



Ahsanullah University of Science & Technology
Department of Computer Science & Engineering

Course No : CSE3108
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Submitted To : Ms. Qamrun Nahar Eity & Ms. Tahsin Aziz

Submitted By-

Group : B₂
Name : S. M. Tasnimul Hasan
Id : 180204142
Section : B

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

For "Plus Sign"

P \Rightarrow Glow Red 2

S \Rightarrow Glow Red 1

Answer :

```
DSEG SEGMENT 'DATA'
DSEG ENDS

SSEG SEGMENT STACK 'STACK'
      DW 100h DUP (?)
SSEG ENDS

CSEG SEGMENT 'CODE'

START PROC FAR

      PUSH DS
      MOV AX, 0
      PUSH AX

      MOV AX, DSEG
      MOV DS, AX
      MOV ES, AX
```


MOV BX, 0

MAINLOOP:

MOV DX, 2003H

MOV AL, 0000 0001b

OUT DX, AL

MOV CX, 100H

L1: LOOP L1

MOV DX, 2003H

MOV AL, 0000 0011b

OUT DX, AL

MOV CX, 100H

L2: LOOP L2

MOV DX, 2030H

; 1st seven segment Display

MOV AL, 0010 0000b

OUT DX, AL

MOV DX, 2003H

MOV AL, 0000 0111b

OUT DX, AL

MOV CX, 100H

L3 : LOOP L3

MOV DX, 2002H

MOV AL, 0000 0100b

OUT DX, AL

MOV CX, 100H

L4 : LOOP L4

MOV DX, 2030H

MOV AL, 0011 0000b

OUT DX, AL

MOV DX, 2001H

MOV AL, 0000 0100b

OUT DX, AL

MOV CX, 100H

L5 : LOOP L5

MOV DX, 2001H

MOV AL, 0000 1100b

OUT DX, AL

MOV CX, 100H

L6 : LOOP L6

MOV DX, 2030H

MOV AL, 0011 0001b

OUT DX, AL

MOV DX, 2001H

MOV AL, 00011100b

OUT DX, AL

MOV CX, 100H

L7 : LOOP L7

MOV DX, 2002H

MOV AL, 0001 0100b

OUT DX, AL

MOV CX, 100H

L8 : LOOP L8

MOV DX, 2030H

MOV AL, 00110011b

OUT DX, AL

MOV DX, 2003H

MOV AL, 0001 0111b

OUT DX, AL

MOV CX, 100H

L9 : LOOP L9

MOV DX, 2003H

MOV AL, 0011 0111b

OUT DX, AL

MOV CX, 100H

L10 : LOOP L10

MOV DX, 2030h

MOV AL, 0111 0011b

OUT DX, AL

MOV DX, 2070H ; R2

MOV AL, 0000 1000b

OUT DX, AL

MOV DX, 2003H

MOV AL, 0111 0111b

OUT DX, AL

MOV CX, 100H

L11: LOOP L11

MOV DX, 2004H

MOV AL, 0100 0000b

OUT DX, AL

MOV CX, 100H

L12: LOOP L12

MOV DX, 2070H

; R2 & R1

MOV AL, 0000 1001b

OUT DX, AL

MOV DX, 2031h

; 2nd Seven Segment Display

MOV AL, 0000 0001b

OUT DX, AL

MOV DX, 2005h

MOV AL, 0100 0000b

OUT DX, AL

MOV CX, 100H

L13 : LOOP L13

MOV DX, 2005H

MOV AL, 0110 0000b

OUT DX, AL

MOV CX, 100H

L14 : LOOP L14

MOV DX, 2031H

MOV AL, 0010 0001b

OUT DX, AL

MOV DX, 2005H

MOV AL, 0111 0000b

OUT DX, AL

MOV CX, 100H

L15 : LOOP L15

MOV DX, 2006H

MOV AL, 0001 0000b

OUT DX, AL

MOV CX, 100H

L16: LOOP L16

MOV DX, 2031h

MOV AL, 0110 0001b

OUT DX, AL

MOV DX, 2007H

MOV AL, 0001 0000b

OUT DX, AL

MOV CX, 100H

L17: LOOP L17

MOV DX, 2007H

MOV AL, 00011000b

OUT DX, AL

MOV CX, 100H

L18: LOOP L18

MOV DX, 2031h

MOV AL, 01100101b

OUT DX, AL

MOV DX, 2007H

MOV AL, 00011100b

OUT DX, AL

MOV CX, 100H

L19 : LOOP L19

MOV DX, 2006H

MOV AL, 00010100b

OUT DX, AL

MOV CX, 100H

L20 : LOOP L20

MOV DX, 2031H

MOV AL, 01101101b

OUT DX, AL

MOV DX, 2005H

MOV AL, 01110100b

OUT DX, AL

MOV CX, 100H

L21 : LOOP L21

MOV DX, 2005H

MOV AL, 01110110b

OUT DX, AL

MOV CX, 100H

L22: LOOP L22

MOV DX, 2005H

MOV AL, 01110111b

OUT DX, AL

MOV CX, 100H

L23: LOOP L23

MOV DX, 2004H

MOV AL, 01000001b

OUT DX, AL

MOV CX, 100H

L24: LOOP L24

MOV DX, 2001H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2002H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2003H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2004H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2005H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2006H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2007H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2030H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2031H

MOV AL, 0000 0000b

OUT DX, AL

MOV DX, 2070H

MOV AL, 0000 0000b

OUT DX, AL

ADD BX, 1

CMP BX, 5

JL MAINLOOP

RET

START ENDP

CSEG ENDS

END START