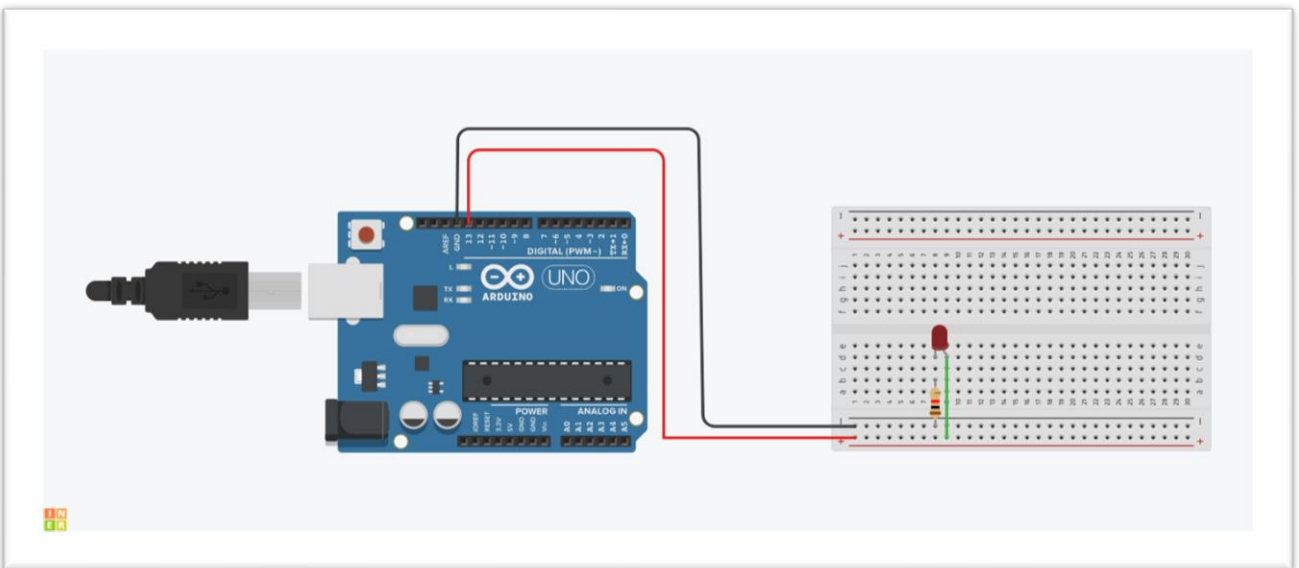


Assignment No: 5

Code:

```
// C++ code
//
void setup()
{
  pinMode(LED_BUILTIN, OUTPUT);
}
void loop()
{
  digitalWrite(LED_BUILTIN, HIGH);
  delay(100); // Wait for 1000 millisecond(s)
  digitalWrite(LED_BUILTIN, LOW);
  delay(100); // Wait for 1000 millisecond(s)
}
```

Output:



