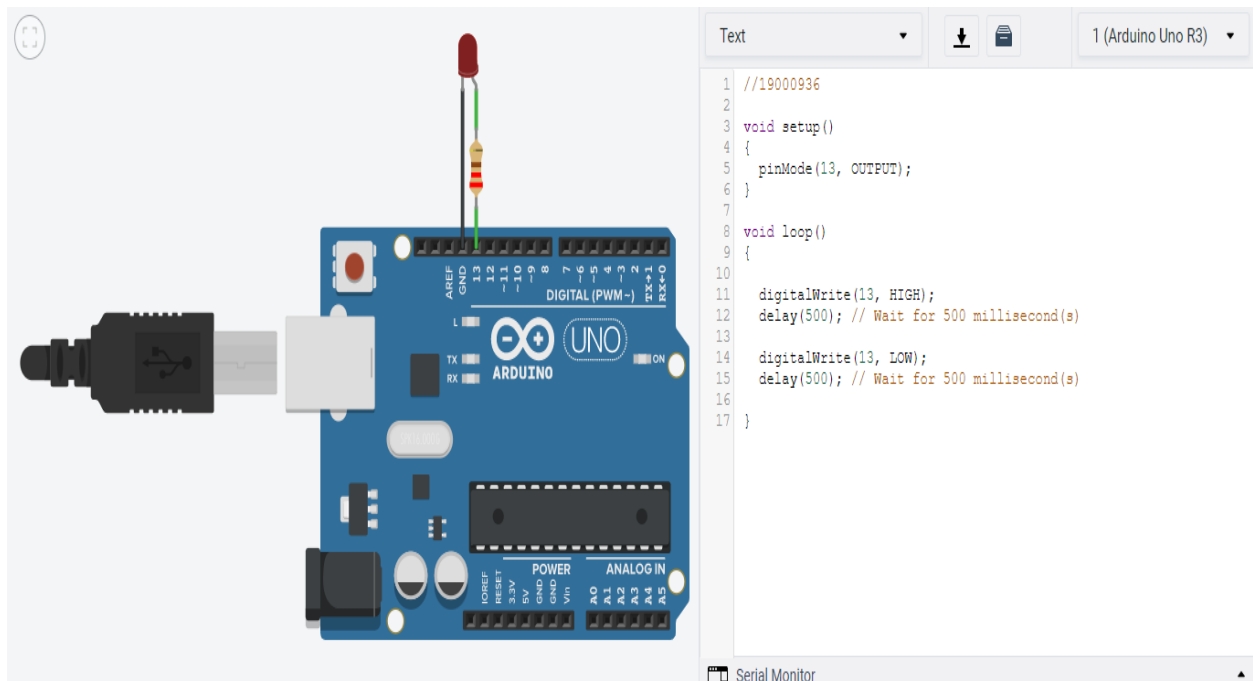
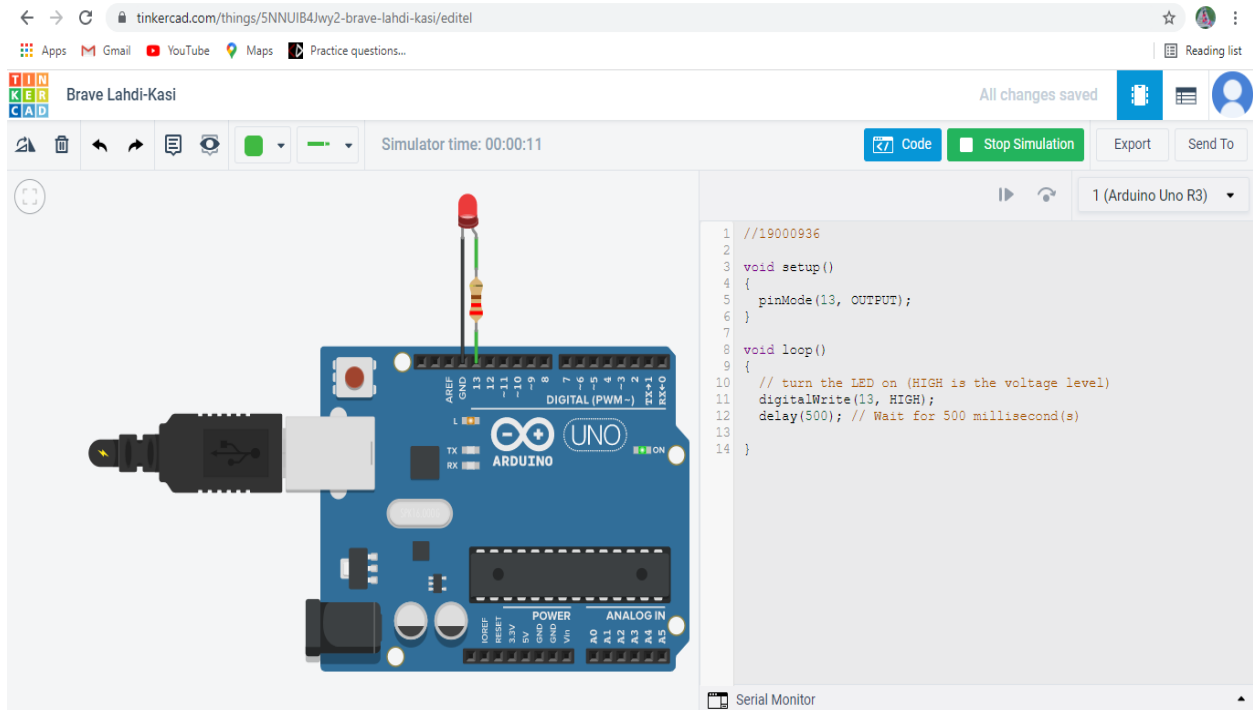


