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**Vellore Institute of Technology**  
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## **SCHOOL OF ELECTRONICS & COMMUNICATION**

**FALL SEMESTER 2023 – 2024**

**ECE – 4003**

### **EMBEDDED SYSTEM DESIGN**

**Professor: Sundar. S**

### **LAB ASSESSMENT – 2**

**Interfacing with Switches and I/O Display Devices**

**VINYAS A SHETTY**

**20BEC0780**

**L27+28**

QUESTION 1:

**Write an Assembly Language program to blink the LEDs alternately.**

CODE:

```
//VINYAS A SHETTY 20BEC0780
```

```
ORG 0000H
```

```
XX: MOV A, #0FFH
```

```
MOV P1, A
```

```
ACALL DELAY
```

```
CLR A
```

```
MOV P1, A
```

```
ACALL DELAY
```

```
SJMP XX
```

```
DELAY: MOV R3,#250
```

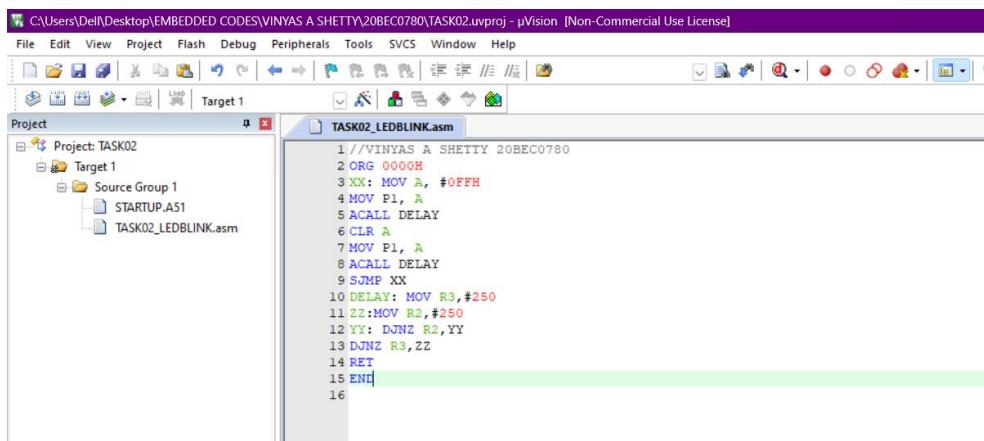
```
ZZ:MOV R2,#250
```

```
YY: DJNZ R2,YY
```

```
DJNZ R3,ZZ
```

```
RET
```

```
END
```



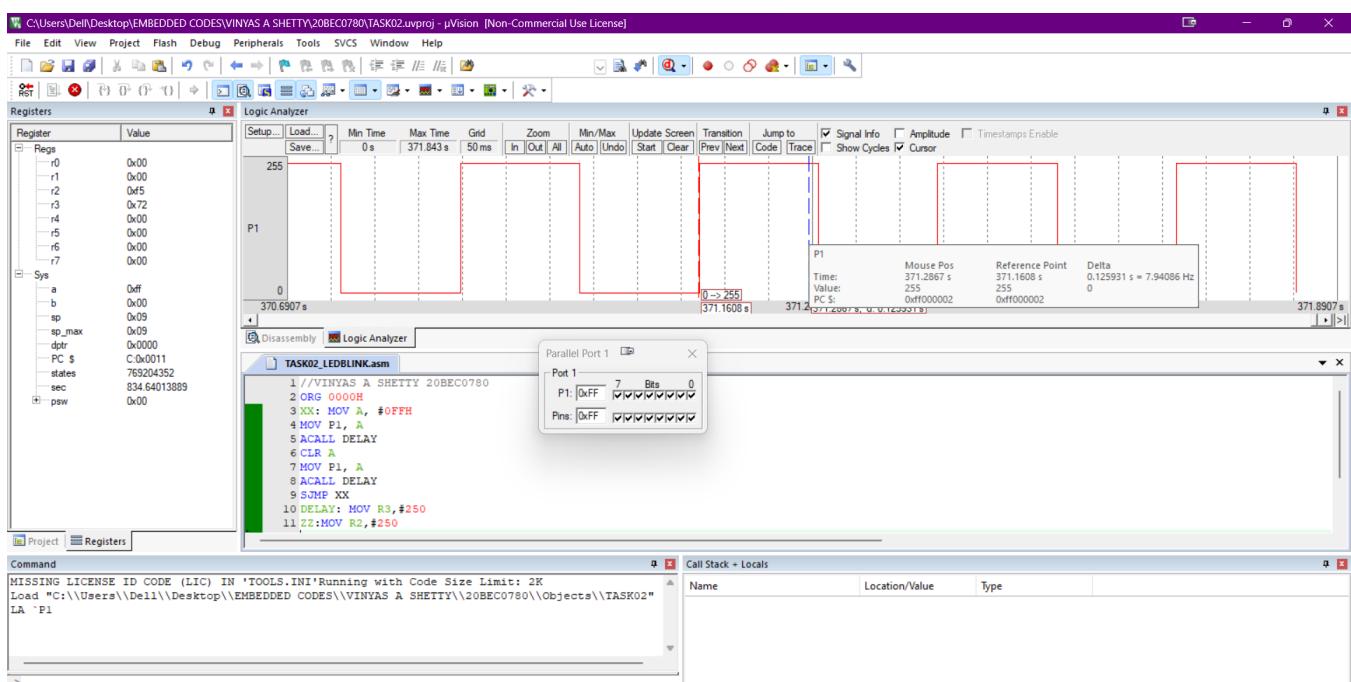
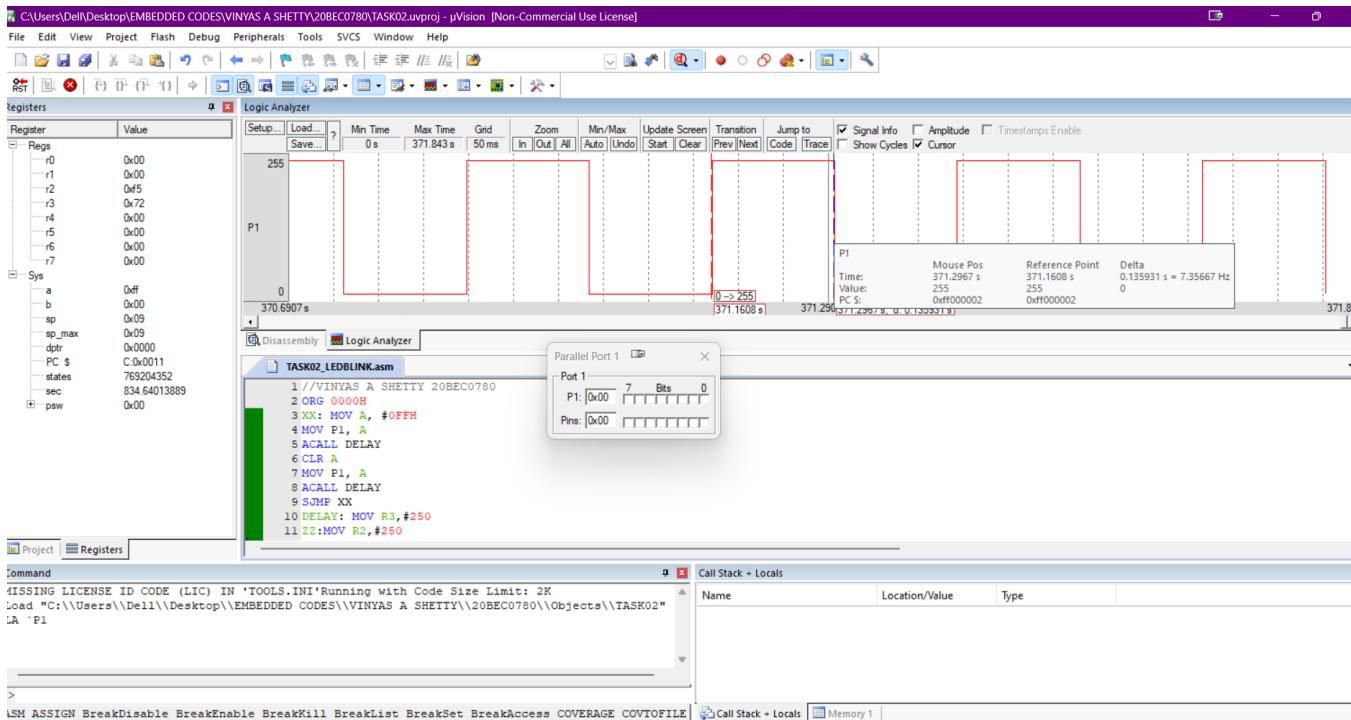
The screenshot shows the µVision IDE interface with the project 'TASK02' open. The assembly code is displayed in the main editor window, starting with the initialization code and followed by the LED blink loop. The code uses registers A, P1, R2, and R3, and memory locations XX, YY, and ZZ. The assembly code is color-coded for syntax highlighting.

```

//VINYAS A SHETTY 20BEC0780
ORG 0000H
XX: MOV A, #0FFH
MOV P1, A
ACALL DELAY
CLR A
MOV P1, A
ACALL DELAY
SJMP XX
DELAY: MOV R3,#250
ZZ:MOV R2,#250
YY: DJNZ R2,YY
DJNZ R3,ZZ
RET
END

