Assignment - 2

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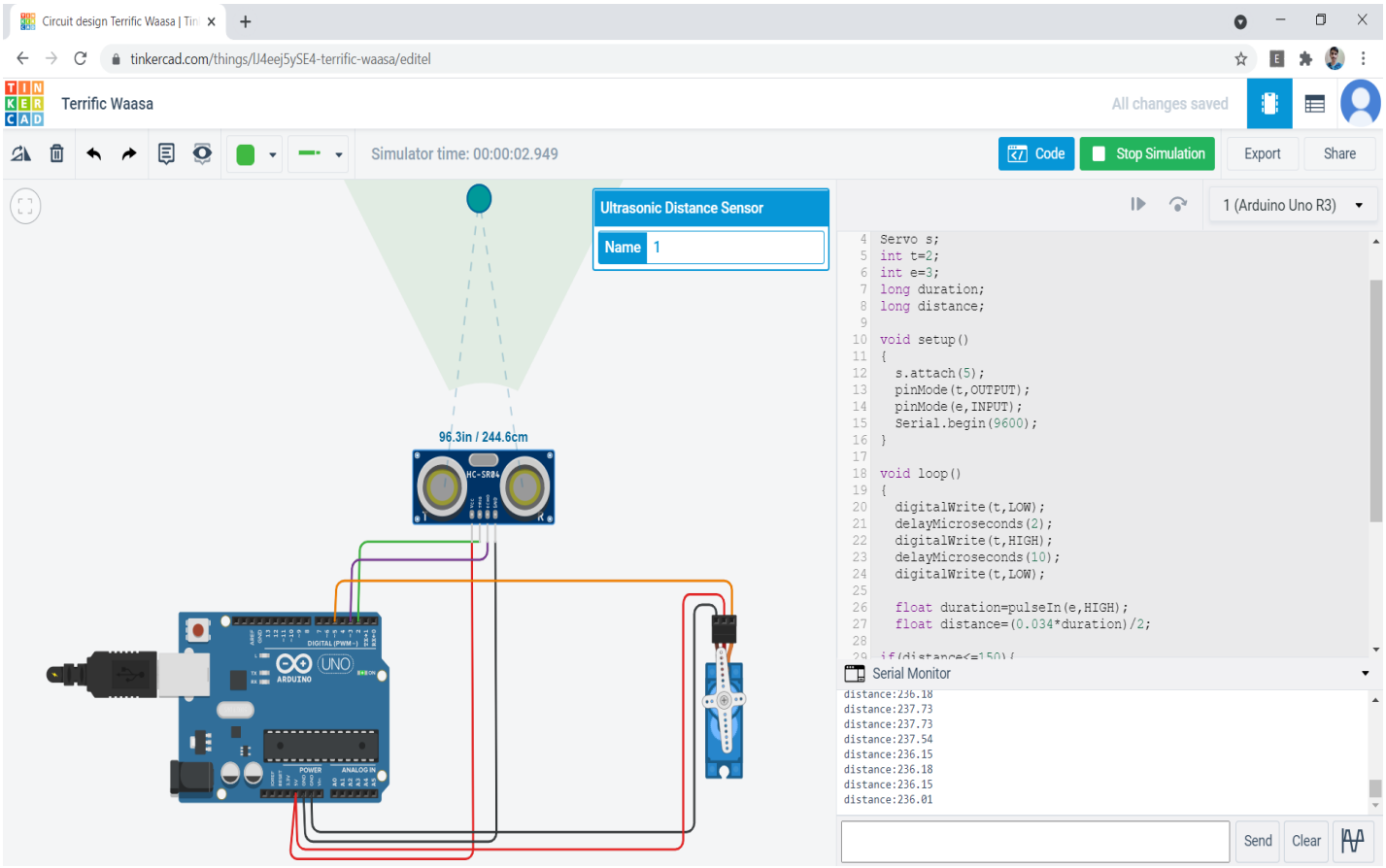
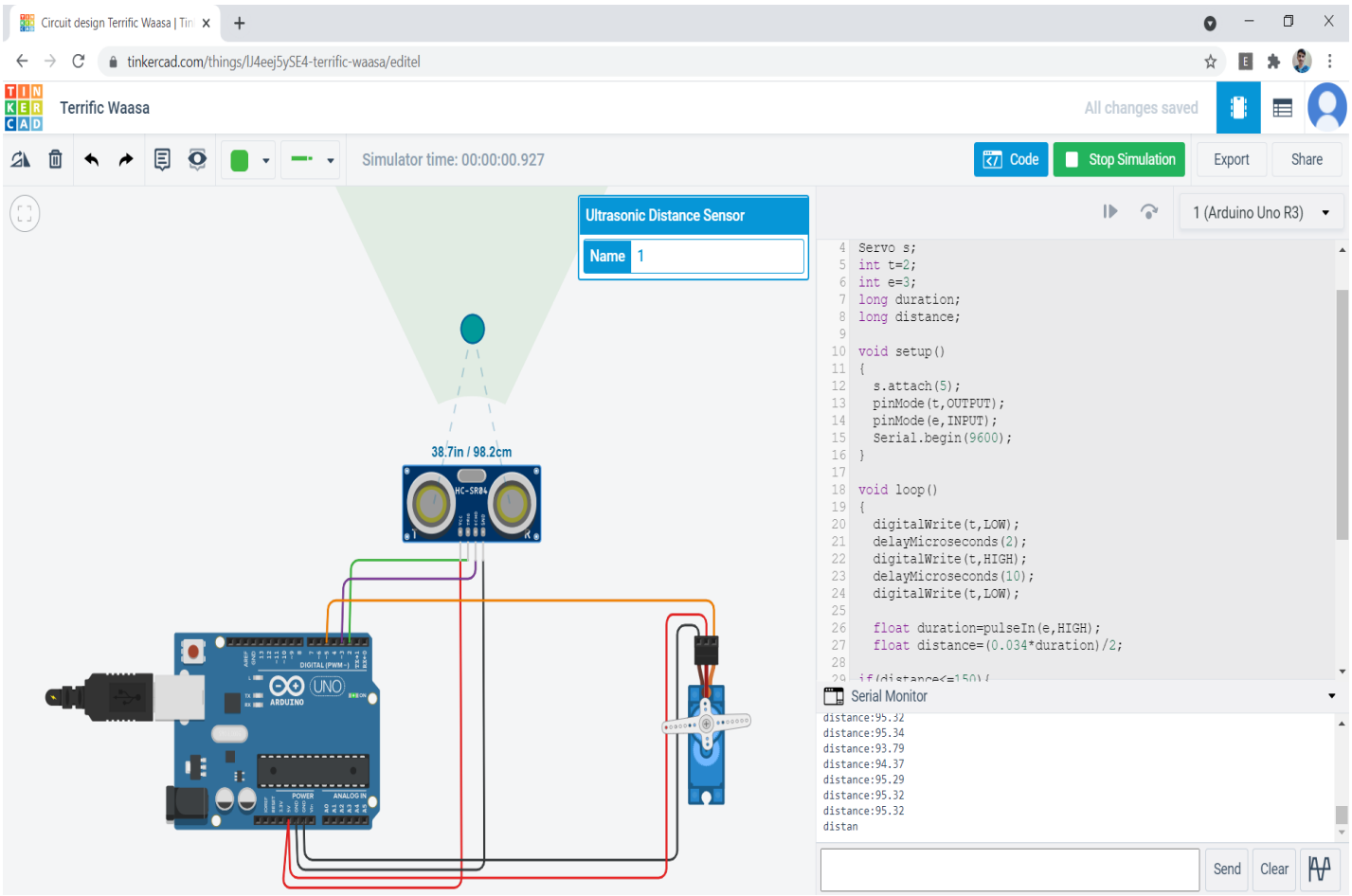
Q. Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. If any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

