

Assignment 2

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Code-

```
#include<Servo.h>

Servo s; void

setup()

{
    Serial.begin(9600); pinMode(9, OUTPUT); // set arduino
pin 9 to output mode pinMode(10, INPUT); // set arduino
pin 10 to input mode

    s.attach(7); // attaches the servo on pin 7 to the servo object

    s.write(0);
}

void loop()

{
    digitalWrite(9, HIGH); delayMicroseconds(10); digitalWrite(9,
LOW); // generate 10-microsecond pulse to TRIG pin

    float dur = pulseIn(10, HIGH); float dis =
(dur*0.0343)/2; // calculate the distance

    if(dis <100)

        s.write(90); // rotate servo motor to 90 degree to open garage door delay(2000);

        s.write(0); // rotate servo motor to 0 degree to close garage door
```

```

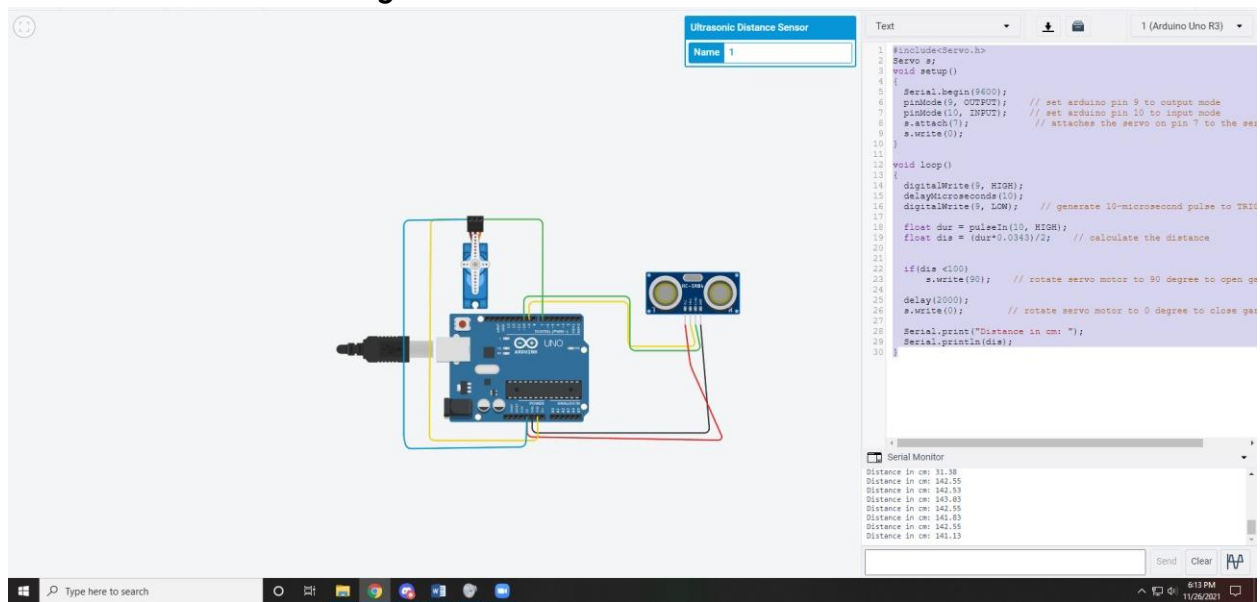
Serial.print("Distance in cm: ");

Serial.println(dis);

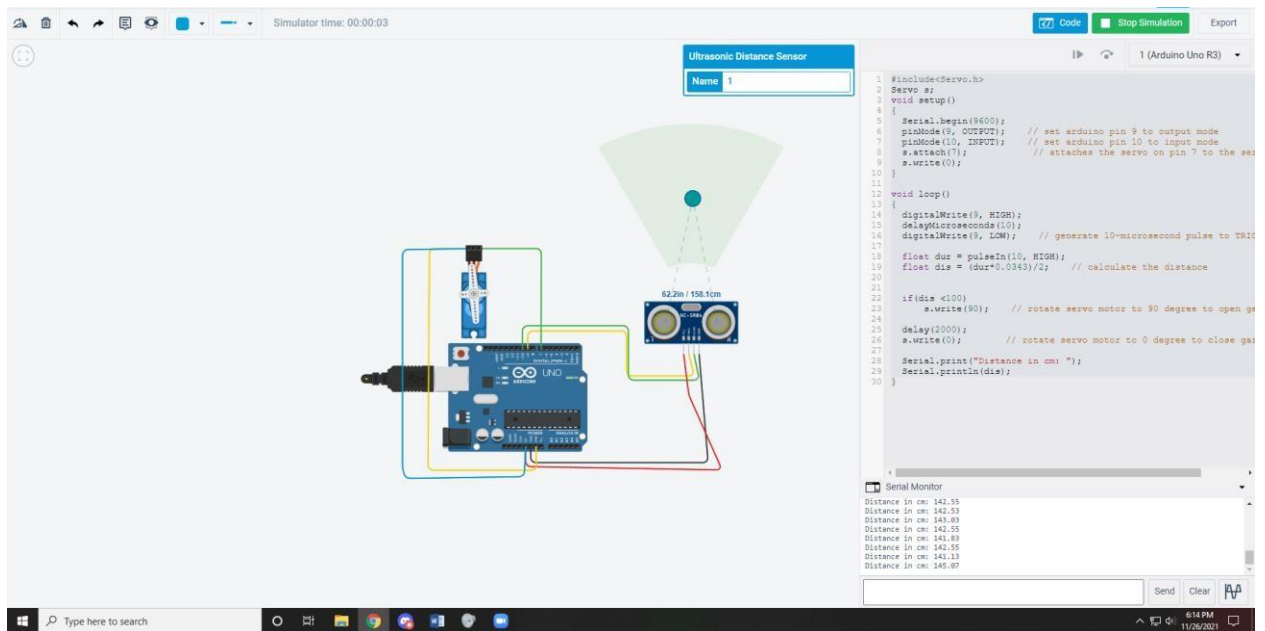
}