```

## SIMULATION RESULTS:



OUTPUT:



OBSERVATIONS:

The LEDs keep turning on and off with a little delay between them

## QUESTION 2:

LOOPING LEDS ON A PARTICULAR PORT

### CODE:

```
//VINYAS A SHETTY 20BEC0780
```

```
ORG 0000H
```

```
XY:MOV P2,#01H
```

```
ACALL DELAY
```

```
MOV P2,#02H
```

```
ACALL DELAY
```

```
MOV P2,#04H
```

```
ACALL DELAY
```

```
MOV P2,#08H
```

```
ACALL DELAY
```

```
MOV P2,#10H
```

```
ACALL DELAY
```

```
MOV P2,#20H
```

```
ACALL DELAY
```

```
MOV P2,#40H
```

```
ACALL DELAY
```

```
MOV P2,#80H
```

```
ACALL DELAY
```

```
SJMP XY
```

```
DELAY:MOV R1,200
```

```
XX: MOV R2,100
```

```
YY:DJNZ R2,YY
```

```
DJNZ R1,XX
```

```
RET
```

```
END
```

The screenshot shows the µVision IDE interface with the assembly code for `TASK02_LEDLOOP.asm`. The code implements a LED loop with a delay. It includes instructions for moving values between registers (P2, R1, R2) and calling a `DELAY` subroutine. The assembly code is as follows:

```

1 //VINYAS A SHETTY 20BEC0780
2 ORG 0000H
3 XY:MOV P2,#01H
4 ACALL DELAY
5 MOV P2,#02H
6 ACALL DELAY
7 MOV P2,#04H
8 ACALL DELAY
9 MOV P2,#08H
10 ACALL DELAY
11 MOV P2,#10H
12 ACALL DELAY
13 MOV P2,#20H
14 ACALL DELAY
15 MOV P2,#40H
16 ACALL DELAY
17 MOV P2,#80H
18 ACALL DELAY
19 SJMP XY
20 DELAY:MOV R1,200
21 XX: MOV R2,100
22 YY:DJNZ R2,YY
23 DJNZ R1,XX
24 RET
25 END
26

```

## SIMULATION RESULTS

The screenshot shows the µVision IDE during simulation. The Registers window displays the state of various registers, including R0 through R7 and system registers like sp and PC. The Disassembly window shows the assembly code being executed, with the current instruction highlighted. A callout box from the `DJNZ` instruction points to a Parallel Port 2 configuration dialog, which shows Port 2 pins 0-7 set to 0. The Call Stack + Locals window is also visible at the bottom.

C:\Users\Delhi\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers Disassembly

Register	Value
Regs	
r0	0x00
r1	0x02
r2	0x22
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x09
sp_max	0x09
dptr	0x0000
dptr	0x000E
states	2031903144
sec	220475601563
psw	0x00

Parallel Port 2 Port 2 7 Bits 0  
P2: 0x02 Pins: 0x02

TASK02\_LEDLOOPasm

```

16 ACALL DELAY
17 MOV P2,#80H
18 ACALL DELAY
19 SJMP XY
20 DELAY:MOV R1,200
21 XX: MOV R2,100
22 YY:DJNZ R2,YY
23 DJNZ R1,XX
24 RET
25 END
26

```

Call Stack + Locals

Name	Location/Value	Type
LA	P1	

## OUTPUT:



## OBSERVATION:

When the code is executed, the LEDs start to blink in a cyclic order, that is LEDs blink in the order of 01,02,04,08,10,20,40,80 (all in hexadecimal value) and rotate back to the initial led.

