

# VIT IOT - (Industry Certificate Program)

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## 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.

### CODE:

```
#include<Servo.h>

Servo s;

void setup()
{
  pinMode(3, OUTPUT);
  pinMode(2, INPUT);
  Serial.begin(9600);
  s.attach(4); //attaching D3 pin to servo motor
}

void loop()
{
  digitalWrite(3, LOW);
  digitalWrite(3, HIGH);
  delayMicroseconds(10);
  digitalWrite(3, LOW);
  float dur = pulseIn(2, HIGH);
  float dis = (dur / 2)/29.1;
  if(dis < 100){
```

```

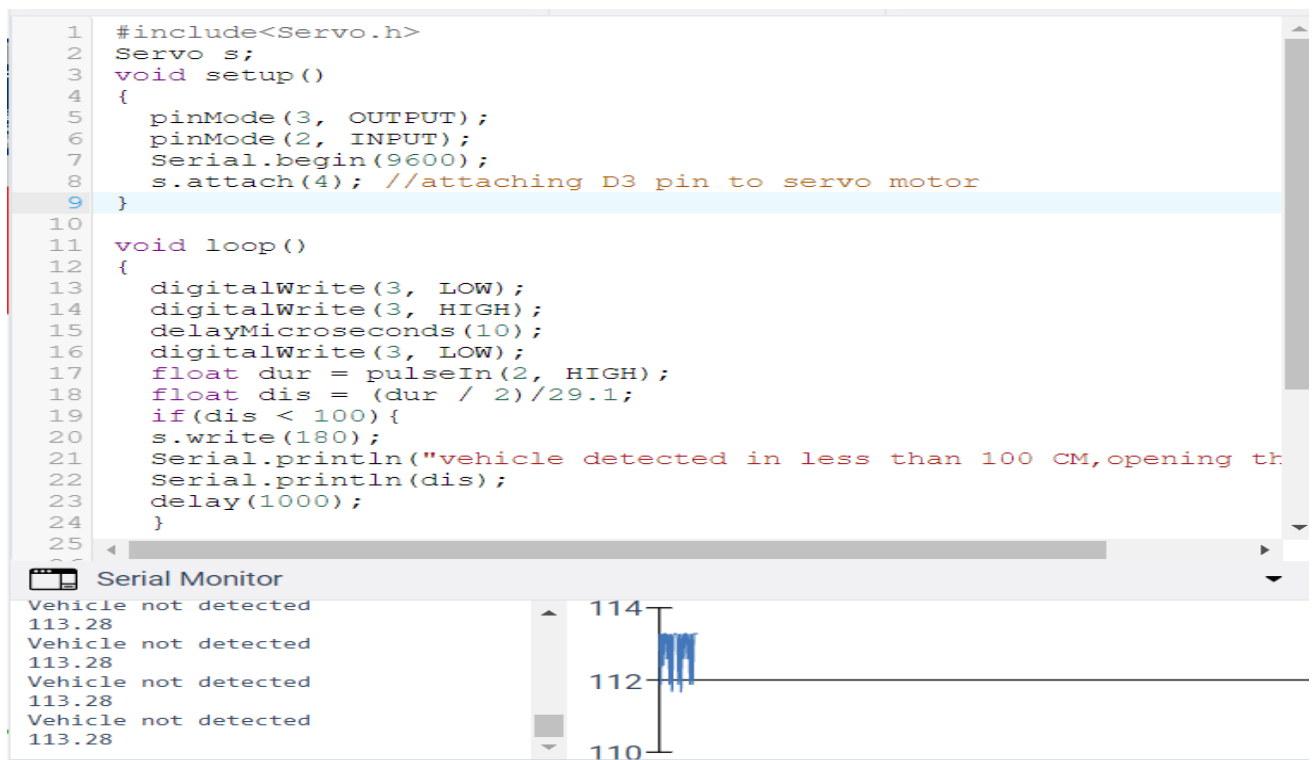
s.write(180);
Serial.println("vehicle detected in less than 100 CM,opening the door");
Serial.println(dis);
delay(1000);
}

else if(dis > 100){
s.write(0);
Serial.println("Vehicle not detected");
Serial.println(dis);
delay(1000);
}

}

```

## OUTPUT:



The screenshot shows the Arduino IDE interface. The top pane displays the code for a servo motor controlled by a distance sensor. The code includes a setup function that initializes pins and a loop function that reads the sensor, moves the servo, and prints the distance. The bottom pane shows the Serial Monitor with the output of the program. The text 'Vehicle not detected' is printed repeatedly, followed by the value '113.28'. A graph on the right side of the Serial Monitor shows the data being received, with a vertical line at 113.28 and a series of blue bars representing the data stream.

```

1  #include<Servo.h>
2  Servo s;
3  void setup()
4  {
5      pinMode(3, OUTPUT);
6      pinMode(2, INPUT);
7      Serial.begin(9600);
8      s.attach(4); //attaching D3 pin to servo motor
9  }
10
11 void loop()
12 {
13     digitalWrite(3, LOW);
14     digitalWrite(3, HIGH);
15     delayMicroseconds(10);
16     digitalWrite(3, LOW);
17     float dur = pulseIn(2, HIGH);
18     float dis = (dur / 2)/29.1;
19     if(dis < 100){
20         s.write(180);
21         Serial.println("vehicle detected in less than 100 CM,opening th
22         Serial.println(dis);
23         delay(1000);
24     }
25 }

```

Serial Monitor

```

Vehicle not detected
113.28
Vehicle not detected
113.28
Vehicle not detected
113.28
Vehicle not detected
113.28

```