```

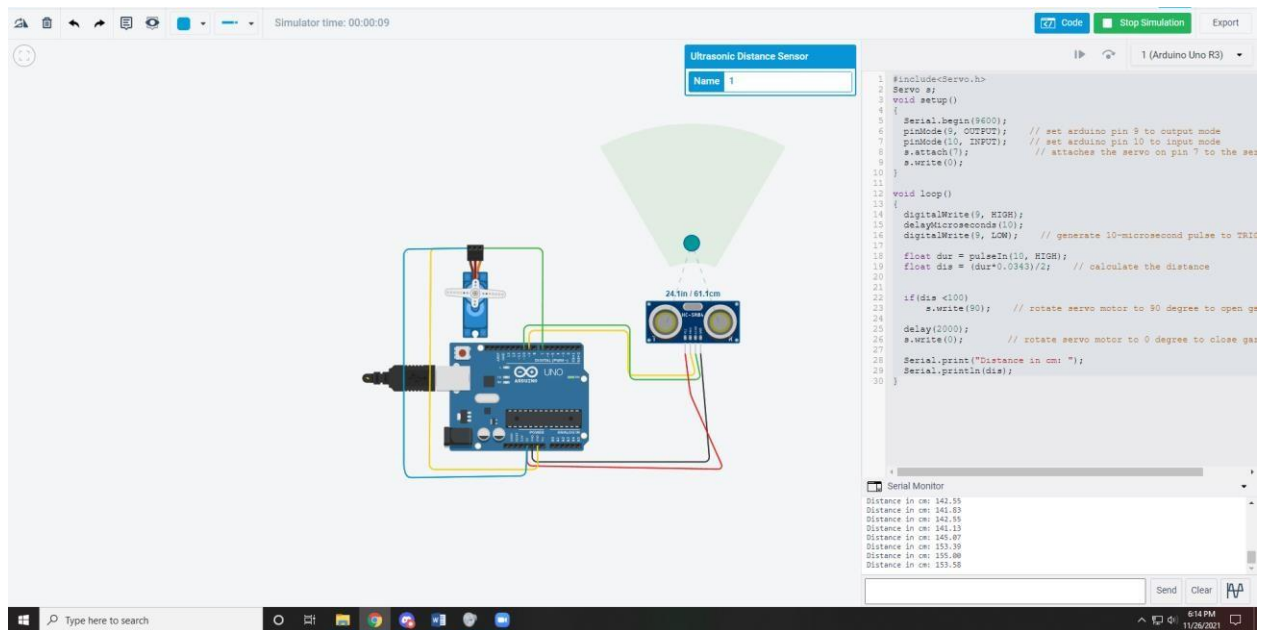
Screenshot of the design-



When the distance is more than 100cm-



When the distance is less than 100 cm-



The screenshot shows an Arduino IDE simulation environment. On the left, a breadboard setup is visible with an Arduino Uno R3 connected to an ultrasonic distance sensor. The sensor is labeled "Ultrasonic Distance Sensor" and "Name 1". A green cone indicates the sensor's range, which is "24.1m - 61.5cm". The code in the IDE is as follows:

```
1 #include<Servo.h>
2 Servo s;
3 void setup()
4 {
5   Serial.begin(9600);
6   pinMode(9, OUTPUT); // set arduino pin 9 to output mode
7   pinMode(10, INPUT); // set arduino pin 10 to input mode
8   s.attach(7); // attaches the servo on pin 7 to the servo object
9   s.write(0);
10 }
11
12 void loop()
13 {
14   digitalWrite(9, HIGH);
15   delayMicroseconds(10); // generate 10-microsecond pulse to TRIG
16   digitalWrite(9, LOW);
17   float dur = pulseIn(10, HIGH); // calculate the time
18   float dis = (dur*0.0343)/2; // calculate the distance
19
20   if(dis < 100)
21   {
22     s.write(90); // rotate servo motor to 90 degree to open gate
23     delay(2000);
24     s.write(0); // rotate servo motor to 0 degree to close gate
25   }
26   Serial.print("Distance in cm: ");
27   Serial.println(dis);
28 }
```

The Serial Monitor displays the following output:

```
Distance in cm: 142.55
Distance in cm: 141.83
Distance in cm: 142.55
Distance in cm: 141.13
Distance in cm: 141.87
Distance in cm: 135.39
Distance in cm: 135.88
Distance in cm: 135.58
```