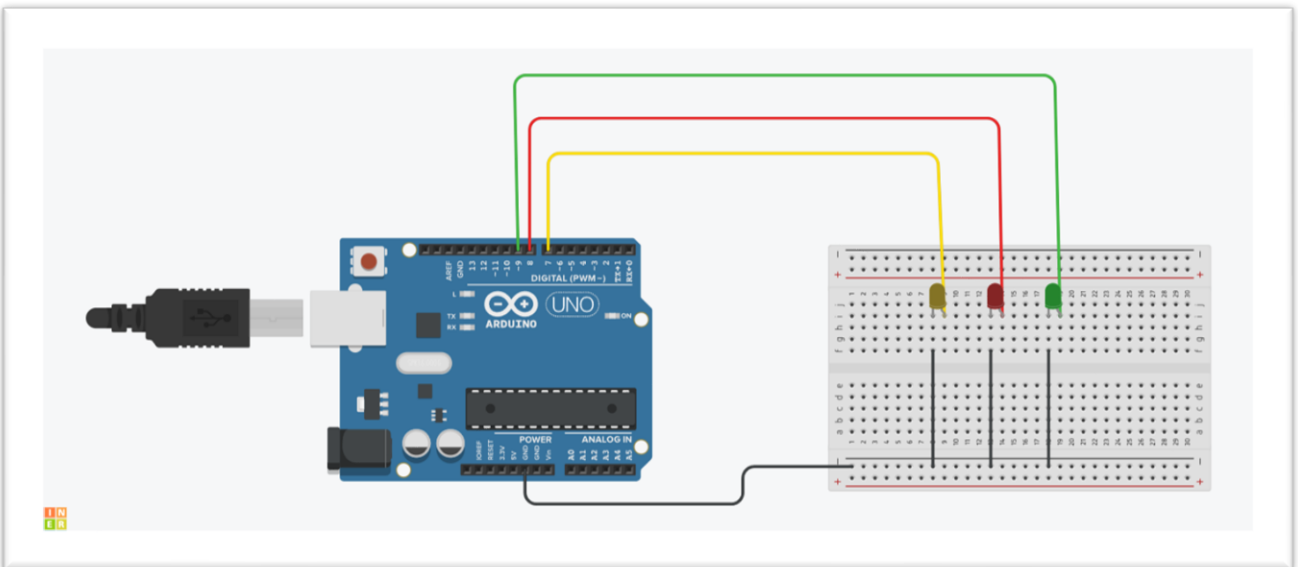
Assignment No: 6

Code:

```
// C++ code
//
int counter = 0;
void setup()
{
  Serial.begin(9600);
  pinMode(7,OUTPUT);
  pinMode(8,OUTPUT);
  pinMode(9,OUTPUT);
}
void loop() {
  if(counter == 31)
  {
    counter=0;
  }
  if(counter < 31)
  {
    Serial.println(counter);
  }
  counter = counter + 1;
  delay(100);
  if(counter > 0 && counter < 11 )
  {
    digitalWrite(7,HIGH);
    digitalWrite(8,LOW);
    digitalWrite(9,LOW);
  }
  if(counter > 10 && counter < 21 )
  {
```

```
digitalWrite(7,LOW);  
digitalWrite(8,HIGH);  
digitalWrite(9,LOW);  
}  
if(counter > 20 && counter < 31 )  
{  
digitalWrite(7,LOW);  
digitalWrite(8,LOW);  
digitalWrite(9,HIGH);  
}  
}
```

Output:



Assignment No: 7

Code:

```
int redPin = 11;

int greenPin = 10;

int bluePin = 9;


//uncomment this line if using a Common Anode LED
//#define COMMON_ANODE

void setup()
{
    pinMode(redPin, OUTPUT);
    pinMode(greenPin, OUTPUT);
    pinMode(bluePin, OUTPUT);
}

void loop()
{
    setColor(255, 0, 0); // red
    delay(1000);
    setColor(0, 255, 0); // green
    delay(1000);
    setColor(0, 0, 255); // blue
    delay(1000);
    setColor(255, 255, 0); // yellow
    delay(1000);
    setColor(80, 0, 80); // purple
    delay(1000);
    setColor(0, 255, 255); // aqua
    delay(1000);
}

void setColor(int red, int green, int blue)
{

```

```
#ifdef COMMON_ANODE

red = 255 - red;

green = 255 - green;

blue = 255 - blue;

#endif

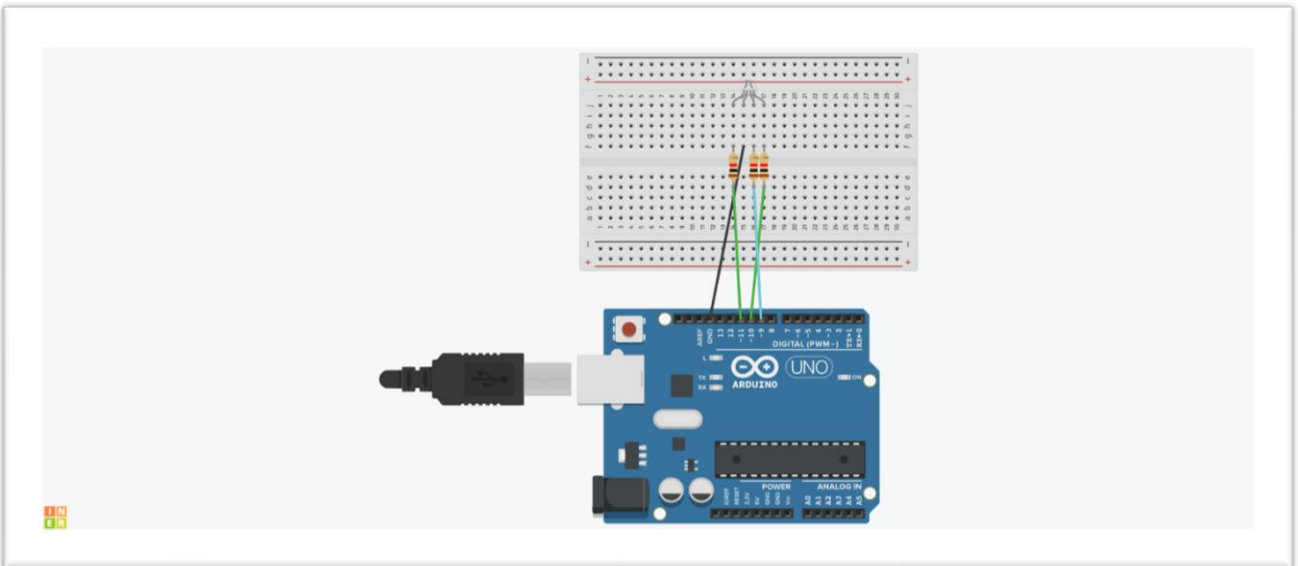
analogWrite(redPin, red);

analogWrite(greenPin, green);

analogWrite(bluePin, blue);

}
```

