**Level 3: Traffic Control**

1. Locate on-line documentation for the implementation and use of the Arduino serial monitor.
2. Modify the traffic light to print status information to the serial monitor.
   1. Colour of the light
   2. Countdown index for the yellow light

**Question 2 code**

int redled =3;

int yellowled = 5;

int greenled =7;

void setup(){

pinMode(redled, OUTPUT);

pinMode(yellowled, OUTPUT);

pinMode(greenled, OUTPUT);

Serial.begin(9600);

}

void loop(){

Serial.println("The GREEN LED is on.");

Serial.println(" ");

digitalWrite(greenled, HIGH); // turn on green LED

delay(5000); // wait 5 seconds

digitalWrite(greenled, LOW); // turn off green LED

for(int i=3;i>-1;i--){ // blinks for 3 times

Serial.println("The YELLOW LED is on.");

delay(500);// wait 0.5 second

digitalWrite(yellowled, HIGH); // turn on yellow LED

delay(500); // wait 0.5 second

digitalWrite(yellowled, LOW); // turn off yellow LED

//Serial.println(i," seconds left ");

Serial.print("seconds left: ");

Serial.println(i);

Serial.println(" ");

}

delay(500); // wait 0.5 second

Serial.println("The RED LED is on.");

Serial.println(" ");

digitalWrite(redled, HIGH);// turn on red LED

delay(5000); // wait 5 second

digitalWrite(redled, LOW);// turn off red LED

}

1. Modify the traffic control program to read a string from the serial console. If the string is “red”, “green’, or “yellow”, the light should immediately change to that colour.

**Question 3 code**

int redled =3;

int yellowled =5;

int greenled =7;

String ledColour = " ";

void setup()

{

Serial.begin(9600);

pinMode(redled, OUTPUT);

pinMode(yellowled, OUTPUT);

pinMode(greenled, OUTPUT);

}

void loop()

{

Serial.print("Enter a colour LED.");

while(Serial.available()==0);

Serial.print("You have selected: ");

ledColour = Serial.readString();

Serial.println(ledColour);

digitalWrite(redled, LOW);

digitalWrite(yellowled, LOW);

digitalWrite(greenled, LOW);

if (ledColour == "green"){

digitalWrite(greenled, HIGH); // turn on green LED

}

if (ledColour == "yellow"){{

digitalWrite(yellowled, HIGH); // turn on yellow LED

}

}

if (ledColour == "red"){ // wait 0.5 second

digitalWrite(redled, HIGH);// turn on red LED

}

}