

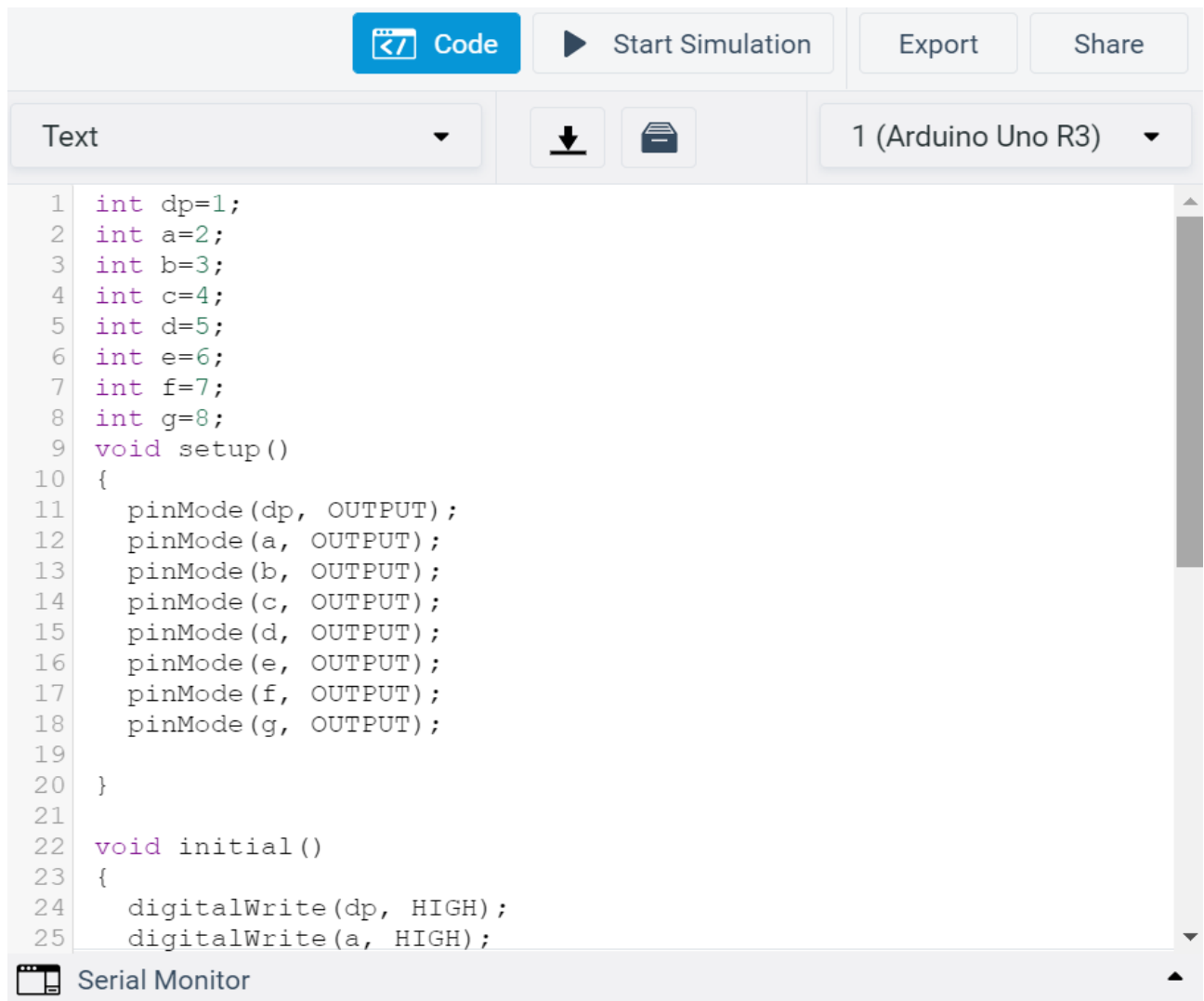
EXPERIMENT 2(a)

AIM- Display pattern on seven segment.

