Assignment 2

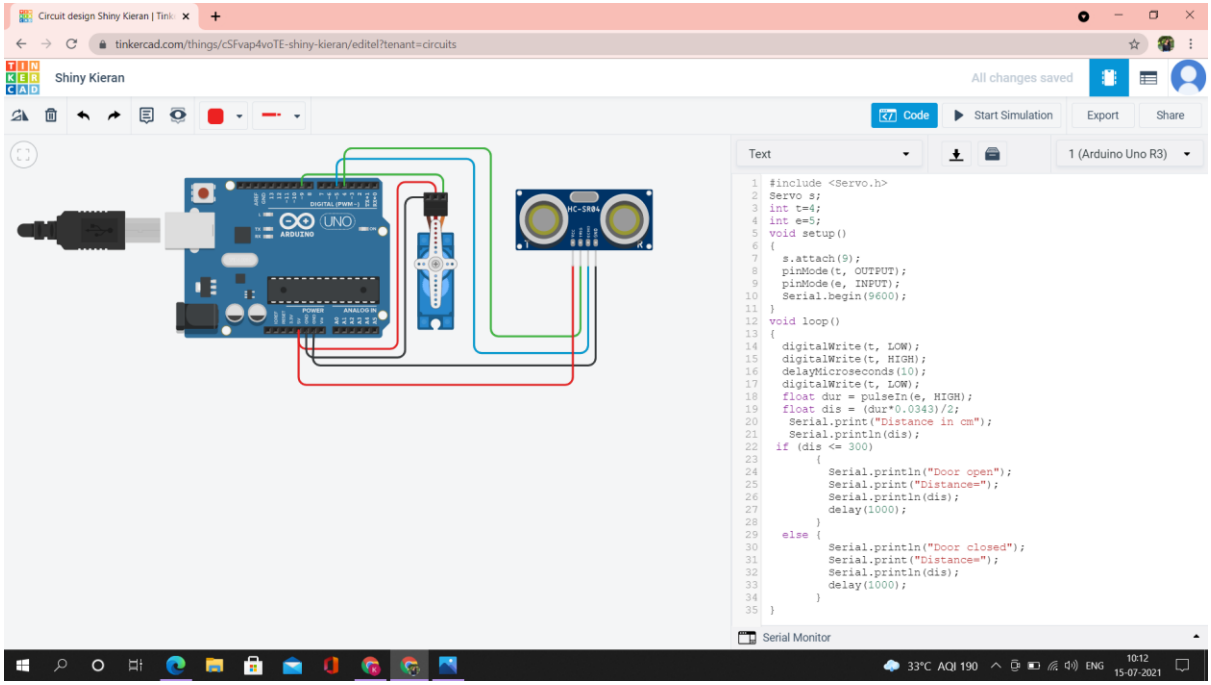
(Keerti Srivastava)

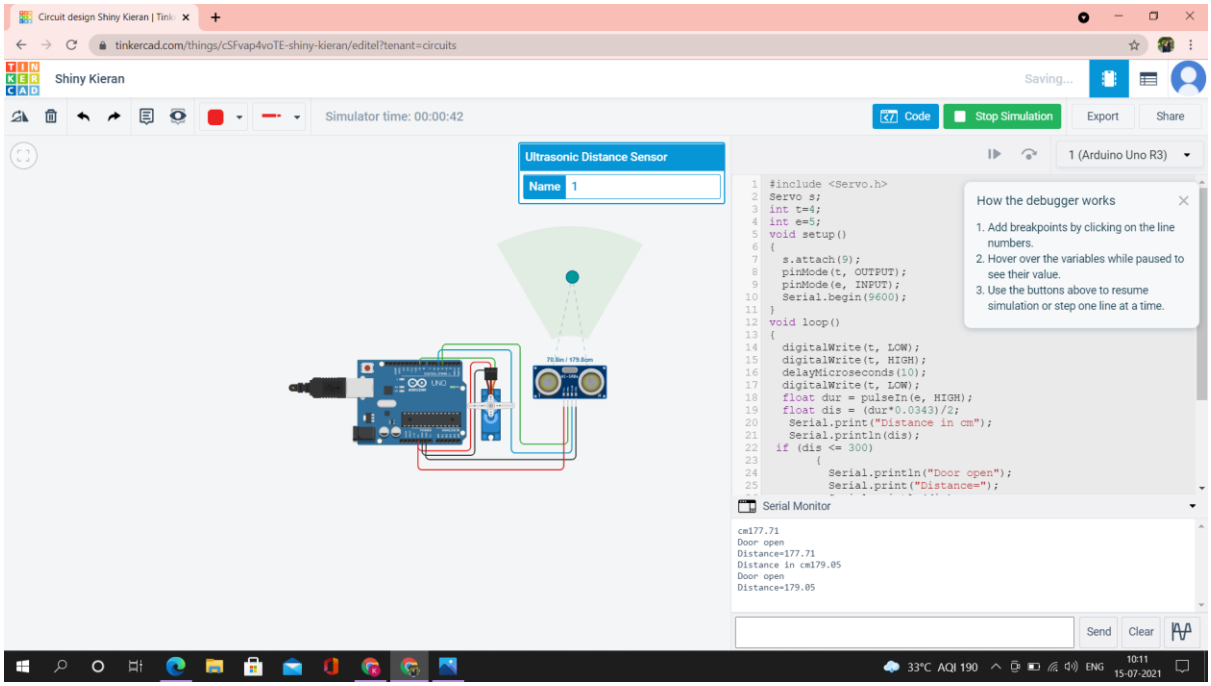
Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. if any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

