Assignment-2

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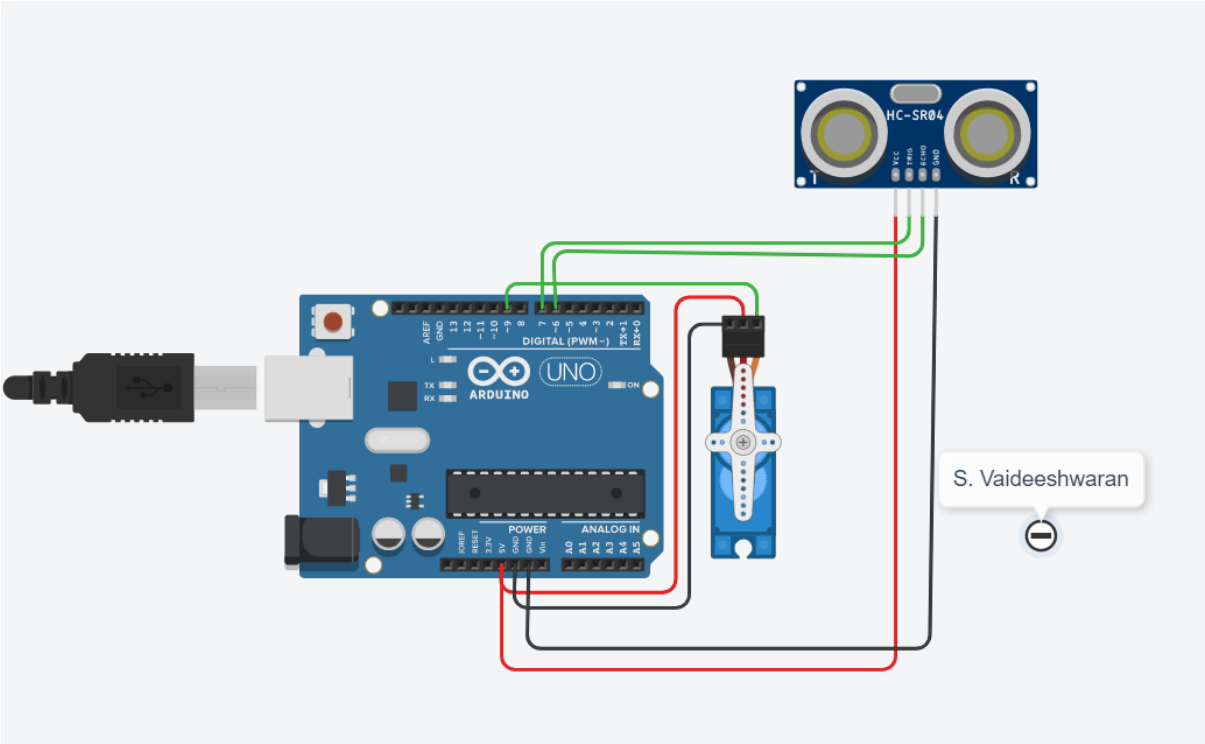
Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. If any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

Circuit in tinkercad:



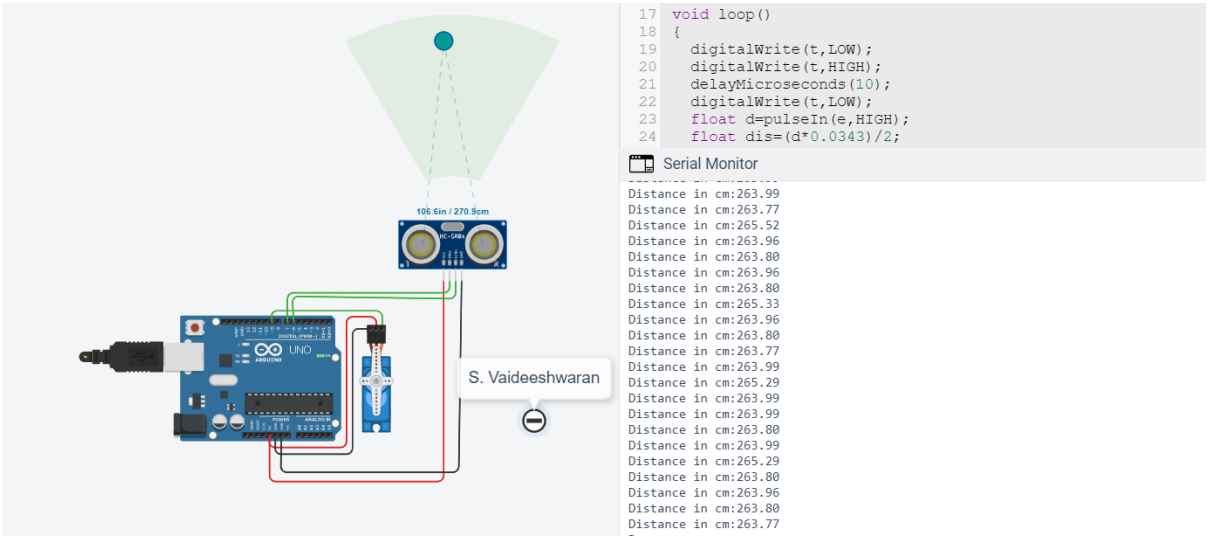
Code:

```
#include <Servo.h>


int pos = 0;

int t=7;

int e=6;

Servo s;
```