SIMULATOR- Tinkercad.

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

PROGRAM CODE-



The screenshot shows the Tinkercad IDE interface. At the top, there are buttons for 'Code' (highlighted in blue), 'Start Simulation', 'Export', and 'Share'. Below these is a toolbar with a 'Text' dropdown, download and upload icons, and a board selection dropdown set to '1 (Arduino Uno R3)'. The main area is a code editor with a line number margin on the left. It contains an Arduino sketch with the following code:

```
1  int dp=1;
2  int a=2;
3  int b=3;
4  int c=4;
5  int d=5;
6  int e=6;
7  int f=7;
8  int g=8;
9  void setup()
10 {
11     pinMode(dp, OUTPUT);
12     pinMode(a, OUTPUT);
13     pinMode(b, OUTPUT);
14     pinMode(c, OUTPUT);
15     pinMode(d, OUTPUT);
16     pinMode(e, OUTPUT);
17     pinMode(f, OUTPUT);
18     pinMode(g, OUTPUT);
19 }
20
21
22 void initial()
23 {
24     digitalWrite(dp, HIGH);
25     digitalWrite(a, HIGH);
```

At the bottom of the IDE, there is a 'Serial Monitor' tab, which is currently closed.

Code

Start Simulation

Export

Share

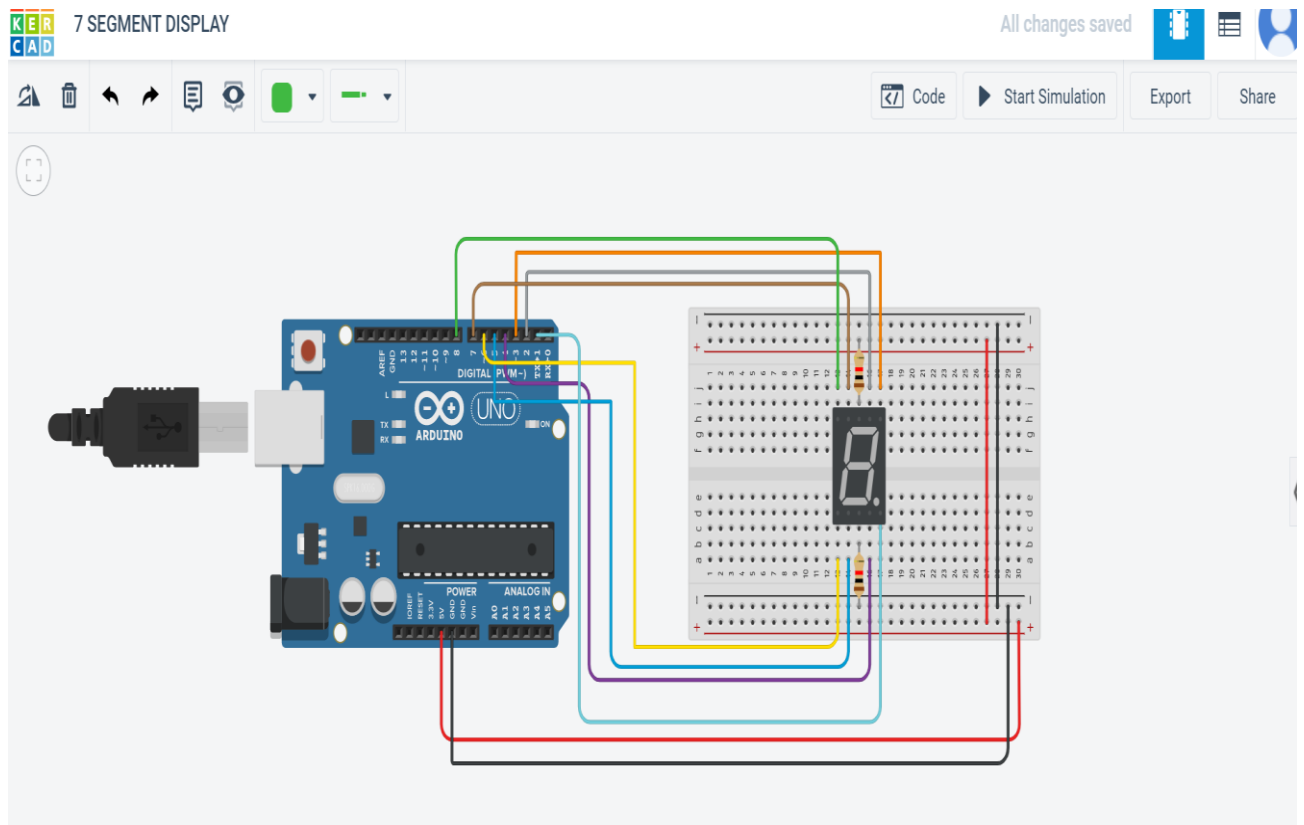
