VIT-IOT

(INDUSTRY CERTIFICATE INTERNSHIP PROGRAM)

ASSIGNMENT-2

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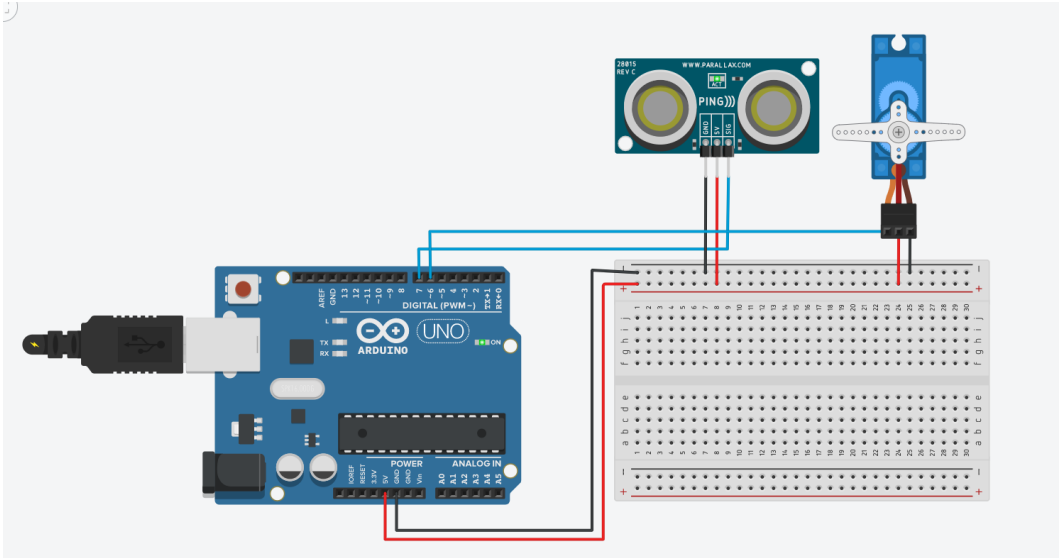
Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. If any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

CODE:

```
#include <Servo.h>
int V_Distance = 0;
Servo servo_6;
long readUltrasonicDistance(int triggerPin, int echoPin)
{
  pinMode(triggerPin, OUTPUT);  // Clear the trigger
  digitalWrite(triggerPin, LOW);
  delayMicroseconds(2);
  // Sets the trigger pin to HIGH state for 10 microseconds
  digitalWrite(triggerPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(triggerPin, LOW);
  pinMode(echoPin, INPUT);
  // Reads the echo pin, and returns the sound wave travel time in microseconds
  return pulseIn(echoPin, HIGH);
}
void setup()
{
  servo_6.attach(6, 500, 2500);
}
void loop()
{
  servo_6.write(90);
  V_Distance = 0.01723 * readUltrasonicDistance(7, 7);
```

```
  if (V_Distance <= 100) {
    servo_6.write(180);
    delay(2000); // Wait for 2000 millisecond(s)
    servo_6.write(90);
  }
  servo_6.write(90);
}
```

SIMULATION:



OUTPUT:

```
distance in cm;333.45
door closed
distance 333.45
distance in cm;333.41
door closed
distance 333.41
distance in cm;334.22
door closed
distance 334.22
distance in cm;333.41
```

```
distance in cm;167.74
door open
distance167.74
distance in cm;166.85
door open
distance166.85
distance in cm;166.85
door open
distance166.85
distance in cm;167.64
door open
distance167.64
distance in cm;168.41
door open
distance168.41
distance in cm;168.41
door open
distance168.41
```