### QUESTION 3:

Pattern LEDS: wherein the leds converge and diverge from the centre led

#### CODE:

```
//VINYAS A SHETTY 20BEC0780
ORG 0000H
XX:MOV DPTR,#200H
MOV A,#00H
MOV R1,#07H
XY:CLR A
MOVC A,@A+DPTR
MOV P1,A
ACALL DELAY
INC DPTR
DJNZ R1,XY
SJMP XX
DELAY: MOV R3,#250
ZZ:MOV R2,#250
YY: DJNZ R2,YY
DJNZ R3,ZZ
RET
ORG 200H
DB 81H,42H,24H,18H,24H,42H,81H
END
```

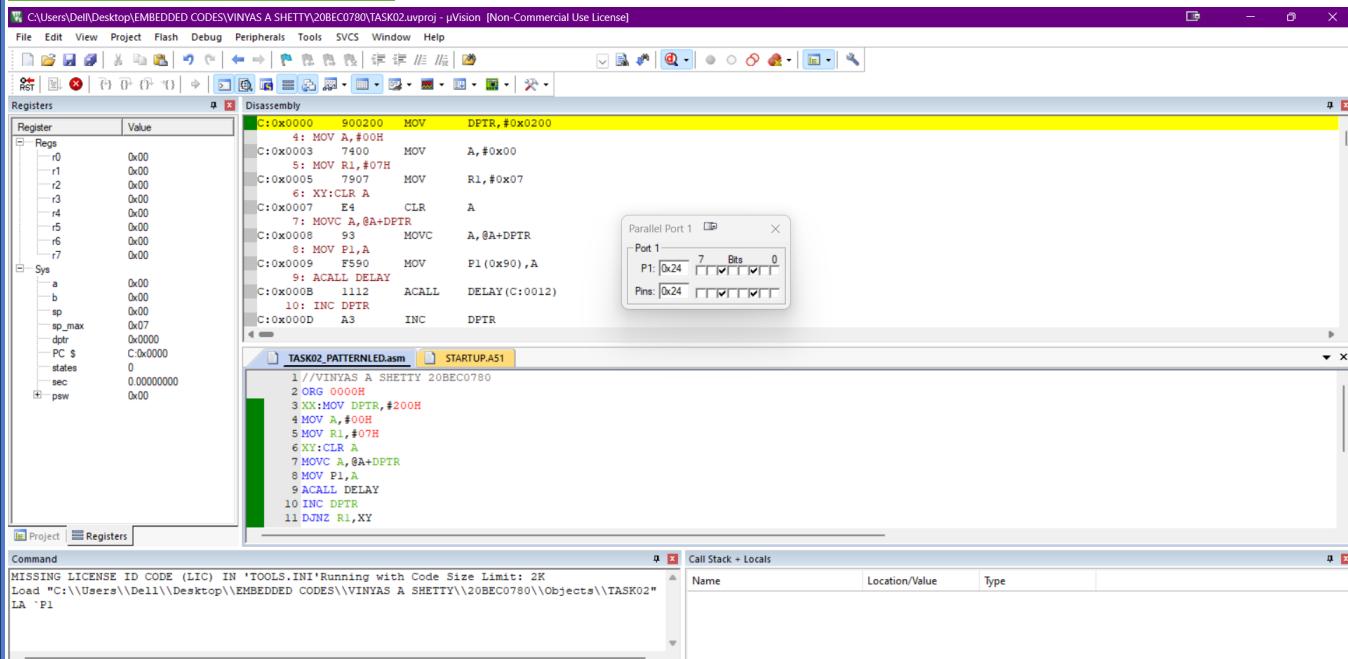
The screenshot shows the µVision IDE interface with the project 'TASK02' open. The assembly code for 'TASK02\_PATTERNLED.asm' is displayed in the main window:

```

1 //VINYAS A SHETTY 20BEC0780
2 ORG 0000H
3 XX:MOV DPTR,#200H
4 MOV A,#00H
5 MOV R1,#07H
6 XY:CLR A
7 MOVC A,@A+DPTR
8 MOV P1,A
9 ACALL DELAY
10 INC DPTR
11 DJNZ R1,XY
12 SJMP XX
13 DELAY: MOV R3,#250
14 ZZ:MOV R2,#250
15 YY: DJNZ R2,YY
16 DJNZ R3,ZZ
17 RET
18 ORG 200H
19 DB 81H,42H,24H,18H,24H,42H,81H
20 END
21

```

## SIMULATION RESULTS:



C:\Users\DELL\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers

Register	Value
Regs	
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x00
sp_max	0x07
dptr	0x0000
PC \$	C:00000
states	0
sec	0.0000000
psw	0x00

Dissassembly

```

C:0x0000 900200 MOV DPTR, #0x0200
 4: MOV A, #00H
C:0x0003 7400 MOV A, #0x00
 5: MOV RL, #07H
C:0x0005 7907 MOV RL, #0x07
 6: XY:CLR A
C:0x0007 E4 CLR A
 7: MOVC A, @A+DPTR
C:0x0008 93 MOVC A, @A+DPTR
 8: MOV P1,A
C:0x0009 F590 MOV P1 (0x90), A
 9: ACALL DELAY
C:0x000B 1112 ACALL DELAY(C:0012)
10: INC DPTR
C:0x000D A3 INC DPTR

```

Parallel Port 1

Port 1	7 Bits	0					
P1: 0x81	<input checked="" type="checkbox"/>						
Pins: 0x81	<input checked="" type="checkbox"/>						

TASK02\_PATTERNLED.asm STARTUP.A51

```

1 //VINYAS A SHETTY 20BEC0780
2 ORG 0000H
3 XX:MOV DPTR, #200H
4 MOV A, #00H
5 MOV RL, #07H
6 XY:CLR A
7 MOVC A, @A+DPTR
8 MOV P1,A
9 ACALL DELAY
10 INC DPTR
11 DJNZ R1,XY

```

Project Registers

Call Stack + Locals

Name	Location/Value	Type
LA	0x00000000	
P1	0x00000000	

MISSING LICENSE ID CODE (LIC) IN 'TOOLS.INI' Running with Code Size Limit: 2K  
Load "C:\\Users\\DELL\\Desktop\\EMBEDDED CODES\\VINYAS A SHETTY\\20BEC0780\\Objects\\\\TASK02"  
LA P1

