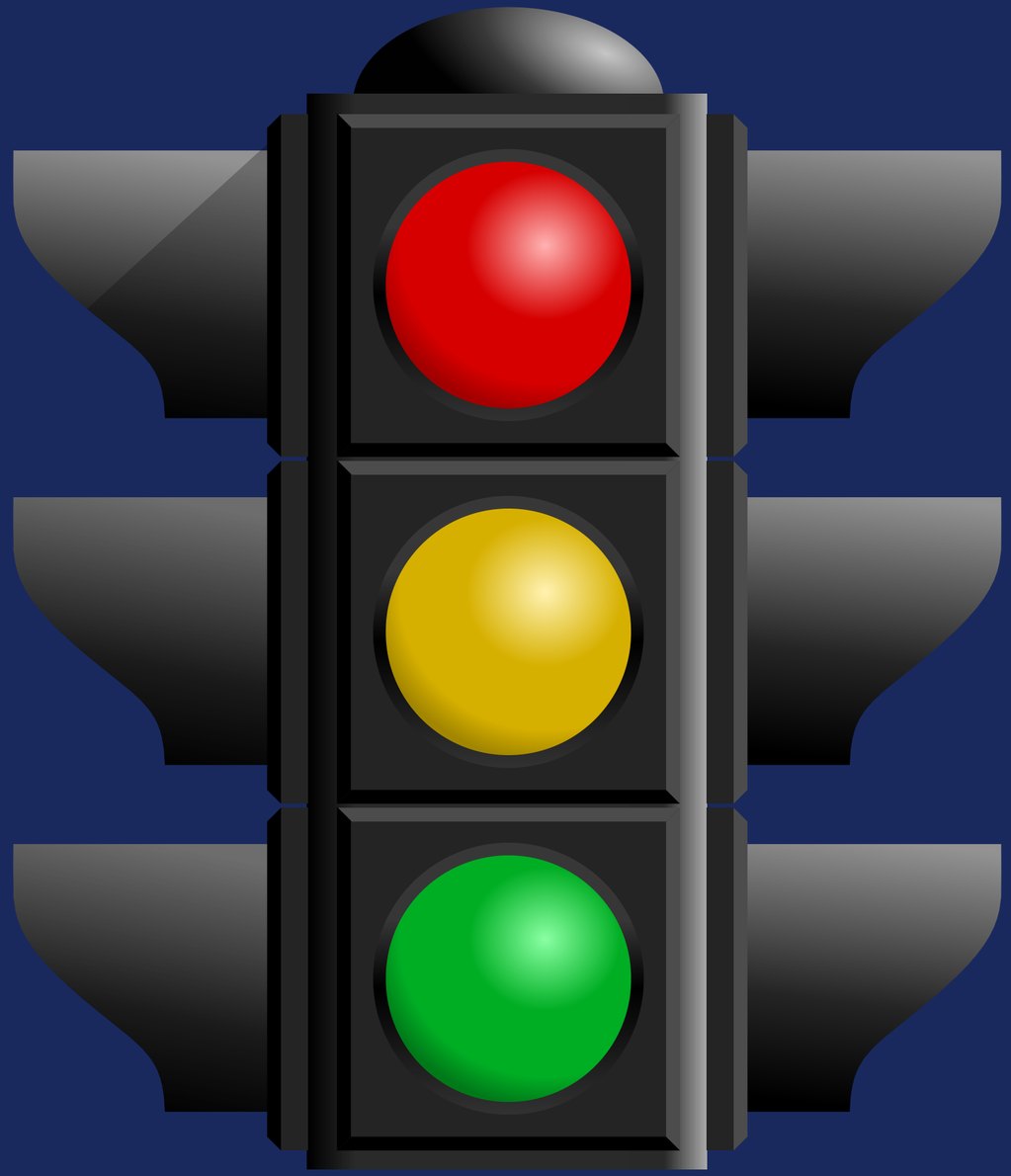
Group 11

INTERFACING TRAFFIC LIGHTS USING LPC2148



19CCE201-Microcontrollers and Interfacing Techniques

TEAM MEMBERS

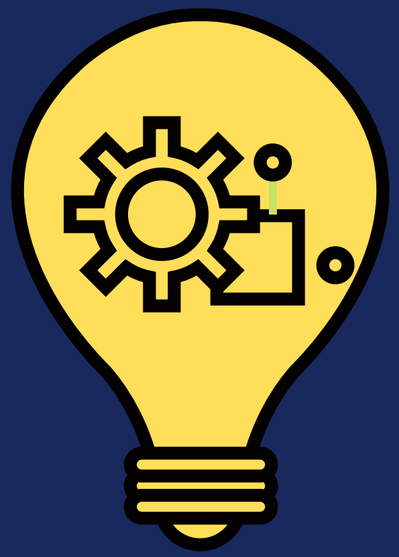
"Coming together is a beginning. Keeping together is progress. Working together is success."

AR VISHALINE: CB.EN.U4CCE20071

KARTHIKEYAN SARAVANAN: CB.EN.U4CCE20026

S.SUDHAN : CB.EN.U4CCE20061

BYRAPURAM LAKSHMIKANTH REDDY: CB.EN.U4CCE20011



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OBJECTIVE

To demonstrate a simple working model of a Traffic Light with LPC2148 using KEIL and simulating them on Proteus

INTRODUCTION

- Traffic lights are signaling devices positioned at road intersections, pedestrian crossings and other locations to control competing flows of traffic

- Traffic lights alternate the right of way of road users by displaying lights of a standard color (red, yellow/amber, and green),

ALGORITHM

1. Configure P0.0 to 0.15 as GPIO
2. Configure P0.0 to P0.15 as output ports

[The simulation starts with the green light at the East and red lights in the other directions]

3. The green light on the EAST, connected to P0.12, and all the other red lights are turned on

DELAY

4. The green light is turned off
5. The yellow light is turned on in the east direction, while the red lights continue to be unaffected

DELAY

6. The yellow light is turned off and the green light on the SOUTH, connected to P0.15, and all the other red lights are turned on

