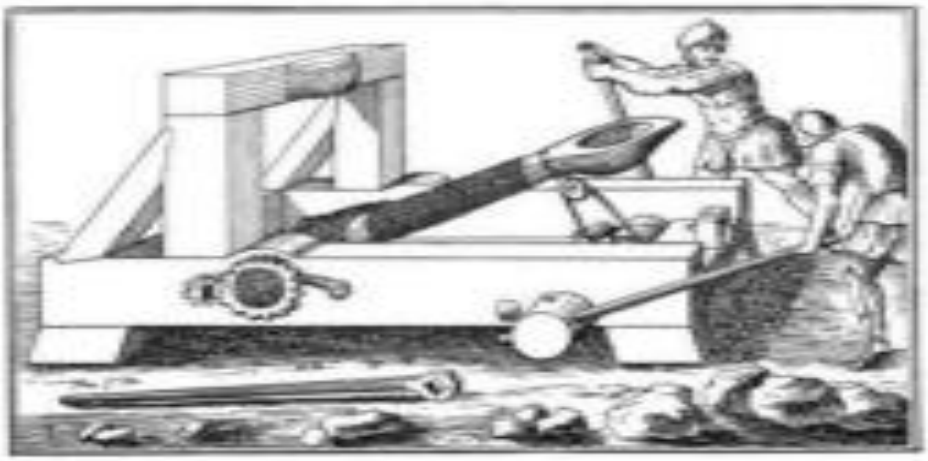
DEPARTMENT
OF
ELECTRONICS AND COMMUNICATION ENGINEERING

THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Handout/Assignment-
for
Engineering Design Project-I (UTA013)



