

PB_05_Kushagra Suryawarshi

B1

E10T LAB ASSIGNMENT - 04

* Aim: Consider a suitable scenario of traffic signalling considering a crossroad & demonstrate traffic control using Raspberry Pi/ Beagle board/ Tinkercad Arduino

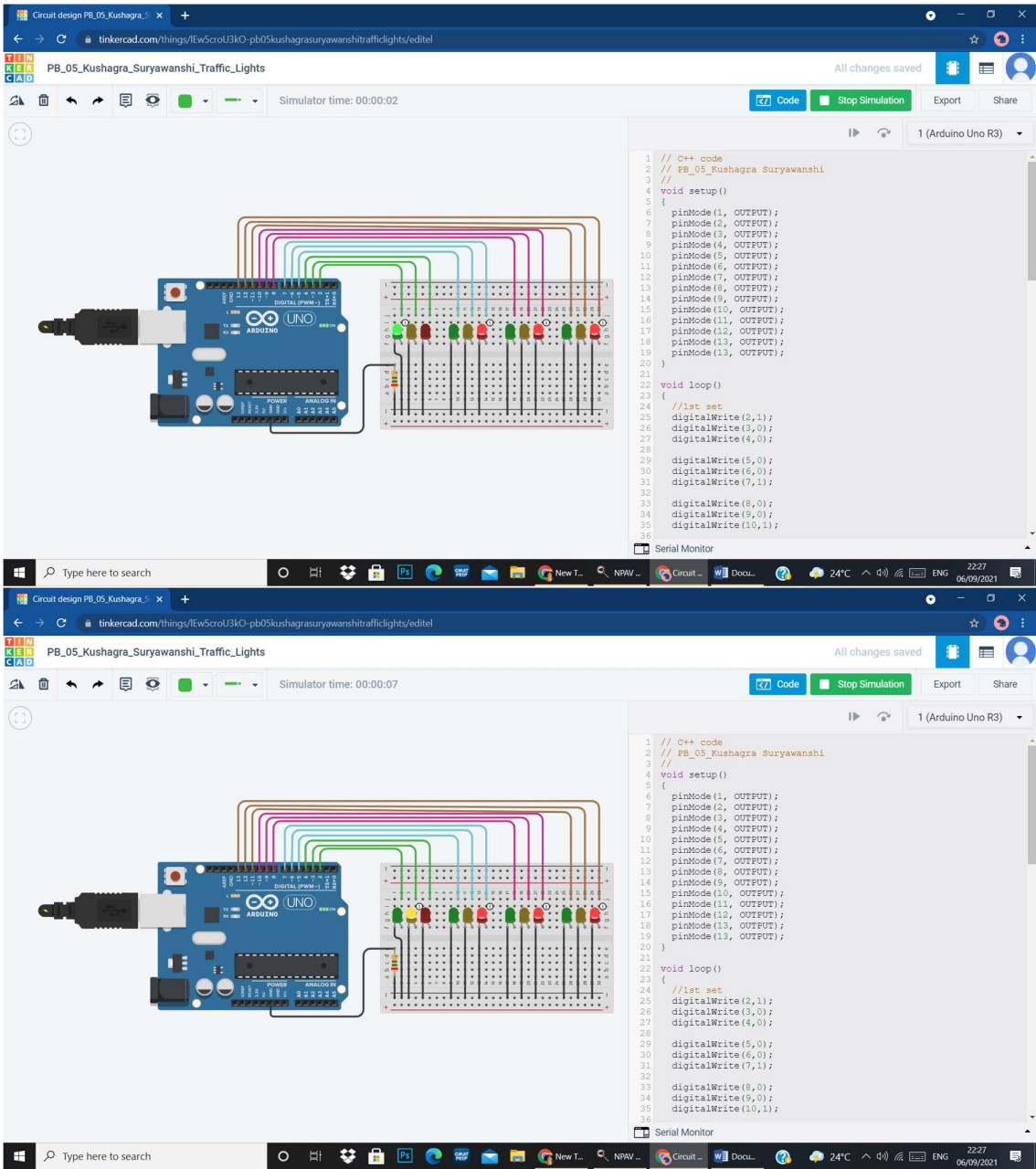
* Theory:

- 1-) a) colour LED: Used for home decorations and highlights contains various colours and is attractive to look at
- b) dimmer switches: Applies with minimum wattage when used with LED bulbs.
- c) SMD LED: (Surface Mounted Device) used majorly in chips and other hardware devices. Have additional brightness hence reliable for office and household appliances.
- d) COB LED: serves a better watt ration to lumen that signifies as it has high productivity. (chip on Board)
- e) Organic LED: Built with organic components. Uses thin sheets and produces a diffused light area.