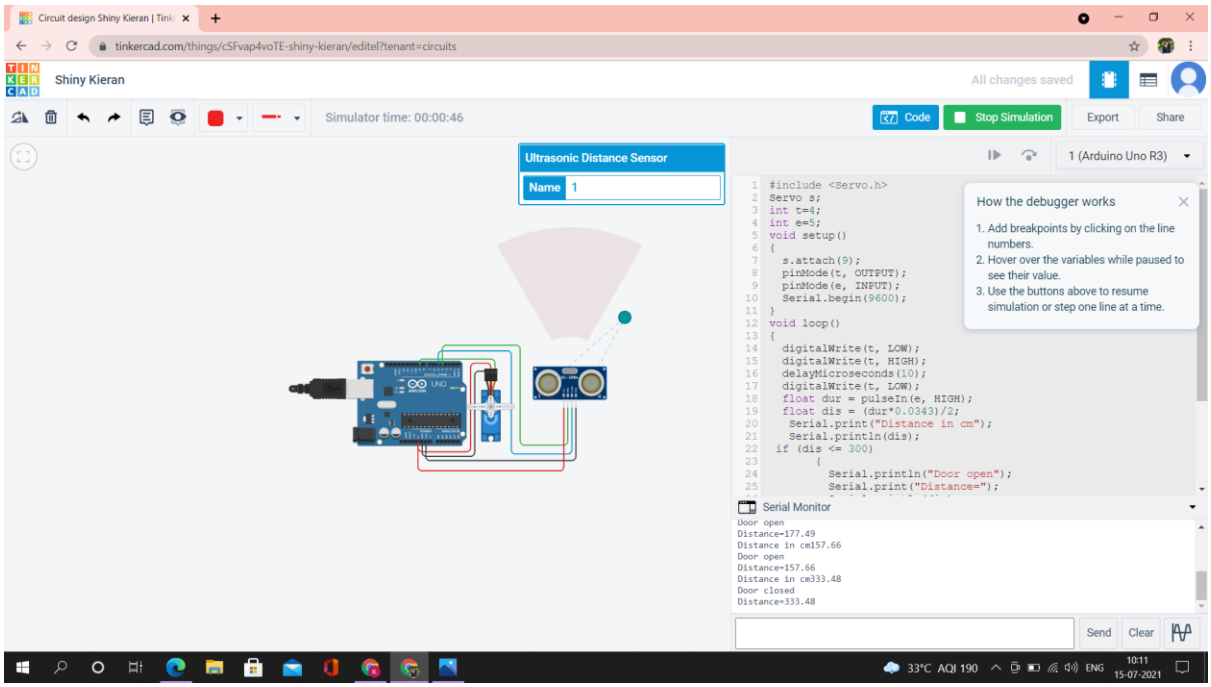
Code:

```
#include <Servo.h>
Servo s;
int t=4;
int e=5;
void setup()
{
  s.attach(9);
  pinMode(t, OUTPUT);
  pinMode(e, INPUT);
  Serial.begin(9600);
}
void loop()
{
  digitalWrite(t, LOW);
  digitalWrite(t, HIGH);
  delayMicroseconds(10);
  digitalWrite(t, LOW);
  float dur = pulseIn(e, HIGH);
  float dis = (dur*0.0343)/2;
   Serial.print("Distance in cm");
   Serial.println(dis);
```

```
 if (dis <= 300)
      {
        Serial.println("Door open");
        Serial.print("Distance=");
        Serial.println(dis);
        delay(1000);
      }
  else {
        Serial.println("Door closed");
        Serial.print("Distance=");
        Serial.println(dis);
        delay(1000);
      }
}
```







RESULT: Servo motor rotates and garage door gets open if any vehicle is within the perimeter of 300cm of ultrasonic sensor.