Name: Hardik Verma

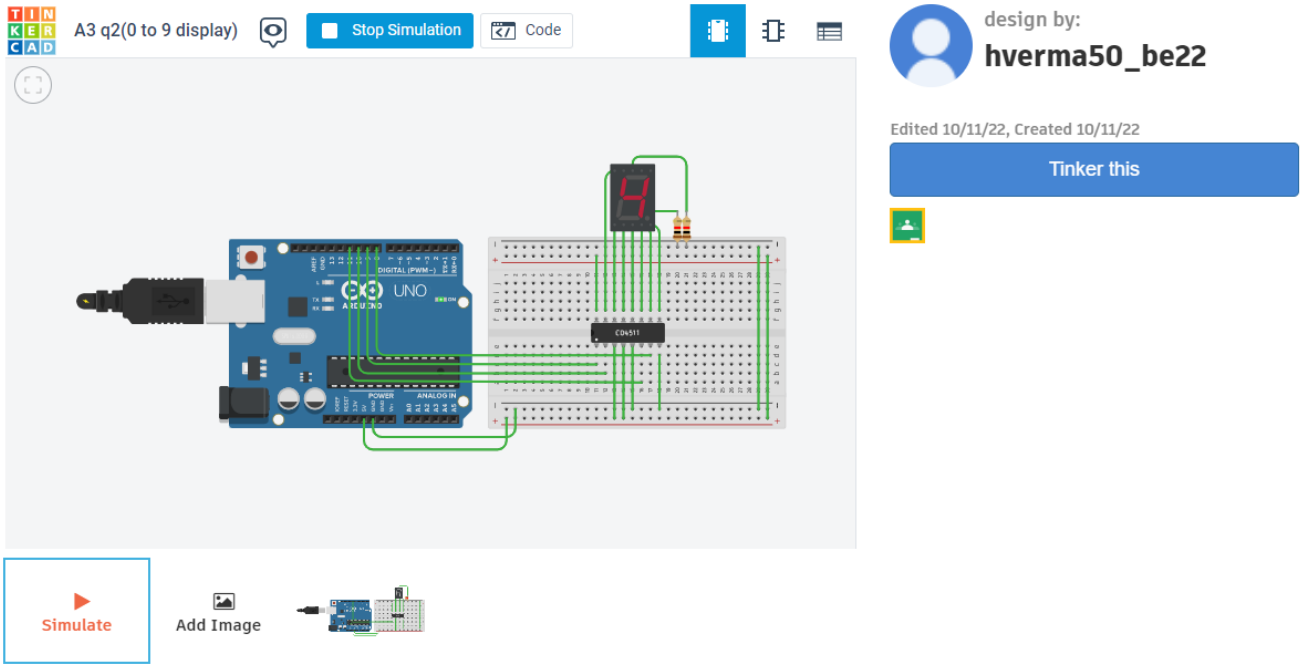
Roll No: 102283044

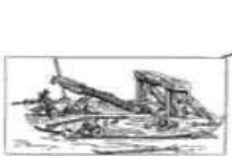
Group: 2CO28

Lab Group: 2

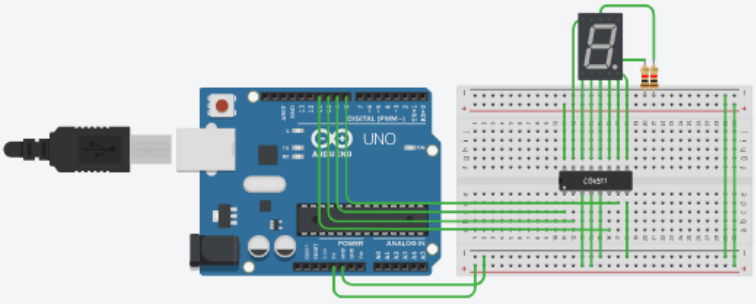
Assignment Tasks:

1. Use Tinkercad to redesign Exercise 2 and display the last digit of your Roll Number on the 7-segment display.

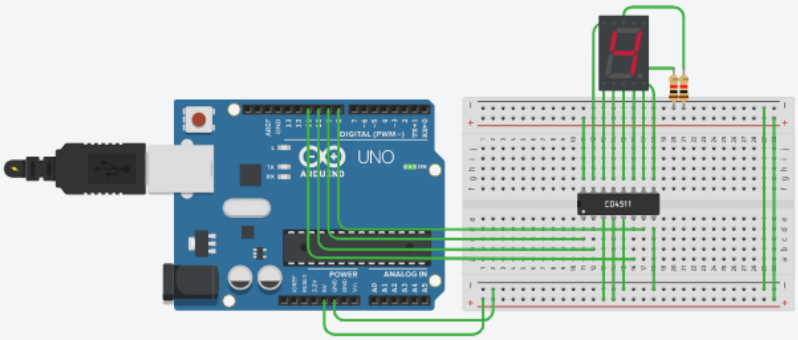




CODE:

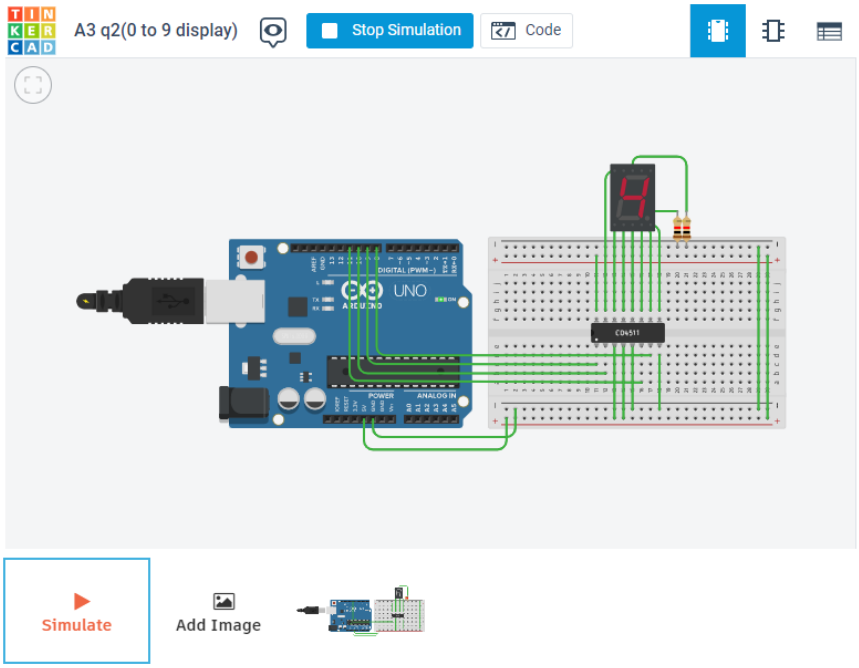


```
int n=4;
int a,b,c,d;
void setup()
{ pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  }
void loop()
{
    n=4;
    a=n%2;
    b=(n/2)%2;
    c=(n/4)%2;
    d=(n/8)%2;
  if(a==HIGH){
    digitalWrite(8,HIGH);
  }
  else{
    digitalWrite(8,LOW);
    }
  if(b==HIGH){
    digitalWrite(9,HIGH);
  }
  else{
    digitalWrite(9,LOW);
    }
  if(c==HIGH){
```

