Ahsanullah University of Science & Technology

Department of Computer Science and Engineering

Course No : CSE 2214

Course Title : Assembly Language Programming Sessional

Assignment no : 06

Date of Performance : 04.03.20

Date of Submission : 26.03.20

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Year : 2nd

Semester : 2nd

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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.

Answer:

```
.MODEL SMALL
.STACK 100H
.DATA
CR EQU 0DH
LF EQU 0AH
M1 DB 0DH,0AH,'ENTER A HEXA DIGIT :','$'
M2 DB 0DH,0AH,'IN DECIMAL IT IS :'
C1 DB ?,'$'
M3 DB 0DH,0AH,'DO YOU WANT TO DO IT AGAIN ? Y/N:','$'
M4 DB 0DH,0AH,'ILLEGAL CHARACTER - ENTER 0-F :','$'
M5 DB 0DH,0AH,'IN DECIMAL IT IS :1'
C2 DB ?,'$'
.CODE
MAIN PROC
    MOV AX,@DATA
    MOV DS,AX
```

```
BEGIN:
    MOV AH,9
    LEA DX,M1
    INT 21H
NEW:
    MOV AH,1
    INT 21H
    CMP AL,'0'
    JL ILLEGAL1
    CMP AL,'9'
    JG ILLEGAL1
    MOV C1,AL
    MOV AH,9
    LEA DX,M2
    INT 21H
MSG:
    MOV AH,9
    LEA DX,M3
    INT 21H
    MOV AH,1
    INT 21H
    CMP AL,'Y'
    JE BEGIN
    JMP ENDD
```

```asm
ILLEGAL1:
    CMP AL,'A'
    JL ILLEGAL2
    CMP AL,'F'
    JG ILLEGAL2
    SUB AL,11H
    MOV C2,AL
    MOV AH,9
    LEA DX,M5
    INT 21H
    JMP MSG
ILLEGAL2:
    MOV AH,9
    LEA DX,M4
    INT 21H
    JMP NEW
ENDD:
    MOV AH,4CH
    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.

Answer:

```
.MODEL SMALL
.STACK 100H
.DATA
 MSG1   DB  'ENTER 1ST CAPITAL LETTER : $'
 MSG2   DB  'ENTER 2ND CAPITAL LETTER: $'
 MSG3   DB  'IN ALPHABETICAL ORDER  : $'
CHAR   DB  0DH,0AH,"$"
.CODE
 MAIN PROC
    MOV AX, @DATA
    MOV DS, AX
    LEA DX, CHAR
    MOV AH, 9
    INT 21H
    LEA DX, MSG1
    INT 21H
    MOV AH, 1
    INT 21H
    MOV BL, AL
```

```
        LEA DX, CHAR

        MOV AH, 9

        INT 21H

        LEA DX, MSG2

        INT 21H

        MOV AH, 1

        INT 21H

        MOV BH, AL

        LEA DX, CHAR

        MOV AH, 9

        INT 21H

        LEA DX, MSG3

        INT 21H

        MOV AH, 2

        CMP BL, BH

        JAE @GREAT

        MOV DL, BL

        INT 21H

        MOV DL, BH

        INT 21H

        JMP @END
@GREAT:

          MOV DL, BH

          INT 21H
```

```asm
        MOV DL, BL
        INT 21H
@END:
        MOV AH, 4CH
        INT 21H
        MAIN ENDP
    END MAIN
```