Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

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Part: 01

Display parallelogram in Dot Matrix using arrays
Answer:

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

START:

        MOV AL,80H
        OUT 1FH,AL

        MOV AL,0FFH
        OUT 19H,AL

        BEGIN:

        MOV SI,OFFSET DATA
        MOV BX,0036H

        TOP:

        MOV AL,BYTE PTR CS:[SI]
        OUT 18H, AL

        INC SI
        DEC BX

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

        INC SI
        DEC BX
```

```
MOV AL,BYTE PTR CS:[SI]
OUT 1CH, AL

MOV CX,0FFFFH
L1 : LOOP L1

MOV CX,0FFFFH
L2 : LOOP L2

INC SI
DEC BX
CMP BX,0000H
JE BEGIN
JMP TOP

DATA:
DB FEH   ;Show Orange in Row 0 Column 4
DB FEH
DB 10H

DB FEH   ;Show Orange in Row 0 Column 3
DB FEH
DB 08H

DB FEH   ;Show Orange in Row 0 Column 2
DB FEH
DB 04H


DB FEH   ;Show Orange in Row 0 Column 0
DB FEH
DB 01H


DB FDH   ;Show Orange in Row 1 Column 0
DB FDH
```

```
DB 01H


DB FDH   ;Show Orange in Row 1 Column 1
DB FDH
DB 02H


DB FBH   ;Show Orange in Row 2 Column 1
DB FBH
DB 02H


DB F7H   ;Show Orange in Row 3 Column 1
DB F7H
DB 02H


DB EFH   ;Show Orange in Row 4 Column 1
DB EFH
DB 02H



DB EFH   ;Show Orange in Row 4 Column 2
DB EFH
DB 04H


DB DFH   ;Show Orange in Row 5 Column 2
DB DFH
DB 04H


DB BFH   ;Show Orange in Row 6 Column 2
DB BFH
DB 04H


DB BFH   ;Show Orange in Row 6 Column 3
DB BFH
DB 08H
```

```
DB 7FH   ;Show Orange in Row 7 Column 3
DB 7FH
DB 08H

DB 7FH   ;Show Orange in Row 7 Column 4
DB 7FH
DB 10H

DB 7FH   ;Show Orange in Row 7 Column 5
DB 7FH
DB 20H


DB 7FH   ;Show Orange in Row 7 Column 6
DB 7FH
DB 40H

DB 7FH   ;Show Orange in Row 7 Column 7
DB 7FH
DB 80H

DB BFH   ;Show Orange in Row 6 Column 7
DB BFH
DB 80H

DB DFH   ;Show Orange in Row 5 Column 7
DB DFH
DB 80H

DB DFH   ;Show Orange in Row 5 Column 6
DB DFH
DB 40H


DB EFH   ;Show Orange in Row 4 Column 6
DB EFH
```

```
        DB 40H

        DB F7H   ;Show Orange in Row 3 Column 6
        DB F7H
        DB 40H

        DB F7H   ;Show Orange in Row 3 Column 5
        DB F7H
        DB 20H

        DB FBH   ;Show Orange in Row 2 Column 5
        DB FBH
        DB 20H

        DB FDH   ;Show Orange in Row 1 Column 5
        DB FDH
        DB 20H


        DB FDH   ;Show Orange in Row 1 Column 4
        DB FDH
        DB 10H

SA ENDS
END START
```

Part: 02

Display E-3-0 in seven segment display and (R1+R2(ON))-G(ON)-Y(ON) using Arrays

Answer:

SA SEGMENT PARA PUBLIC 'CODE'

ASSUME CS:SA

ORG 1000H

START:

      MOV AL,80H

      OUT 1FH,AL

      BEGIN:

      MOV SI,OFFSET DATA

      MOV BX,0017H

   TOP:

      MOV AL,BYTE PTR CS:[SI]

      OUT 19H,AL

```
MOV CX,0FFFFH
L1: LOOP L1


MOV CX,0FFFFH
L2: LOOP L2


INC SI
DEC BX
CMP BX,0004H
JE DISPLAY_LED
JMP TOP


DISPLAY_LED:


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


MOV CX,0FFFFH
L3: LOOP L3


MOV CX,0FFFFH
L4: LOOP L4


INC SI
DEC BX
```

```asm
        CMP BX,0000H
        JE BEGIN
JMP DISPLAY_LED

        DATA:

        DB 0FEH  ; start displaying E
        DB 0DEH
        DB 09EH
        DB 08EH
        DB 086H
        DB 0FFH  ; reset
        DB 0FEH  ; start displaying 3
        DB 0FCH
        DB 0BCH
        DB 0B8H
        DB 0B0H
        DB 0FFH  ; reset
        DB 0FEH  ;start displaying 0
        DB 0FCH
        DB 0F8H
        DB 0F0H
        DB 0E0H
        DB 0C0H
```

DB 0FFH ; turning off seven segment

;DISPLAY LED

DB 09H ;R1 and R2 turn on

DB AL,0BH ; G turned on keeping R1 and R2 on

DB AL,0FH ; Y turned on keeping R1 and R2 on

DB 000H ; turning off LED

SA ENDS

END START