

Assignment-2

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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;

void setup()
{
  s.attach(7);
  pinMode(2, OUTPUT);
  pinMode(3, INPUT);
  Serial.begin(9600);
}

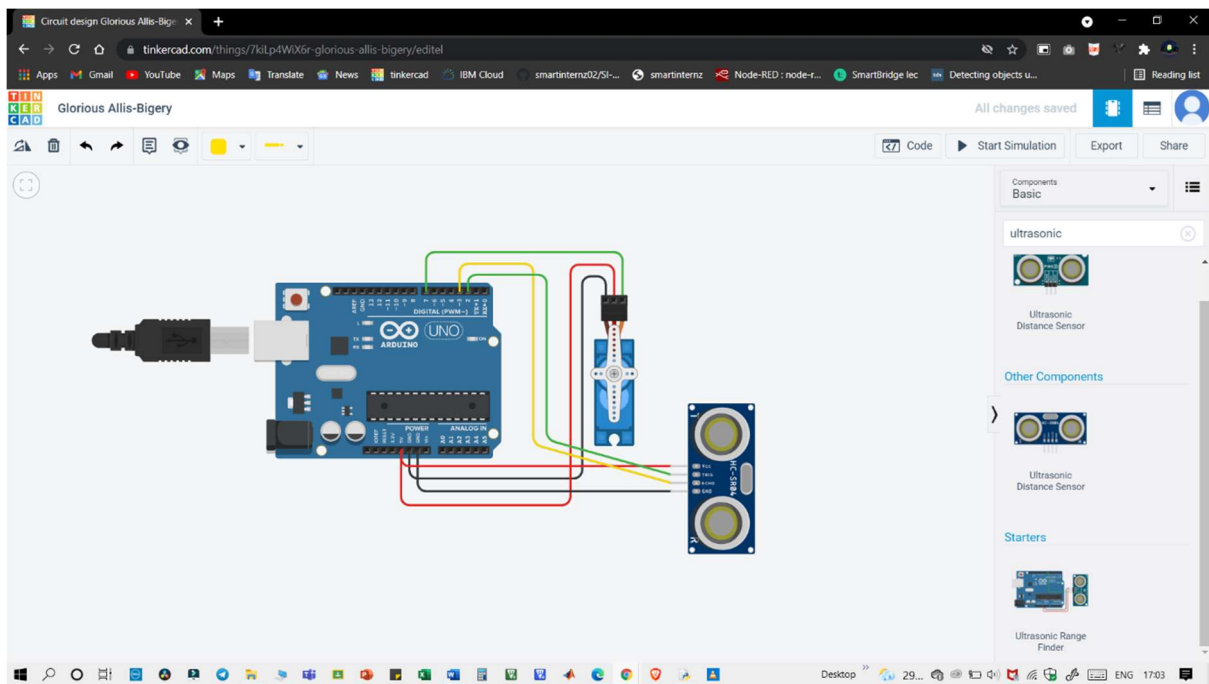
void loop()
{
  digitalWrite(2, LOW);
  digitalWrite(2, HIGH);
  delayMicroseconds(10);
  digitalWrite(2, LOW);
  float dur = pulseIn(3, HIGH);
  float dis = (dur * 0.0343)/2;
  Serial.print("Distance in cm: ");
  Serial.println(dis);
  if(dis<100)
  {
```

```

s.write(90);
delay(1000);
}
else
{
s.write(0);
delay(1000);
}
}

```

Before simulation:



After simulation:

Ultrasonic Distance Sensor

Name 1

```
1 #include<Servo.h>
2 Servo s;
3 void setup()
4 {
5   s.attach(7);
6   pinMode(2, OUTPUT);
7   pinMode(3, INPUT);
8   Serial.begin(9600);
9 }
10
11 void loop()
12 {
13   digitalWrite(2, LOW);
14   digitalWrite(2, HIGH);
15   delayMicroseconds(10);
16   digitalWrite(2, LOW);
17   float dur = pulseIn(3, HIGH);
18   float dis = (dur * 0.0343)/2;
19   Serial.print("Distance in cm: ");
20   Serial.println(dis);
21   if(dis<100)
22   {
23     s.write(90);
24     delay(1000);
25 }
```

Serial Monitor

Distance in cm: 202.75
Distance in cm: 203.48
Distance in cm: 202.08
Distance in cm: 202.08
Distance in cm: 203.45
Distance in cm: 202.08
Distance in cm: 202.08
Distance in cm: 203.48

Ultrasonic Distance Sensor

Name 1

```
1 #include<Servo.h>
2 Servo s;
3 void setup()
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5   s.attach(7);
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11 void loop()
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13   digitalWrite(2, LOW);
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17   float dur = pulseIn(3, HIGH);
18   float dis = (dur * 0.0343)/2;
19   Serial.print("Distance in cm: ");
20   Serial.println(dis);
21   if(dis<100)
22   {
23     s.write(90);
24     delay(1000);
25 }
```

Serial Monitor

Distance in cm: 202.08
Distance in cm: 203.48
Distance in cm: 202.04
Distance in cm: 202.08
Distance in cm: 202.83
Distance in cm: 54.04
Distance in cm: 54.45
Distance in cm: 54.64