Text

1 (Arduino Uno R3)

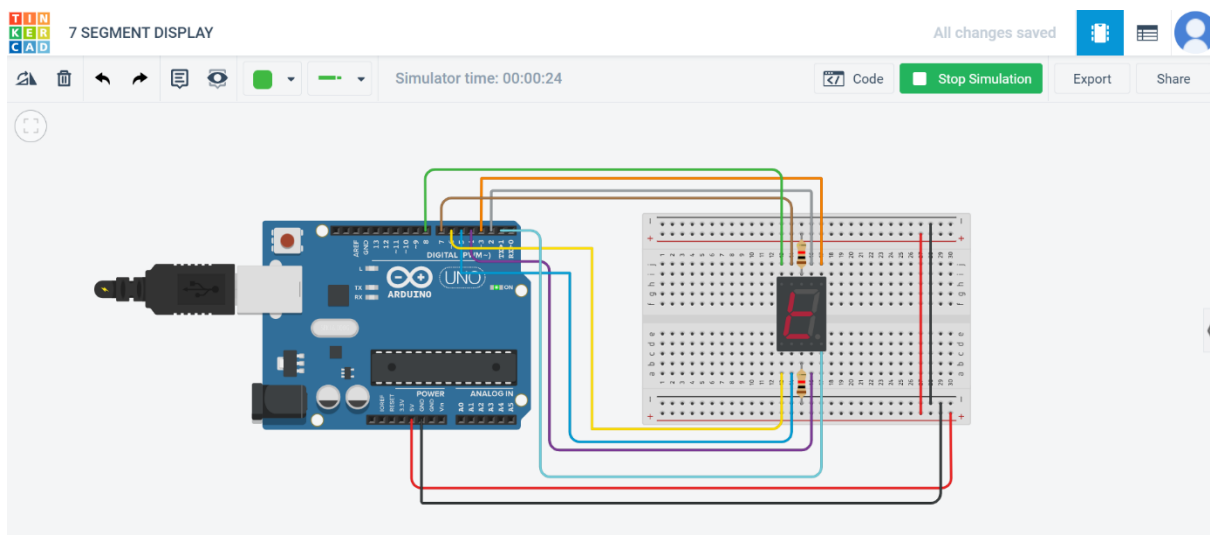
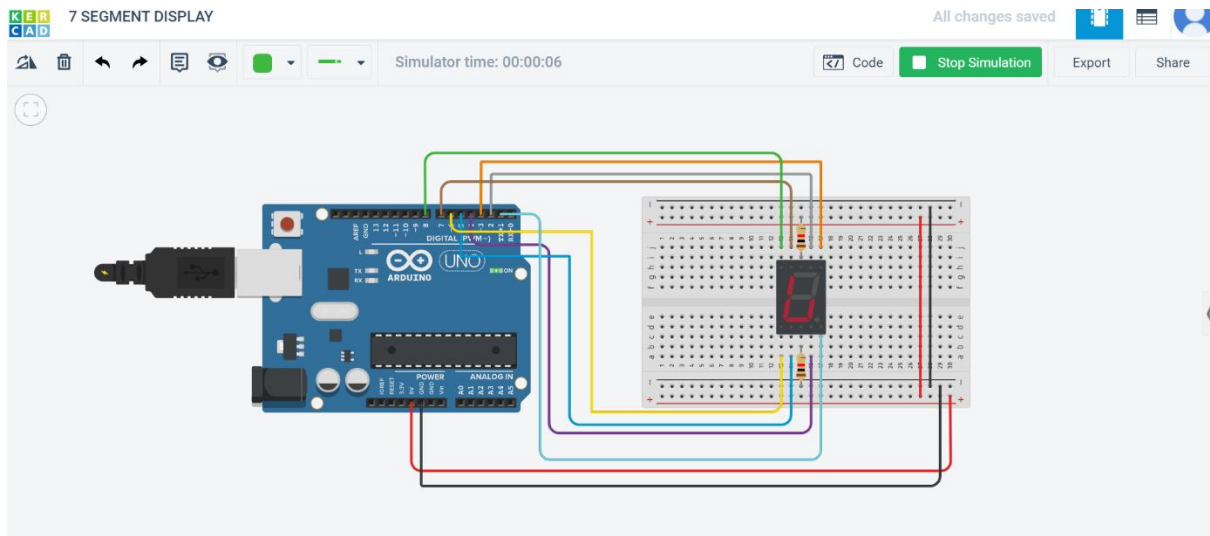
```
26 digitalWrite(b, HIGH);
27 digitalWrite(c, HIGH);
28 digitalWrite(d, HIGH);
29 digitalWrite(e, HIGH);
30 digitalWrite(f, HIGH);
31 digitalWrite(g, LOW);
32 }
33 void loop()
34 {
35     int i;
36     initial();
37     delay(2000);
38
39     for(i=1;i<=8;i++)
40     {
41         digitalWrite(i, LOW);
42         delay(2000);
43     }
44     for(i=8;i>0;i--)
45     {
46         digitalWrite(i, HIGH);
47         delay(2000);
48     }
49 }
50
```