Assignment 02

1. Turn LED on / off with 500ms pause

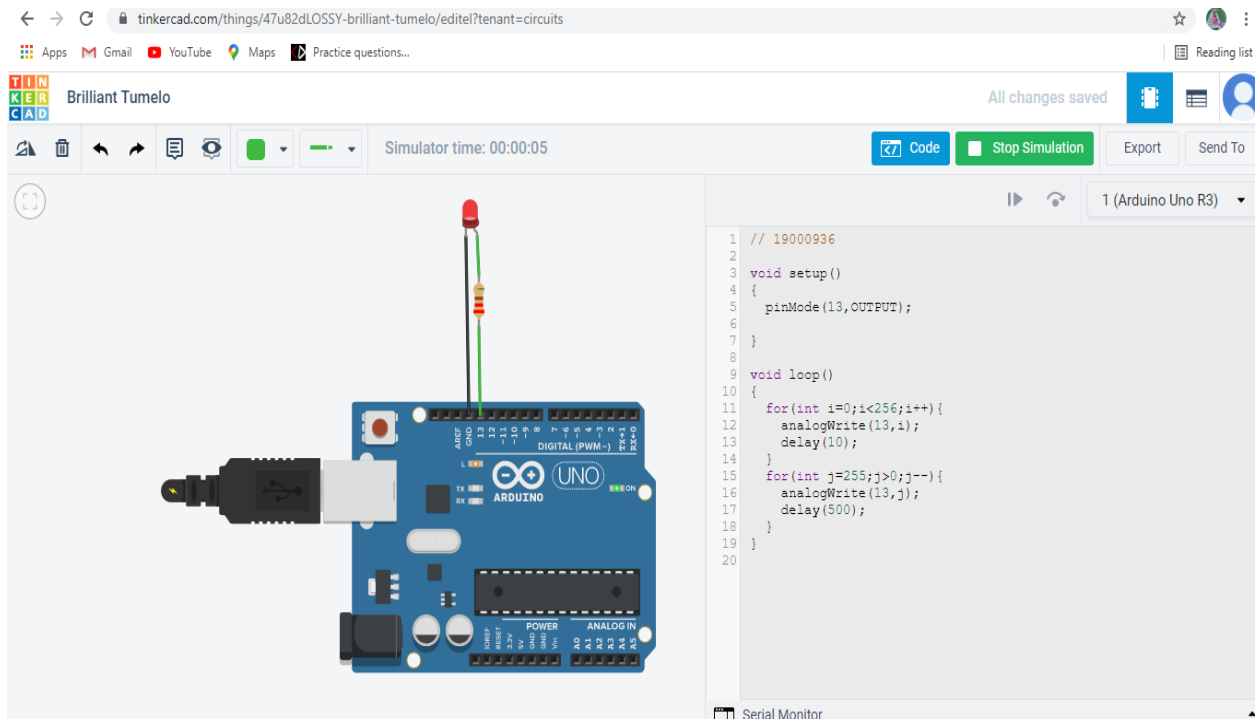


```
//19000936
```

```
void setup()
{
  pinMode(13, OUTPUT);
}

void loop()
{
  digitalWrite(13, HIGH);
  delay(500); // Wait for 500 millisecond(s)
  digitalWrite(13, LOW);
  delay(500); // Wait for 500 millisecond(s)
}
```

