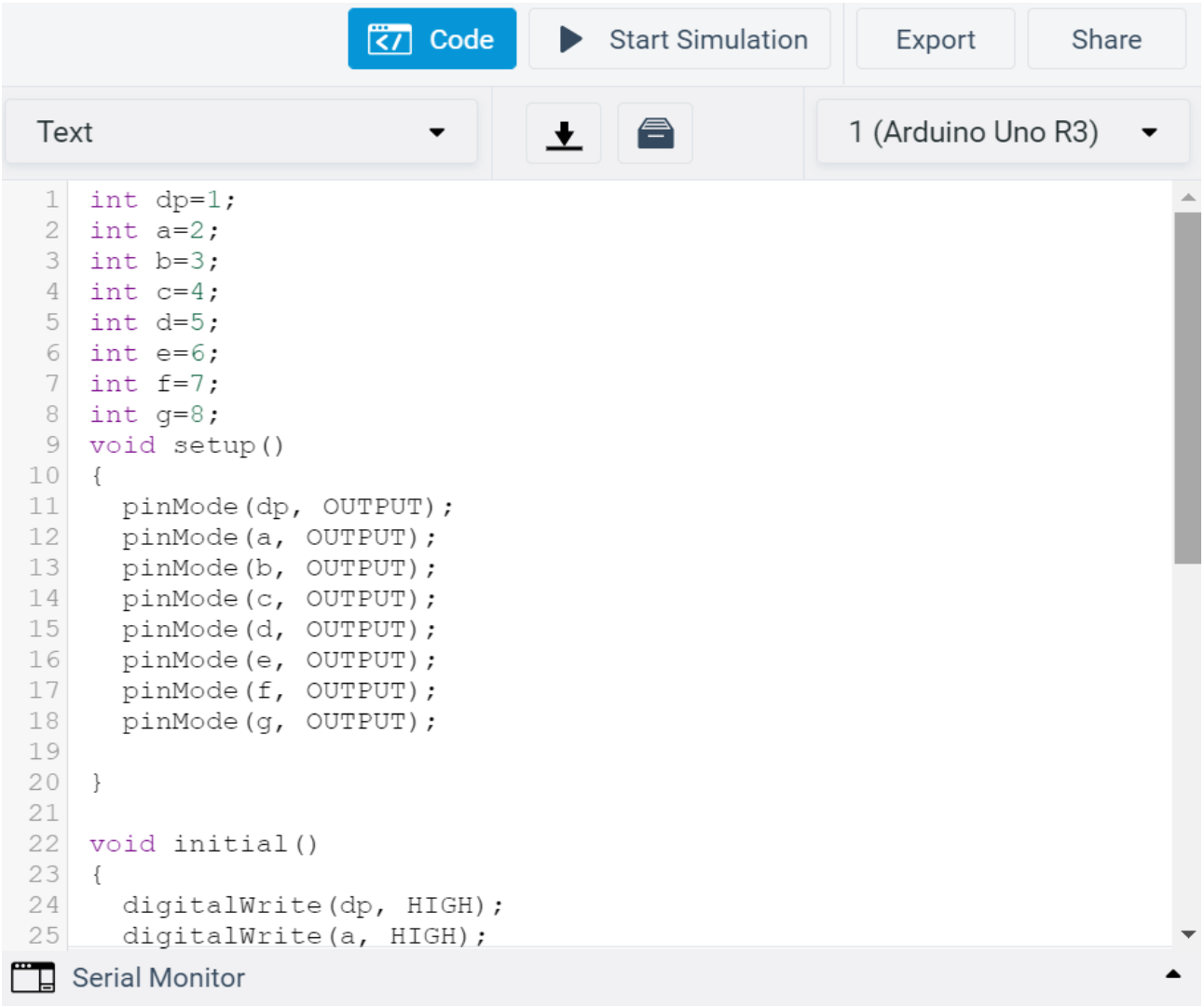
EXPERIMENT 2(a)

AIM- Display pattern on seven segment.

SIMULATOR- Tinkercad.