Output:



Assignment No: 8

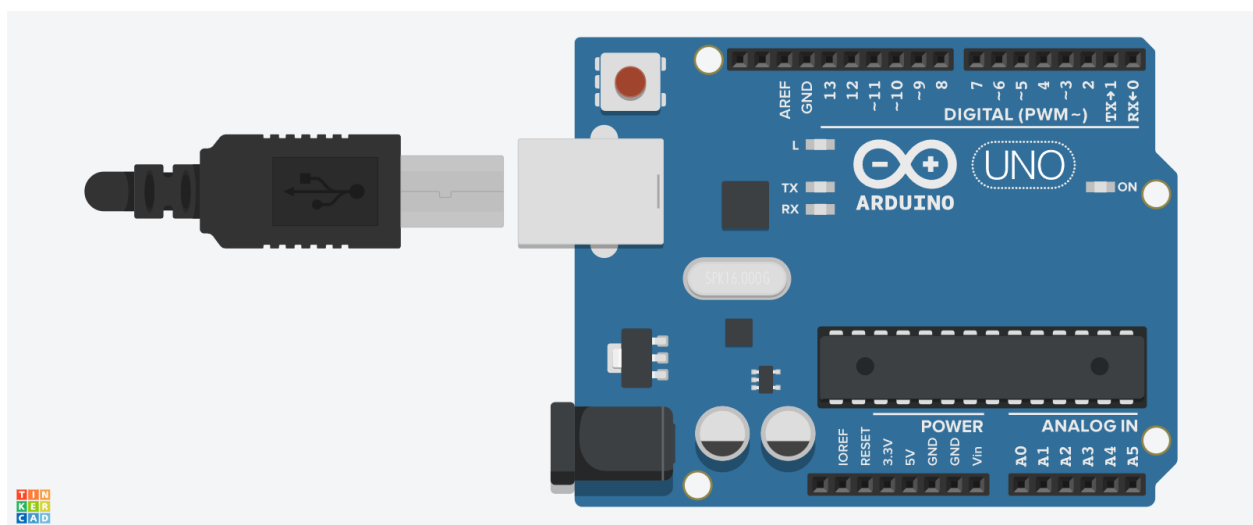
Code:

```
// C++ code

void setup()
{
    Serial.begin(9600);
}

void loop()
{
    int sqrt;
    if(Serial.available()>0)
    {
        int read=Serial.readString().toInt();
        Serial.print("You Entered:");
        Serial.println(read);
        int out=read*read;
        Serial.print("Square is:");
        Serial.println(out);
    }
}
```

Output:



