ASSIGNMENT – 2

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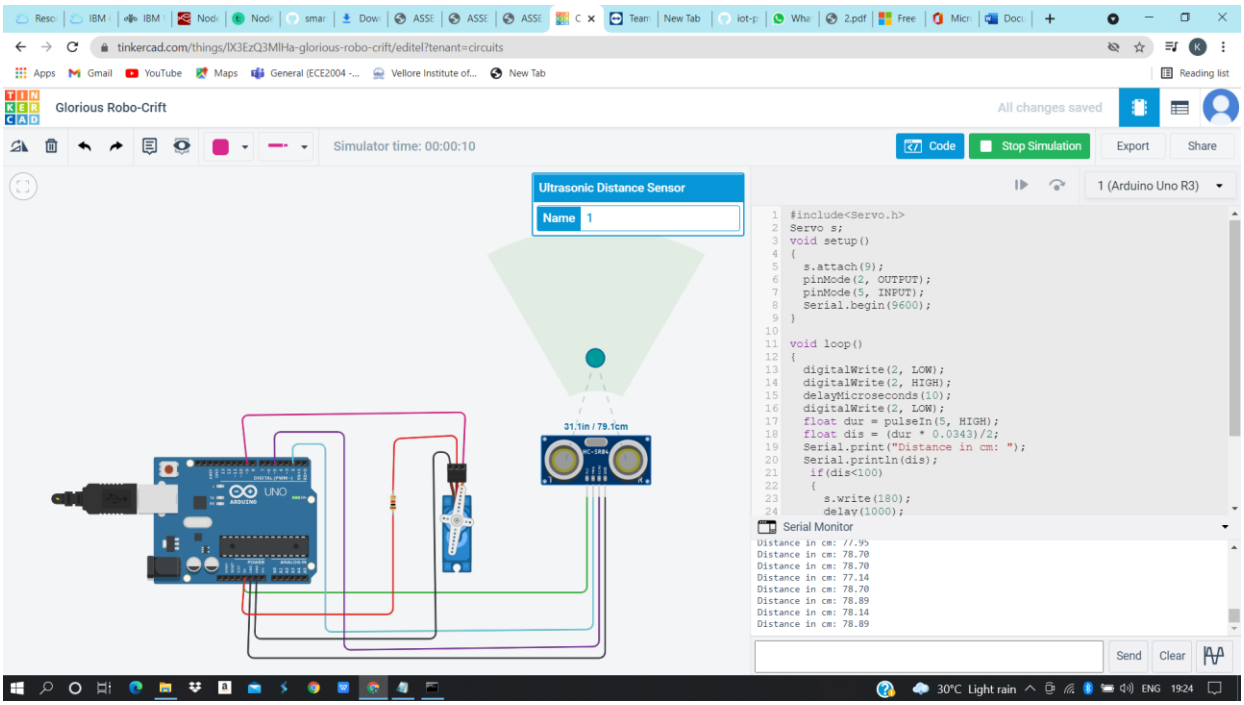
Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. if any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

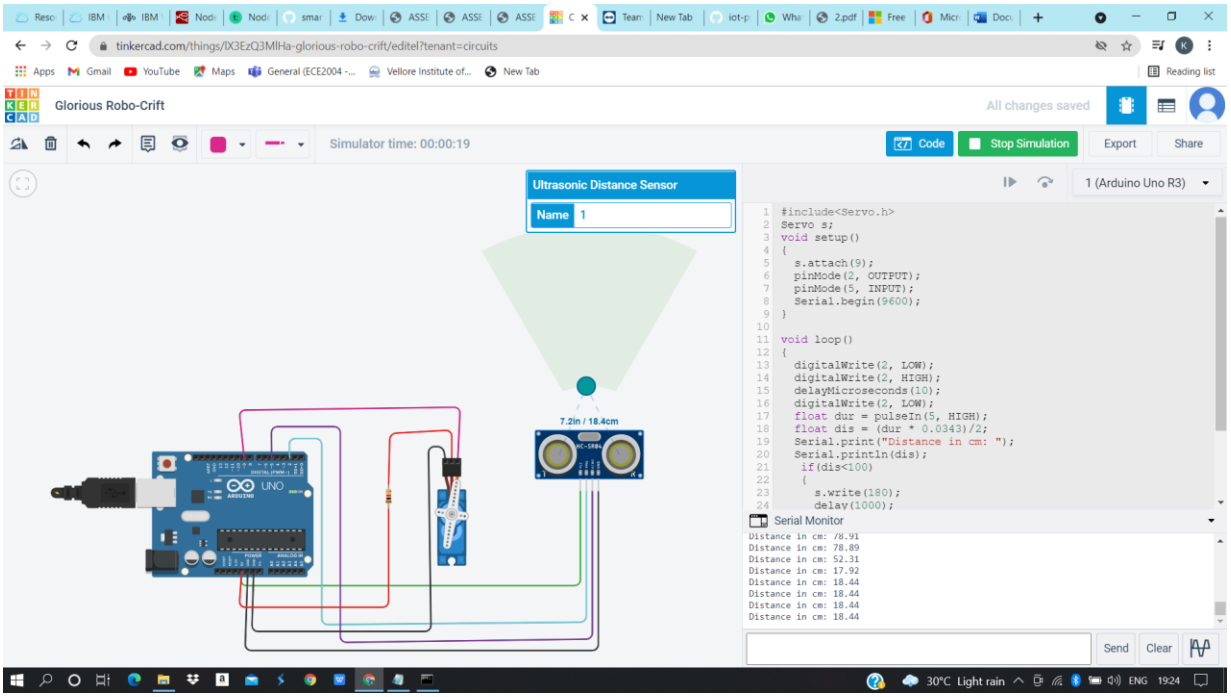
TINKERCARD CODE :

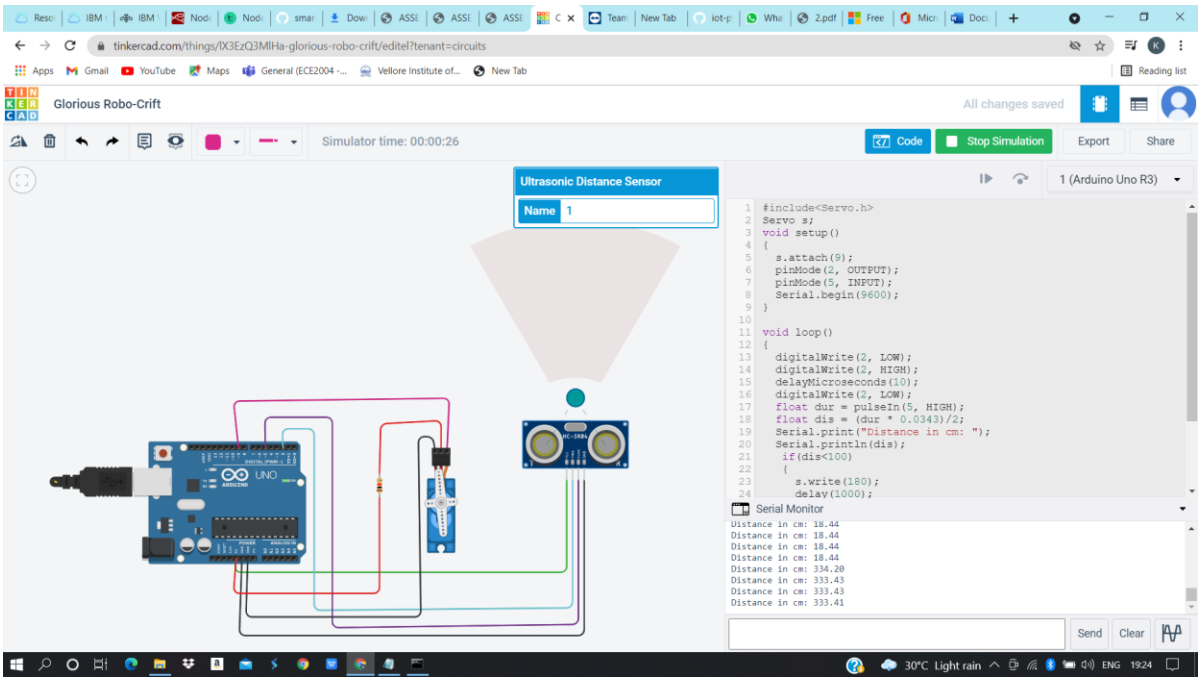
```
#include<Servo.h>
Servo s;
void setup()
{
  s.attach(9);
  pinMode(2, OUTPUT);
  pinMode(5, INPUT);
  Serial.begin(9600);
}

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

```
 float dur = pulseIn(5, 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);
 }
}
```

OUTPUT :


tinkercad.com/things/lX3EzQ3MlHa-glorious-robo-crift/editel?tenant=circuits
Glorious Robo-Crift
All changes saved
Simulator time: 00:00:10
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
#include<Servo.h>
Servo s;
void setup()
{
s.attach(9);
pinMode(2, OUTPUT);
pinMode(5, INPUT);
Serial.begin(9600);
}
void loop()
{
digitalWrite(2, LOW);
digitalWrite(2, HIGH);
delayMicroseconds(10);
digitalWrite(2, LOW);