## OUTPUT:



## OBSERVATIONS:

When the code is executed the LEDs starts blinking in a specific pattern as such the LEDs resemble the numbers 81H, 42H and so On(as mentioned in the DATABASE)

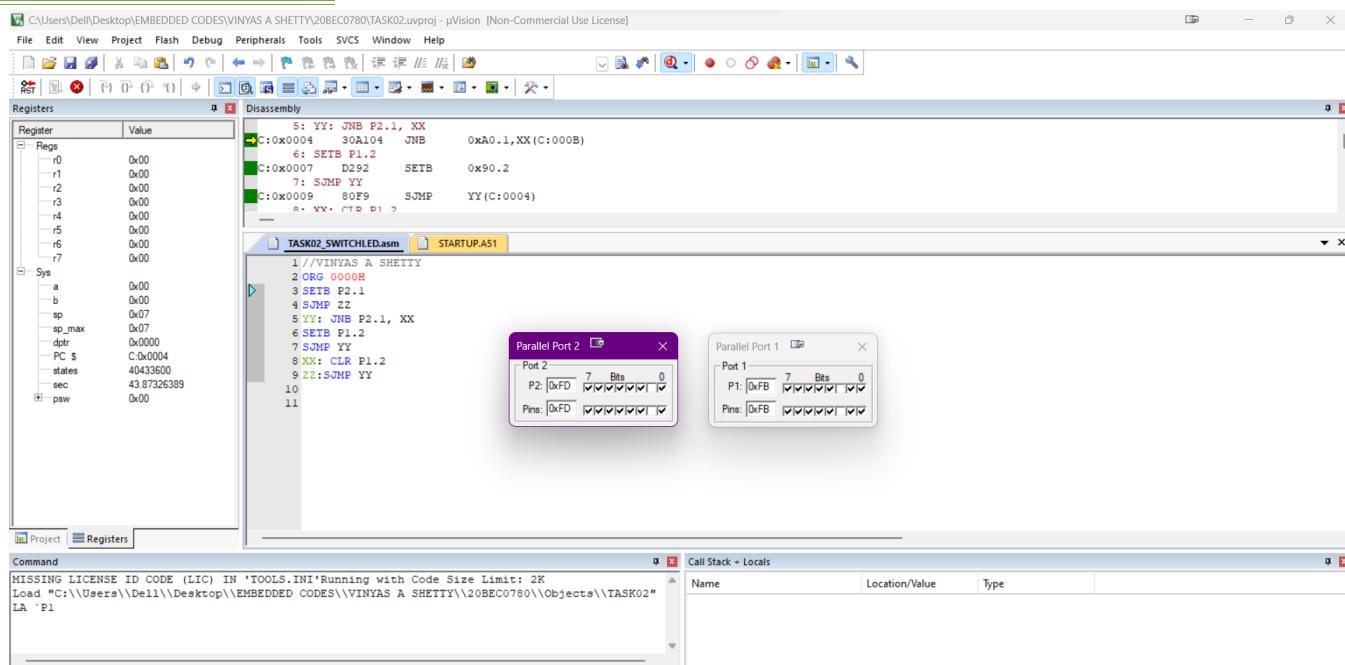
## QUESTION 4

SWITCH controls the LED

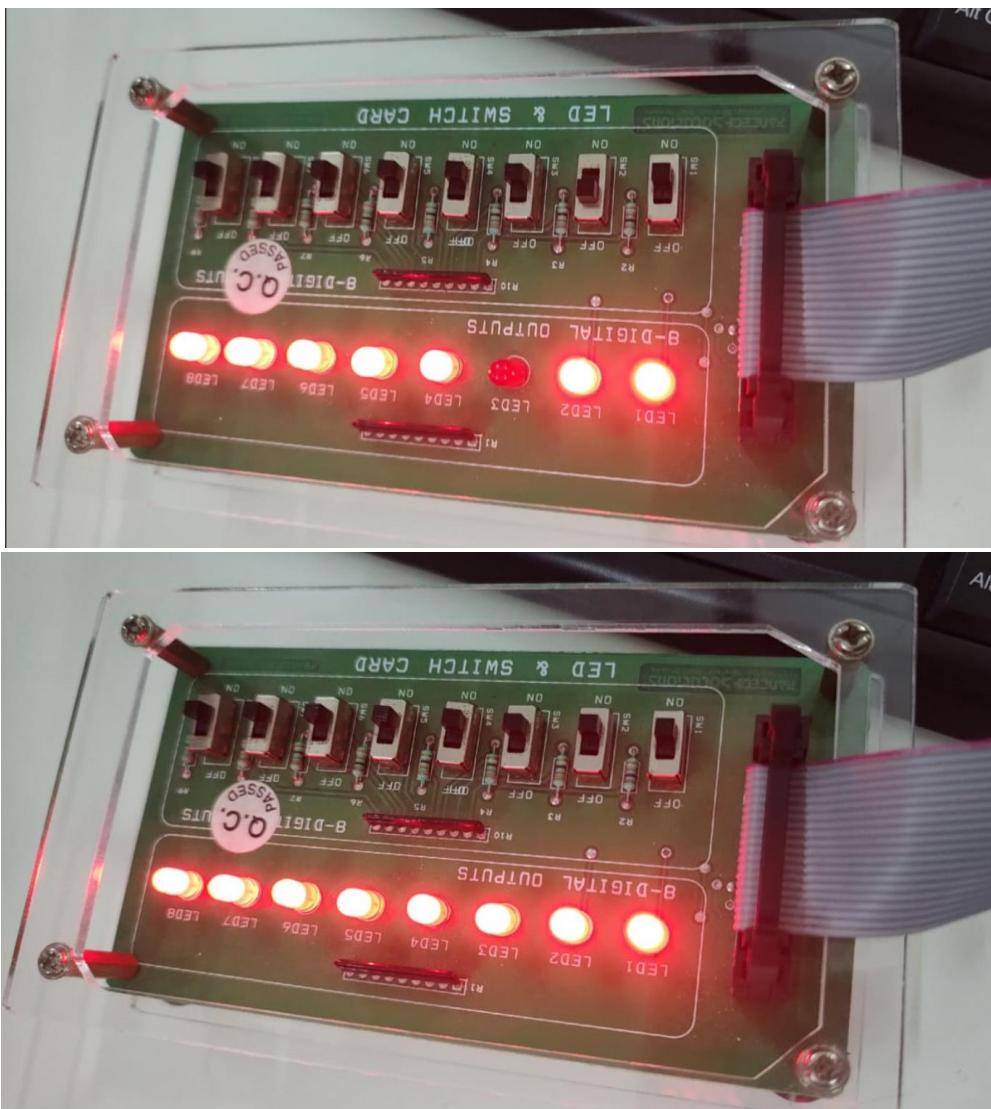
### CODE:

```
//VINYAS A SHETTY
ORG 0000H
SETB P2.1
SJMP ZZ
YY: JNB P2.1, XX
SETB P1.2
SJMP YY
XX: CLR P1.2
ZZ: SJMP YY
```

