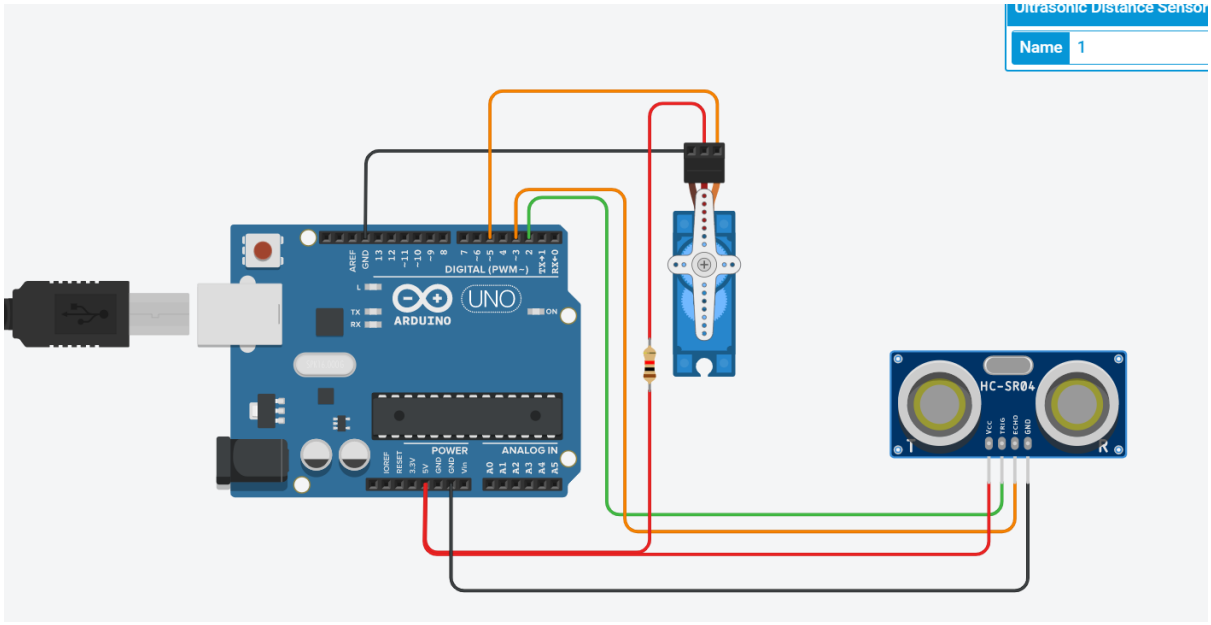
Assignment 2

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.

Circuit Diagram:

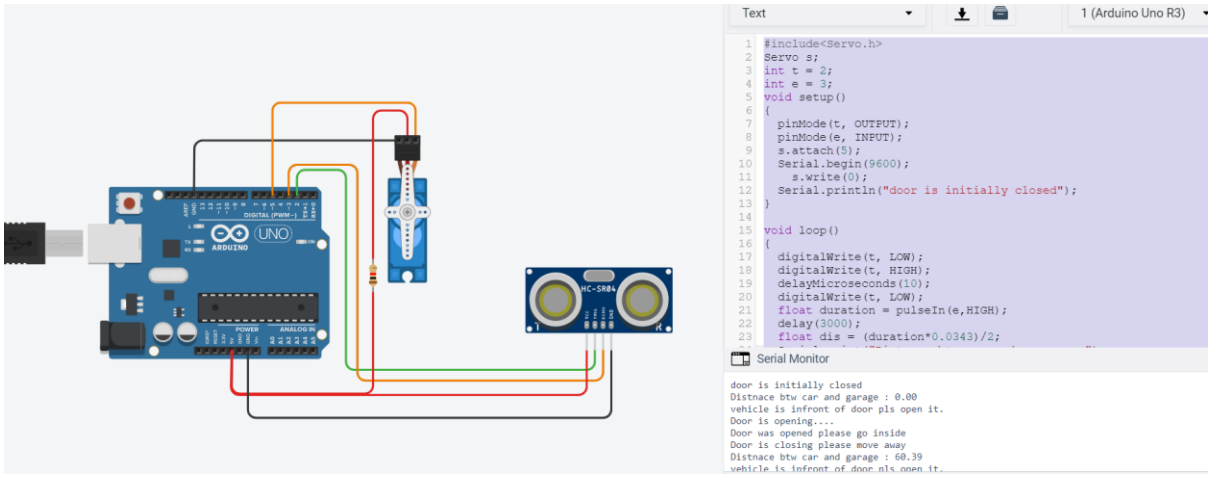


Code:

```
#include<Servo.h>

Servo s;

int t = 2;

int e = 3;

void setup()

{

  pinMode(t, OUTPUT);

  pinMode(e, INPUT);
```

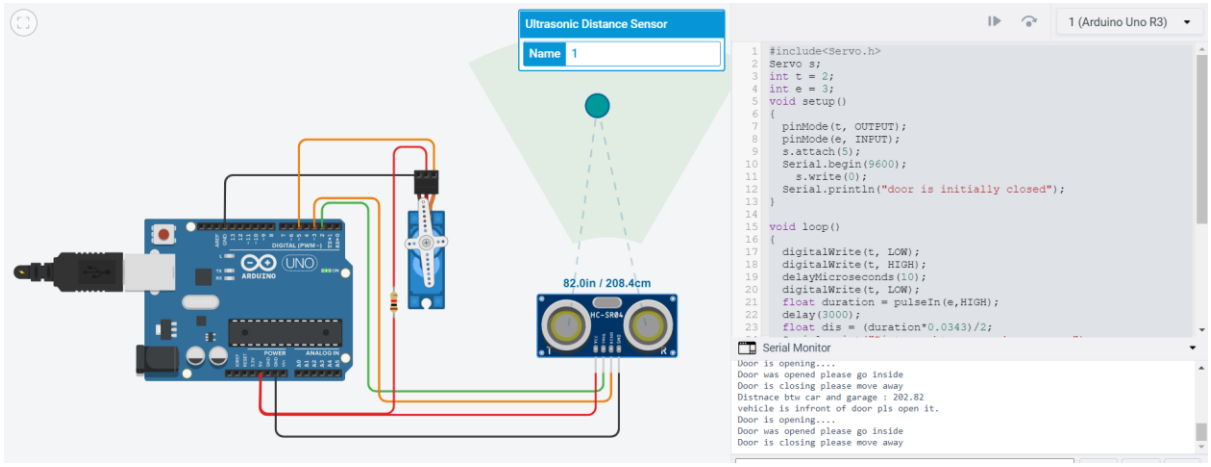
```
  s.attach(5);
  Serial.begin(9600);
    s.write(0);
  Serial.println("door is initially closed");
}

void loop()
{
  digitalWrite(t, LOW);
  digitalWrite(t, HIGH);
  delayMicroseconds(10);
  digitalWrite(t, LOW);
  float duration = pulseIn(e,HIGH);
  delay(3000);
  float dis = (duration*0.0343)/2;
  Serial.print("Distnace btw car and garage : ");
  Serial.println(dis);
  if (dis < 210){
    Serial.println("vehicle is infront of door pls open it.");
    Serial.println("Door is opening....");
    s.write(180);
    delay(5000);
    Serial.println("Door was opened please go inside");
    Serial.println("Door is closing please move away");
      s.write(0);
  }
```