- 2.] i.) Current Sourcing : When a load is connected to a device, so that the device supplies current to the load, then the configuration is said to be current sourcing. Sourcing current is important of a sourcing input or output product the voltage source for the electric load.
- ii.) Current Sinking : When a load is connected to a device, so that the current flows from the power supply through the load and into the device then the configuration is said to be current sinking. When current flows into the device, it is said to be sinking current.
- 3.]
- i.) TPT LCD display
 - ii.) TFT LCD Touchscreen display
 - iii.) DDT Matrix
 - iv.) White DLED.
 - v.) 16×2 character LED
 - vi.) 5110 LCD display
 - vii.) 4 bits digital tube LED display.

Conclusion : Thus, implemented traffic light control system considering a cross road scenario.

PB_05_Kushagra Suryawanshi



Circuit design PB_05_Kushagra_S...
tinkercad.com/things/leW5croU3kO-pb05kushagrasuryawanshitrafficlights/editel

PB_05_Kushagra_Suryawanshi_Traffic_Lights

Simulator time: 00:00:10

Code Stop Simulation Export Share

1 (Arduino Uno R3)

```
1 // C++ code
2 // PB_05_Kushagra_Suryawanshi
3 //
4 void setup()
5 {
6   pinMode(1, OUTPUT);
7   pinMode(2, OUTPUT);
8   pinMode(3, OUTPUT);
9   pinMode(4, OUTPUT);
10  pinMode(5, OUTPUT);
11  pinMode(6, OUTPUT);
12  pinMode(7, OUTPUT);
13  pinMode(8, OUTPUT);
14  pinMode(9, OUTPUT);
15  pinMode(10, OUTPUT);
16  pinMode(11, OUTPUT);
17  pinMode(12, OUTPUT);
18  pinMode(13, OUTPUT);
19  pinMode(13, OUTPUT);
20 }
21
22 void loop()
23 {
24   //first set
25   digitalWrite(2,1);
26   digitalWrite(3,0);
27   digitalWrite(4,0);
28
29   digitalWrite(5,0);
30   digitalWrite(6,0);
31   digitalWrite(7,1);
32
33   digitalWrite(8,0);
34   digitalWrite(9,0);
35   digitalWrite(10,1);
36 }
```

Circuit design PB_05_Kushagra_S...
tinkercad.com/things/leW5croU3kO-pb05kushagrasuryawanshitrafficlights/editel