Serial Monitor

CIRCUIT DIAGRAM-



OUTPUT-



CONCLUSION- The simulation was a success.

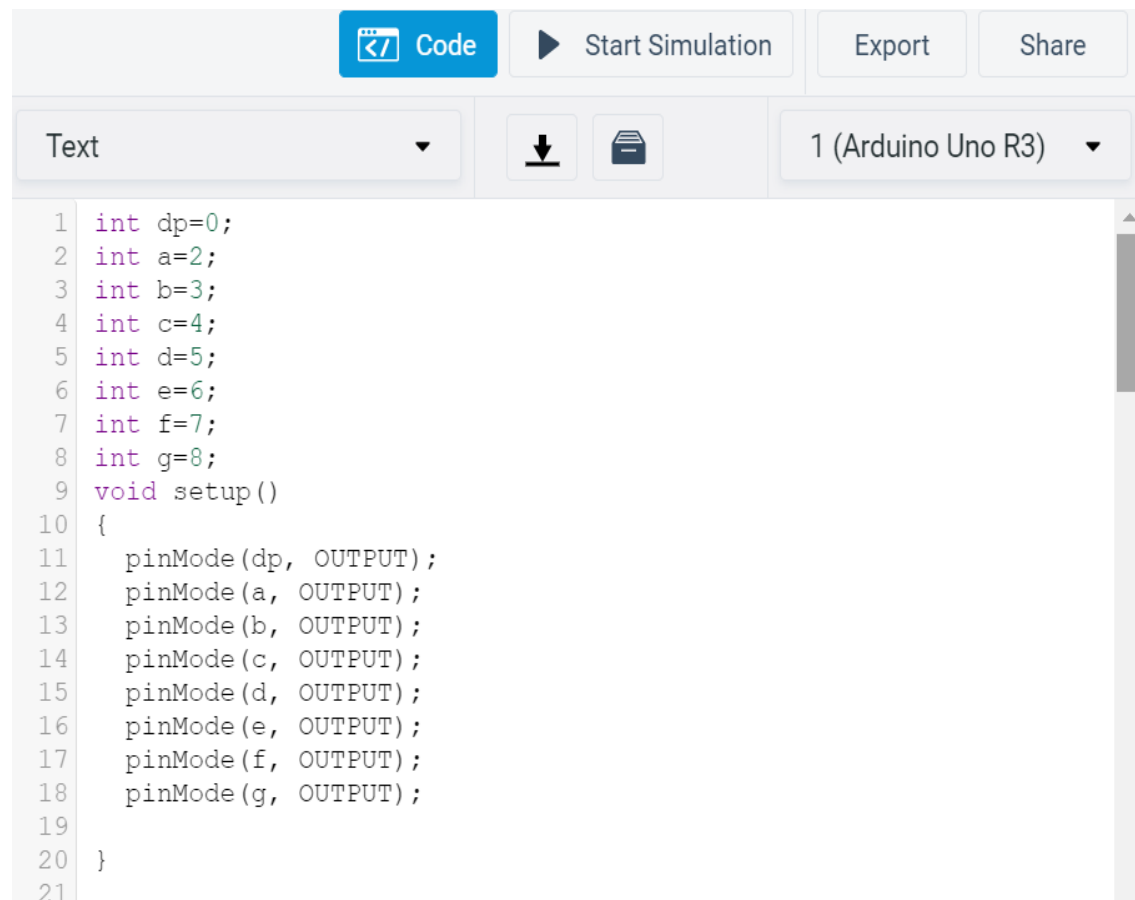
EXPERIMENT 2(b)

AIM- Display 0-9 on seven segment.

SIMULATOR- Tinkercad.


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


PROGRAM CODE-



The screenshot shows the Tinkercad IDE interface. At the top, there are buttons for 'Code' (highlighted in blue), 'Start Simulation', 'Export', and 'Share'. Below these is a toolbar with a 'Text' dropdown, download and save icons, and a board selection dropdown set to '1 (Arduino Uno R3)'. The main area contains the following C++ code:

```
1  int dp=0;
2  int a=2;
3  int b=3;
4  int c=4;
5  int d=5;
6  int e=6;
7  int f=7;
8  int g=8;
9  void setup()
10 {
11     pinMode(dp, OUTPUT);
12     pinMode(a, OUTPUT);
13     pinMode(b, OUTPUT);
14     pinMode(c, OUTPUT);
15     pinMode(d, OUTPUT);
16     pinMode(e, OUTPUT);
17     pinMode(f, OUTPUT);
18     pinMode(g, OUTPUT);
19
20 }
21
```



 Code

 Start Simulation

Export


Share


Text



1 (Arduino Uno R3)

```
19 }
20 }
21
22 void loop()
23 {
24     digitalWrite(dp, HIGH);
25     digitalWrite(a, HIGH);
26     digitalWrite(b, HIGH);
27     digitalWrite(c, HIGH);
28     digitalWrite(d, HIGH);
29     digitalWrite(e, HIGH);
30     digitalWrite(f, HIGH);
31     digitalWrite(g, LOW);
32     delay(2000); // Wait for 2000 millisecond(s)
33     // 1
34     digitalWrite(dp, HIGH);
35     digitalWrite(a, LOW);
36     digitalWrite(b, HIGH);
37     digitalWrite(c, HIGH);
38     digitalWrite(d, LOW);
39     digitalWrite(e, LOW);
40     digitalWrite(f, LOW);
41     digitalWrite(g, LOW);
42     delay(2000); // Wait for 2000 millisecond(s)
```



