

# Microprocessor Lab Test 1 Report

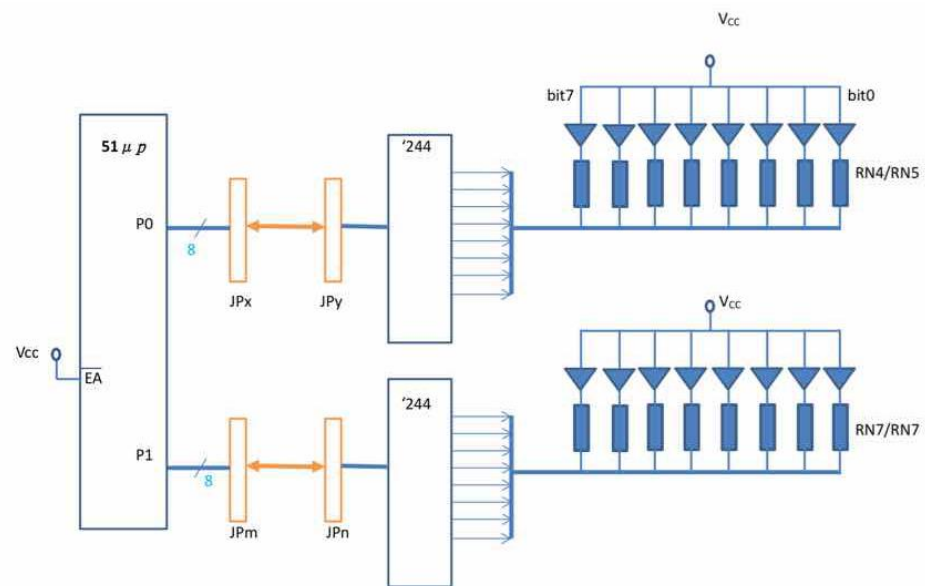
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## Subject and Goal:

This lab is about using  $\mu$ -Vision 51IDE residing on MegaWin82G516 to:

- Access every individual LED for ON/OFF control in the 2 sets of discrete LED module
- Write a code with 1 inner loop within a non stop outer loop for the display control of LED



## Preparations:

- Power cable and required connection from the output to the led input is established. The on/off of led is controlled by the output of port P0 and P2 that is connected to LED wiring port.
- Check the correctness and check if there are any defective on the board by test running Lab 1 program.

## Operating Procedure:

- Jumper-wiring for circuit setup
- Code preparation
- Task execution:
  - Start IDE51 emulation,
  - Start execution and troubleshooting if necessary

## Code Preparation:

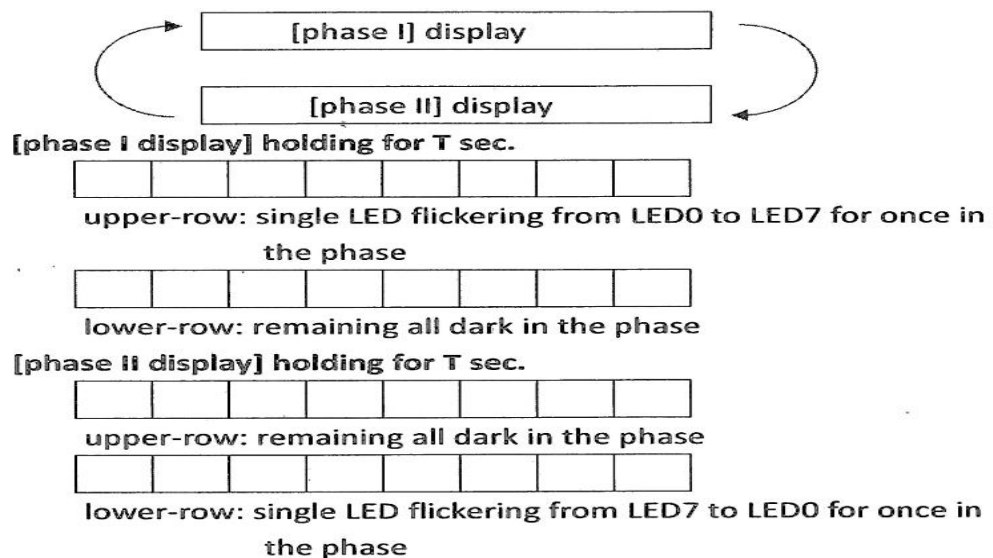
```

org 0                                mov r7, a
mov sp, #50H                          delay:
                                     push 5
                                     push 6
                                     push 7
                                     mov r5, #12
                                     dd1:
mov r6, a                             mov r6, #225
mov a, #0ffh                          dd2:
mov r1, a                             mov r7, #250
mov a, #07fh                          djnz r7, $
mov r2, a                             djnz r6, dd2
mov a, #8                             djnz r5, dd1
mov r3, a                             pop 7
mk1:                                  pop 6
mov a, r6                             pop 5
mov p0, a                             ret
mov a, r7
mov p3, a
call delay
rl a
                                     end
                                     mov a, r6
                                     rr a
                                     mov r6, a
                                     djnz r3, mk1
                                     //exchange
                                     push 1
                                     push 7
                                     pop 1
                                     pop 7
                                     push 2
                                     push 6
                                     pop 2
                                     pop 6
                                     mov a, #8
                                     mov r3, a
                                     jmp mk1

```

### Observation:

- The code provided above in the report able to display the LED animation as the graph below



- The code above has no more bug or warning message popup. Therefore, test 1 has been completed and the process has not been a harsh path due to sufficient preparation from reading material prepared before the start of the lab.

### Comprehensive evaluation:

- By using more than one register to control one light patter has advantages of being able to decrease loop size by sacrificing memory space.

- Delay function is calculated by considering the clock needed to execute the command djnz and clock frequency of the device