2. Tune LED on / off by gradually changing the led brightness



```
// 19000936
```

```
void setup()
```

```
{
```

```
  pinMode(13,OUTPUT);
```

```
}
```

```
void loop()
```

```
{
```

```
  for(int i=0;i<256;i++){
```

```
    analogWrite(13,i);
```

```
    delay(10);
```

```
  }
```

```
  for(int j=255;j>0;j--){
```

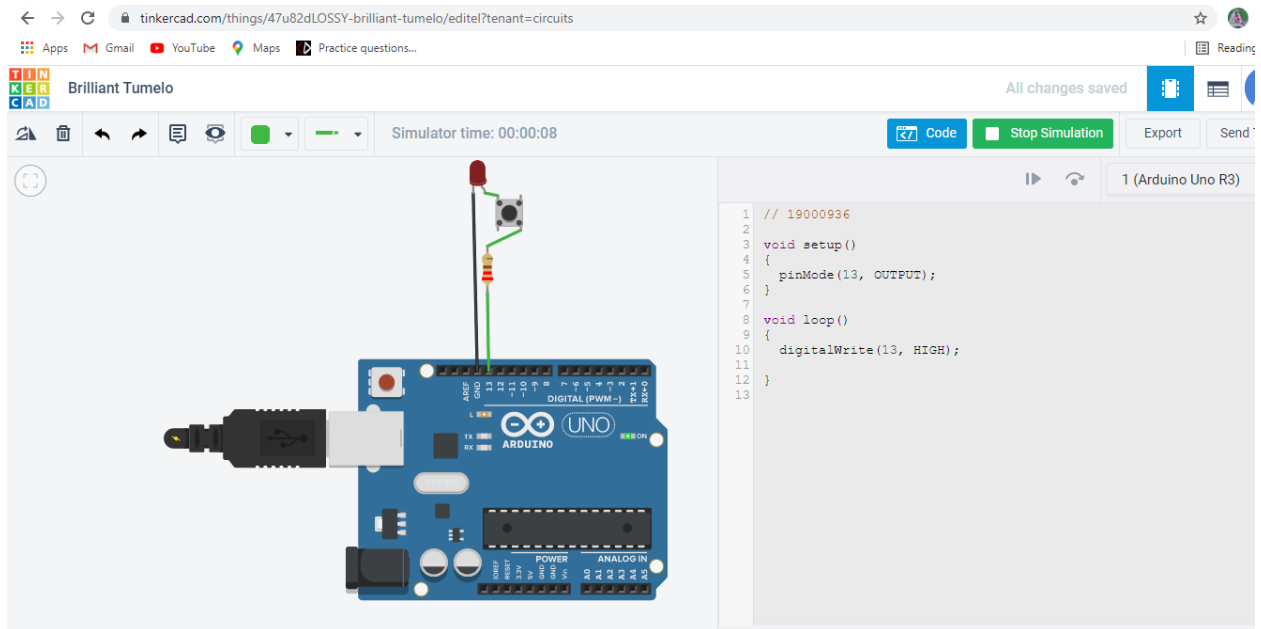
```
    analogWrite(13,j);
```

```
    delay(500);
```

```
  }
```

```
}
```