You Entered:2
Square is:4
You Entered:2
Square is:4
You Entered:6
Square is:36

Assignment No: 9

Code:

```
// Define the pins for the RGB LED

const int redPin = 7;

const int greenPin = 6;

const int bluePin = 5;


// Define the pin for the potentiometer

const int potPin = A0;


void setup() {

  // Set the RGB LED pins as outputs

  pinMode(redPin, OUTPUT);

  pinMode(greenPin, OUTPUT);

  pinMode(bluePin, OUTPUT);

}


void loop() {

  // Read the value from the potentiometer

  int potValue = analogRead(potPin);


  // Map the potentiometer value to a range of 0-255

  int colorValue = map(potValue, 0, 1023, 0, 255);


  // Set the color of the RGB LED based on the potentiometer value

  analogWrite(redPin, colorValue);

  analogWrite(greenPin, colorValue/2);

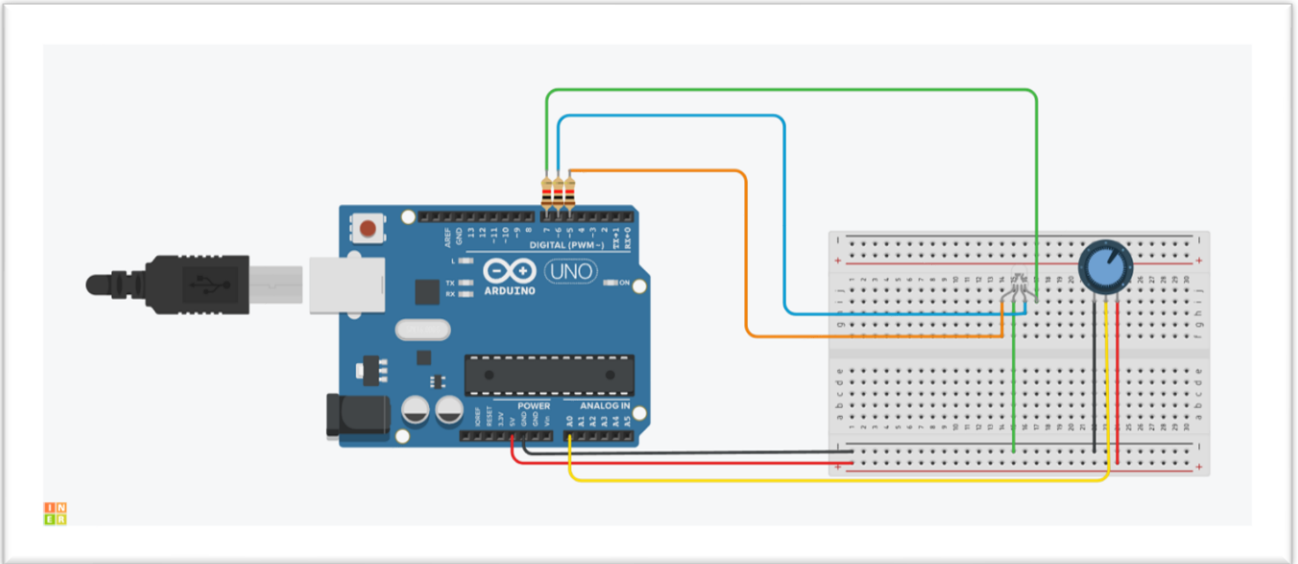
  analogWrite(bluePin, colorValue/4);


  // Add a small delay to reduce flickering

  delay(10);
```


}

Output:



Assignment No: 10

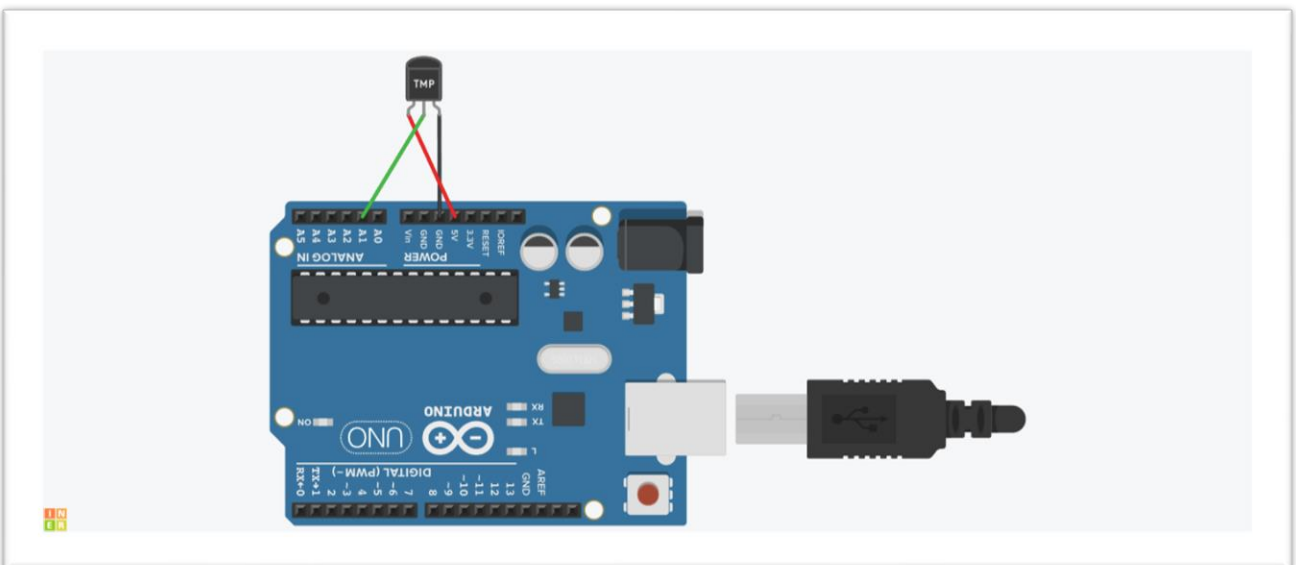
Code:

```
float temp;
int tempPin = 0;

void setup()
{
  Serial.begin(9600);
}

void loop()
{
  temp = analogRead(tempPin);
  temp = temp * 0.48828125;
  Serial.print("TEMPERATURE =");
  Serial.print(temp);
  Serial.print("*C");
  Serial.println();
  delay(1000);
}
```

Output:



TEMPERATURE =347.66*C
TEMPERATURE =4.88*C
TEMPERATURE =417.48*C
TEMPERATURE =278.32*C
TEMPERATURE =460.45*C
TEMPERATURE =449.71*C
TEMPERATURE =263.18*C
TEMPERATURE =309.57*C
TEMPERATURE =244.14*C
TEMPERATURE =146.48*C
TEMPERATURE =331.05*C
TEMPERATURE =252.44*C
TEMPERATURE =63.96*C
TEMPERATURE =42.48*C
TEMPERATURE =81.05*C
TEMPERATURE =193.36*C
TEMPERATURE =106.93*C
TEMPERATURE =235.84*C
TEMPERATURE =396.48*C
TEMPERATURE =33.69*C
TEMPERATURE =41.02*C
TEMPERATURE =39.06*C
TEMPERATURE =183.59*C

Assignment NO: 11

Code:

```
int baselineTemp = 0;
int celsius = 0;
int fahrenheit = 0;
int hfahrenheit = 0;
int lfahrenheit = 0;

void setup()
{
  pinMode(A0, INPUT);
  Serial.begin(9600);
}

void loop()
{
  baselineTemp = 40;

  celsius = map(((analogRead(A1) - 20) * 3.04), 0, 1023, -40, 125);

  fahrenheit = ((celsius * 9) / 5 + 32);
  if(fahrenheit > hfahrenheit)
  {
    hfahrenheit = fahrenheit;
  }
  if(fahrenheit < lfahrenheit)
  {
    lfahrenheit = fahrenheit;
  }
  Serial.print(fahrenheit);
  Serial.println(" F : Current Temperature");
  Serial.println("");
  Serial.print(hfahrenheit);
  Serial.println(" F : The Heighest temprature");
  Serial.print(lfahrenheit);
  Serial.println(" F : The lowest temprature");
  Serial.println("");
  delay(2000);
}
```

Output:

