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# VIT-IOT-INDUSTRY CERTIFICATE-EXTERNSHIP PROGRAM

# ASSIGNMENT-2

Assignment-2

Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. if any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

Understand the Working of Ultrasonic Sensor

## CODE:


```
#include<Servo.h>
const int trigPin = 7; // Trigger Pin of Ultrasonic Sensor
const int echoPin = 6; // Echo Pin of Ultrasonic Sensor
int servopin=1;
Servo servo;

long duration;
int distance;

void setup() {
  pinMode(trigPin, OUTPUT);
  pinMode(echoPin, INPUT);
  Serial.begin(9600); // Starting Serial Terminal
}

void loop() {
   digitalWrite(trigPin, LOW);
   delayMicroseconds(2);
   digitalWrite(trigPin, HIGH);
   delayMicroseconds(10);
   digitalWrite(trigPin, LOW);;
   duration = pulseIn(echoPin, HIGH);
   distance=duration*0.034/2;
   Serial.print("Distance:");
   delay(2000);
   if (distance>0 && distance<20){
    servo.write(180);
    Serial.print(distance);
    Serial.println("cm");
    Serial.println("Vehicle detected");
   }
   else if (distance>20){
    servo.write(180);
    Serial.print(distance);
    Serial.println("cm");
    Serial.println("Vehicle not detected");
   }
}
```

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   delayMicroseconds(2);
   digitalWrite(trigPin, HIGH);
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   digitalWrite(trigPin, LOW);;
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   distance=duration*0.034/2;
   Serial.print("Distance:");
   delay(2000);
   if (distance>0 && distance<20){
    servo.write(180);
    Serial.print(distance);
    Serial.println("cm");
    Serial.println("Vehicle detected");
   }
   else if (distance>20){
    servo.write(180);
    Serial.print(distance);
    Serial.println("cm");
    Serial.println("Vehicle not detected") } }
```

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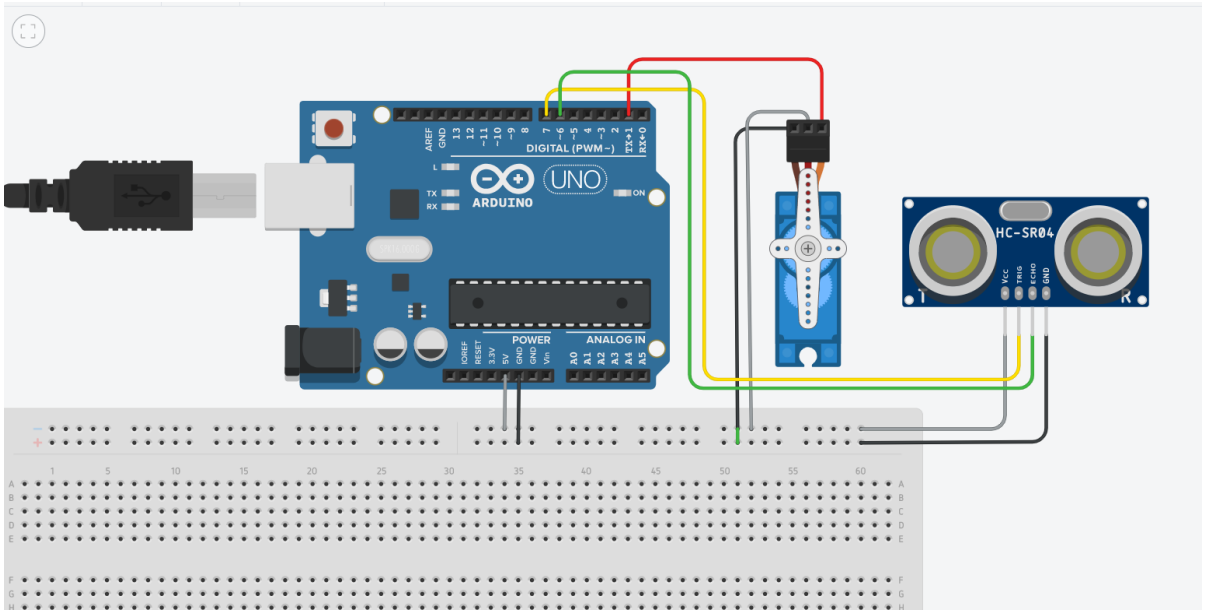
## CIRCUIT DESIGN:




## OUTPUT:

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COM5

```
Distance:11cm
Vehicle detected
Distance:3cm
Vehicle detected
Distance:189cm
Vehicle not detected
Distance:96cm
Vehicle not detected
Distance:3cm
Vehicle detected
Distance:5cm
Vehicle detected
Distance:16cm
Vehicle detected
Distance:Distance:108cm
Vehicle not detected
Distance:8cm
Vehicle detected
Distance:94cm
Vehicle not detected
Distance:190cm
Vehicle not detected
Distance:191cm
Vehicle not detected
Distance:94cm
Vehicle not detected
Distance:12cm
Vehicle detected
Distance:5cm
Vehicle detected
Distance:94cm
Vehicle not detected
Distance:93cm
Vehicle not detected
Distance:88cm
Vehicle not detected
Distance:88cm
Vehicle not detected
Distance:82cm
Vehicle not detected
Distance:96cm
Vehicle not detected
```