Name: Muhammad Maiz Nadeem
Reg. ID: SP21-BCS-052

Question 1:

For a number stored on Ax register , create a procedure that display it on screen in a number system whose base is 6 (For checking 27d in this number system will be displayed as 43).

Answer:

```
1     DIS MACRO STR
2     MOV AH,09H
3     LEA DX,STR
4     INT 21H
5     ENDM
6
7     DATA SEGMENT
8         MSG2 DB "BASE 6 NUMBER IS : $"
9         STR1 DB 20 DUP('$')
10        STR2 DB 20 DUP('$')
11        NO DW 180
12        LINE DB 10,13,'$'
13    DATA ENDS
14
15    CODE SEGMENT
16              ASSUME DS:DATA, CS:CODE
17    START:
18              MOV AX, DATA
19              MOV DS, AX
20              LEA SI, STR1
21              MOV AX, NO
22              MOV BH, 00
23              MOV BL, 6
24       L1:    DIV BL
25              ADD AH, '0'
26              MOV BYTE PTR[SI], AH
27              MOV AH, 00
28              INC SI
29              INC BH
30              CMP AL, 00
31              JNE L1
```

```
32
33              MOV CL, BH
34              LEA SI, STR1
35              LEA DI, STR2
36              MOV CH, 00
37              ADD SI, CX
38              DEC SI
39
40        L2:   MOV AH, BYTE PTR[SI]
41              MOV BYTE PTR[DI], AH
42              DEC SI
43              INC DI
44              LOOP L2
45
46              DIS LINE
47              DIS MSG2
48              DIS STR2
49              MOV AH, 4CH
50              INT 21H
51
52    CODE ENDS
53    END START
```

Question 2:

Make a procedure that asks user to enter a number , in a number system of base 6, and store the value of corresponding number in register AX.

(Hint: Pseudo codes at the end of MUL and DIV slides can be used for both questions . Just need to replace 10 with appropriate number system base).

Answer:

```
 1      DIS MACRO STR
 2          MOV AH,09H
 3          LEA DX,STR
 4          INT 21H
 5      ENDM
 6
 7      ORG 100h
 8
 9      .DATA
10
11      MSG1   DB "ENTER A BASE 6 NUMBER: $"
```

```
12      MSG2   DB "BASE 10 NUMBER IS: $"
13      INPUT  DB 20 DUP('$')
14      ANS    DB 0
15      SIZE   DB 0
16      LEN    DB 0
17      BASE   DB 6
18      LINE   DB 10, 13, '$'
19
20      .CODE
21
22      MAIN PROC
23
24              DIS MSG1
25
26              LEA SI, INPUT
27              MOV AH, 1
28
29         L1:  INT 21H
30              SUB AL, 30H
31              MOV [SI], AL
32              INC SI
33              INC SIZE
34              CMP AL, 0DDH
35              JNE L1
36
37              DEC SIZE
38              MOV AL, SIZE
39              MOV LEN, AL
40              XOR AX, AX
41              XOR DX, DX
42
43              LEA SI, INPUT
44
45
46
47         L2:  MOV AL, [SI]
48              INC SI
49              DEC SIZE
50              MOV DL, SIZE
51              CMP DL, 0
52              JE L4
53         L3:  MUL BASE
54              DEC DL
55              CMP DL, 0
56              JNE L3
57         L4:  ADD ANS, AL
```

```
58              CMP SIZE, 0
59              JNE L2
60
61
62              DIS LINE
63              DIS MSG2
64
65              XOR AX, AX
66              XOR DX, DX
67              MOV AL, ANS
68
69
70              MOV CX, 0
71              MOV DX, 0
72      LABEL1: CMP AX, 0
73              JE PRINT1
74
75              MOV  BX, 10
76              DIV  BX
77              PUSH DX
78              INC  CX
79              XOR  DX, DX
80              JMP LABEL1
81
82      PRINT1: CMP CX, 0
83              JE EXIT
84              POP DX
85              ADD DX, 48
86              MOV AH, 2
87              INT 21H
88              DEC CX
89              JMP PRINT1
90      EXIT:
91
92      MAIN ENDP
93
94      RET
```