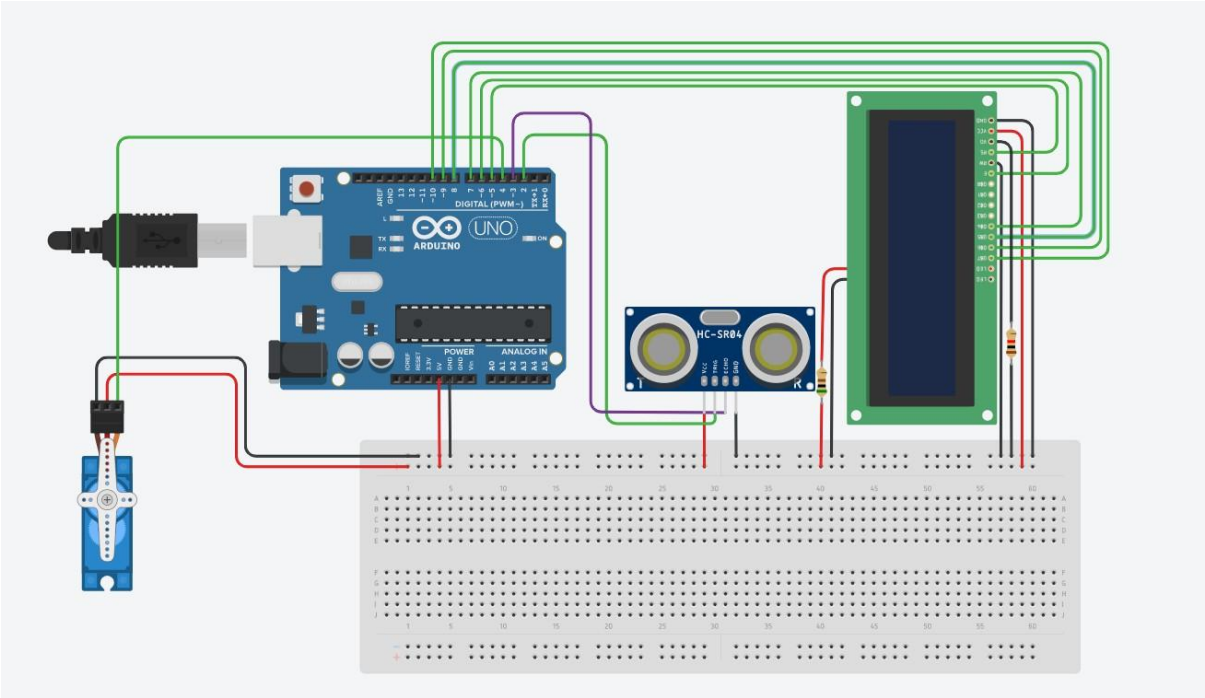
Assignment – 2

Name – Pratham Barot

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 –



Arduino Code –

```
#include<Servo.h>

#include

<LiquidCrystal.h> const

int rs = 5;

const int en = 6;

const int d4 = 7;

const int d5 = 8;

const int d6 = 9;

const int d7 = 10;

Servo s;

LiquidCrystal

lcd(rs,en,d4,d5,d6,d7); void setup()

{

 s.attach(4);

 pinMode(2,OUTPUT)

 ; pinMode(3,INPUT);

 lcd.begin(16,2);

}


void loop()

{

 float distance = mot();

 dispsys(distance);

}


float mot()

{

 digitalWrite(2,LOW);

 digitalWrite(2,HIGH);

 delayMicroseconds(10);

 digitalWrite(2, LOW);
```

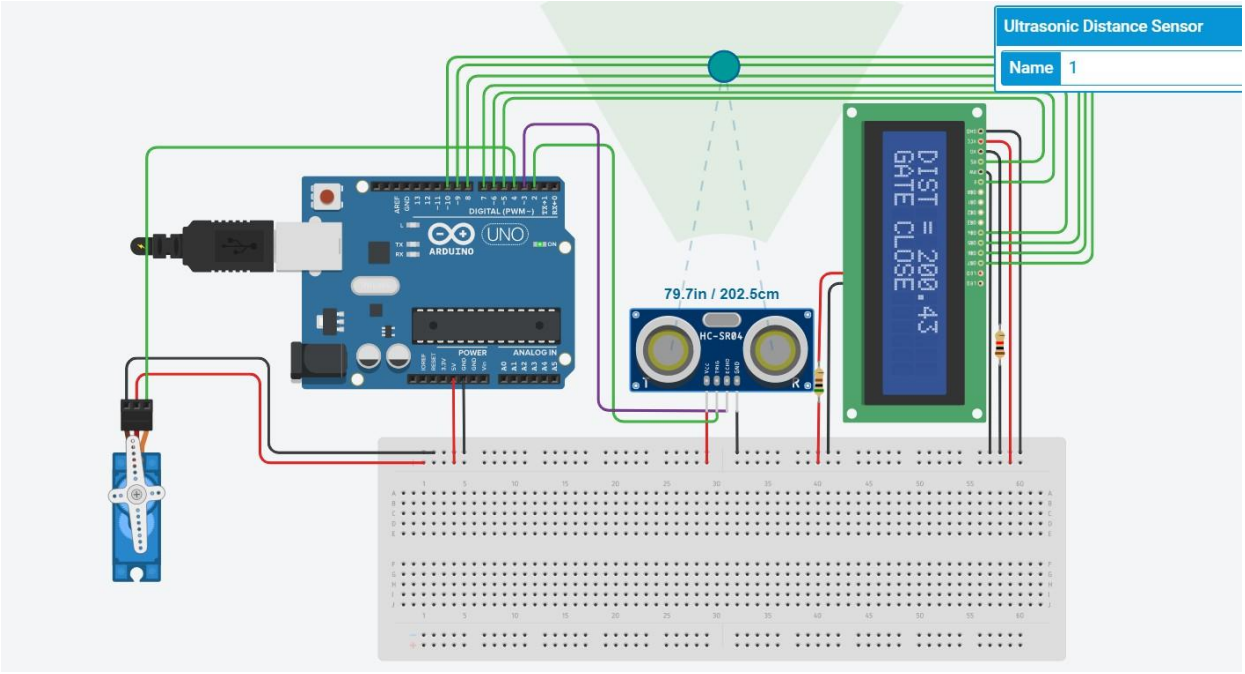
```
 float dur = pulseIn(3,
 HIGH); float dist = (dur *
 0.0343)/2; return dist;
}

void dispsys(float dis)
{
 if(dis<=200)
 {
  lcd.clear();
        lcd.setCursor(0,0);
        lcd.print("DIST = ");
        lcd.print(dis);
  lcd.setCursor(0,1);
  lcd.print("GATE
  OPEN"); s.write(90);
  delay(10000);
 }

 lcd.clear();
 lcd.setCursor(0,0);
 lcd.print("DIST = ");
 lcd.print(dis);
 lcd.setCursor(0,1);
 lcd.print("GATE
 CLOSE"); s.write(0);
 delay(1000);
}
```

Output –

DISTANCE > 200 CM THEREFORE GATE IS CLOSED



DISTANCE < 200 CM THEREFORE GATE IS OPEN