### SIMULATION RESULTS:



OUTPUT:



OBSERVATIONS:

Therefore, when P2.1 is HIGH the led connected to P1.2 will be turned ON, similarly if P2.1 is LOW P1.2 will be turned OFF

QUESTION 5:

MASTER SWITCH TO CONTROL ALL THE LEDS OF AN PORT

CODE:

//VINYAS A SHETTY

ORG 0000H

SETB P2.1

Y:MOV C,P2.1

JC XX

JNC XY

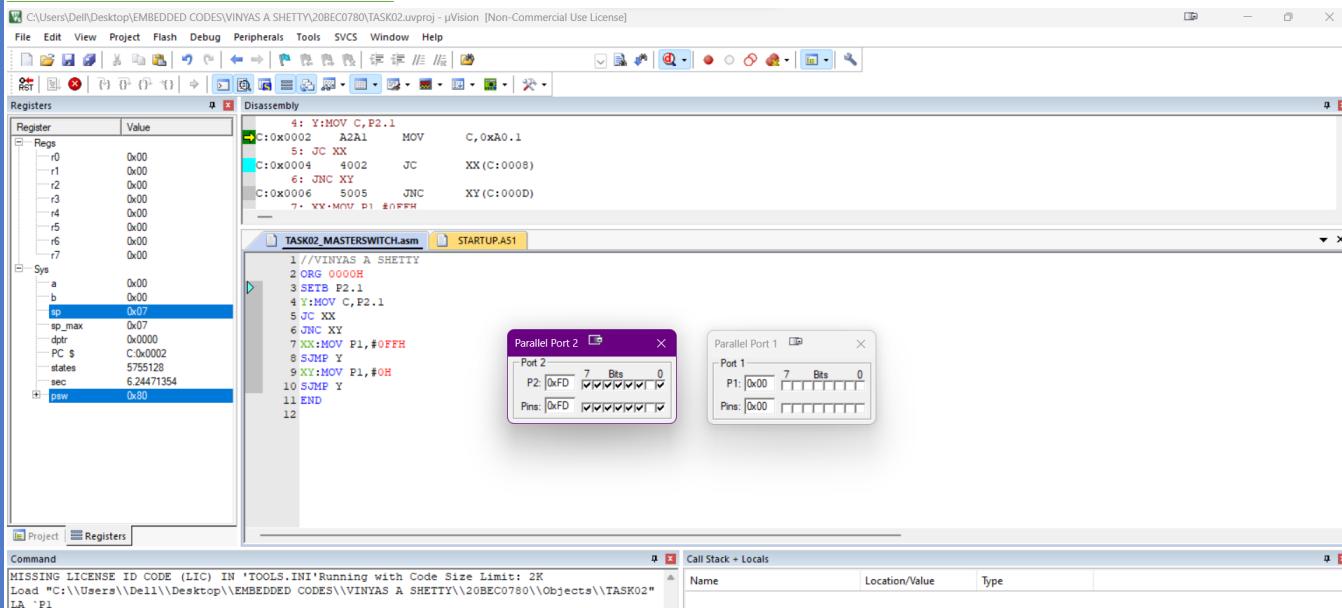
XX:MOV P1,#0FFH

SJMP Y

XY:MOV P1,#0H

SJMP Y

END

SIMULATION RESULTS:

C:\Users\Del\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers Disassembly

Register	Value
Regs	
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x07
sp_max	
dptr	0x0000
PC \$	C:0x0002
states	40442649
sec	43.88308268
pew	0x00

```

4: Y:MOV C,P2.1
C:0x0002 A2A1 MOV C,0xA0.1
5: JC XX
C:0x0004 4002 JC XX(C:0008)
6: JNC XY
C:0x0006 5005 JNC XY(C:000D)
7: XY:MOV P1,#0FFH

```

TASK2\_MASTERSWITCH.asm STARTUP.A51

```

1 //VINYAS A SHETTY
2 ORG 0000H
3 SETB P2.1
4 Y:MOV C,P2.1
5 JC XX
6 JNC XY
7 XX:MOV P1,#0FFH
8 SJMP Y
9 XY:MOV P1,#0H
10 SJMP Y
11 END
12

```

Parallel Port 2 Port 2 Bits 0  
P2: [0xFF] ✓✓✓✓✓✓✓✓  
Pins: [0xFF] ✓✓✓✓✓✓✓✓

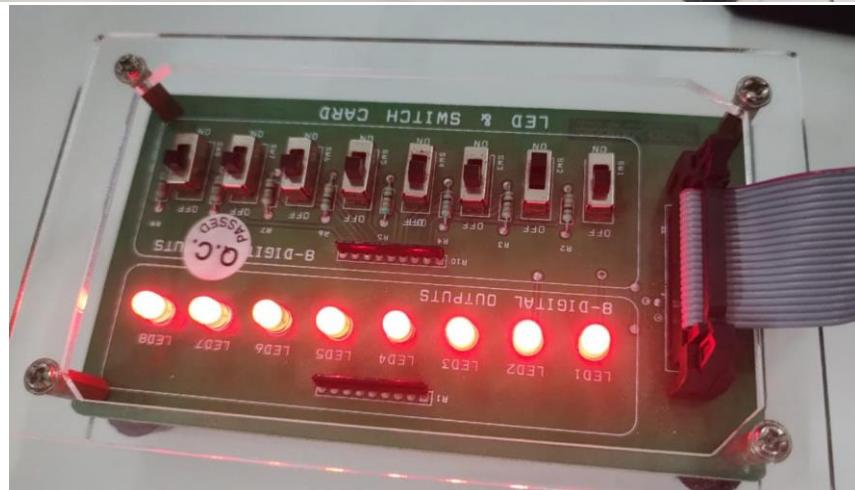
Parallel Port 1 Port 1 Bits 0  
P1: [0xFF] ✓✓✓✓✓✓✓✓  
Pins: [0xFF] ✓✓✓✓✓✓✓✓

