Ahsanullah University of Science & Technology

Department of Computer Science and Engineering

Course No	**:**	CSE3108
Course Title	**:**	Microprocessors Lab
Set no	**:**	14 & 5
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Section : A1

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Experiment No: 01

Write an assembly code to glow dots on Dot Matrix Display Left Sided Arrow shape in GREEN color with array.

SOLUTION:

```
DM SEGMENT PARA PUBLIC 'CODE'
ASSUME CS: DM
ORG 1000H
START:
        ;control register turn on
         MOV AL,80H
         OUT 1FH,AL

         TOP1:
         MOV SI,OFFSET DATA
         MOV BX,36H

         TOP:
              ;PORT A
              MOV AL,BYTE PTR CS:[SI]
              OUT 18H,AL
```

```
 INC SI
 DEC BX

;PORT B
MOV AL,BYTE PTR CS:[SI]
OUT 1AH,AL
INC SI
DEC BX

;PORT C
MOV AL,BYTE PTR CS:[SI]
OUT 1CH,AL

;for delay
MOV CX,0FFFFH
L1:LOOP L1

INC SI
DEC BX
CMP BX,0000H
JE TOP1
JMP TOP
```

```
DATA:
DB BFH
DB FFH
DB 04H

DB DFH
DB FFH
DB 02H

DB EFH
DB FFH
DB 01H

DB F7H
DB FFH
DB 02H

DB FBH
DB FFH
DB 04H
```

```
DB F7H
DB FFH
DB 04H

DB F7H
DB FFH
DB 08H

DB F7H
DB FFH
DB 10H

DB F7H
DB FFH
DB 20H

DB F7H
DB FFH
DB 40H

DB F7H
DB FFH
```

```
DB 80H

DB EFH
DB FBH
DB 80H

DB DFH
DB FFH
DB 80H

DB DFH
DB FFH
DB 40H

DB DFH
DB FFH
DB 20H

DB DFH
DB FFH
DB 10H
```

```
        DB DFH
        DB FFH
        DB 08H

        DB DFH
        DB FFH
        DB 04H

    DM ENDS
END START
```

Experiment No: 02

Write an assembly code to display A, 6, L in Seven Segment Display and to glow R2+Y(ON)-G(ON)-Y(OFF)-R1(ON) in LED in one code.

Solution:

```
SA SEGMENT PARA PUBLIC 'CODE'
ASSUME CS: SA
ORG 1000H
```

```
START1:
;control register turn on
MOV AL, 80H
OUT 1FH, AL


MOV SI, OFFSET DATA
MOV BX, 11H
MOV DX,04H

SSD:
MOV AL, BYTE PTR CS:[SI]
OUT 19H, AL

;For delay
MOV CX, 0FFFFH
L1: LOOP L1
MOV CX, 0FFFFH
L2: LOOP L2
MOV CX, 0FFFFH
L3: LOOP L3
MOV CX, 0FFFFH
L4: LOOP L4

INC SI
DEC BX
CMP BX, 0000H
JE START2
JMP SSD
```

```
START2:
;segment address forcefully off
MOV AL, 0FFH
OUT 19H, AL

LED:
MOV AL, BYTE PTR CS:[SI]
OUT 1BH, AL

;For delay
MOV CX, 0FFFFH
L5: LOOP L5
MOV CX, 0FFFFH
L6: LOOP L6
MOV CX, 0FFFFH
L7: LOOP L7
MOV CX, 0FFFFH
L8: LOOP L8

INC SI
DEC DX
CMP DX, 0000H
JE EXIT
JMP LED

DATA:
;For SSD

; for display A
DB 0FEH
DB 0FCH
```

```
DB 0F8H
DB 0E8H
DB 0C8H
DB 088H
DB 0FFH ; for blank

;for display 6
DB 0FEH
DB 0DEH
DB 0CEH
DB 0C6H
DB 0C2H
DB 082H
DB 0FFH ; for blank

;for display L
DB 0DFH
DB 0CFH
DB 0C7H

;R2 AND Y LED turn on
 DB 0CH

 ;G LED turn ON
 DB 0EH

 ;Y LED turn OFF
 DB 0AH

 ;R1 LED turn ON
 DB 0BH


EXIT:

SA ENDS
END START1
```