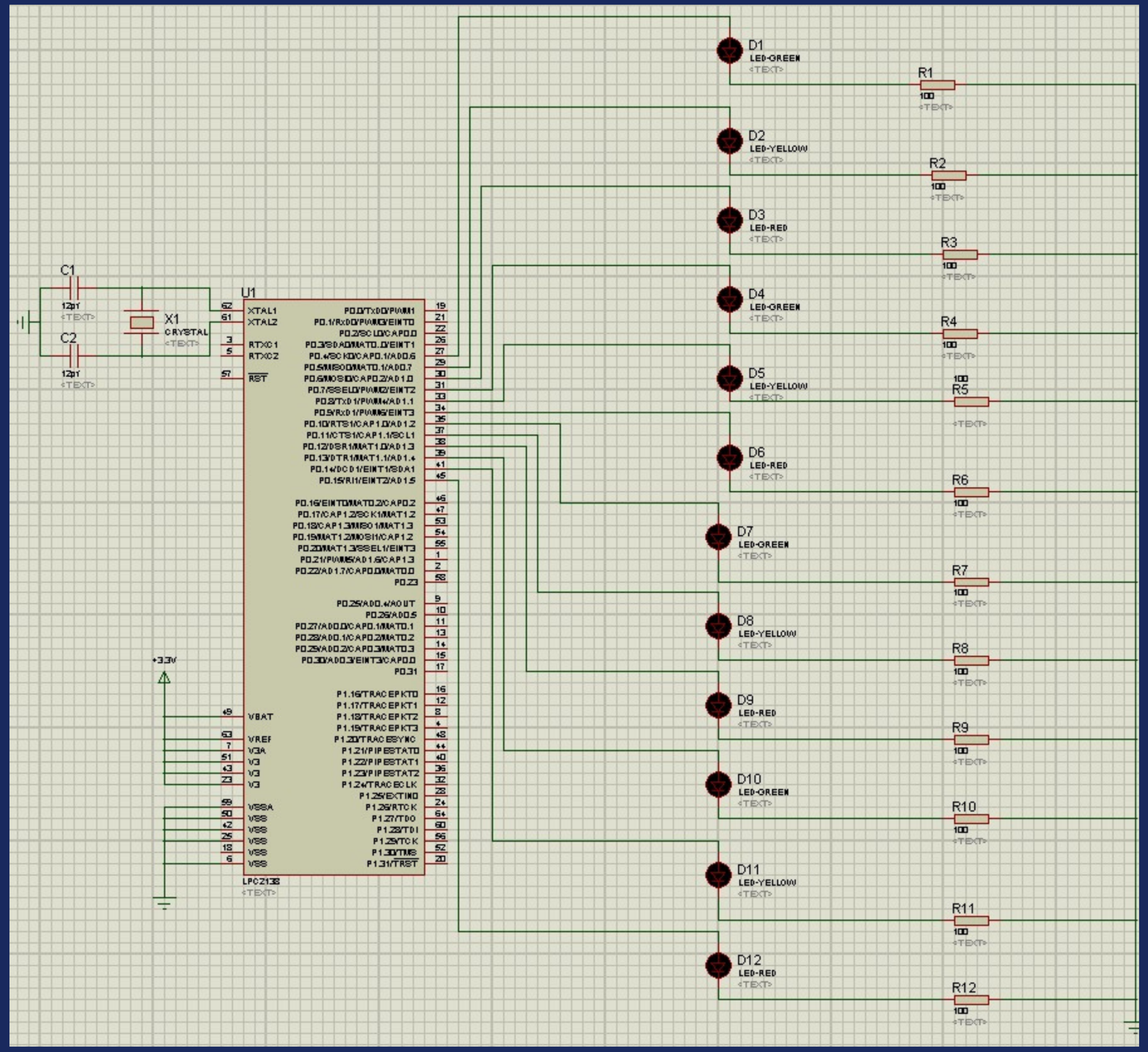
DELAY

7. The green light is turned off
8. The yellow light is turned on in the south direction, while the red lights continue to be unaffected

DELAY

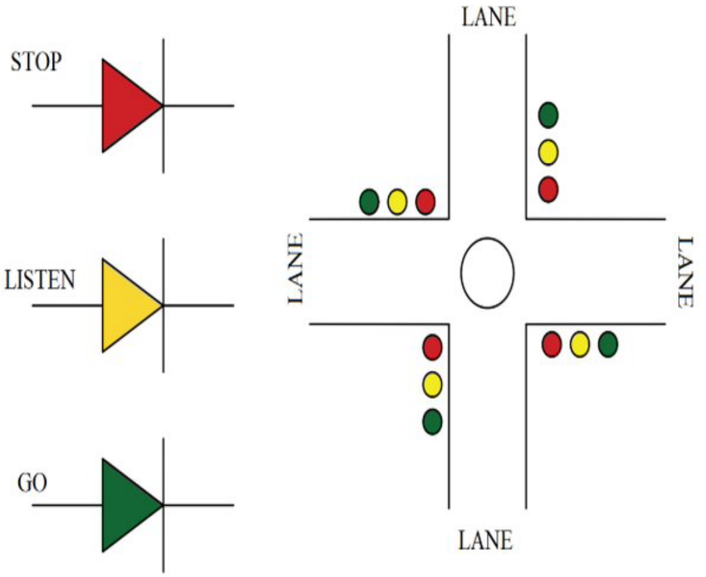
9. The yellow light is turned off and the green light on the WEST, connected to P0.6, and all the other red lights are turned on
10. The Process is Repeated