3. Turn LED on / off by pressing a pushdown button (pressed = led on, released = led off)

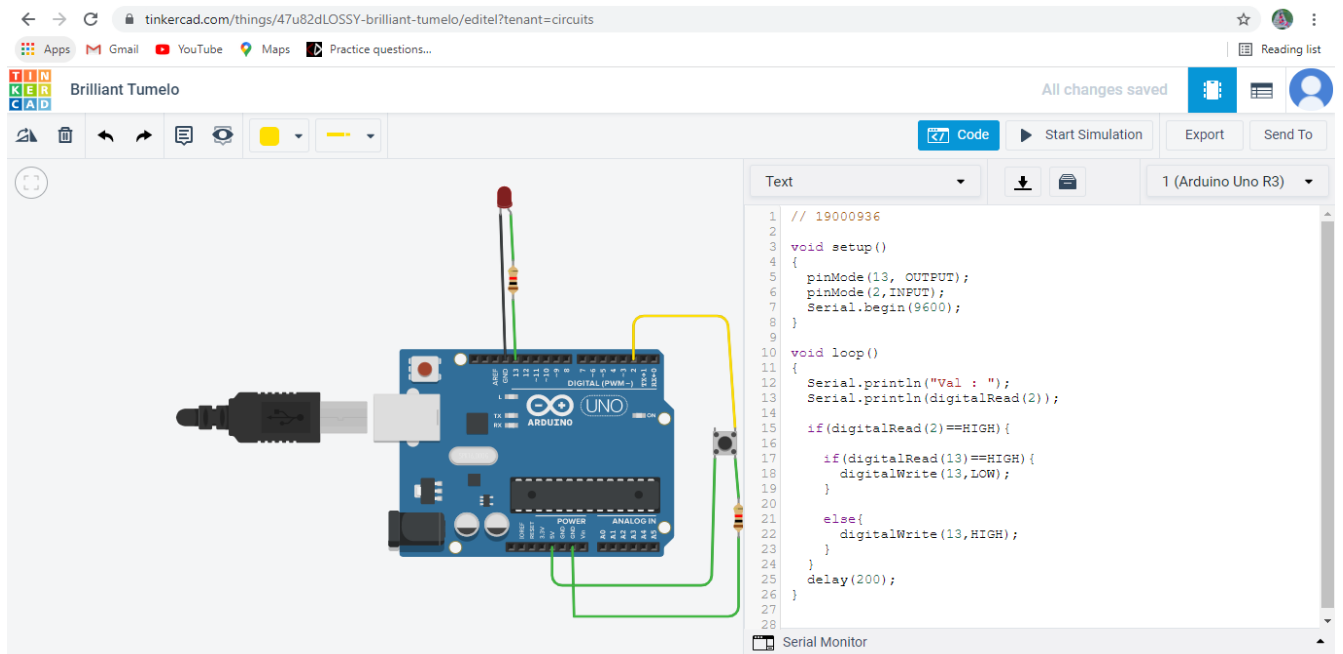


```
// 19000936
```

```
void setup()\n{\n  pinMode(13, OUTPUT);\n}
```

```
void loop()\n{\n  digitalWrite(13, HIGH);\n}
```