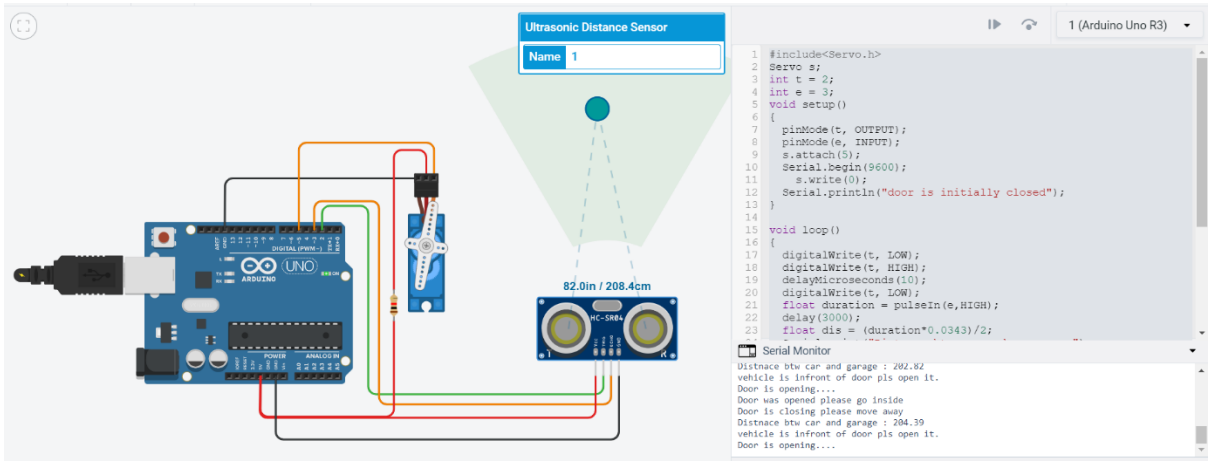
```
  else
    Serial.println("Door was closed");
}
```



Output:

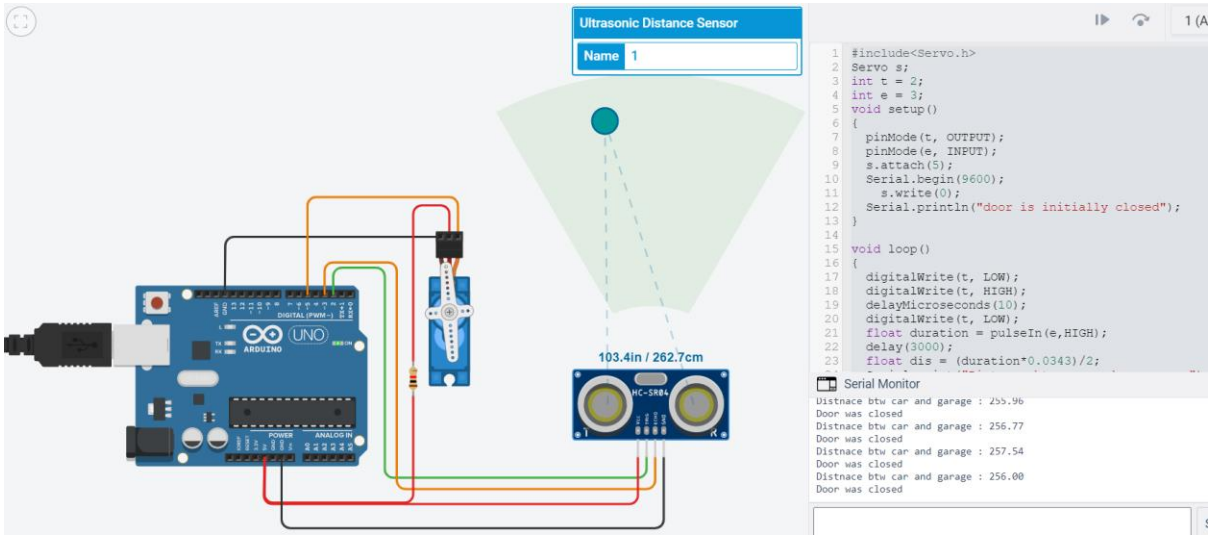
When distance is less than 210 cm then door is closed. And servo motor is rotated.





```
Door was opened please go inside
Door is closing please move away
Distnace btw car and garage : 204.39
vehicle is infront of door pls open it.
Door is opening....
Door was opened please go inside
Door is closing please move away
```

When distance is more than 210 cm then door is closed. And servo motor is not rotated.




```
Distnace btw car and garage : 255.98
Door was closed
Distnace btw car and garage : 255.96
Door was closed
Distnace btw car and garage : 256.00
Door was closed
```