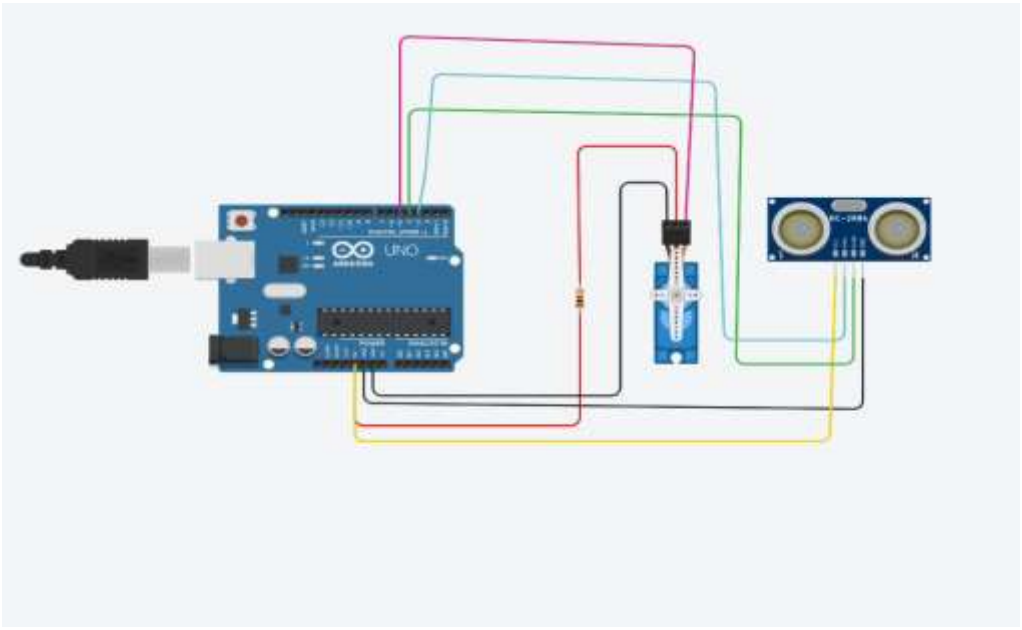
ASSIGNMENT-2

Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect ifthere 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.

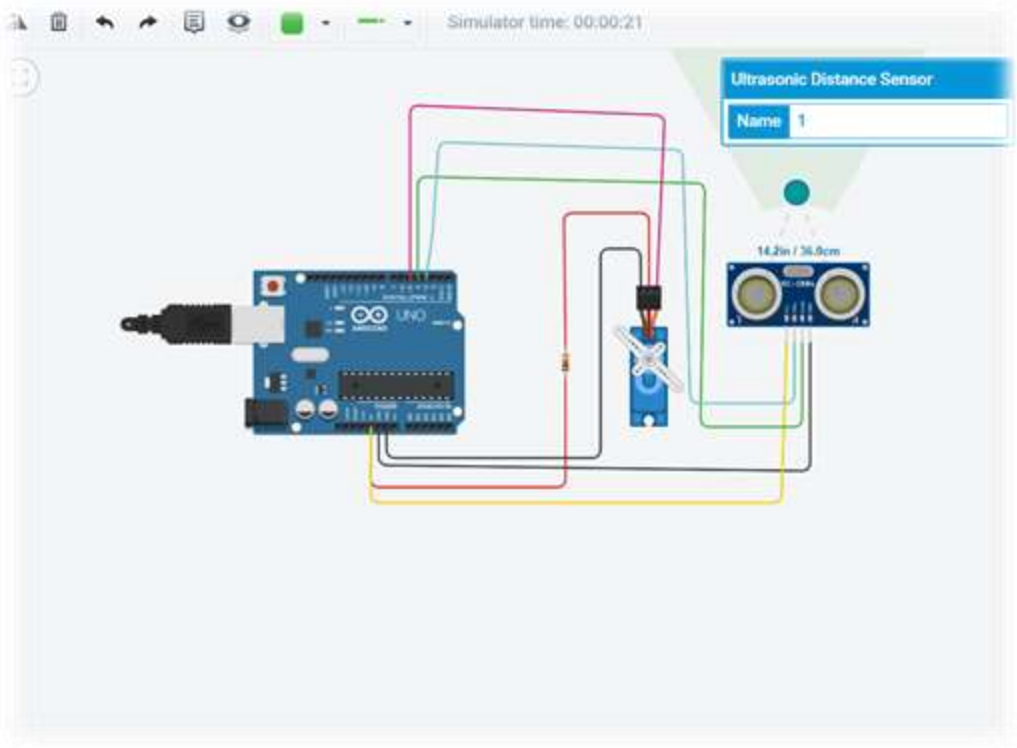
CODE:

```
#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("Vehicle detected Opening Gate!");
for(int j=180;j>=0;j--){
s.write(j);
delay(50);}
```

```
delay(200);

}

}
```



OUTPUT:

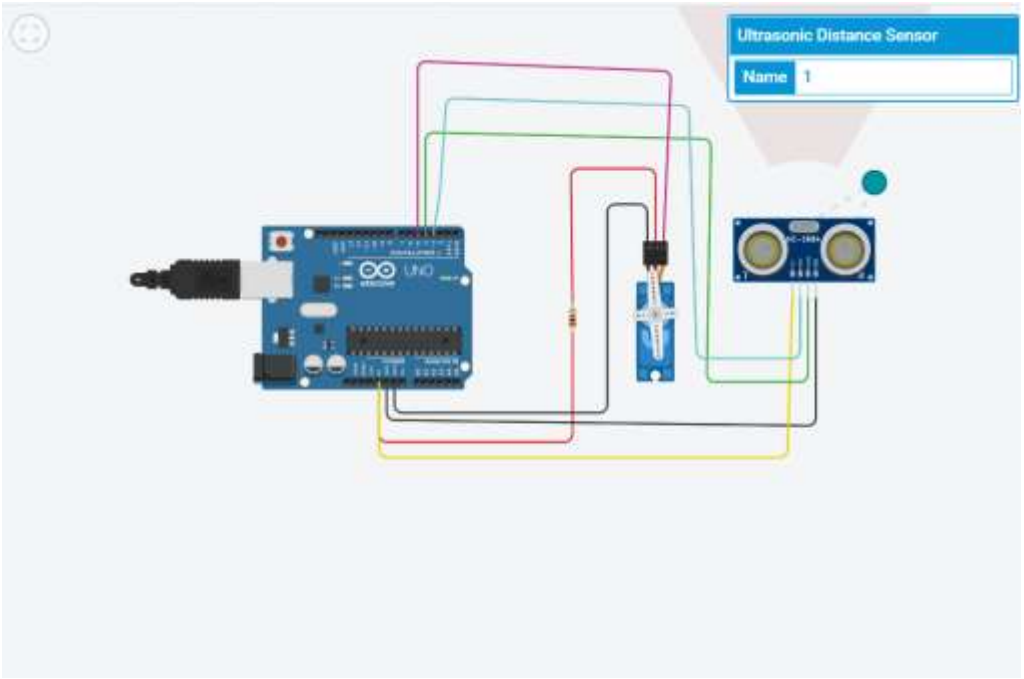


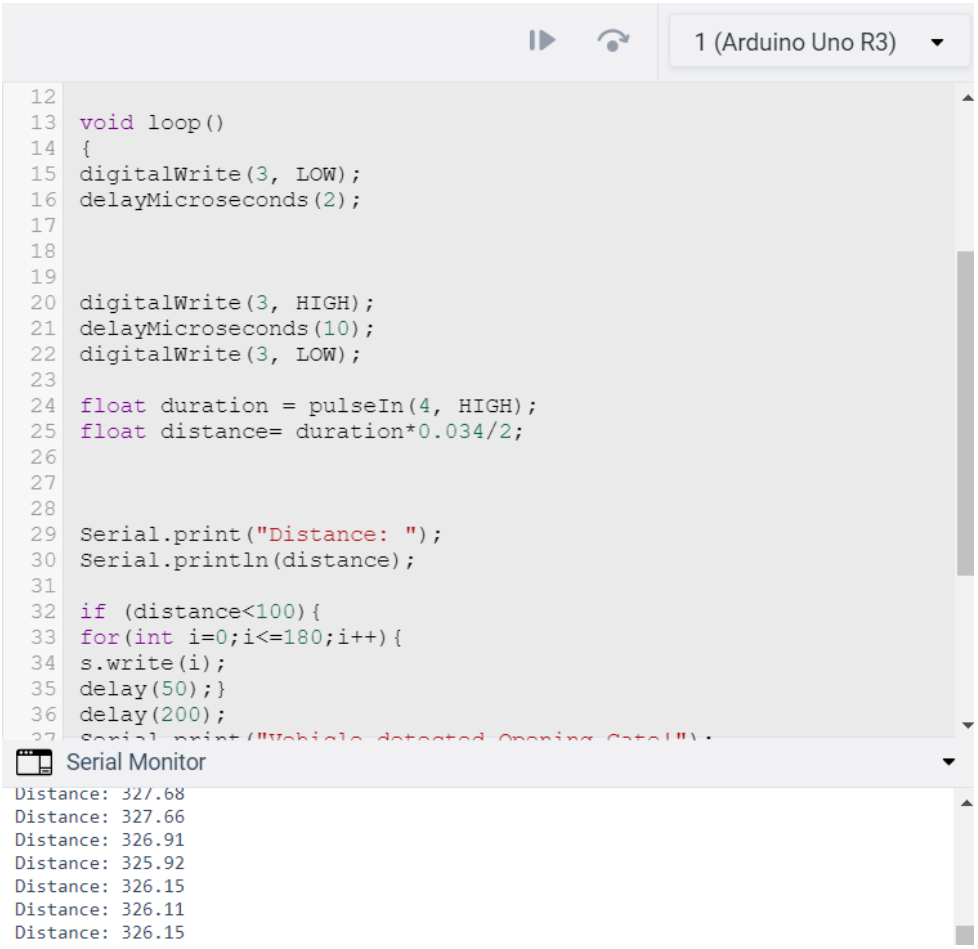
1 (Arduino Uno R3)

```
12
13 void loop()
14 {
15 digitalWrite(3, LOW);
16 delayMicroseconds(2);
17
18
19
20 digitalWrite(3, HIGH);
21 delayMicroseconds(10);
22 digitalWrite(3, LOW);
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);
```

Serial Monitor

```
Vehicle detected Opening Gate!Distance: 35.72
Vehicle detected Opening Gate!Distance: 35.62
Vehicle detected Opening Gate!
```




1 (Arduino Uno R3)
12
13 void loop()
14 {
15 digitalWrite(3, LOW);
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20 digitalWrite(3, HIGH);
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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);
Serial Monitor
Distance: 327.68
Distance: 327.66
Distance: 326.91
Distance: 325.92
Distance: 326.15
Distance: 326.11
Distance: 326.15