PARAMATHMUNI V N S SAI SARAN

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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.

Software: Thinkercad

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(180);
```
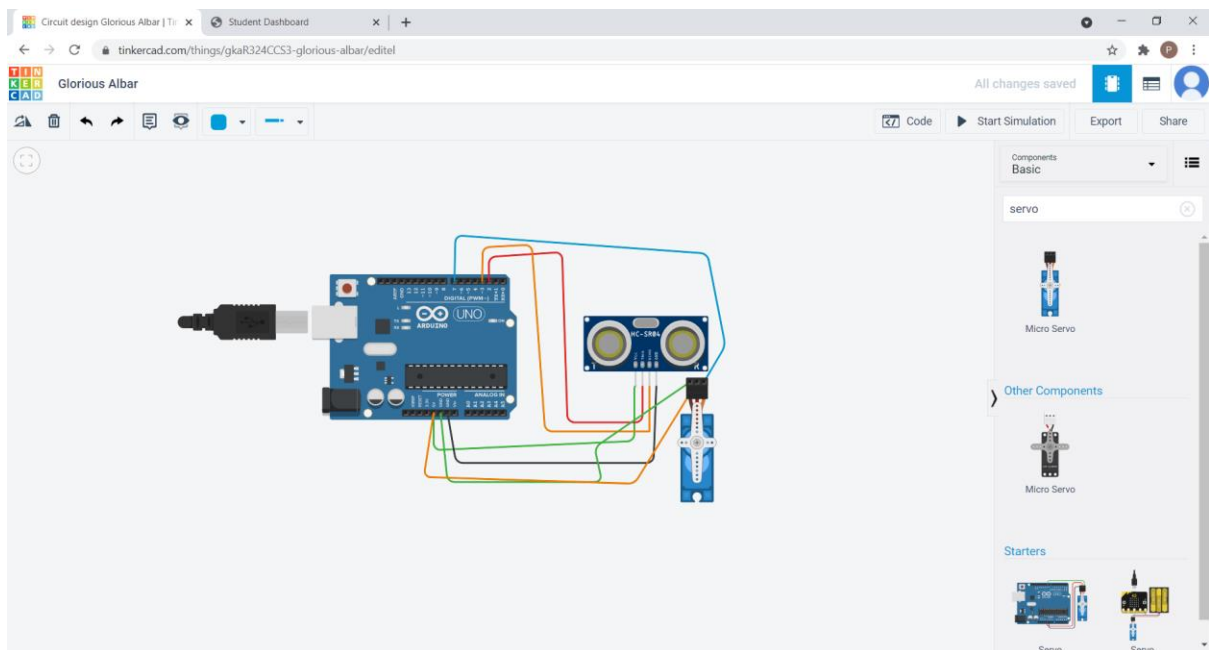
```
    delay(1000);
  }
  else
  {
    s.write(0);
    delay(1000);
  }
}
```

Before Simulation:



After simulation:

```
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(180);
24     delay(1000);
25   }
```

Serial Monitor

```
Distance in cm: 92.27
Distance in cm: 92.27
Distance in cm: 91.63
Distance in cm: 92.27
Distance in cm: 92.27
Distance in cm: 90.84
Distance in cm: 92.27
Distance in cm: 92.27
```