EQUIPMENT REQUIRED - Arduino Uno R3, 7 Segment display, Breadboard,2 Resistor(1 kΩ)

PROGRAM CODE-




```
int dp=1;
int a=2;
int b=3;
int c=4;
int d=5;
int e=6;
int f=7;
int g=8;
void setup()
{
  pinMode(dp, OUTPUT);
  pinMode(a, OUTPUT);
  pinMode(b, OUTPUT);
  pinMode(c, OUTPUT);
  pinMode(d, OUTPUT);
  pinMode(e, OUTPUT);
  pinMode(f, OUTPUT);
  pinMode(g, OUTPUT);

}

void initial()
{
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
```

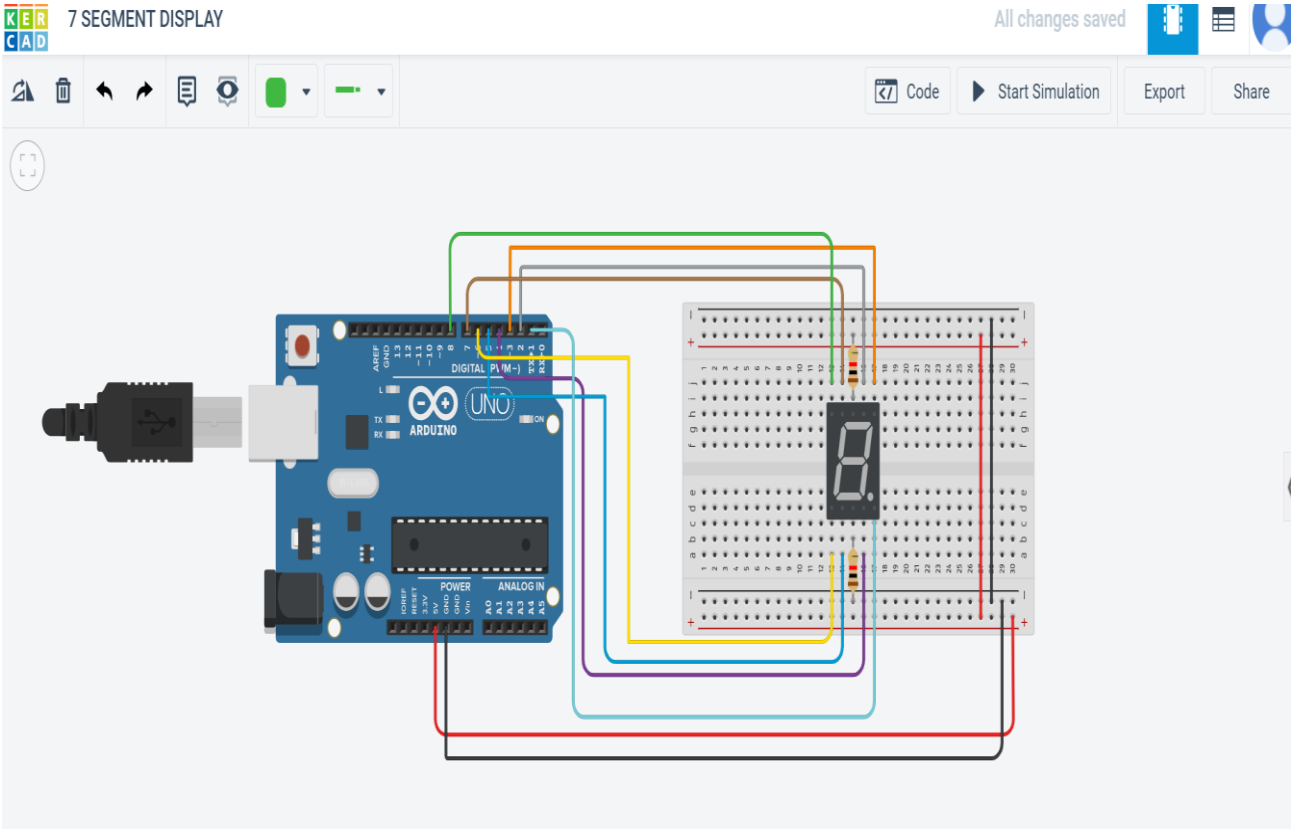
Code | Start Simulation | Export | Share

Text | 1 (Arduino Uno R3)