4. Toggle LED on / off by pressing a pushdown button



```
// 19000936
```

```
void setup()
```

```
{
```

```
  pinMode(13, OUTPUT);
```

```
  pinMode(2, INPUT);
```

```
  Serial.begin(9600);
```

```
}
```

```
void loop()
```

```
{
```

```
  Serial.println("Val : ");
```

```
  Serial.println(digitalRead(2));
```

```
  if(digitalRead(2)==HIGH){
```

```

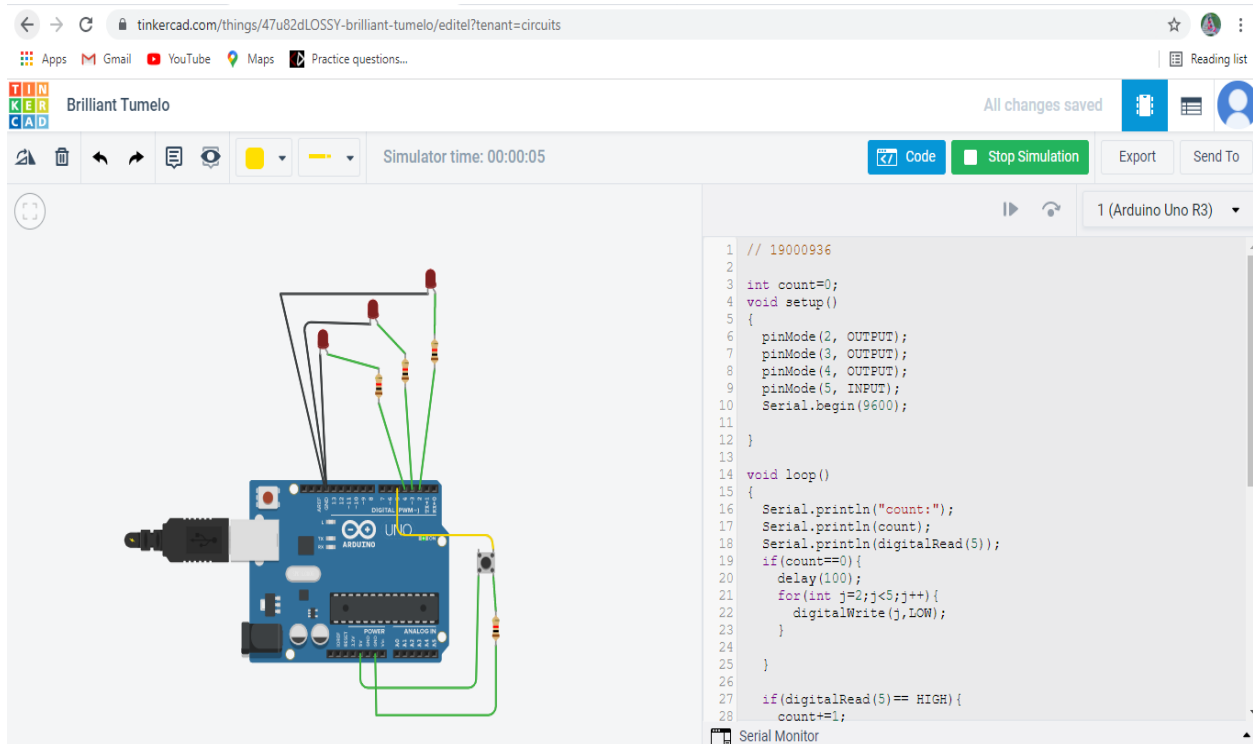
if(digitalRead(13)==HIGH){
    digitalWrite(13,LOW);
}

else{
    digitalWrite(13,HIGH);
}
}

delay(200);
}

```

5. Create 3 LED bit counter by pressing a pushdown button (each button press should increment the counter)



The screenshot displays the Tinkercad web interface for a 3-bit LED counter project. On the left, a circuit diagram shows an Arduino Uno R3 connected to three LEDs and a pushdown button. The LEDs are connected to digital pins 2, 3, and 4, and the button is connected to digital pin 5. On the right, the code for the circuit is shown in the 'Code' tab.

```

1 // 19000936
2
3 int count=0;
4 void setup()
5 {
6   pinMode(2, OUTPUT);
7   pinMode(3, OUTPUT);
8   pinMode(4, OUTPUT);
9   pinMode(5, INPUT);
10  Serial.begin(9600);
11
12 }
13
14 void loop()
15 {
16   Serial.println("count:");
17   Serial.println(count);
18   Serial.println(digitalRead(5));
19   if(count==0){
20     delay(100);
21     for(int j=2;j<5;j++){
22       digitalWrite(j,LOW);
23     }
24   }
25
26   if(digitalRead(5)== HIGH){
27     count+=1;
28