 Code

 Start Simulation

Export


Share


Text



1 (Arduino Uno R3)

```
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)
```



 Code

 Start Simulation

Export


Share


Text



1 (Arduino Uno R3)

```
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)
```



 Code

 Start Simulation

Export


Share


Text



1 (Arduino Uno R3)

```
43 // 4
44 digitalWrite(dp, HIGH);
45 digitalWrite(a, LOW);
46 digitalWrite(b, HIGH);
47 digitalWrite(c, HIGH);
48 digitalWrite(d, LOW);
49 digitalWrite(e, LOW);
50 digitalWrite(f, HIGH);
51 digitalWrite(g, HIGH);
52 delay(2000); // Wait for 2000 millisecond(s)
53 // 5
54 digitalWrite(dp, HIGH);
55 digitalWrite(a, HIGH);
56 digitalWrite(b, LOW);
57 digitalWrite(c, HIGH);
58 digitalWrite(d, HIGH);
59 digitalWrite(e, LOW);
60 digitalWrite(f, HIGH);
61 digitalWrite(g, HIGH);
62 delay(2000); // Wait for 2000 millisecond(s)
```



 Code

 Start Simulation

Export


Share


Text



1 (Arduino Uno R3)

```
83 // 6
84 digitalWrite(dp, HIGH);
85 digitalWrite(a, HIGH);
86 digitalWrite(b, LOW);
87 digitalWrite(c, HIGH);
88 digitalWrite(d, HIGH);
89 digitalWrite(e, HIGH);
90 digitalWrite(f, HIGH);
91 digitalWrite(g, HIGH);
92 delay(2000); // Wait for 2000 millisecond(s)
93 // 7
94 digitalWrite(dp, HIGH);
95 digitalWrite(a, HIGH);
96 digitalWrite(b, HIGH);
97 digitalWrite(c, HIGH);
98 digitalWrite(d, LOW);
99 digitalWrite(e, LOW);
100 digitalWrite(f, LOW);
101 digitalWrite(g, LOW);
102 delay(2000); // Wait for 2000 millisecond(s)
```