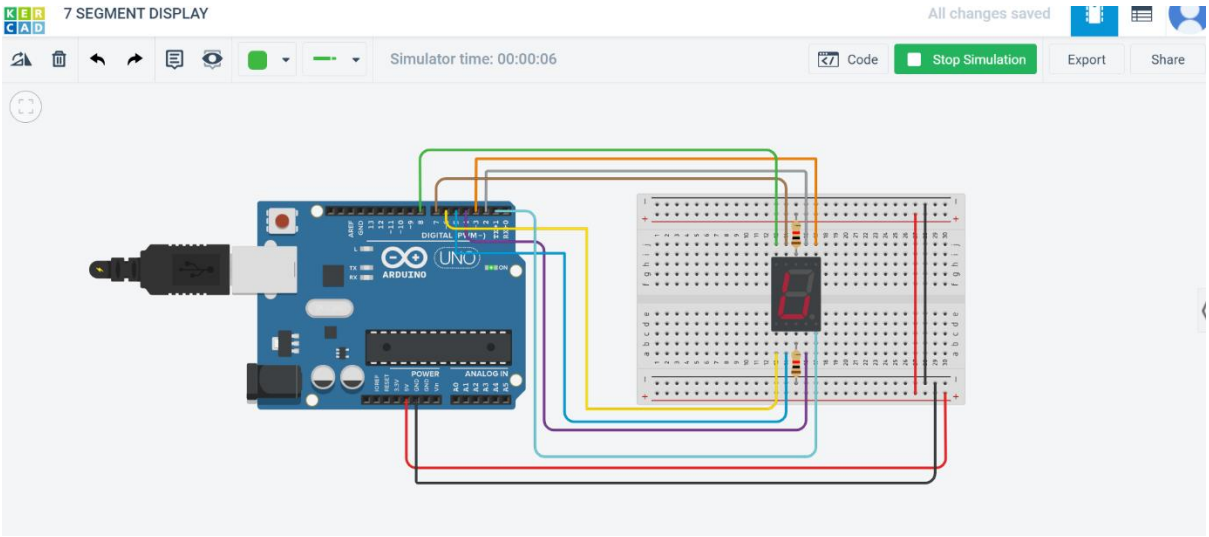
```
   digitalWrite(b, HIGH);
   digitalWrite(c, HIGH);
   digitalWrite(d, HIGH);
   digitalWrite(e, HIGH);
   digitalWrite(f, HIGH);
   digitalWrite(g, LOW);
}
void loop()
{
   int i;
   initial();
   delay(2000);

   for(i=1;i<=8;i++)
   {
     digitalWrite(i,LOW);
     delay(2000);
   }
   for(i=8;i>0;i--)
   {
     digitalWrite(i,HIGH);
     delay(2000);
   }
}
```

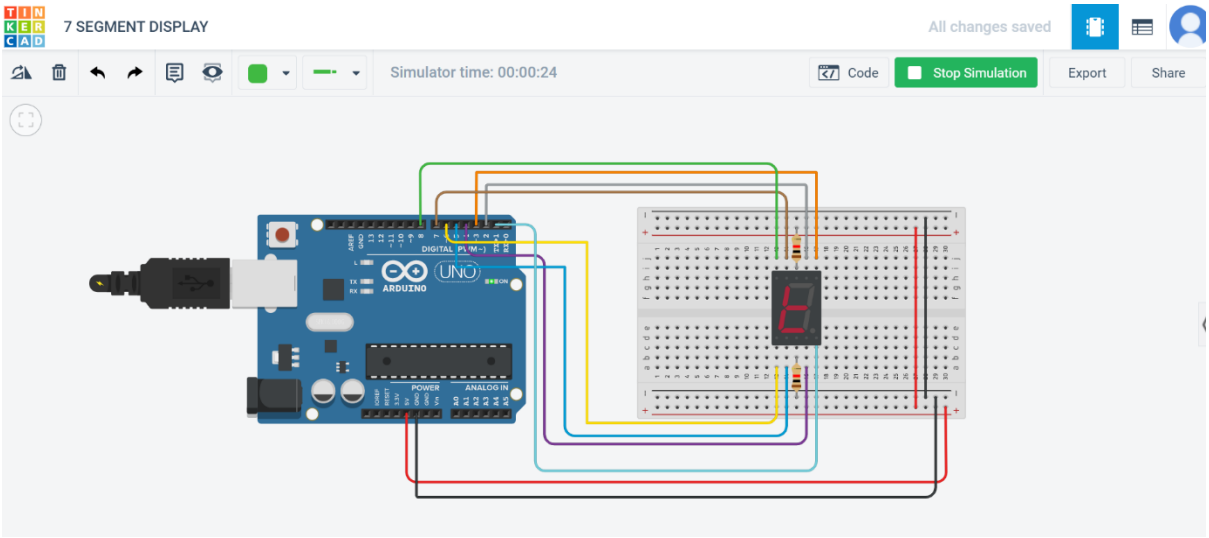
Serial Monitor

CIRCUIT DIAGRAM-



OUTPUT-





CONCLUSION- The simulation was a success.