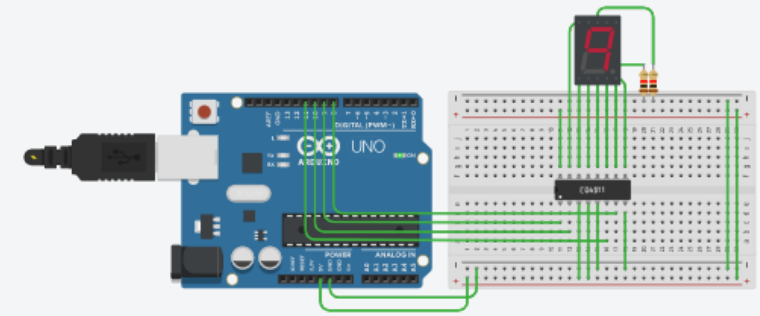


```
    c=(n/4)%2;
    d=(n/8)%2;
  if(a==HIGH){
    digitalWrite(8,HIGH);
  }
  else{
    digitalWrite(8,LOW);
    }
  if(b==HIGH){
    digitalWrite(9,HIGH);
  }
  else{
    digitalWrite(9,LOW);
    }
  if(c==HIGH){
    digitalWrite(10,HIGH);
  }
  else{
    digitalWrite(10,LOW);
    }
  if(d==HIGH){
    digitalWrite(11,HIGH);
  }
  else{
    digitalWrite(11,LOW);
    }
    delay(1000);
}
```

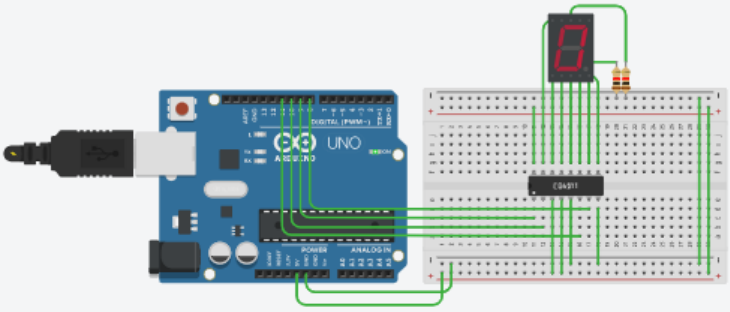
2. Using Tinkercad, write an Arduino sketch to make an up counter which counts from 0 to 9 & repeat it infinitely using Tinkercad.



CODE:



```
int n;
int a,b,c,d;
void setup()
{ pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  }
void loop()
{
  for(int i=0;i<=9;i++){
    n=i;
    a=n%2;
    b=(n/2)%2;
    c=(n/4)%2;
    d=(n/8)%2;
  if(a==HIGH){
    digitalWrite(8,HIGH);
  }
  else{
    digitalWrite(8,LOW);
    }
  if(b==HIGH){
    digitalWrite(9,HIGH);
  }
  else{
    digitalWrite(9,LOW);
    }
```



```
    d=(n/8)%2;
  if(a==HIGH){
    digitalWrite(8,HIGH);
  }
  else{
    digitalWrite(8,LOW);
    }
  if(b==HIGH){
    digitalWrite(9,HIGH);
  }
  else{
    digitalWrite(9,LOW);
    }
  if(c==HIGH){
    digitalWrite(10,HIGH);
  }
  else{
    digitalWrite(10,LOW);
    }
  if(d==HIGH){
    digitalWrite(11,HIGH);
  }
  else{
    digitalWrite(11,LOW);
    }
    delay(1000);
  }
}
```