Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No : CSE2214

Course Title : Assembly Language Programming Sessional

Assignment No : 06

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<u>Submitted By-</u>
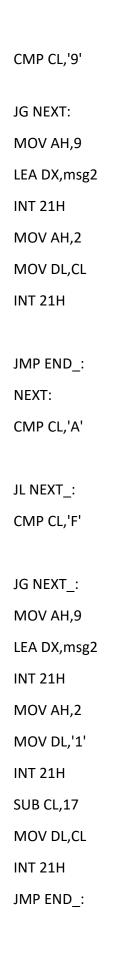
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Section : A

Question 1: Write a program that will prompt the user to enter a hex digit character (0-F), display it on the next line in decimal and ask the user if he or she wants to do it again. If the user types "Y", the program repeats. If the user types "N" the program terminates. If the user enters an illegal character, prompt the user to try again.

Solution:

```
.MODEL SMALL
.STACK 100H

.CODE

.DATA

msg1 DB 0DH,0AH,'Enter a character between 0-9 or A-F hex digit to be converted : $'

msg2 DB 0DH,0AH,'The converted character is : $'

msg3 DB 0DH,0AH,'If you want to contine you type Y or else N :$'

msg4 DB 0DH,0AH,'Illegal character entered. Enter Again $'

msg5 DB 0DH,0AH,'Can only take input Y or N $'

MAIN PROC

    MOV AX,@DATA

    MOV DS,AX


    REPEAT:

    MOV AH,9

    LEA DX,msg1

    INT 21H

    MOV AH,1

    INT 21H

    MOV CL,AL

    CMP CL,'0'

    JL NEXT:  ;
```

```asm
CMP CL,'9'

JG NEXT:
MOV AH,9
LEA DX,msg2
INT 21H
MOV AH,2
MOV DL,CL
INT 21H

JMP END_:
NEXT:
CMP CL,'A'

JL NEXT_:
CMP CL,'F'

JG NEXT_:
MOV AH,9
LEA DX,msg2
INT 21H
MOV AH,2
MOV DL,'1'
INT 21H
SUB CL,17
MOV DL,CL
INT 21H
JMP END_:
```

```
NEXT_:

MOV AH,9

LEA DX,msg4

INT 21H


JMP REPEAT:

END_:

MOV AH,9

LEA DX,msg3

INT 21H

MOV AH,1

INT 21H

MOV CL,AL

CMP CL,'Y'


JE REPEAT:

CMP CL,'N'

JE TERMINATE:

MOV AH,9

LEA DX,msg5

INT 21H

JMP END_:

TERMINATE:

MOV AX,4C00H

INT 21H

MAIN ENDP
    END MAIN
```

Question 2: Write a program to read two capital letters and display them on the next line in alphabetical order.

Solution:

.MODEL SMALL

.STACK 100H

.CODE

.DATA

msg1 DB 'Enter the first character : $'

msg2 DB 0DH,0AH,'Enter the second character : $'

msg3 DB 0DH,0AH,'The Letters in Alphabetical order is : $'

MAIN PROC

   MOV AX,@DATA

   MOV DS,AX

   MOV AH,9

   LEA DX,msg1

   INT 21H

   MOV AH,1

   INT 21H

   MOV BL,AL

   MOV AH,9

   LEA DX,msg2

   INT 21H

   MOV AH,1

   INT 21H

   MOV BH,AL

```
        CMP BL,BH

        JG NEXT_:

        MOV CL,BL
        MOV CH,BH
        JMP NEXT_2:
        NEXT_:

        MOV CL,BH
        MOV CH,BL
        NEXT_2:

        MOV AH,9
        LEA DX,msg3
        INT 21H

        MOV AH,2
        MOV DL,CL
        INT 21H
        MOV DL,CH
        INT 21H
        MOV AX,4C00H
        INT 21H
    MAIN ENDP
        END MAIN
```