

Traffic Light Control

Traffic lights, which may also be known as stoplights, traffic lamps, traffic signals, signal lights, robots or semaphore, are signaling devices positioned at road intersections, pedestrian crossings and other locations to control competing flows of traffic.

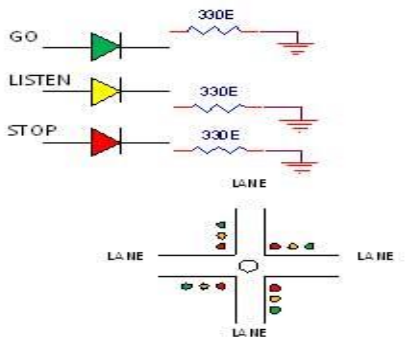
About the colors of Traffic Light Control

Traffic lights alternate the right of way of road users by displaying lights of a standard color (red, yellow/amber, and green), using a universal color code (and a precise sequence to enable comprehension by those who are color blind).

In the typical sequence of colored lights:

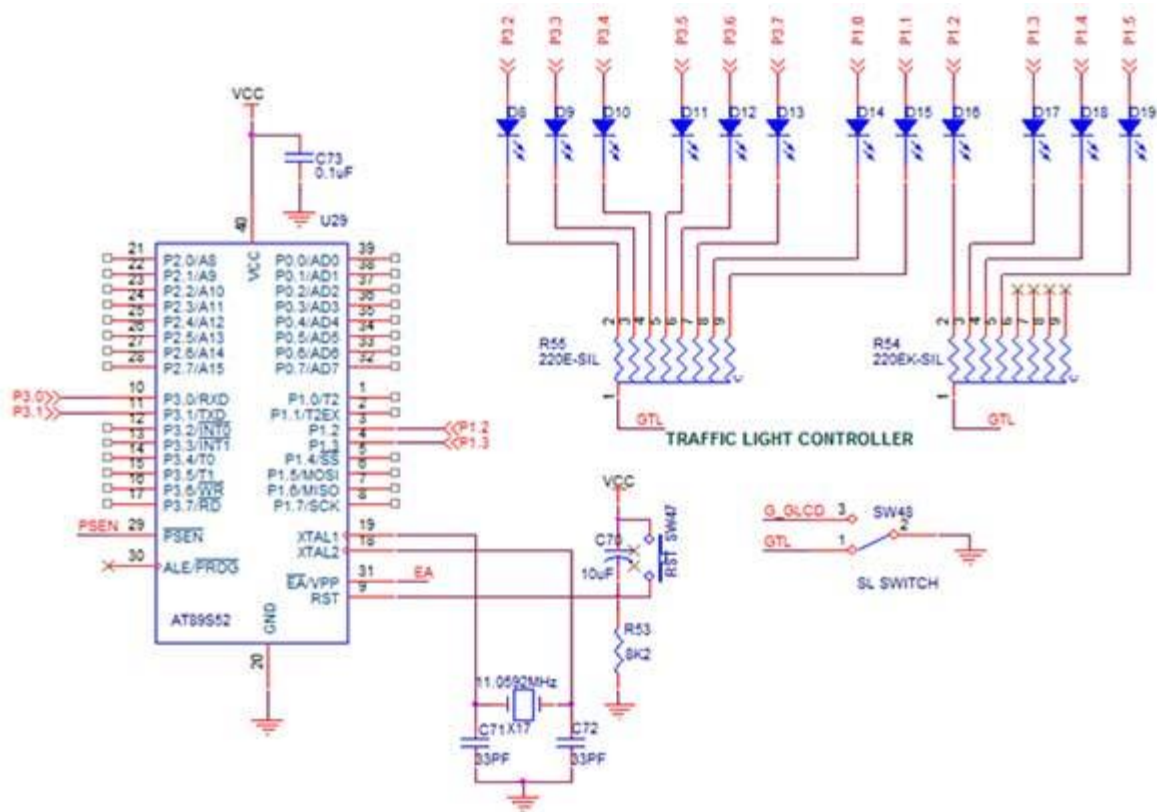
- ☞ Illumination of the green light allows traffic to proceed in the direction denoted,
- ☞ Illumination of the yellow/amber light denoting, if safe to do so, prepare to stop short of the intersection, and
- ☞ Illumination of the red signal prohibits any traffic from proceeding.

Pin Assignment with 8051

LAN Direction	8051 Lines	LED's	Traffic Light Controller
NORTH	P3.2	D8-Stop	 <p style="font-size: small; margin-top: 10px;">Make high to - LED On Make low to - LED Off</p>
	P3.3	D9-Listen	
	P3.4	D10-Go	
WEST	P3.5	D11-Stop	
	P3.6	D12-Listen	
	P3.7	D13-Go	
SOUTH	P1.0	D14-Stop	
	P1.1	D15-Listen	
	P1.2	D16-Go	
EAST	P1.3	D17-Stop	
	P1.4	D18-Listen	
	P1.5	D19-Go	

Note : Make SW32 to “Traffic” label marking position

Circuit Diagram to Interface Traffic Light with 8051



Source Code

I. C Program to Traffic Light using 8051

Title : Program to read traffic light controller

```
#include<stdio.h>
#include<reg51.h>
void Delay(unsigned int);
sbit RA = P1^0;
sbit YA = P1^1;
sbit GA = P1^2;
sbit RB = P3^2;
sbit YB = P3^3;
sbit GB = P3^4;
sbit RC = P3^5;
sbit YC = P3^6;
sbit GC = P3^7;
```

```

    sbit rD = P1^3;
    sbit YD = P1^4;
    sbit GD = P1^5;
    void Delay (unsigned int time)
    {
        unsigned int i,j;
        for (i=0;i<time;i++)
        for (j=0;j<1275;j++);
    }
    void SuperDelay()
    {
        unsigned int i;
        for (i=0;i<25;i++)
        Delay(100);
    }
    void main ()
    {
        P3 = 0;
        while (1)
        {
            RA = 0;
            GA = 1;
            YA = 0;
            RB = 1;
            GB = 0;
            YB = 0;
            RC = 1;
            GC = 0;
            YC = 0;
            rD = 1;
            GD = 0;
            YD = 0;
            SuperDelay();
            GA = 0;
            YA = 1;
            Delay(100);
            RA = 1;
            GA = 0;

```

```
YA = 0;
RB = 0;
GB = 1;
YB = 0;
RC = 1;
GC = 0;
YC= 0;
rD = 1;
GD = 0;
YD = 0;
SuperDelay ();
GB = 0;
YB = 1;
Delay (100);
RA = 1;
GA = 0;
YA = 0;
RB = 1;
GB = 0;
YB = 0;
RC = 0;
GC = 1;
YC = 0;
rD = 1;
GD = 0;
YD = 0;
SuperDelay ();
  GC = 0;
YC = 0;
Delay (100);
RA = 1;
GA = 0;
YA = 0;
RB = 1;
GB = 0;
YB = 0;
RC = 1;
GC = 0;
YC = 0;
```

```
rD = 0;  
GD = 1;  
YD = 0;  
SuperDelay ();  
GD = 0;  
YD = 1;  
Delay(100);  
}  
}
```