77 F : Current Temperature

77 F : The Heighest temprature

0 F : The lowest temprature

77 F : Current Temperature

77 F :The Heighest temprature

0 F : The lowest temprature

77 F : Current Temperature

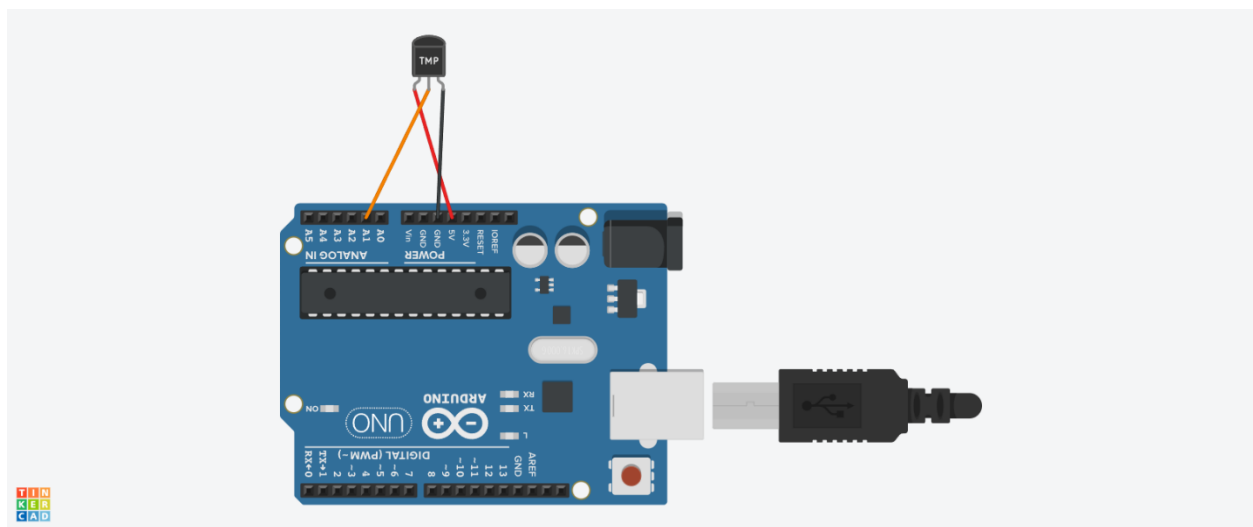
77 F :The Heighest temprature

0 F : The lowest temprature

77 F : Current Temperature

77 F :The Heighest temprature

0 F : The lowest temprature



Assignment No: 12

Code:

```
#define fsrpin A0

#define buzzer 9

int fsrreading;

void setup() {
    Serial.begin(9600);
}

void loop() {
    fsrreading = analogRead(fsrpin);

    Serial.println(fsrreading);

    if(fsrreading>200){
        buzzerAlert();
    }
}

void buzzerAlert() {
    // Activate the buzzer for a specific duration

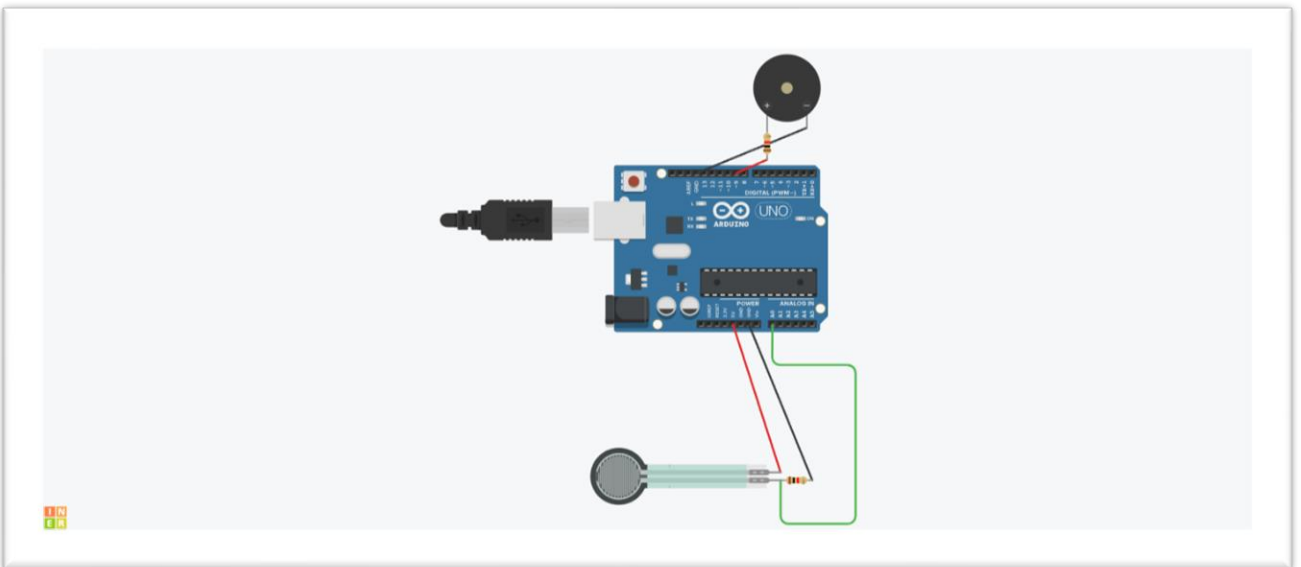
    tone(9, 220, 100);

    delay(200);
}
```

