

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(4, INPUT);
```

```
  Serial.begin(9600);
```

```
  s.attach(5);
```

```
}
```

```
void loop()
```

```
{
```

```
  digitalWrite(3, LOW);
```

```
  delayMicroseconds(2);
```

```
  digitalWrite(3, HIGH);
```

```
  delayMicroseconds(10);
```

```
  digitalWrite(3, LOW);
```

```
  float duration = pulseIn(4, HIGH);
```

```
  float distance= duration*0.034/2;
```

```
  Serial.print("Distance: ");
```

```
  Serial.println(distance);
```

```
  if (distance<100){
```

```
    for(int i=0;i<=180;i++){
```

```

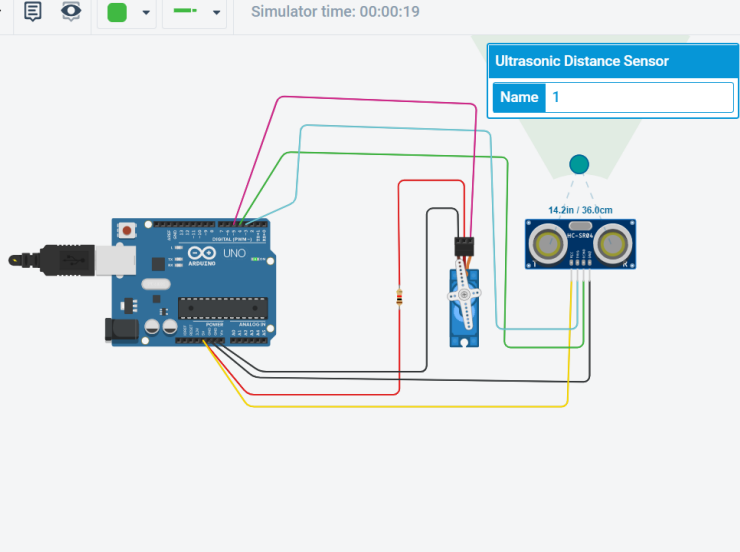
s.write(i);
delay(50);}
delay(200);
Serial.print("Open gate!");
for(int j=180;j>=0;j--){
s.write(j);
delay(50);}
delay(200);

}

}

```

OUTPUT:



Simulator time: 00:00:19

Ultrasonic Distance Sensor
Name 1

14.2in / 36.0cm

```

23
24 float duration = pulseIn(4, HIGH);
25 float distance= duration*0.034/2;
26
27
28
29 Serial.print("Distance: ");
30 Serial.println(distance);
31
32 if (distance<100) {
33   for(int i=0;i<=180;i++) {
34     s.write(i);
35     delay(50);
36     delay(200);
37     Serial.print("Open gate!");
38     for(int j=180;j>=0;j--){
39       s.write(j);
40       delay(50);
41       delay(200);
42     }
43   }
44 }
45 }
46
47

```

Serial Monitor

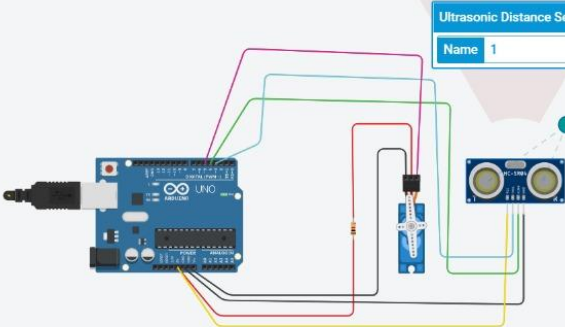
Distance: 35.62
Open gate!Distance: 35.62

Simulator time: 00:00:20.126

Code Stop Simulation Export Share

1 (Arduino Uno R3)

Ultrasonic Distance Sensor
Name 1



```
23
24 float duration = pulseIn(4, HIGH);
25 float distance= duration*0.034/2;
26
27
28
29 Serial.print("Distance: ");
30 Serial.println(distance);
31
32 if (distance<100){
33   for(int i=0;i<=180;i++){
34     s.write(i);
35     delay(50);
36     delay(200);
37     Serial.print("Open gate!");
38     for(int j=180;j>=0;j--){
39       s.write(j);
40       delay(50);
41       delay(200);
42     }
43   }
44 }
45 }
46
47
```

Serial Monitor

Distance: 326.15
Distance: 326.15
Distance: 326.15
Distance: 326.11
Distance: 326.15
Distance: 326.11
Distance: 326.15
Distance: 325.9

Send Clear