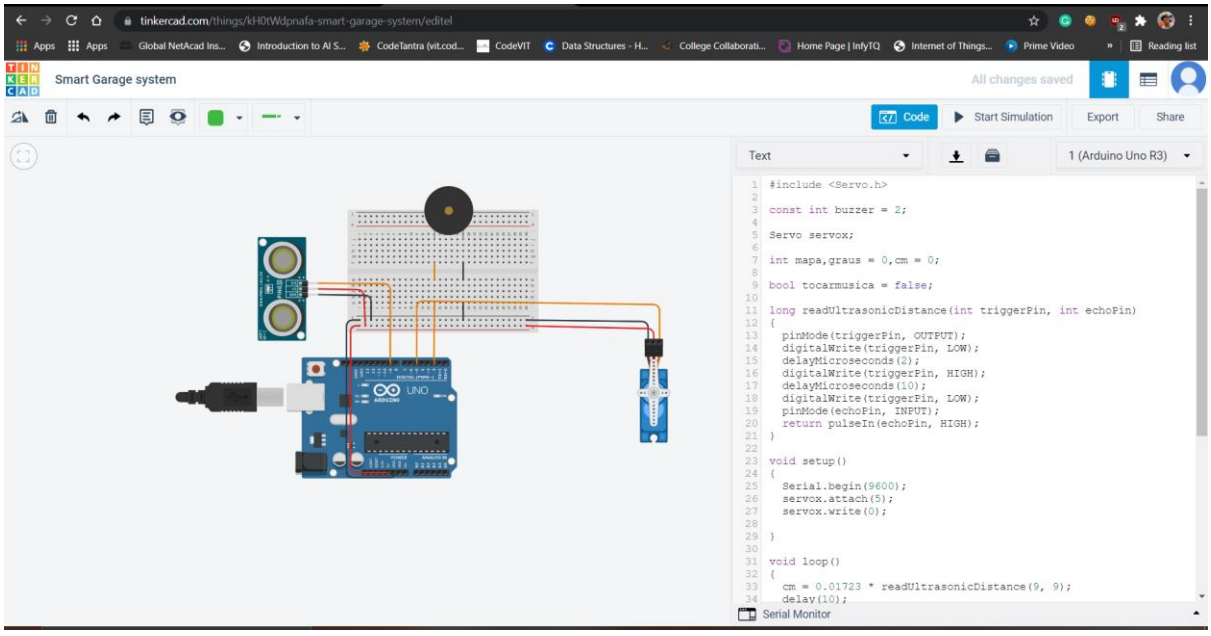
VIT-IoT (INDUSTRY CERTIFICATE INTERNSHIP PROGRAM)

ASSIGNMENT -2

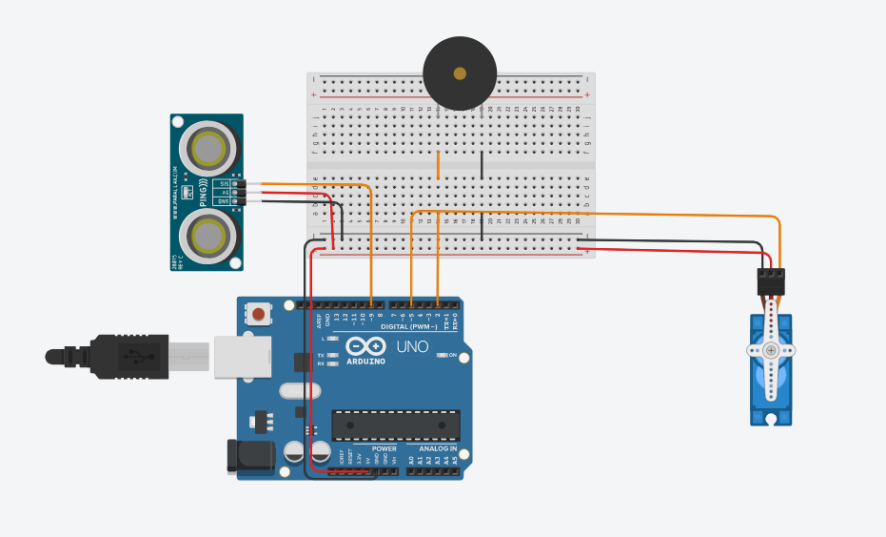
NAME: CHITTARANJAN TADIKONDA

MAIL ID: crchintu07@gmail.com

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.