CIRCUIT DIAGRAM

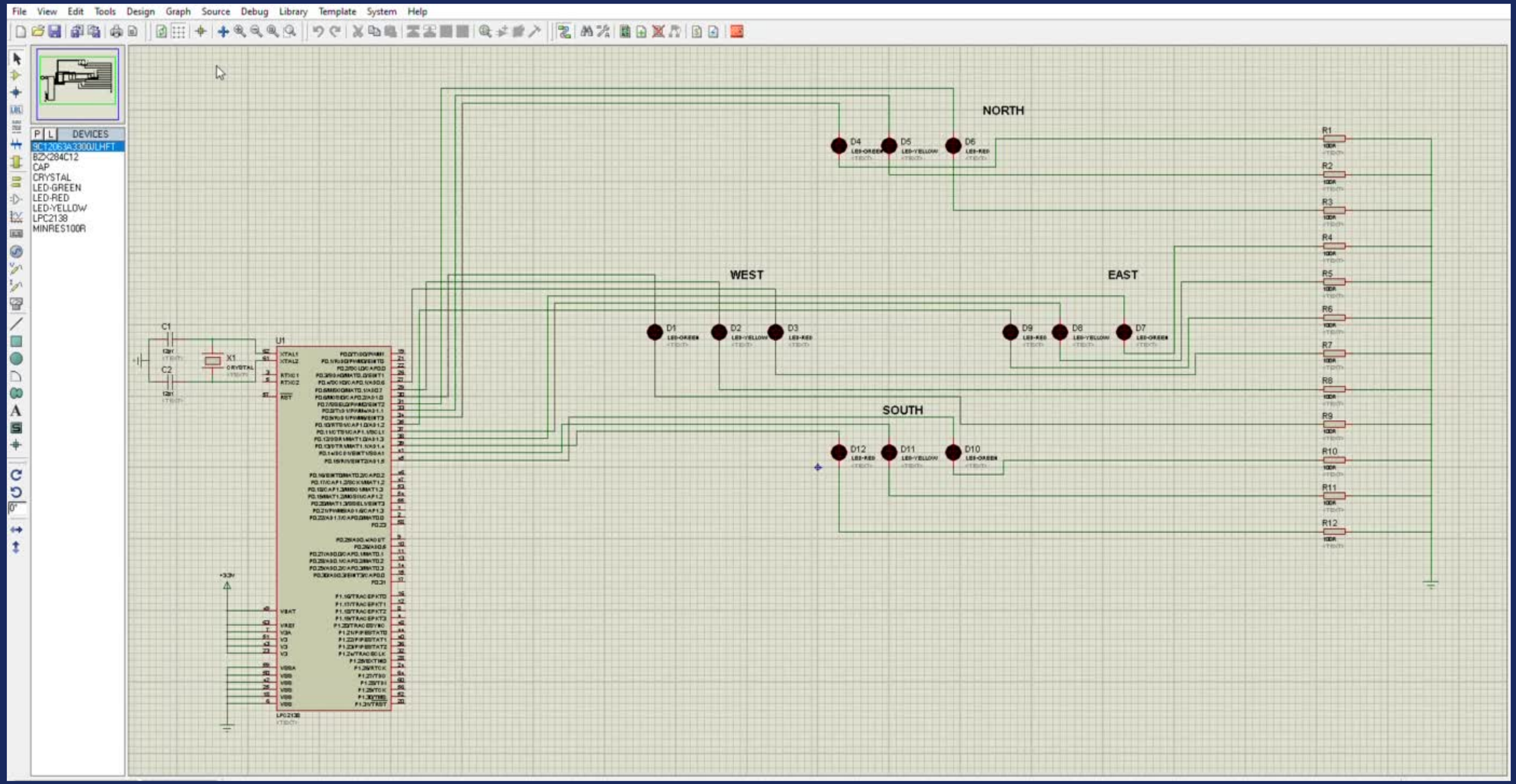


PIN ASSIGNMENT

LANE Direction	PORT	LEDs	Traffic Light Controller
SOUTH	P0.15	D10-Go	
	P0.14	D11-Listen	
	P0.13	D12-Stop	
EAST	P0.12	D7-Go	
	P0.11	D8-Listen	
	P0.10	D9-Stop	
NORTH	P0.9	D4-Go	
	P0.8	D5-Listen	
	P0.7	D6-Stop	
WEST	P0.6	D1-Go	
	P0.5	D2-Listen	
	P0.4	D3-Stop	



SIMULATION


File View Edit Tools Design Graph Source Debug Library Template System Help
P L DEVICES
9C12063A3300JLHFT
BZX284C12
CAP
CRYSTAL
LED-GREEN
LED-RED
LED-YELLOW
LPC2138
MINRES100R
NORTH
WEST
EAST
SOUTH
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
C1
C2
X1
U1
LPC2138

CONCLUSION

- The ARM7 based traffic control system works on traffic related problems such as traffic jam; emergency vehicles or forcibly passing, etc can be solved.
- By using this system configuration we have tried to reduce the possibilities of traffic jams, caused by traffic lights.
- Number of passing vehicle in the fixed time slot on the road decide the density range of traffics and on the basis of vehicle density calculation, microcontroller decide the traffic light delays.

Thank You

GROUP BATCH 11