float dur = pulseIn(5, HIGH);
float dis = (dur * 0.0343)/2;
Serial.print("Distance in cm: ");
Serial.println(dis);
if(dis<100)
{
s.write(180);
delay(1000);
31.1in / 79.1cm
Serial Monitor
Distance in cm: 77.95
Distance in cm: 78.70
Distance in cm: 78.70
Distance in cm: 77.14
Distance in cm: 78.70
Distance in cm: 78.89
Distance in cm: 78.14
Distance in cm: 78.89
Send
Clear
30°C Light rain
ENG
19:24


tinkercad.com/things/lX3EzQ3MlHa-glorious-robo-crift/editel?tenant=circuits
Glorious Robo-Crift
All changes saved
Simulator time: 00:00:19
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
#include<Servo.h>
Servo s;
void setup()
{
s.attach(9);
pinMode(2, OUTPUT);
pinMode(5, INPUT);
Serial.begin(9600);
}
void loop()
{
digitalWrite(2, LOW);
digitalWrite(2, HIGH);
delayMicroseconds(10);
digitalWrite(2, LOW);
float dur = pulseIn(5, HIGH);
float dis = (dur * 0.0343)/2;
Serial.print("Distance in cm: ");
Serial.println(dis);
if(dis<100)
{
s.write(180);
delay(1000);
7.2in / 18.4cm
Serial Monitor
Distance in cm: 78.91