```

The code implements a 3-bit counter. It initializes the count to 0 and sets up pins 2, 3, and 4 as outputs and pin 5 as an input. In the loop, it prints the current count and the state of pin 5. When pin 5 is pressed (HIGH), the count is incremented by 1. The LEDs are controlled by pins 2, 3, and 4, which are currently set to LOW.

```
// 19000936
```

```
int count=0;
```

```
void setup()
```

```
{
```

```
  pinMode(2, OUTPUT);
```

```
  pinMode(3, OUTPUT);
```

```
  pinMode(4, OUTPUT);
```

```
  pinMode(5, INPUT);
```

```
  Serial.begin(9600);
```

```
}
```

```
void loop()
```

```
{
```

```
  Serial.println("count:");
```

```
  Serial.println(count);
```

```
  Serial.println(digitalRead(5));
```

```
  if(count==0){
```

```
    delay(100);
```

```
    for(int j=2;j<5;j++){
```

```
      digitalWrite(j,LOW);
```

```
    }
```

```
}
```

```
if(digitalRead(5)== HIGH){
```

```
  count+=1;
```

```
  if(count<8){
```

```
int c=count;
for(int i=2;i<5;i++){

    if(c%2==1){
        digitalWrite(i, HIGH);
    }

    else{
        digitalWrite(i,LOW);
    }
    c/=2;

}
delay(500);

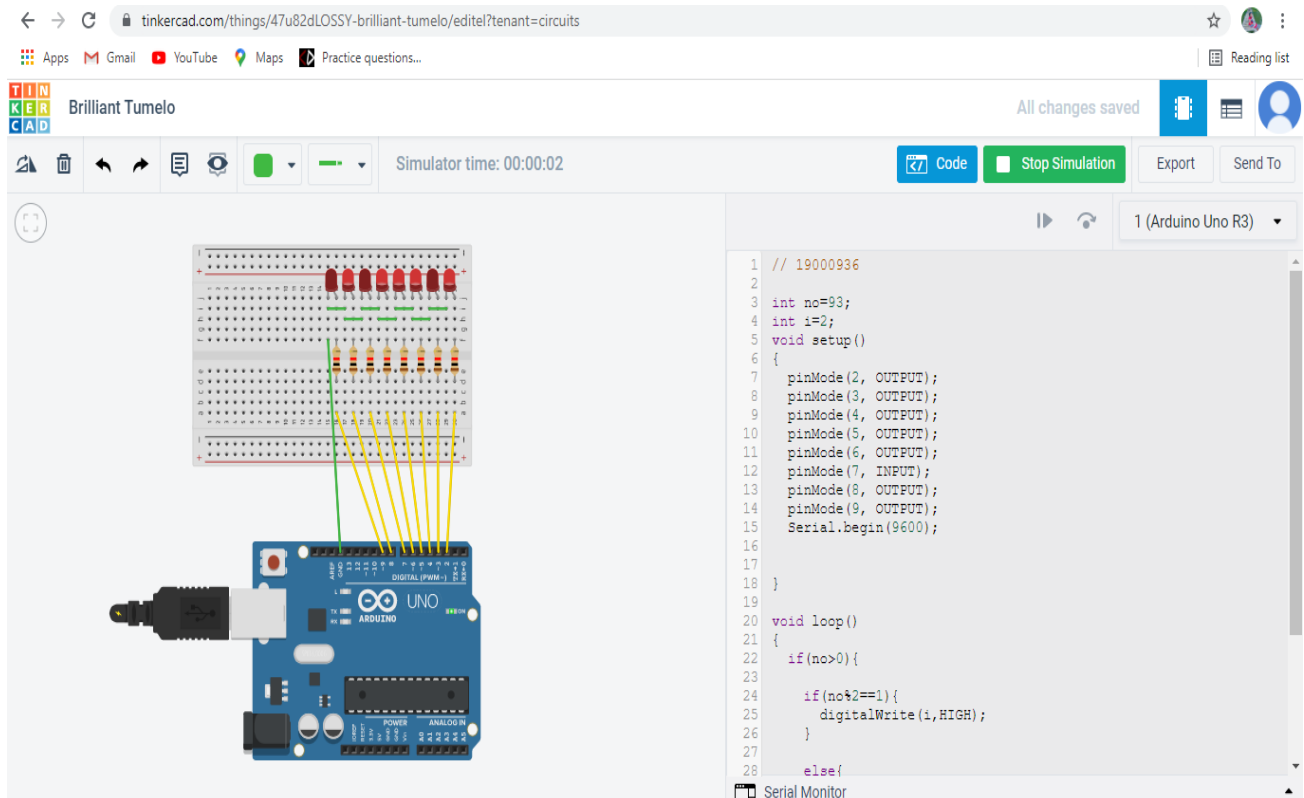
}
else{
    count=0;
}

}
}
```


6. Show the binary pattern of your registration number using LEDs (1s by led on and 0s by led off) (higher marks will be given if you didn't use any loops)

2019/CS/093

93 - 01011101



// 19000936

int no=93;

int i=2;

void setup()

{

pinMode(2, OUTPUT);

pinMode(3, OUTPUT);

pinMode(4, OUTPUT);

pinMode(5, OUTPUT);

pinMode(6, OUTPUT);

```
pinMode(7, INPUT);
pinMode(8, OUTPUT);
pinMode(9, OUTPUT);
Serial.begin(9600);

}

void loop()
{
  if(no>0){

    if(no%2==1){
      digitalWrite(i,HIGH);
    }

    else{
      digitalWrite(i,LOW);
    }

    no/=2;
    i++;
  }
}
```