**LED glows when an obstacle comes into its path**

**Code:-**

int LEDpin = 13;

int obstaclePin = 10;

int hasObstacle = LOW; // LOW MEANS NO OBSTACLE

void setup(){

pinMode(LEDpin, OUTPUT);

pinMode(obstaclePin, INPUT);

Serial.begin(9600);

}

void loop() {

hasObstacle = digitalRead(obstaclePin);

if (hasObstacle == HIGH) {

Serial.println("Stop something is ahead!!");

digitalWrite(LEDpin, HIGH);

}

else {

Serial.println("Path is clear");

digitalWrite(LEDpin, LOW);

}

delay(200);

}

**IR Sensor CODE:-**

const int irSensorPin = 10;

const int ledPin = 13;

void setup() {

Serial.begin(9600);

pinMode(irSensorPin, INPUT);

pinMode(ledPin, OUTPUT);

}

void loop() {

int irState = digitalRead(irSensorPin);

Serial.print("IR Sensor State: ");

Serial.println(irState);

if (irState == LOW) {

digitalWrite(ledPin, HIGH);

} else {

digitalWrite(ledPin, LOW);

}

delay(500);

}

**Ultrasonic sensor CODE:-**

const int pingPin = 7; // Trigger Pin of Ultrasonic Sensor to digital 7

const int echoPin = 6; // Echo Pin of Ultrasonic Sensor to digital 6

void setup() {

Serial.begin(9600); // Starting Serial Terminal

pinMode(9, OUTPUT);

}

void loop()

{

long duration, inches, cm;

pinMode(pingPin, OUTPUT);

digitalWrite(pingPin, LOW);

//delayMicroseconds(2);

digitalWrite(pingPin, HIGH);

// delayMicroseconds(10);

digitalWrite(pingPin, LOW);

pinMode(echoPin, INPUT);

duration = pulseIn(echoPin, HIGH);

inches = microsecondsToInches(duration);

cm = microsecondsToCentimeters(duration);

delay(100);

if(cm<10)

{

digitalWrite(9, HIGH);

Serial.print("Led ON ");

// delay(5000); //

}

else

{

digitalWrite(9, LOW);

Serial.println("Led OFF ");

// delay(3000);

}

}

long microsecondsToInches(long microseconds)

{

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds)

{

return microseconds / 29 / 2;

}

**Distance measure code:-**

const int trigpin = 9;

const int echopin = 10;

long long int duration;

int distance;

void setup() {

// put your setup code here, to run once:

pinMode(trigpin,OUTPUT);

pinMode(echopin,INPUT);

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

digitalWrite(trigpin,LOW);

delayMicroseconds(2);

digitalWrite(trigpin,HIGH);

delayMicroseconds(10);

digitalWrite(trigpin,LOW);

duration = pulseIn(echopin,HIGH); //duration in microseconds

distance = duration \* 0.034/2;

Serial.print("distance: ");

Serial.println(distance);

}