Distance in cm: 78.89
Distance in cm: 52.31
Distance in cm: 17.92
Distance in cm: 18.44
Distance in cm: 18.44
Distance in cm: 18.44
Distance in cm: 18.44
Send
Clear
30°C Light rain
ENG
19:24


tinkercad.com/things/IX3EzQ3MlHa-glorious-robo-crift/editel?tenant=circuits
Glorious Robo-Crift
All changes saved
Simulator time: 00:00:26
Code
Stop Simulation
Export
Share
Ultrasonic Distance Sensor
Name 1
1 (Arduino Uno R3)
#include<Servo.h>
Servo s;
void setup()
{
s.attach(9);
pinMode(2, OUTPUT);
pinMode(5, INPUT);
Serial.begin(9600);
}
void loop()
{
digitalWrite(2, LOW);
digitalWrite(2, HIGH);
delayMicroseconds(10);
digitalWrite(2, LOW);
float dur = pulseIn(5, HIGH);
float dis = (dur * 0.0343)/2;
Serial.print("Distance in cm: ");
Serial.println(dis);
if(dis<100)
{
s.write(180);
delay(1000);
Serial Monitor
Distance in cm: 18.44
Distance in cm: 18.44
Distance in cm: 18.44
Distance in cm: 18.44
Distance in cm: 334.20
Distance in cm: 333.43
Distance in cm: 333.43
Distance in cm: 333.41
Send
Clear
30°C Light rain
ENG
1924