Code:

```
// C++ code
//
#include<Servo.h>
Servo s;
int t=2;
int e=3;
long duration;
long distance;
void setup()
{
  s.attach(5);
  pinMode(t,OUTPUT);
  pinMode(e,INPUT);
  Serial.begin(9600);
}


void loop()
```

```
{
  digitalWrite(t,LOW);
  delayMicroseconds(2);
  digitalWrite(t,HIGH);
  delayMicroseconds(10);
  digitalWrite(t,LOW);

  float duration=pulseIn(e,HIGH);
  float distance=(0.034*duration)/2;

if(distance<=150){

  s.write(180);
  }
  else{
    s.write(0);}

 Serial.print("distance:");
 Serial.println(distance);

 delay(1);

}
```


Circuit design Terrific Waasa | Tin
tinkercad.com/things/lJ4eej5ySE4-terrific-waasa/editel
Terrific Waasa
All changes saved
Simulator time: 00:00:02.949
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
96.3in / 244.6cm
HC-SR04
Servo s;
int t=2;
int e=3;
long duration;
long distance;
void setup()
{
s.attach(5);
pinMode(t,OUTPUT);
pinMode(e,INPUT);
Serial.begin(9600);
}
void loop()
{
digitalWrite(t,LOW);
delayMicroseconds(2);
digitalWrite(t,HIGH);
delayMicroseconds(10);
digitalWrite(t,LOW);
float duration=pulseIn(e,HIGH);
float distance=(0.034*duration)/2;
Serial Monitor
distance:236.18
distance:237.73
distance:237.73
distance:237.54
distance:236.15
distance:236.18
distance:236.15
distance:236.01
Send
Clear


Circuit design Terrific Waasa | Tin
tinkercad.com/things/lJ4eej5ySE4-terrific-waasa/editel
Terrific Waasa
All changes saved
Simulator time: 00:00:00.927
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
38.7in / 98.2cm
HC-SR04
Servo s;
int t=2;
int e=3;
long duration;
long distance;
void setup()
{
s.attach(5);
pinMode(t,OUTPUT);
pinMode(e,INPUT);
Serial.begin(9600);
}
void loop()
{
digitalWrite(t,LOW);
delayMicroseconds(2);
digitalWrite(t,HIGH);
delayMicroseconds(10);
digitalWrite(t,LOW);
float duration=pulseIn(e,HIGH);
float distance=(0.034*duration)/2;
Serial Monitor
distance:95.34
distance:93.79
distance:94.37
distance:95.29
distance:95.32
distance:95.32
Send
Clear