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 servo1;
int trigPin = 9;
int echoPin = 8;
float distance;
float duration;

void setup()
{
servo1.attach(7);
 pinMode(trigPin, OUTPUT);
 pinMode(echoPin, INPUT);
  Serial.begin(9600);
}

void loop() {
  ultra();
  servo1.write(0);
  if(distance <= 150){
    Serial.println("Garage Door Opens");
    delay(7000);
  servo1.write(90);
    delay(5000);
    servo1.write(0);
    delay(2000);
  Serial.println("Garage Door closes");
  }
  else{
    delay(5000);
     servo1.write(0);
```

```
  Serial.println("Garage Door is Closed");
  }
}

void ultra(){
  digitalWrite(trigPin, LOW);
  delayMicroseconds(2);
  digitalWrite(trigPin, HIGH);
  delayMicroseconds(10);
  digitalWrite(trigPin, LOW);
  duration = pulseIn(echoPin, HIGH);
  distance = (duration*0.034)/2;
  Serial.println(distance);
  }
```

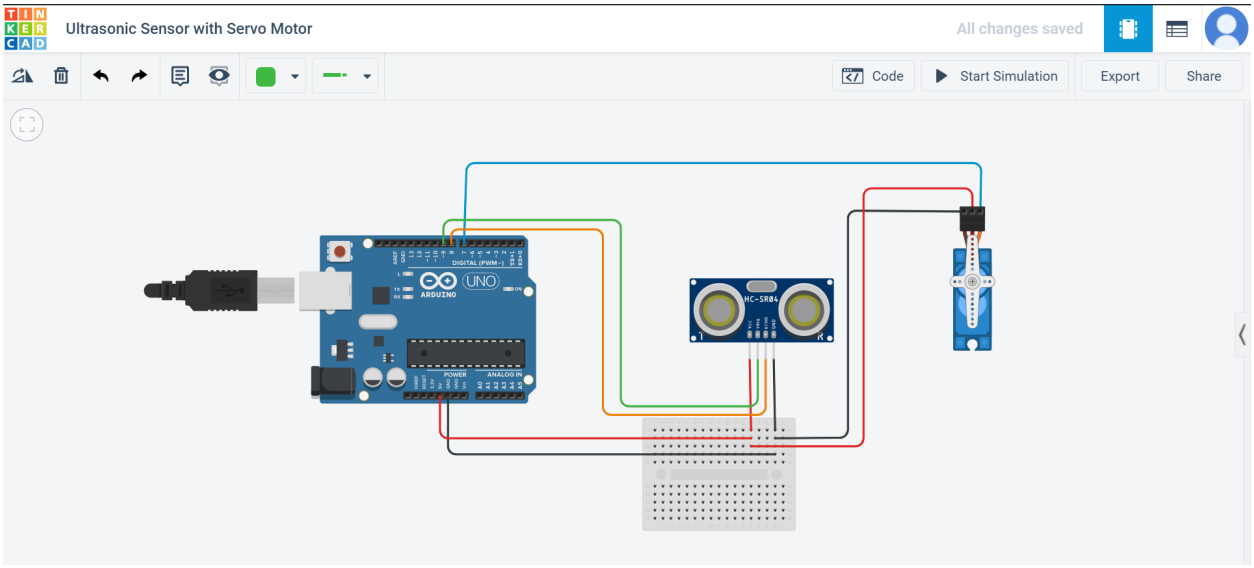
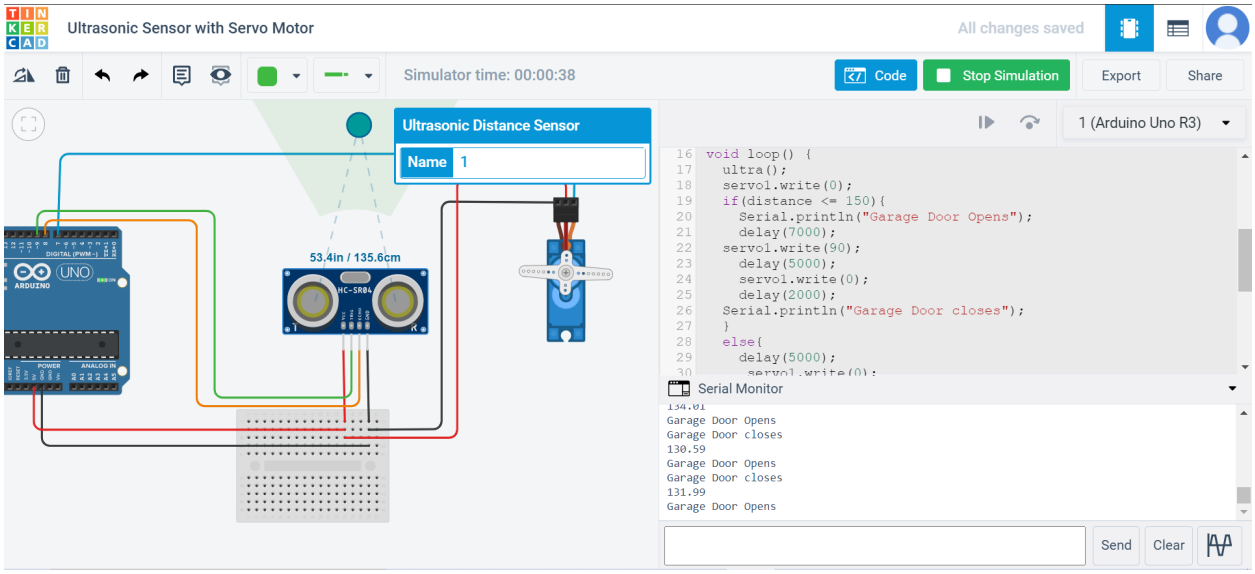
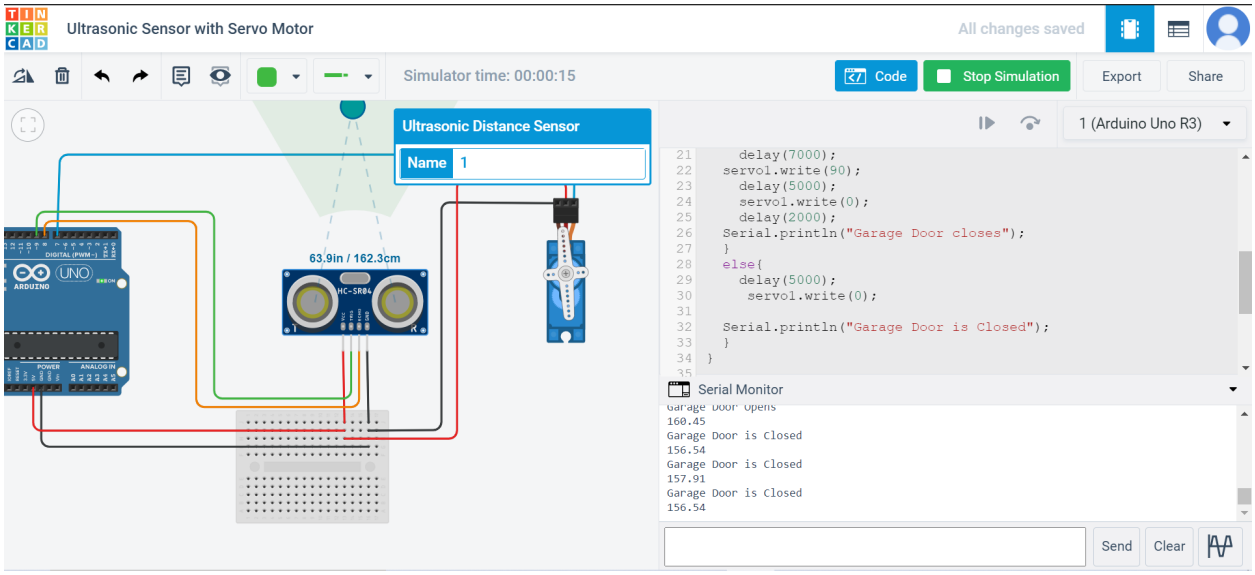


Figure represents the circuit diagram



As the distance is less than 150cm , the garage door opens and then after a delay it closes.



And if the distance is more than 150 cm, the door will be in closed condition only.