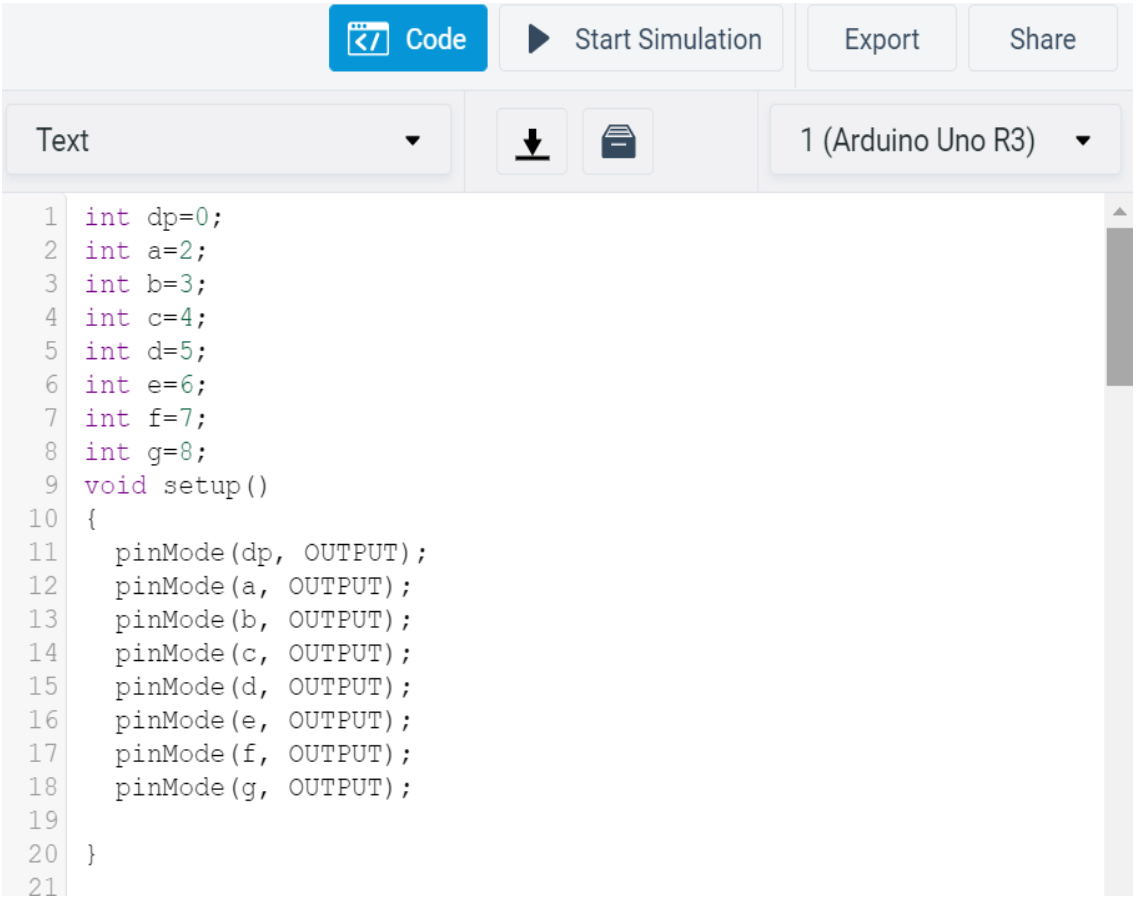
EXPERIMENT 2(b)

AIM- Display 0-9 on seven segment.

SIMULATOR- Tinkercad.