 Code

 Start Simulation

Export

Share

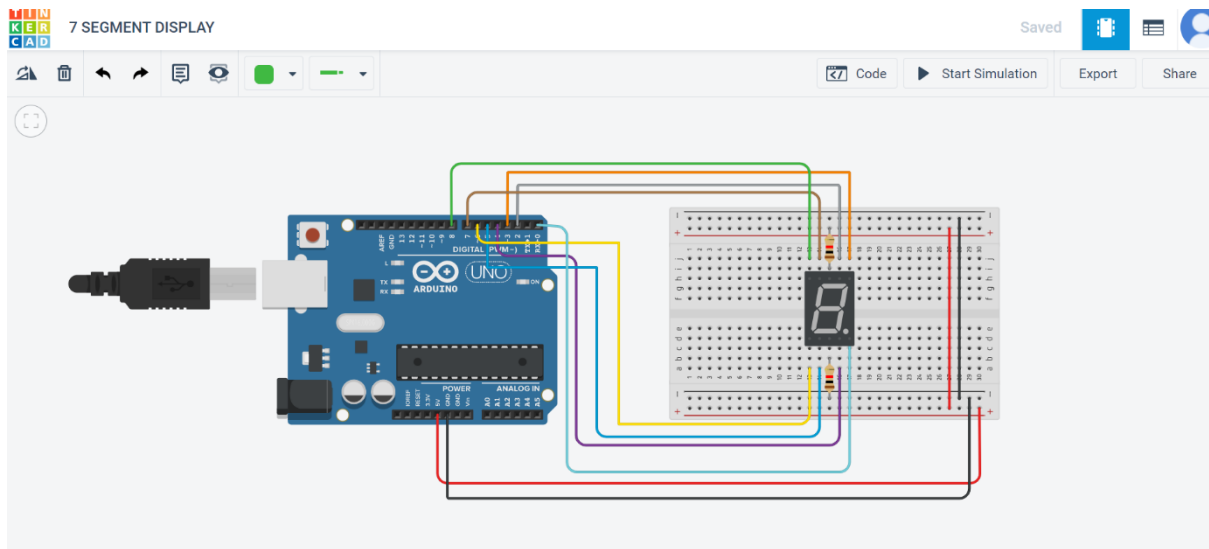
Text



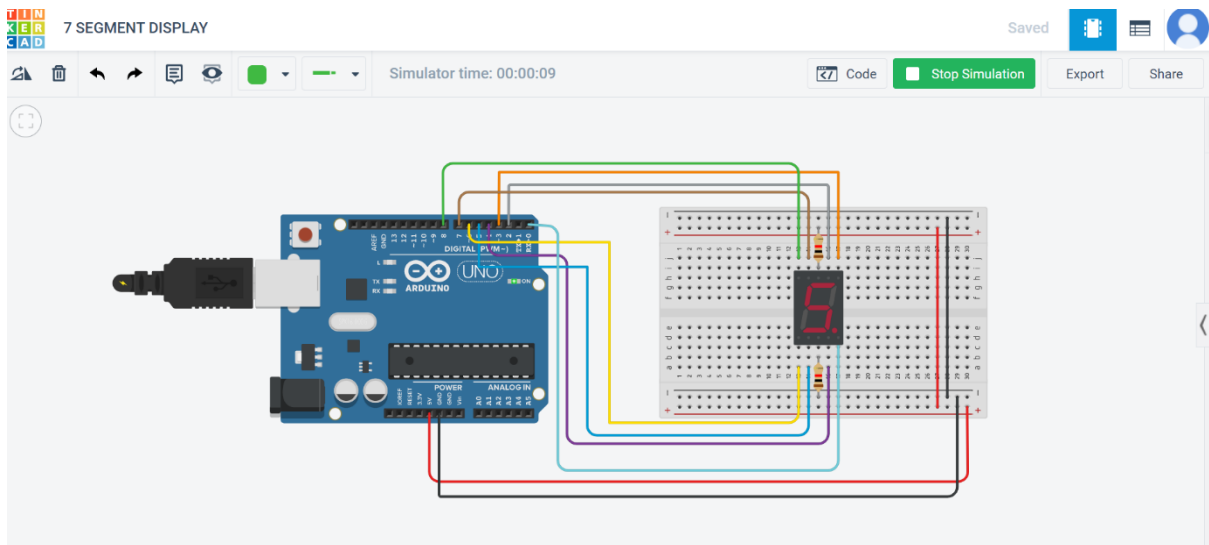
1 (Arduino Uno R3)

```
99 digitalWrite(e, LOW);
00 digitalWrite(f, LOW);
01 digitalWrite(g, LOW);
02 delay(2000); // Wait for 2000 millisecond(s)
03 // 8
04 digitalWrite(dp, HIGH);
05 digitalWrite(a, HIGH);
06 digitalWrite(b, HIGH);
07 digitalWrite(c, HIGH);
08 digitalWrite(d, HIGH);
09 digitalWrite(e, HIGH);
10 digitalWrite(f, HIGH);
11 digitalWrite(g, HIGH);
12 delay(2000); // Wait for 2000 millisecond(s)
13 //9
14 digitalWrite(dp, HIGH);
15 digitalWrite(a, HIGH);
16 digitalWrite(b, HIGH);
17 digitalWrite(c, HIGH);
18 digitalWrite(d, HIGH);
19 digitalWrite(e, LOW);
20 digitalWrite(f, HIGH);
21 digitalWrite(g, HIGH);
22 delay(2000); // Wait for 2000 millisecond(s)
23 }
```

CIRCUIT DIAGRAM-



OUTPUT-



CONCLUSION- The simulation was success.