

## **IBM ASSIGNMENT-IOT**

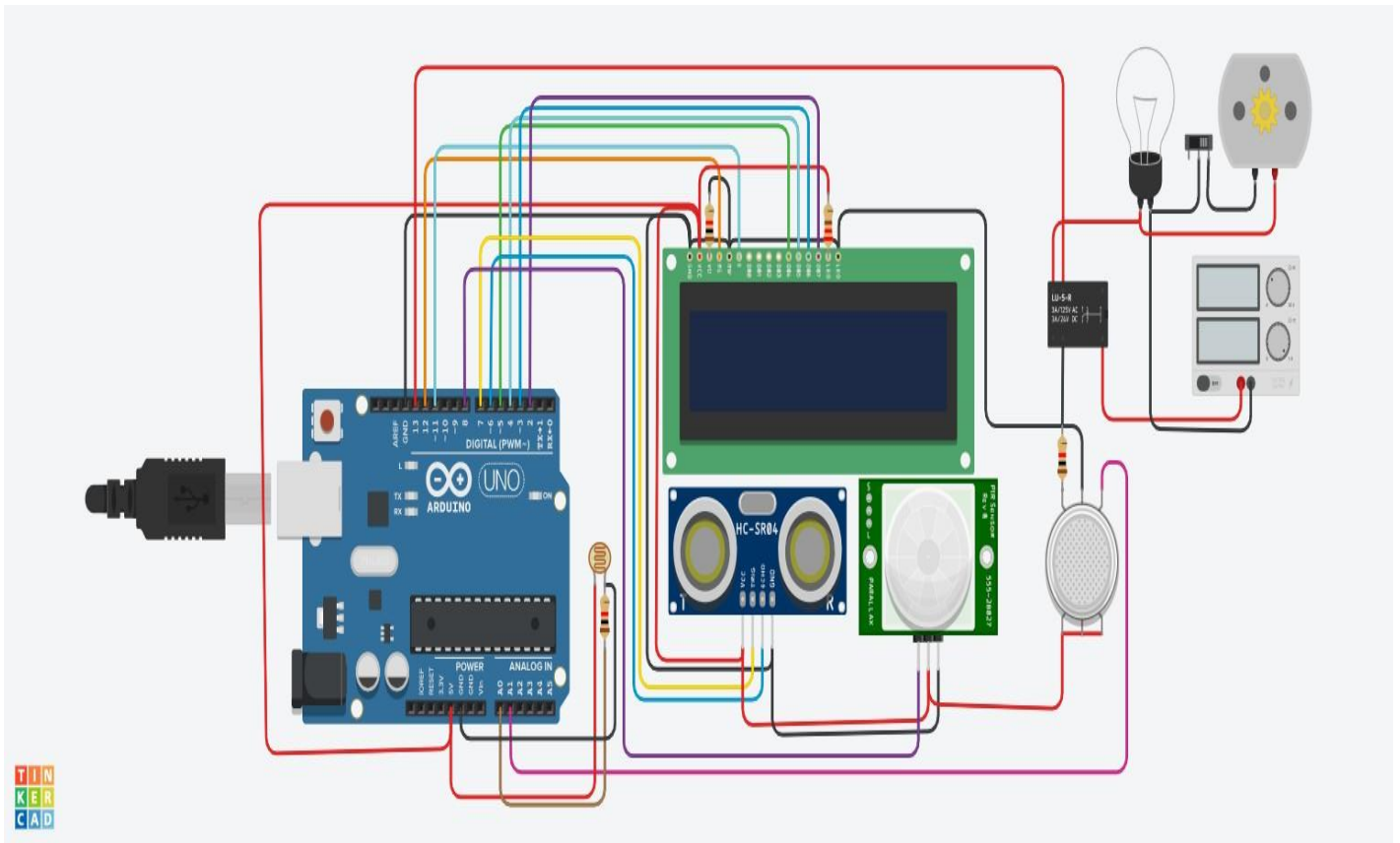
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**Circuit:**



## **Code:**

```
#include <LiquidCrystal.h>
```

```
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
```

```
int distanceThreshold = 0;
```

```
int cm = 0;
```

```
int inches = 0;
```

```
int releNO = 13;
```

```
int inputPir = 8;
```

```
int val = 0;
```

```
int resuldoSensorLDR;
```

```
int sensorLDR = A0;
```

```
int const PINO_SGAS = A1;
```

```
long readUltrasonicDistance(int triggerPin, int echoPin)
```

```
{
```

```
  pinMode(triggerPin, OUTPUT); // Clear the trigger
```

```
  digitalWrite(triggerPin, LOW);
```

```
  delayMicroseconds(2);
```

```
  digitalWrite(triggerPin, HIGH);
```

```
  delayMicroseconds(10);
```

```
  digitalWrite(triggerPin, LOW);
```

```
  pinMode(echoPin, INPUT);
```

```

    return pulseIn(echoPin, HIGH);
}

void setup() {

    lcd.begin(16, 2);

    pinMode(releNO, OUTPUT);
    pinMode(inputPir, INPUT);
    pinMode(sensorLDR, INPUT);
    Serial.begin(9600);
}

void loop() {

    distanceThreshold = 350;
    cm = 0.01723 * readUltrasonicDistance(7, 6);

    inches = (cm / 2.54);

    lcd.setCursor(0,0);
    lcd.print("D:");
    lcd.print(cm);
    lcd.print("cm");
    delay(10);

    val = digitalRead(inputPir);
    resuldoSensorLDR = analogRead(sensorLDR);
    if(resuldoSensorLDR<600)
    {
        if(val == HIGH)
        {

```

```

        digitalWrite(releNO, HIGH);
        lcd.setCursor(0,1);
        lcd.print("L: On ");
        delay(5000);
    }
    else{
        digitalWrite(releNO, LOW);lcd.setCursor(0,1);
        lcd.print("L: Off");
        delay(300);
    }
}

else{ digitalWrite (releNO, LOW);
Serial.println(resuldoSensorLDR);
delay(500);
}

int color = analogRead(PINO_SGAS);

lcd.setCursor(8,0);
//lcd.print("");
if(color <= 85){
    lcd.print("G:Low ");
} else if(color <= 120){
    lcd.print("G:Med ");
} else if(color <= 200){
    lcd.print("G:High");
} else if(color <= 300){
    lcd.print("G:Ext ");
}

delay(250);
}

```