EQUIPMENT REQUIRED- Arduino Uno R3, 7 Segment display, Breadboard,2 Resistor(1 kΩ)

PROGRAM CODE-




```
int dp=0;
int a=2;
int b=3;
int c=4;
int d=5;
int e=6;
int f=7;
int g=8;
void setup()
{
  pinMode(dp, OUTPUT);
  pinMode(a, OUTPUT);
  pinMode(b, OUTPUT);
  pinMode(c, OUTPUT);
  pinMode(d, OUTPUT);
  pinMode(e, OUTPUT);
  pinMode(f, OUTPUT);
  pinMode(g, OUTPUT);

}
```

Code | Start Simulation | Export | Share

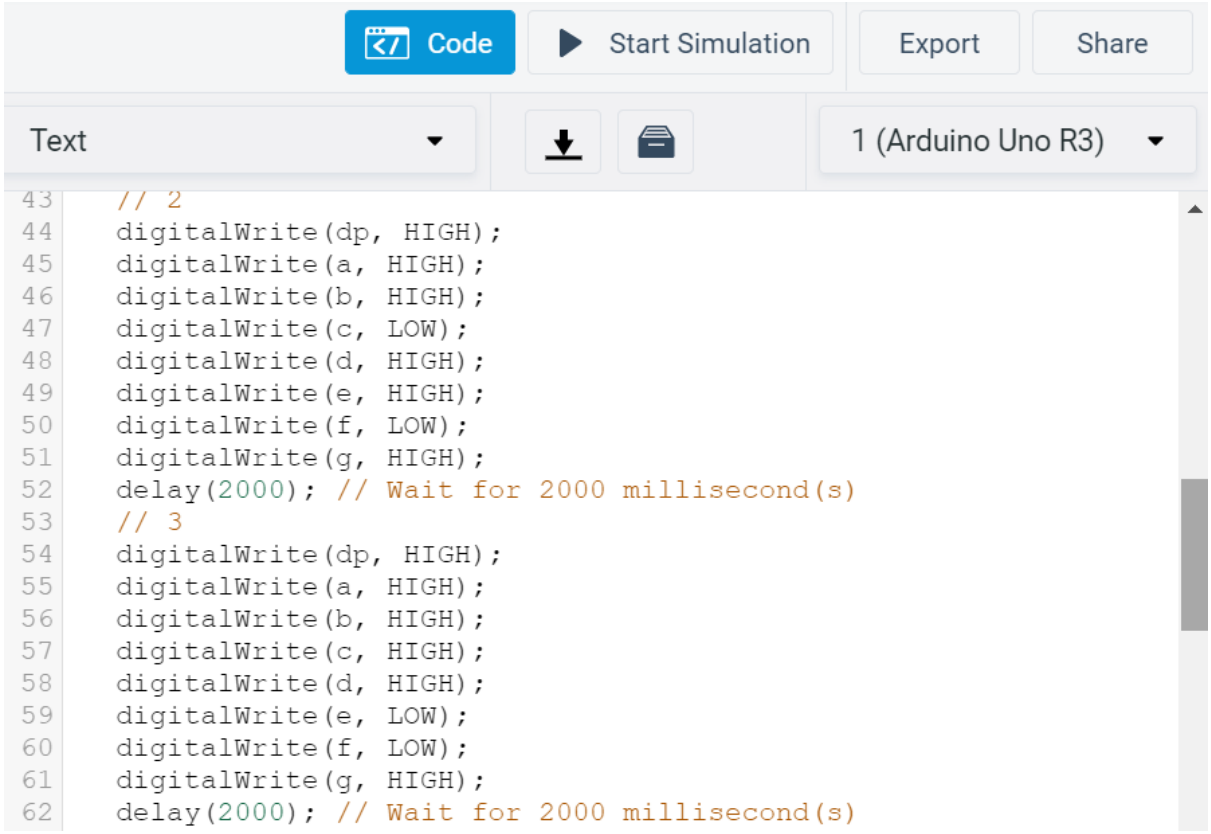
Text | 1 (Arduino Uno R3)

```
}

void loop()
{
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, HIGH);
  digitalWrite(e, HIGH);
  digitalWrite(f, HIGH);
  digitalWrite(g, LOW);
  delay(2000); // Wait for 2000 millisecond(s)
  // 1
  digitalWrite(dp, HIGH);
  digitalWrite(a, LOW);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, LOW);
  digitalWrite(e, LOW);
  digitalWrite(f, LOW);
  digitalWrite(g, LOW);
  delay(2000); // Wait for 2000 millisecond(s)
```

