



Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

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Section : A

Part: 01

Display parallelogram in Dot Matrix and show the row number in seven segment display.

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,00A0H
```

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
```

INC SI
DEC BX

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

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 BEGIN
JMP TOP

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

DB 0C0H ; display 0

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

DB 0C0H ; display 0

DB FEH ;Show Orange in Row 0 Column 2

DB FEH

DB 04H

DB 0C0H ; display 0

DB FEH ;Show Orange in Row 0 Column 0

DB FEH

DB 01H

DB 0C0H ; display 0

DB FDH ;Show Orange in Row 1 Column 0

DB FDH

DB 01H

DB 0F9H ; display 1

DB FDH ;Show Orange in Row 1 Column 1

DB FDH

DB 02H

DB 0F9H ; display 1

DB FBH ;Show Orange in Row 2 Column 1

DB FBH

DB 02H

DB 0A4H ; display 2

DB F7H ;Show Orange in Row 3 Column 1

DB F7H

DB 02H

DB 0B0H ; display 3

DB EFH ;Show Orange in Row 4 Column 1

DB EFH

DB 02H

DB 099H ; display 4

DB EFH ;Show Orange in Row 4 Column 2

DB EFH

DB 04H

DB 099H ; display 4

DB DFH ;Show Orange in Row 5 Column 2

DB DFH

DB 04H

DB 092H ; display 5

DB BFH ;Show Orange in Row 6 Column 2

DB BFH

DB 04H

DB 082H ; display 6

DB BFH ;Show Orange in Row 6 Column 3

DB BFH

DB 08H

DB 082H ; display 6

DB 7FH ;Show Orange in Row 7 Column 3

DB 7FH

DB 08H

DB 0F8H ; display 7

DB 7FH ;Show Orange in Row 7 Column 4

DB 7FH

DB 10H

DB 0F8H ; display 7

DB 7FH ;Show Orange in Row 7 Column 5

DB 7FH

DB 20H

DB 0F8H ; display 7

DB 7FH ;Show Orange in Row 7 Column 6

DB 7FH

DB 40H

DB 0F8H ; display 7

DB 7FH ;Show Orange in Row 7 Column 7

DB 7FH

DB 80H

DB 0F8H ; display 7

DB BFH ;Show Orange in Row 6 Column 7

DB BFH

DB 80H

DB 082H ; display 6

DB DFH ;Show Orange in Row 5 Column 7

DB DFH

DB 80H

DB 092H ; display 5

DB DFH ;Show Orange in Row 5 Column 6

DB DFH

DB 40H

DB 092H ; display 5

DB EFH ;Show Orange in Row 4 Column 6

DB EFH

DB 40H

DB 099H ; display 4

DB F7H ;Show Orange in Row 3 Column 6

DB F7H

DB 40H

DB 0B0H ; display 3

DB F7H ;Show Orange in Row 3 Column 5

DB F7H

DB 20H

DB 0B0H ; display 3

DB FBH ;Show Orange in Row 2 Column 5

DB FBH

DB 20H

DB 0A4H ; display 2

DB FDH ;Show Orange in Row 1 Column 5

DB FDH

DB 20H

DB 0F9H ; display 1

DB FDH ;Show Orange in Row 1 Column 4

DB FDH

DB 10H

DB 0F9H ; display 1

DB FFH ;turn off dot matrix

DB FFH

DB 00H

DB 0FFH ; turn off SSD

SA ENDS

END START

Part: 02

Display a parallelogram in dot matrix and also display the same color on LED.

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,00A0H
```

```
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

INC SI

DEC BX

MOV AL,BYTE PTR CS:[SI]

OUT 1BH,AL

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 BEGIN

JMP TOP

DATA:

DB FEH ;Show Orange in Row 0 Column 4

DB FEH

DB 10H

DB 04H ; display Orange

DB FEH ;Show Orange in Row 0 Column 3

DB FEH

DB 08H

DB 04H ; display Orange

DB FEH ;Show Orange in Row 0 Column 2

DB FEH

DB 04H

DB 04H ; display Orange

DB FEH ;Show Orange in Row 0 Column 0

DB FEH

DB 01H

DB 04H ; display Orange

DB FDH ;Show Orange in Row 1 Column 0

DB FDH

DB 01H

DB 04H ; display Orange

DB FDH ;Show Orange in Row 1 Column 1

DB FDH

DB 02H

DB 04H ; display Orange

DB FBH ;Show Orange in Row 2 Column 1

DB FBH

DB 02H

DB 04H ; display Orange

DB F7H ;Show Orange in Row 3 Column 1

DB F7H

DB 02H

DB 04H ; display Orange

DB EFH ;Show Orange in Row 4 Column 1

DB EFH

DB 02H

DB 04H ; display Orange

DB EFH ;Show Orange in Row 4 Column 2

DB EFH

DB 04H

DB 04H ; display Orange

DB DFH ;Show Orange in Row 5 Column 2

DB DFH

DB 04H

DB 04H ; display Orange

DB BFH ;Show Orange in Row 6 Column 2

DB BFH

DB 04H

DB 04H ; display Orange

DB BFH ;Show Orange in Row 6 Column 3

DB BFH

DB 08H

DB 04H ; display Orange

DB 7FH ;Show Orange in Row 7 Column 3

DB 7FH

DB 08H

DB 04H ; display Orange

DB 7FH ;Show Orange in Row 7 Column 4

DB 7FH

DB 10H

DB 04H ; display Orange

DB 7FH ;Show Orange in Row 7 Column 5

DB 7FH

DB 20H

DB 04H ; display Orange

DB 7FH ;Show Orange in Row 7 Column 6

DB 7FH

DB 40H

DB 04H ; display Orange

DB 7FH ;Show Orange in Row 7 Column 7

DB 7FH

DB 80H

DB 04H ; display Orange

DB BFH ;Show Orange in Row 6 Column 7

DB BFH

DB 80H

DB 04H ; display Orange

DB DFH ;Show Orange in Row 5 Column 7

DB DFH

DB 80H

DB 04H ; display Orange

DB DFH ;Show Orange in Row 5 Column 6

DB DFH

DB 40H

DB 04H ; display Orange

DB EFH ;Show Orange in Row 4 Column 6

DB EFH

DB 40H

DB 04H ; display Orange

DB F7H ;Show Orange in Row 3 Column 6

DB F7H

DB 40H

DB 04H ; display Orange

DB F7H ;Show Orange in Row 3 Column 5

DB F7H

DB 20H

DB 04H ; display Orange

DB FBH ;Show Orange in Row 2 Column 5

DB FBH

DB 20H

DB 04H ; display Orange

DB FDH ;Show Orange in Row 1 Column 5

DB FDH

DB 20H

DB 04H ; display Orange

DB FDH ;Show Orange in Row 1 Column 4

DB FDH

DB 10H

DB 04H ; display Orange

DB FFH ;turn off dot matrix

DB FFH

DB 00H

DB 00H

SA ENDS

END START