Call Stack + Locals

Name	Location/Value	Type
------	----------------	------

MISSING LICENSE ID CODE (LIC) IN 'TOOLS.INI' Running with Code Size Limit: 2K  
Load "C:\\Users\\Del\\Desktop\\EMBEDDED CODES\\VINYAS A SHETTY\\20BEC0780\\Objects\\\\TASK02"  
LA\_P1

## OUTPUT:



OBSERVATIONS:

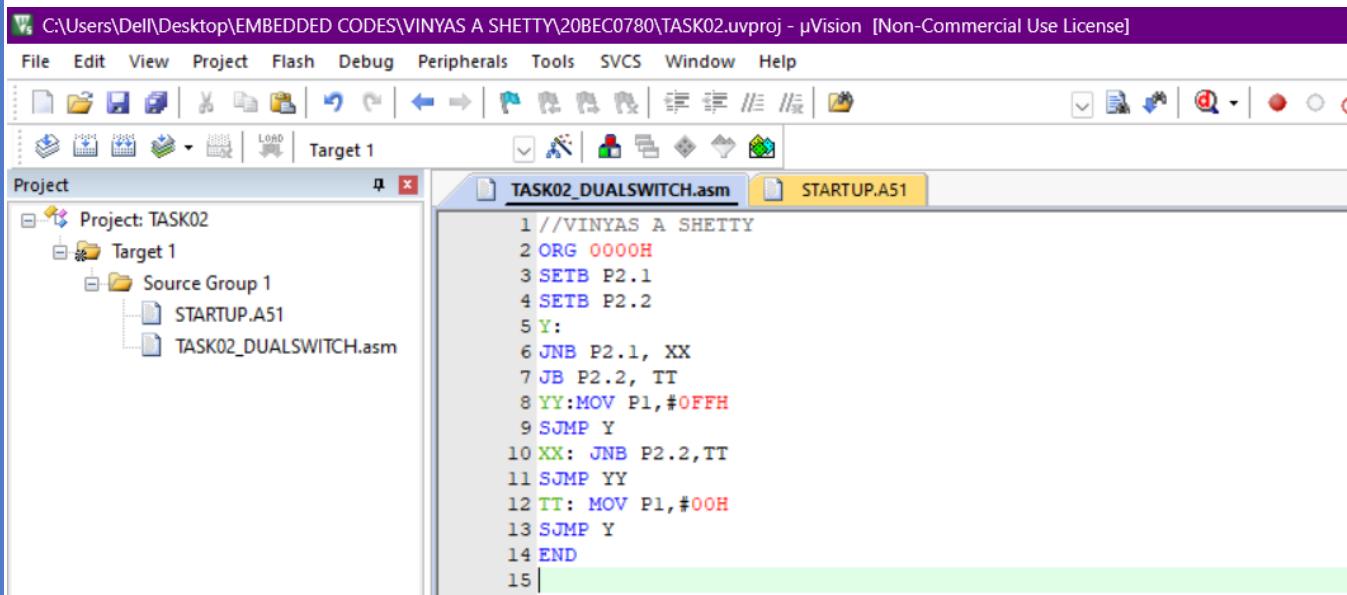
When the Pin P2.1 is turned ON all the LEDs start glowing irrespective of their switch position.  
Similarly when P2.1 is OFF all the LEDs turn OFF.

QUESTION 6:

DUAL SWITCH which switches on the when either of the switch is on

CODE:

```
//VINYAS A SHETTY
ORG 0000H
SETB P2.1
SETB P2.2
Y:
JNB P2.1, XX
JB P2.2, TT
YY:MOV P1,#0FFH
SJMP Y
XX: JNB P2.2,TT
SJMP YY
TT: MOV P1,#00H
SJMP Y
END
```



The screenshot shows the µVision IDE interface with the following details:

- Title Bar:** C:\Users\Dell\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]
- Menu Bar:** File, Edit, View, Project, Flash, Debug, Peripherals, Tools, SVCS, Window, Help
- Toolbar:** Standard toolbar icons for file operations, project management, and debugging.
- Project Explorer:** Shows "Project: TASK02" with "Target 1" selected. Under "Source Group 1", there are files "STARTUP.A51" and "TASK02\_DUALSWITCH.asm".
- Code Editor:** The active window displays the assembly code for "TASK02\_DUALSWITCH.asm".

```

1 //VINYAS A SHETTY
2 ORG 0000H
3 SETB P2.1
4 SETB P2.2
5 Y:
6 JNB P2.1, XX
7 JB P2.2, TT
8 YY:MOV P1,#0FFH
9 SJMP Y
10 XX: JNB P2.2,TT
11 SJMP YY
12 TT: MOV P1,#00H
13 SJMP Y
14 END
15 |

```

## SIMULATION RESULTS:

C:\Users\Del\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers Disassembly

Register	Value
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
 Sys	
a	0x00
b	0x00
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C:0x0014
states	19084842
sec	20.71232856
psw	0x00

```

12: IT: MOV P1,#00H
+0x0014 7590000 MOV P1(0x90),#000
13: SJMP Y
C:0x0017 80EB SJMP Y(C:0004)
C:0x0019 00 NOP
C:0x001A 00 NOP
C:0x001B nn NOP

```

TASK02\_DUALSWITCH.asm STARTUP.A51

```

1 //VINYAS A SHETTY
2 ORG 0000H
3 SETB P2.1
4 SETB P2.2
5 Y:
6 JNB P2.1, XX
7 JB P2.2, TT
8 YY:MOV P1,#0FFH
9 SJMP Y
10 XX: JNB P2.2, TT
11 SJMP YY
12 TT: MOV P1,#00H
13 SJMP Y
14 END
15

```

Parallel Port 2 Parallel Port 1

Port 2: Port 1:

Pins: Pins:

Call Stack + Locals

MISSING LICENSE ID CODE (LIC) IN 'TOOLS.INI' Running with Code Size Limit: 2K  
Load "C:\\Users\\Dell\\Desktop\\EMBEDDED CODES\\VINYAS A SHETTY\\20BEC0780\\Objects\\TASK02"  
LA 'P1'

C:\Users\Del\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers Disassembly