Output:

```
0
0
0
0
0
0
0
0
0
0
385
385
385
385
385
385
385
385
```

401
401
401
401
401
401
401
401
401
401
381
381
381
346
295
280
280
280
280
255
255
323
323
385
385
417
417
417
425
425
425
425
425
425
425



Assignment No:13

Code:

```
float cm=0;
float inches=0;
int LEDR=2;
int LEDB=3;
int LEDG=4;

long readultrasonicDistance (int triggerPin, int echoPin)
{
  pinMode (triggerPin, OUTPUT); // clear the trigger
  digitalWrite (triggerPin, LOW);
  delay(5000);
  // Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH);
  delay(5000);
  digitalWrite(triggerPin, LOW);
  pinMode (echoPin, INPUT);
  // Reads the echo pin, and returns the sound wave travel time
  return pulseIn(echoPin,HIGH);
}

void setup()
{
  pinMode(LEDR,OUTPUT);
  pinMode(LEDB,OUTPUT);
  pinMode(LEDG,OUTPUT);
  Serial.begin(9600);
}

void loop()
{
  // measure the ping time in cm
  cm =0.01723 *readultrasonicDistance (6,5);
```



```
//convert to inches by dividing by 2.34
```

```
if(cm>=0 && cm<50)
```

```
{
```

```
    digitalWrite(LED1,HIGH);
```

```
    Serial.print("LED= RED, ");
```

```
    delay(500);
```

```
}
```

```
else
```

```
{
```

```
    digitalWrite(LED1,LOW);
```

```
}
```

```
if(cm>=50 && cm<100)
```

```
{
```

```
    digitalWrite(LED2,HIGH);
```

```
    Serial.print("LED= GREEN, ");
```

```
    delay(5000);
```

```
}
```

```
else
```

```
{
```

```
    digitalWrite(LED2,LOW);
```

```
}
```

```
if(cm>=100 && cm<150)
```

```
{
```

```
    digitalWrite(LED3,HIGH);
```

```
    Serial.print("LED= BLUE, ");
```

```
    delay(5000);
```

```
}
```

```
else
```

```
{
```

```
    digitalWrite(LED3,LOW);
```

```
}
```

```
if(cm>=150 && cm<200)
```

```
{
    digitalWrite(LED1,HIGH);
    digitalWrite(LED2,HIGH);
    digitalWrite(LED3,HIGH);
    Serial.print("LED= WHITE, ");
    delay(5000);
}
else
{
    digitalWrite(LED1,LOW);
    digitalWrite(LED3,LOW);
    digitalWrite(LED2,LOW);
}
if(cm>=200 && cm<250)
{
    digitalWrite(LED2,HIGH);
    digitalWrite(LED3,HIGH);
    Serial.print("LED= WHITE, ");
    delay(5000);
}
else
{
    digitalWrite(LED3,LOW);
    digitalWrite(LED2,LOW);
}
if(cm>=250 && cm<300)
{
    digitalWrite(LED1,HIGH);
    digitalWrite(LED3,HIGH);
    Serial.print("LED= WHITE, ");
    delay(5000);
}
```

```

else
{
digitalWrite(LEDRL,LOW);
digitalWrite(LEDGR,LOW);
}
if(cm>=300 && cm<325)
{
digitalWrite(LEDRL,HIGH);
digitalWrite(LEDGR,HIGH);
Serial.print("LED= WHITE, ");
delay(5000);
}
else
{
digitalWrite(LEDRL,LOW);
digitalWrite(LEDGR,LOW);
}
inches= (cm/2.54);
Serial.print (cm);
Serial.print(" CM, ");
Serial.print (inches);
Serial.print(" IN ");
Serial.println();
delay(5000); // wait for 100 millisecond(s)
}

```

Output:

```

LED= WHITE, 176.35 CM, 69.43 IN
LED= WHITE, 322.06 CM, 126.80 IN
LED= WHITE, 220.32 CM, 86.74 IN
LED= GREEN, 94.54 CM, 37.22 IN
LED= WHITE, 200.59 CM, 78.97 IN

```