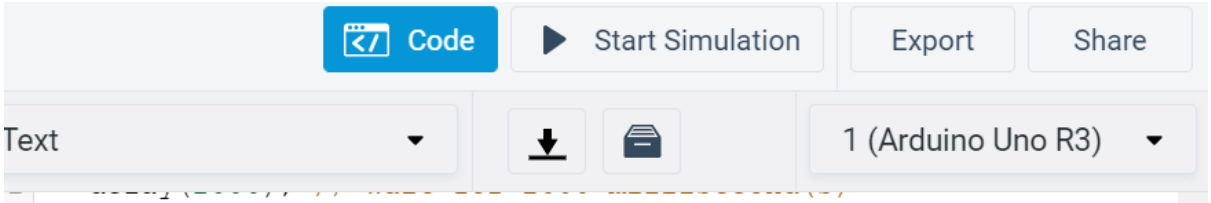
Code | Start Simulation | Export | Share

Text | 1 (Arduino Uno R3)

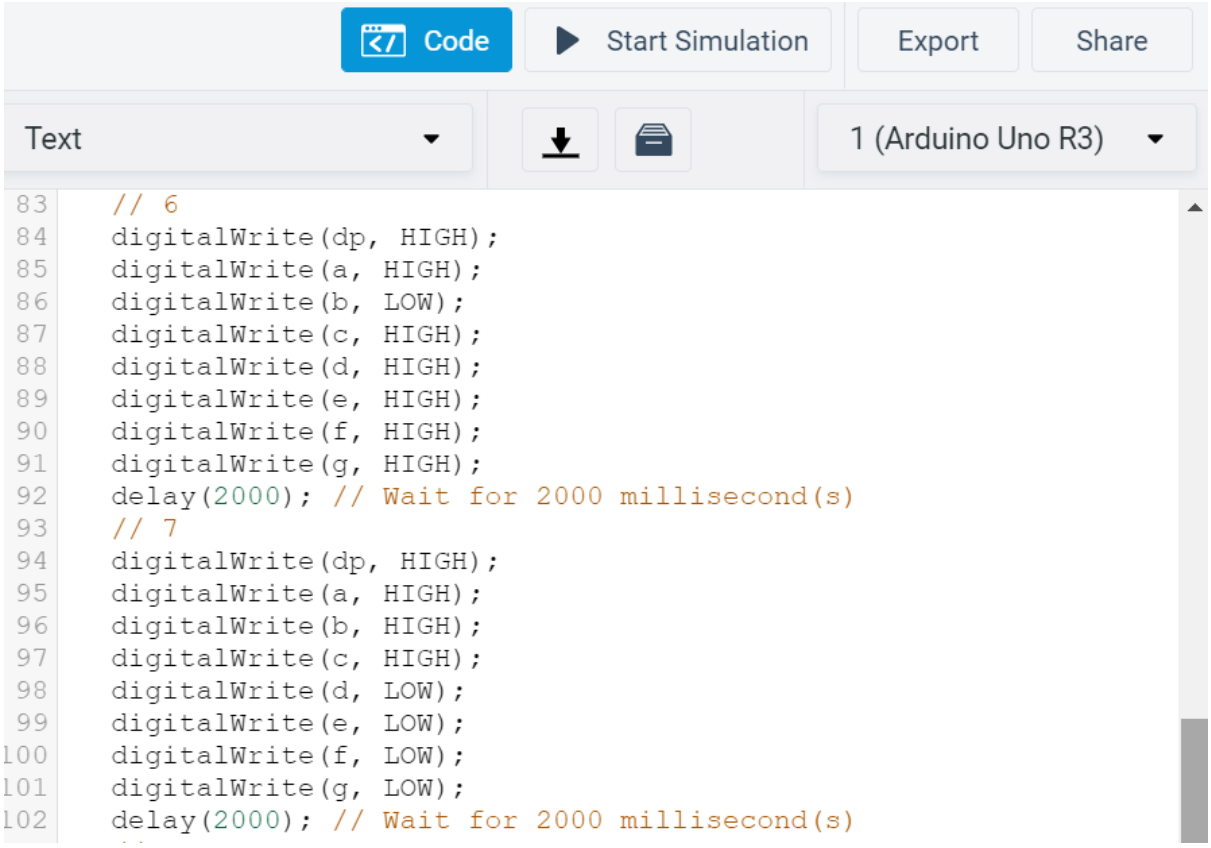
```
  // 2
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, LOW);
  digitalWrite(d, HIGH);
  digitalWrite(e, HIGH);
  digitalWrite(f, LOW);
  digitalWrite(g, HIGH);
  delay(2000); // Wait for 2000 millisecond(s)
  // 3
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, HIGH);
  digitalWrite(e, LOW);
  digitalWrite(f, LOW);
  digitalWrite(g, HIGH);
  delay(2000); // Wait for 2000 millisecond(s)
```



