**ASSIGNMENT**

**CODE:**

#define trigPin 5

#define echoPin 6

long duration;

int distance;

const int analogInPin = A0;

const int LEDpin = 10;

int sensorValue = 0;

int outputValue = 0;

void setup() {

Serial.begin(9600);

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

}

void loop() {

digitalWrite(trigPin, LOW);

delayMicroseconds(2);

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

distance = duration \* 0.034 / 2;

sensorValue = analogRead(analogInPin);

outputValue = map(sensorValue, 0, 1023, 0, 255);

analogWrite(LEDpin, outputValue);

//distance=15;

Serial.print("Distance: ");

Serial.print(distance);

Serial.println(" cm");

if(distance <= 10){

analogWrite(LEDpin, 1023);

Serial.println("Full Brightness");

}

else if(distance>10 && distance<=30){

analogWrite(LEDpin,255);

Serial.println("Partial Brightness");

}

else {

analogWrite(LEDpin,64);

Serial.println("Low Brightness");

}

delay(1000);

}

**SIMULATION:**