PB_05_Kushagra_Suryawanshi_Traffic_Lights

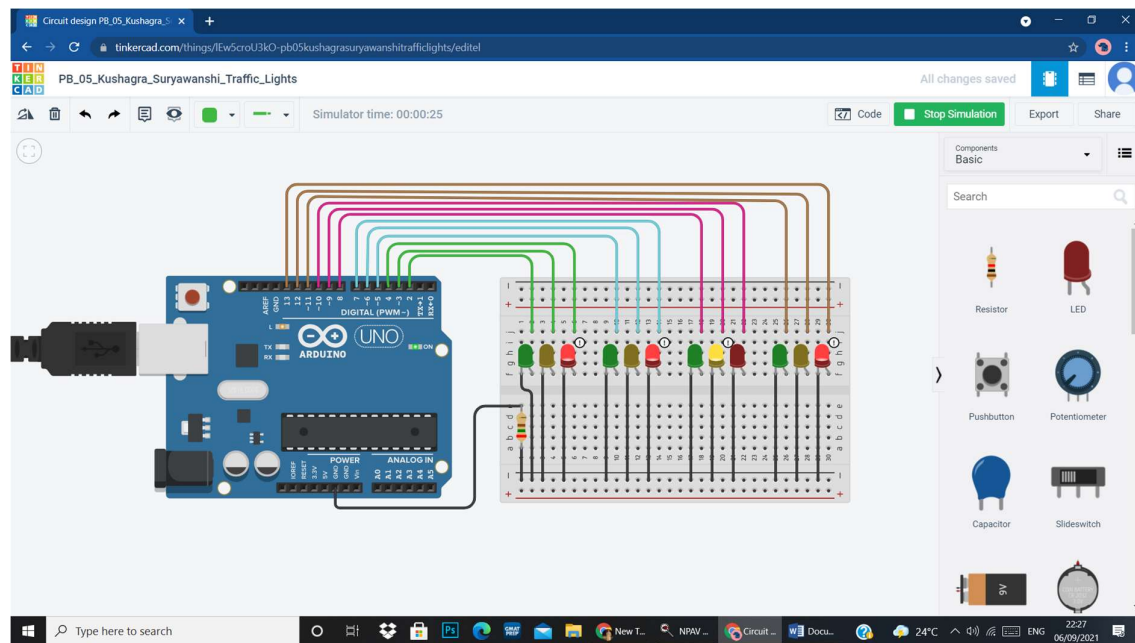
Simulator time: 00:00:20

Code Stop Simulation Export Share

Components Basic

Search

Resistor LED Pushbutton Potentiometer Capacitor Slideswitch



```
// C++ code
// PB_05_Kushagra Suryawanshi
//
void setup()
{
  pinMode(1, OUTPUT);
  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
  pinMode(5, OUTPUT);
  pinMode(6, OUTPUT);
  pinMode(7, OUTPUT);
  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  pinMode(12, OUTPUT);
  pinMode(13, OUTPUT);
  pinMode(13, OUTPUT);
}
```

```
}
```

```
void loop()
```

```
{
```

```
  //1st set
```

```
  digitalWrite(2,1);
```

```
  digitalWrite(3,0);
```

```
  digitalWrite(4,0);
```

```
  digitalWrite(5,0);
```

```
  digitalWrite(6,0);
```

```
  digitalWrite(7,1);
```

```
  digitalWrite(8,0);
```

```
  digitalWrite(9,0);
```

```
  digitalWrite(10,1);
```

```
  digitalWrite(11,0);
```

```
  digitalWrite(12,0);
```

```
  digitalWrite(13,1);
```

```
  delay(7000);
```

```
  digitalWrite(2,0);
```

```
  digitalWrite(3,1);
```

```
  delay(2000);
```

```
  //2nd set
```

```
  digitalWrite(2,0);
```

```
  digitalWrite(3,0);
```

```
  digitalWrite(4,1);
```

```
digitalWrite(5,1);  
digitalWrite(6,0);  
digitalWrite(7,0);
```

```
digitalWrite(8,0);  
digitalWrite(9,0);  
digitalWrite(10,1);
```

```
digitalWrite(11,0);  
digitalWrite(12,0);  
digitalWrite(13,1);  
delay(7000);
```

```
digitalWrite(5,0);  
digitalWrite(6,1);  
delay(2000);
```

```
//3rd set  
digitalWrite(2,0);  
digitalWrite(3,0);  
digitalWrite(4,1);
```

```
digitalWrite(5,0);  
digitalWrite(6,0);  
digitalWrite(7,1);
```

```
digitalWrite(8,1);  
digitalWrite(9,0);  
digitalWrite(10,0);
```

```
digitalWrite(11,0);
```

```
digitalWrite(12,0);  
digitalWrite(13,1);  
delay(7000);
```

```
digitalWrite(8,0);  
digitalWrite(9,1);  
delay(2000);
```

```
//4th set  
digitalWrite(2,0);  
digitalWrite(3,0);  
digitalWrite(4,1);
```

```
digitalWrite(5,0);  
digitalWrite(6,0);  
digitalWrite(7,1);
```

```
digitalWrite(8,0);  
digitalWrite(9,0);  
digitalWrite(10,1);
```

```
digitalWrite(11,1);  
digitalWrite(12,0);  
digitalWrite(13,0);  
delay(7000);
```

```
digitalWrite(11,0);  
digitalWrite(12,1);  
delay(2000);
```

```
}
```