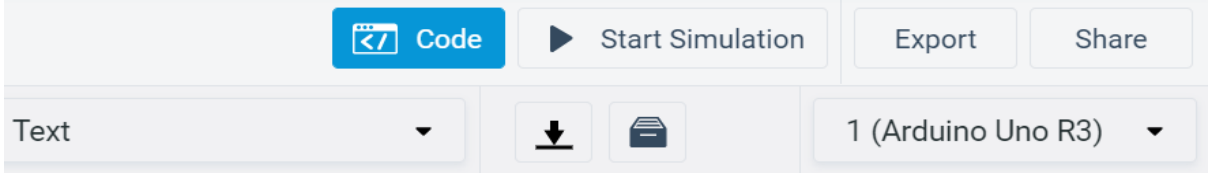

```
43    // 2
44    digitalWrite(dp, HIGH);
45    digitalWrite(a, HIGH);
46    digitalWrite(b, HIGH);
47    digitalWrite(c, LOW);
48    digitalWrite(d, HIGH);
49    digitalWrite(e, HIGH);
50    digitalWrite(f, LOW);
51    digitalWrite(g, HIGH);
52    delay(2000); // Wait for 2000 millisecond(s)
53    // 3
54    digitalWrite(dp, HIGH);
55    digitalWrite(a, HIGH);
56    digitalWrite(b, HIGH);
57    digitalWrite(c, HIGH);
58    digitalWrite(d, HIGH);
59    digitalWrite(e, LOW);
60    digitalWrite(f, LOW);
61    digitalWrite(g, HIGH);
62    delay(2000); // Wait for 2000 millisecond(s)
```




```
53    // 4
54    digitalWrite(dp, HIGH);
55    digitalWrite(a, LOW);
56    digitalWrite(b, HIGH);
57    digitalWrite(c, HIGH);
58    digitalWrite(d, LOW);
59    digitalWrite(e, LOW);
60    digitalWrite(f, HIGH);
61    digitalWrite(g, HIGH);
62    delay(2000); // Wait for 2000 millisecond(s)
63    // 5
64    digitalWrite(dp, HIGH);
65    digitalWrite(a, HIGH);
66    digitalWrite(b, LOW);
67    digitalWrite(c, HIGH);
68    digitalWrite(d, HIGH);
69    digitalWrite(e, LOW);
70    digitalWrite(f, HIGH);
71    digitalWrite(g, HIGH);
72    delay(2000); // Wait for 2000 millisecond(s)
```

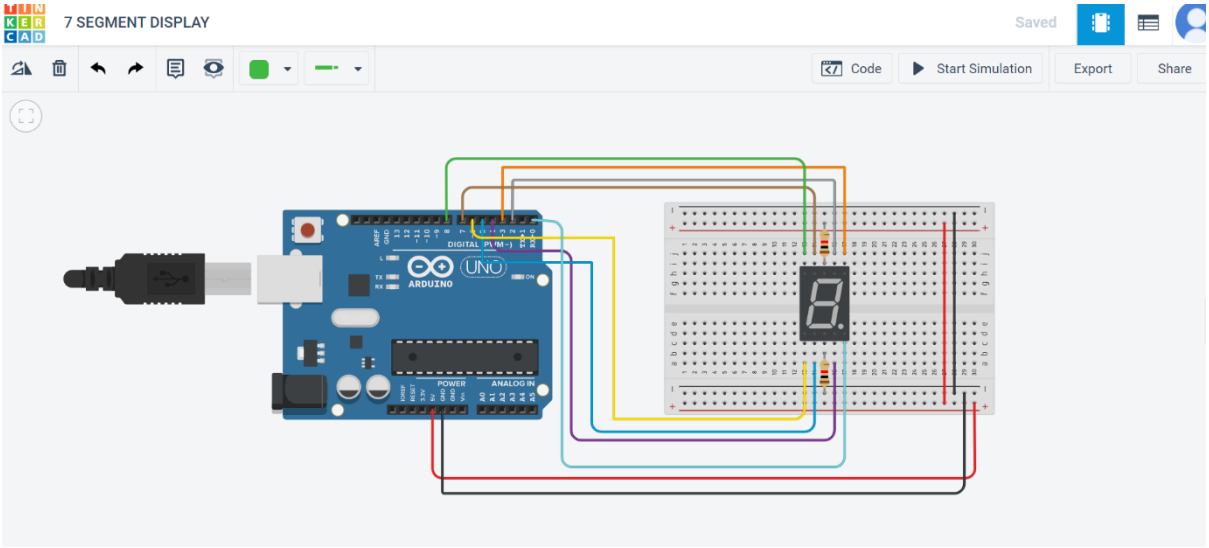



```
  // 6
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, LOW);
  digitalWrite(c, HIGH);
  digitalWrite(d, HIGH);
  digitalWrite(e, HIGH);
  digitalWrite(f, HIGH);
  digitalWrite(g, HIGH);
  delay(2000); // Wait for 2000 millisecond(s)
  // 7
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, LOW);
  digitalWrite(e, LOW);
  digitalWrite(f, LOW);
  digitalWrite(g, LOW);
  delay(2000); // Wait for 2000 millisecond(s)
```