Register	Value
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
 Sys	
a	0x00
b	0x00
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C:0x0004
states	91226576
sec	98.98608507
psw	0x00

```

6: JNB P2.1, XX
+0x0004 30A108 JNB 0xA0.1,XX(C:0004)
7: JB P2.2, TT
C:0x0007 20A20A JB 0xA0.2,TT(C:0014)
8: YY:MOV P1,#0FFH
9: SJMP Y
C:0x000A 7590FF MOV P1(0x90),#0xFF
G: SJMP Y

```

TASK02\_DUALSWITCH.asm STARTUP.A51

```

1 //VINYAS A SHETTY
2 ORG 0000H
3 SETB P2.1
4 SETB P2.2
5 Y:
6 JNB P2.1, XX
7 JB P2.2, TT
8 YY:MOV P1,#0FFH
9 SJMP Y
10 XX: JNB P2.2, TT
11 SJMP YY
12 TT: MOV P1,#00H
13 SJMP Y
14 END
15

```

Parallel Port 2 Parallel Port 1

Port 2: Port 1:

Pins: Pins:

Call Stack + Locals

MISSING LICENSE ID CODE (LIC) IN 'TOOLS.INI' Running with Code Size Limit: 2K  
Load "C:\\Users\\Dell\\Desktop\\EMBEDDED CODES\\VINYAS A SHETTY\\20BEC0780\\Objects\\TASK02"  
LA 'P1'

C:\Users\DELL\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\TASK02.uvproj - µVision [Non-Commercial Use License]

File Edit View Project Flash Debug Peripherals Tools SVCS Window Help

Registers Disassembly

Register	Value
Regs	0x00
r0	0x00
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x00
b	0x00
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C0x000A
states	112051612
sec	1215837038
psw	0x00

```

8: YY:MOV P1,#0FFH      P1(0x90),#0xFF
9: SJMP Y
C:0x00D 80F5 SJMP      Y(C:0004)
10: XX: JNB P2.2,TT
C:0x00F 30A202 JNB     0xA0.2,TT(C:0014)
11: SJMP YY

```

TASK02\_DUALSWITCH.asm STARTUP.A51

```

1 //VINYAS A SHETTY
2 ORG 0000H
3 SETB P2.1
4 SETB P2.2
5 Y:
6 JNB P2.1, XX
7 JB P2.2, TT
8 YY:MOV P1,#0FFH
9 SJMP Y
10 XX: JNB P2.2, TT
11 SJMP YY
12 TT: MOV P1,#00H
13 SJMP Y
14 END
15

```

Parallel Port 2 Parallel Port 1

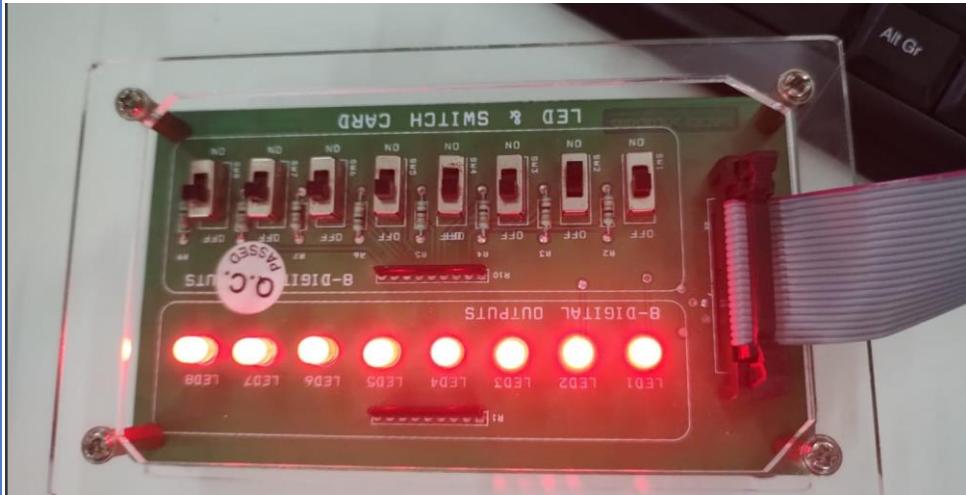
Port 2	Port 1
P2: [0xF9] 7 Bits 0	P1: [0x00] 7 Bits 0
Pins: [0xF9]	Pins: [0x00]

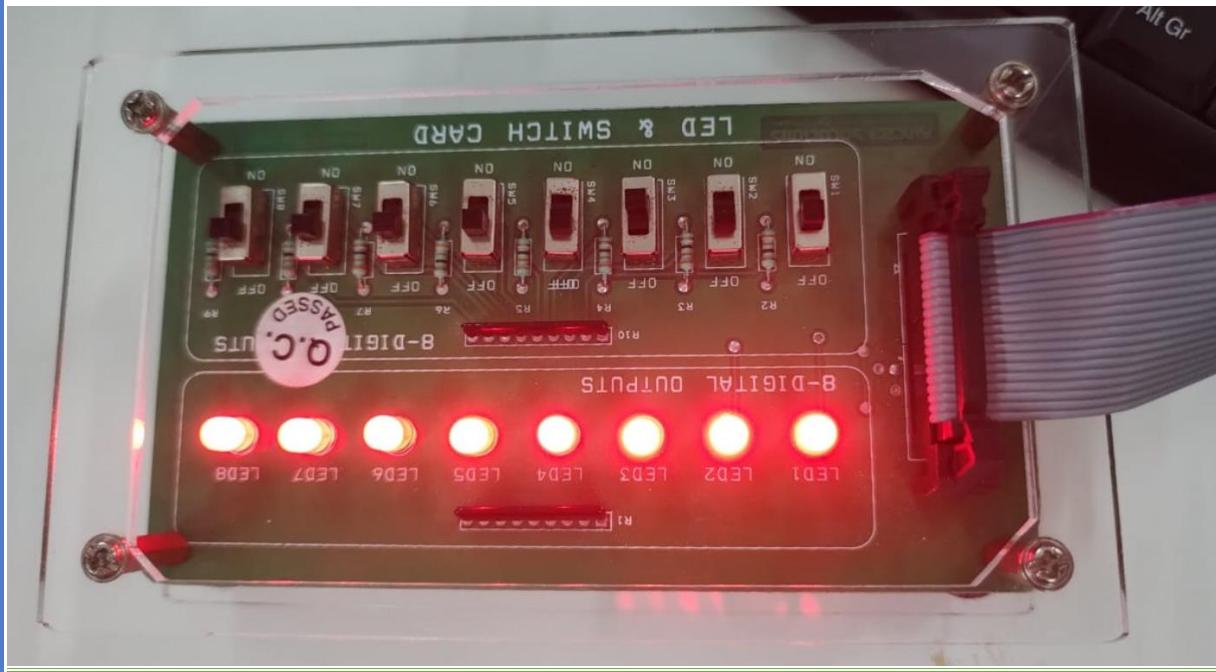
Call Stack + Locals

Name	Location/Value	Type

MISSING LICENSE ID CODE (LIC) IN 'TOOLS.INI' Running with Code Size Limit: 2K  
Load "C:\Users\DELL\Desktop\EMBEDDED CODES\VINYAS A SHETTY\20BEC0780\Objects\TASK02"  
LA `P1`

## OUTPUT:





### OBSERVATIONS:

A DUAL SWITCH works like an XOR gate therefore, when both the pin are turned on or off the LEDs are off. If either of the switch is turned on only then the led will be turned ON.