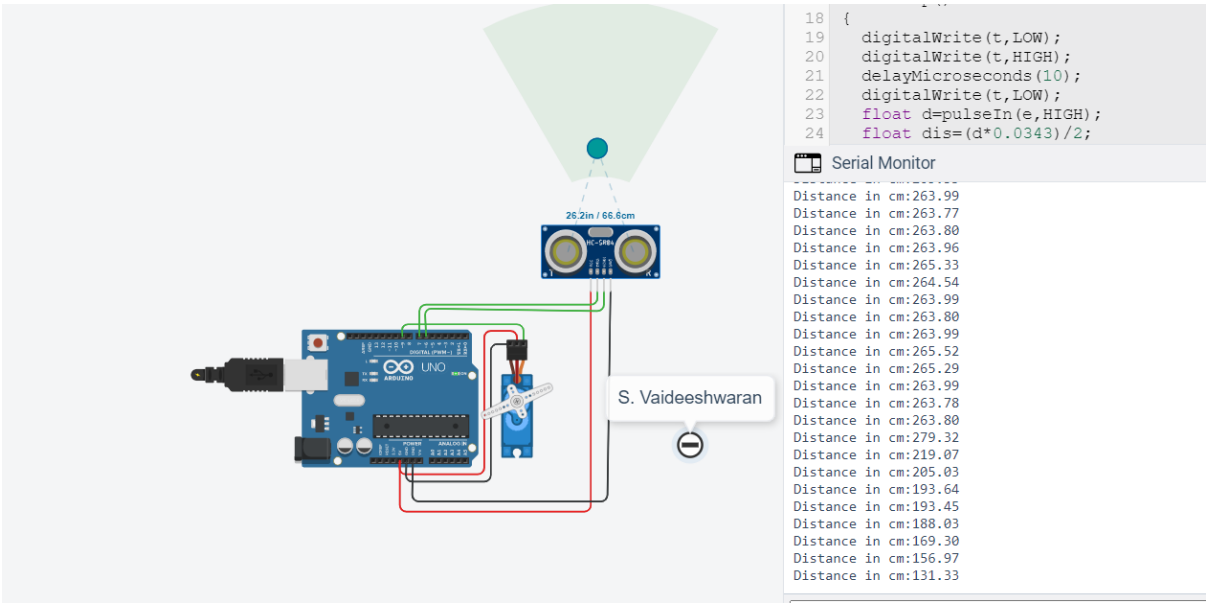
```
void setup()
{
  s.attach(9, 500, 2500);
  pinMode(t,OUTPUT);
  pinMode(e,INPUT);
  Serial.begin(9600);
  s.write(0);
}
void loop()
{
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(10);
  digitalWrite(t,LOW);
  float d=pulseIn(e,HIGH);
  float dis=(d*0.0343)/2;
  Serial.print("Distance in cm:");
  Serial.println(dis);
  if(dis<150)
  {  for (pos = 0; pos <= 180; pos += 1) {
    s.write(pos);
    delay(15); // Wait for 15 millisecond(s)
  }
    delay(2000);//wait 2 sec after opening the door
  for (pos = 180; pos >= 0; pos -= 1) {
    s.write(pos);
    delay(15); // Wait for 15 millisecond(s)
  }
  }
```

}

OUTPUT:



Distance greater than 150



Distance less than 150, servo motor automatically open, wait for 2 seconds and closes

Tinkercad Link:

https://www.tinkercad.com/things/kS8850oT9px-sizzling-amberis/editel?sharecode=4f1Q7-JUY5Y54qkPngpB8FInVxPvXN5C-twO0LLohh4