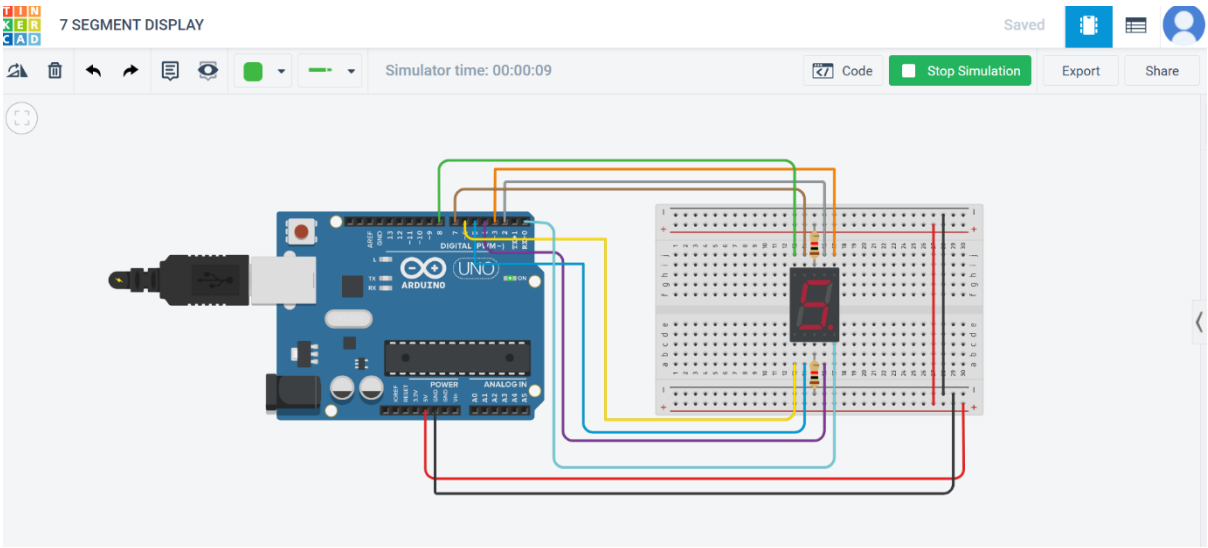



```
  digitalWrite(e, LOW);
  digitalWrite(f, LOW);
  digitalWrite(g, LOW);
  delay(2000); // Wait for 2000 millisecond(s)
  // 8
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, HIGH);
  digitalWrite(e, HIGH);
  digitalWrite(f, HIGH);
  digitalWrite(g, HIGH);
  delay(2000); // Wait for 2000 millisecond(s)
  //9
  digitalWrite(dp, HIGH);
  digitalWrite(a, HIGH);
  digitalWrite(b, HIGH);
  digitalWrite(c, HIGH);
  digitalWrite(d, HIGH);
  digitalWrite(e, LOW);
  digitalWrite(f, HIGH);
  digitalWrite(g, HIGH);
  delay(2000); // Wait for 2000 millisecond(s)
}
```

CIRCUIT DIAGRAM-



OUTPUT-



CONCLUSION- The simulation was success.