## QUESTION 7:

LCD SINGLE ROW DISPLAY OF “VIT”

### CODE:

```
//VINYAS A SHETTY 20BEC0780
```

```
ORG 0H
```

```
MOV A,#38H
```

```
ACALL CMDWRT
```

```
ACALL DELAY
```

```
MOV A,#0EH
```

```
ACALL CMDWRT
```

```
ACALL DELAY
```

```
MOV A,#01H
```

```
ACALL CMDWRT
```

```
ACALL DELAY
```

```
MOV A,#06H
```

```
ACALL CMDWRT
```

```
ACALL DELAY
```

```
MOV A,#084H
```

```
ACALL CMDWRT
```

```
ACALL DELAY
```

```
MOV A,#'V'
```

```
ACALL DATAWRT
```

```
ACALL DELAY
```

```
MOV A,#'T'
```

```
ACALL DATAWRT
```

```
ACALL DELAY
```

```
MOV A,#'T'
```

```
ACALL DATAWRT
```

```
ACALL DELAY
```

```
AGAIN: SJMP AGAIN
```

```
CMDWRT:MOV P1,A
```

```
CLR P2.0
```

```
CLR P2.1
```

```
SETB P2.2
```

```
ACALL DELAY
```

```
CLR P2.2
```

```
RET
```

```
DATAWRT:MOV P1,A
```

SETB P2.0  
CLR P2.1  
SETB P2.2  
ACALL DELAY  
CLR P2.2  
RET

DELAY:MOV R3,#255  
HERE2: MOV R4,#255  
HERE:DJNZ R4,HERE  
DJNZ R3,HERE2  
RET  
END

### OUTPUT:



### OBSERVATIONS:

We can see that word VIT is displayed in 1<sup>st</sup> ROW

## QUESTION 8:

LCD DISPLAY 2 ROWS -GROUP NAME AND LAB SLOT

### CODE:

```
//VINYAS A SHETTY 20BEC0780
ORG 0000H
MOV A,#38H
ACALL CMDWRT
ACALL DELAY
MOV A,#0EH
ACALL CMDWRT
ACALL DELAY
MOV A,#01H
ACALL CMDWRT
ACALL DELAY
MOV A,#06H
ACALL CMDWRT
ACALL DELAY
MOV A,#084H
ACALL CMDWRT
ACALL DELAY
MOV A,#'G'
ACALL DATAWRT
ACALL DELAY
MOV A,#'R'
ACALL DATAWRT
ACALL DELAY
MOV A,#'O'
ACALL DATAWRT
ACALL DELAY
MOV A,#'U'
ACALL DATAWRT
ACALL DELAY
MOV A,#'P'
ACALL DATAWRT
```

```
ACALL DELAY
MOV A,#'3'
ACALL DATAWRT
ACALL DELAY

MOV A,#0C4H
ACALL CMDWRT
ACALL DELAY

MOV A,#'L'
ACALL DATAWRT
ACALL DELAY
MOV A,#'2'
ACALL DATAWRT
ACALL DELAY
MOV A,#'7'
ACALL DATAWRT
ACALL DELAY
MOV A,#'+'
ACALL DATAWRT
ACALL DELAY
MOV A,#'L'
ACALL DATAWRT
ACALL DELAY
MOV A,#'2'
ACALL DATAWRT
ACALL DELAY
MOV A,#'8'
ACALL DATAWRT
ACALL DELAY
AG;AIN: SJMP AGAIN
```

```
CMDWRT:MOV P1,A
CLR P2.0
CLR P2.1
SETB P2.2
ACALL DELAY
```

CLR P2.2

RET

DATAWRT:MOV P1,A

SETB P2.0

CLR P2.1

SETB P2.2

ACALL DELAY

CLR P2.2

RET

DELAY:MOV R3,#255

HERE2: MOV R4,#255

HERE:DJNZ R4,HERE

DJNZ R3,HERE2

RET

END

### OUTPUT:



### OBSERVATIONS:

We can see that GROUP3 was displayed on 1<sup>st</sup> row and L27+L28 was displayed on 2<sup>nd</sup> row.

### QUESTION 9:

MOVING DISPLAY wherein VIT continues to scroll

#### CODE:

```
//VINYAS A SHETTY
ORG 0000H
MOV A,#38H
ACALL CMNWRT
ACALL DELAY
MOV A,#0EH
ACALL CMNWRT
ACALL DELAY
MOV A,#01H
ACALL CMNWRT
ACALL DELAY
MOV A,#06H
ACALL CMNWRT
ACALL DELAY
MOV A,#80H
ACALL CMNWRT
ACALL DELAY

MOV A,#'V'
ACALL DATWRT
ACALL DELAY
MOV A,#'I'
ACALL DATWRT
ACALL DELAY
MOV A,#'T'
ACALL DATWRT
ACALL DELAY
AGAIN:
```

**MOV A,#18H**

ACALL CMNWRT

MOV R6,#0FFH

XX:ACALL DELAY

DJNZ R6,XX

SJMP AGAIN

CMNWRT:

MOV P1,A

CLR P2.0

CLR P2.1

SETB P2.2

CLR P2.2

RET

DATWRT:

MOV P1,A

SETB P2.0

CLR P2.1

SETB P2.2

CLR P2.2

RET

DELAY: MOV R3,#0FFH

MOV R4,#0FFH

MOV R5,#0FFH

HERE: DJNZ R5,HERE

HERE1: DJNZ R4, HERE1

HERE2: DJNZ R3,HERE2

RET

END

OUTPUT:



OBSERVATIONS:

When this code is executed the word VIT scrolls lefts continuosly after the specific delay.