IBM ASSIGNMENT-IOT

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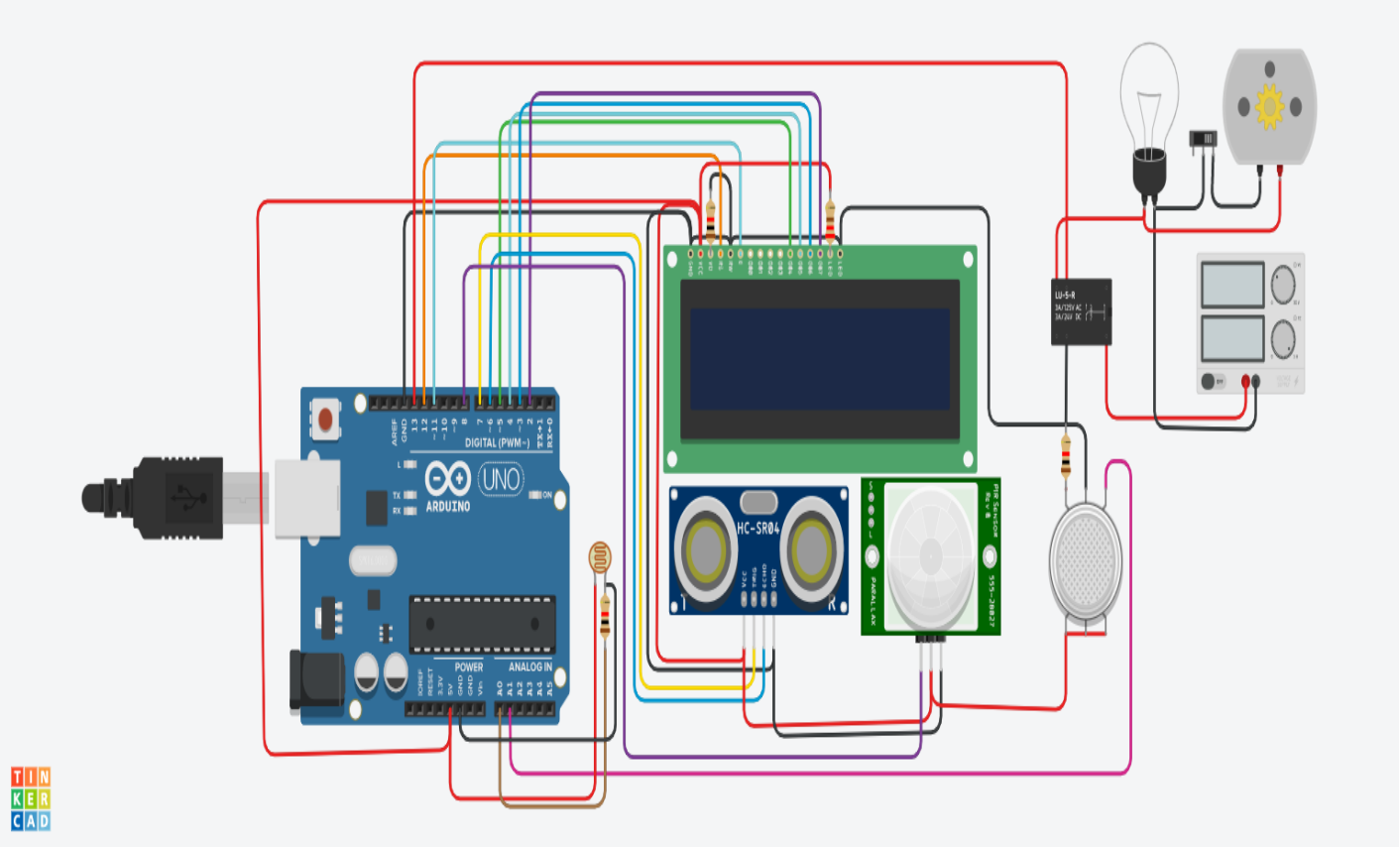
Circuit:


DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN
HC-SR04
Vcc
Trig
Echo
GND
PARALLAX
TIN
KER
CAD

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);
}
```