CIRCUIT DIAGRAM:



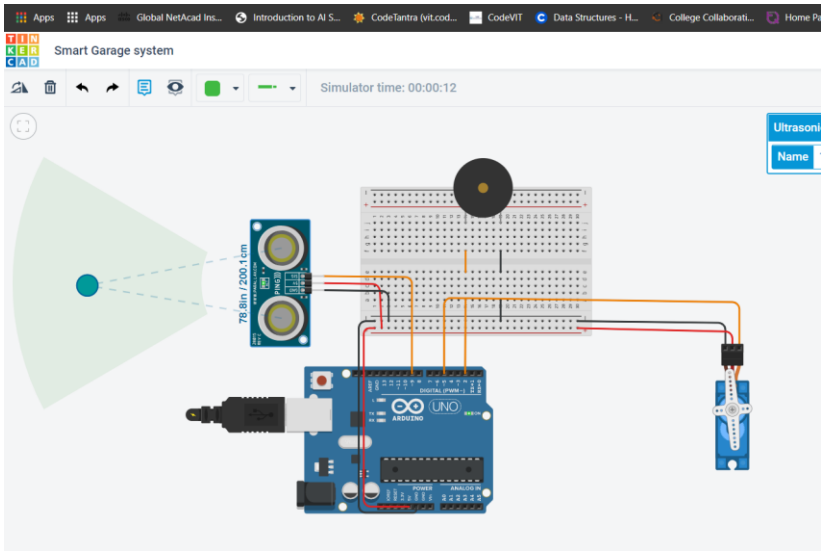
CODE:

```
#include <Servo.h>

const int buzzer = 2;

Servo servox;

int mapa,graus = 0,cm = 0;

bool tocarmusica = false;

long readUltrasonicDistance(int triggerPin, int echoPin)

{

  pinMode(triggerPin, OUTPUT);

  digitalWrite(triggerPin, LOW);

  delayMicroseconds(2);

  digitalWrite(triggerPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(triggerPin, LOW);

  pinMode(echoPin, INPUT);

  return pulseIn(echoPin, HIGH);
```

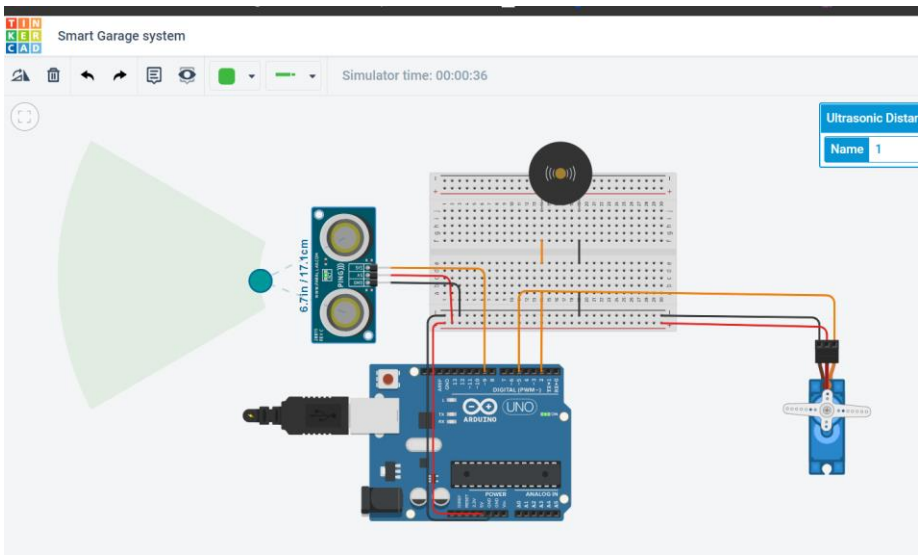
```
}
void setup()
{
  Serial.begin(9600);
  servox.attach(5);
  servox.write(0);

}
void loop()
{
  cm = 0.01723 * readUltrasonicDistance(9, 9);
  delay(10);
  if(cm < 20){
    servox.write(90);
    tocarmusica = true;
  }
  else if(20 < cm && cm < 60){
    mapa = map(cm, 20,60, 0, 90);
    graus = 90 - mapa;
    servox.write(graus);
  }else{
    servox.write(0);
  }
delay(10);
  if(tocarmusica){
    tone(buzzer, 1000, 500);
    tocarmusica = false;
```

```
}
}
```

WORKING:



When there no vehicle the servo motor does not rotate so the garage door is closed.



When there is a vehicle near the garage the servo motor rotates so the garage door opens.

Conclusion: This the working of Automatic garage door opening system which uses ultrasonic sensor and servo motor to work automatically. When the car is near the garage it opens the door and when it is far the door is closed.