Ahsanullah University of Science and Technology (AUST)
Department of Computer Science and Engineering

LAB REPORT

Course No   : CSE3108

Course Title   : Microprocessors Sessional

Assignment No   : 04

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9. Draw the given shape in dot matrix display and show the initials of the shape in seven segment display and glow the four LEDs according to the initials.

`Half Frame`
↓   ↓
H   F

Answer.

SSEG   SEGMENT STACK 'STACK'

   DW 100 DUP(?)

SSEG ENDS

DSEG SEGMENT 'DATA'

   COUNT DB 5

DSEG ENDS

CSEG SEGMENT 'CODE'

MAIN PROC FAR

   PUSH DS

   MOV AX, 0

   PUSH AX

   MOV AX, DSEG

   MOV DS, AX

   MOV ES, AX

```
PRINT:
        MOV DX, 2004H
        MOV AL, 00000001b
        OUT DX, AL
        MOV DX, 2030H
        MOV AL, 01000000b
        OUT DX, AL
        MOV CX, 0010H
L1 : Loop L1

        MOV DX, 2003H
        MOV AL, 00000001b
        OUT DX, AL
        MOV DX, 2030H
        MOV AL, 00110000b
        OUT DX, AL
        MOV CX, 0010H
L2 : Loop L2

        MOV DX, 2002H
        MOV AL, 00000001b
        OUT DX, AL
        MOV DX, 2030H
        MOV AL, 01110000b
        OUT DX, AL
        MOV CX, 0010H
L3: Loop L3

        MOV DX, 2001H
        MOV AL, 00000001b
        OUT DX, AL
        MOV DX, 2030H
        MOV AL, 01110010b
        OUT DX, AL
        MOV CX, 0010H
L4: Loop L4

        MOV DX, 2000H
        MOV AL, 00000001b
        OUT DX, AL
        MOV DX, 2030H
        MOV AL, 01101110b ; H
        OUT DX, AL
        MOV DX, 2070H
        MOV AL, 00000010b
        OUT DX, AL
        MOV CX, 0050H
L5: Loop L5

        MOV DX, 2000H
        MOV AL, 00000011b
        OUT DX, AL
        MOV DX, 2031H
        MOV AL, 00100000b
        OUT DX, AL
        MOV CX, 0010H
L6 : Loop L6
```

```asm
Mov DX, 2000H
Mov AL, 00000111b
OUT DX, AL

Mov DX, 2031H
Mov AL, 00110000b
OUT DX, AL

Mov CX, 0010H
L7: LOOP L7


Mov DX, 2000H
Mov AL, 00001111b
OUT DX, AL

Mov DX, 2031H
Mov AL, 00110001b
OUT DX, AL

Mov CX, 0010H
L8: LOOP L8


Mov DX, 2000H
Mov AL, 00011111b
OUT DX, AL

Mov DX, 2031H
Mov AL, 01110001b
OUT DX, AL

Mov DX, 2070H
Mov AL, 00000111b
OUT DX, AL


Mov CX, 0050H
L9: LOOP L9


Mov DX, 2000H
Mov AL, 00111111b
OUT DX, AL

Mov CX, 0010H
L10: LOOP L10


Mov DX, 2000H
Mov AL, 01111111b
OUT DX, AL

Mov CX, 0010H
L11: LOOP L11


Mov DX, 2001H
Mov AL, 00100001b
OUT DX, AL

Mov CX, 0010H
L12: LOOP L12


Mov DX, 2002H
Mov AL, 00010001b
OUT DX, AL

Mov CX, 0010H
L13: LOOP L13
```

```
Mov DX, 2003H
Mov AL, 00001001b
OUT DX, AL
Mov CX, 0010H
L14: Loop L14

Mov DX, 2003H
Mov AL, 00001101b
OUT DX, AL
Mov CX, 0010H
L15: Loop L15

Mov DX, 2004H
Mov AL, 00000101b
OUT DX, AL
Mov CX, 0060H
L16: Loop L16

Mov DX, 2004H
Mov AL, 00000100b
OUT DX, AL
Mov DX, 2030H
Mov AL, 01110010b
OUT DX, AL
Mov CX, 0010H
L01: Loop L01

Mov DX, 2003H
Mov AL, 00001100b
OUT DX, AL
Mov DX, 2030H
Mov AL, 01110000b
OUT DX, AL
Mov CX, 0010H
L02: Loop L02

Mov DX, 2002H
Mov AL, 00010000b
OUT DX, AL
Mov DX, 2030H
Mov AL, 00110000b
OUT DX, AL
Mov CX, 0010H
L03: Loop L03

Mov DX, 2001H
Mov AL, 001000000b
OUT DX, AL
Mov DX, 2030H
Mov AL, 001000000b
OUT DX, AL
Mov CX, 0010H
L04: Loop L04
```

```asm
Mov   DX, 2000H
Mov   AL, 01111110b
OUT   DX, AL
Mov   DX, 2030H
Mov   AL, 00000000b
OUT   DX, AL

Mov   DX, 2070H
Mov   AL, 00000001b
OUT   DX, AL

Mov   CX, 0060H
L05:  LOOP  L05


Mov   DX, 2000H
Mov   AL, 01111100b
OUT   DX, AL
Mov   DX, 2031H
Mov   AL, 00110001b
OUT   DX, AL
Mov   CX, 0010H
L06:  LOOP  L06


Mov   DX, 2000H
Mov   AL, 01111000b
OUT   DX, AL
```

```asm
Mov   DX, 2031H
Mov   AL, 00110000b
OUT   DX, AL
Mov   CX, 0010H
L07:  LOOP  L07


Mov   DX, 2000H
Mov   AL, 01110000b
OUT   DX, AL
Mov   DX, 2031H
Mov   AL, 00100000b
OUT   DX, AL
Mov   CX, 0010H
L08:  LOOP  L08


Mov   DX, 2000H
Mov   AL, 01100000b
OUT   DX, AL
Mov   DX, 2031H
Mov   AL, 00000000b
OUT   DX, AL

Mov   DX, 2070H
Mov   AL, 00000000b
OUT   DX, AL
Mov   CX, 0060H
L09:  LOOP  L09
```

```asm
    MOV  DX, 2000H
    MOV  AL, 01000000b
    OUT  DX, AL
    MOV  CX, 0010H
L010:  LOOP  L010


    MOV  DX, 2000H
    MOV  AL, 00000000b
    OUT  DX, AL
    MOV  CX, 0010H
L011:  LOOP  L011


    MOV  DX, 2001 H
    MOV  AL, 00000000b
    OUT  DX, AL
    MOV  CX, 0010H
L012:  LOOP  L012


    MOV  DX, 2002H
    MOV  AL, 00000000b
    OUT  DX, AL
    MOV  CX, 0010H
L013:  LOOP  L013


    MOV  DX, 2003H
    MOV  AL, 00000100b
    OUT  DX, AL
    MOV  CX, 0010H
L014:  LOOP  L014


    MOV  DX, 2003H
    MOV  AL, 00000000b
    OUT  DX, AL
    MOV  CX, 0010H
L015:  LOOP  L015


    MOV  DX, 2004H
    MOV  AL, 00000000b
    OUT  DX, AL
    MOV  CX, 0065H
L016:  LOOP  L016


    DEC  COUNT
    CMP  COUNT, 0
    JG  PRINT

    RET
MAIN ENDP

CSEG  ENDS
END  MAIN
```