

Chapter 4

Part-4

Problem Solving using Assembly Instructions

PREPARED BY

AHMED AL MAROUF

LECTURER, DEPT. OF CSE

DAFFODIL INTERNATIONAL UNIVERSITY

Case Conversion (Lower case to Upper case)

```
.MODEL SMALL
.STACK 100H
.DATA
    CR      EQU      0DH
    LF      EQU      0AH
MSG1 DB 'ENTER A LOWER CASE LETTER: $'
MSG2 DB 0DH,0AH,'IN UPPER CASE IT IS: '
CHAR DB '?,$'
.CODE
MAIN PROC
;initialize DS
    MOV     AX,?DATA    ;get data segment
    MOV     DS,AX       ;initialize DS
;print user prompt
    LEA     DX,MSG1      ;get first message
    MOV     AH,9         ;display string function
    INT     21H          ;display first message
;input a character and convert to upper case
    MOV     AH,1         ;read character function
    INT     21H          ;read a small letter into AL
    SUB     AL, 20H      ;convert it to upper case
    MOV     CHAR,AL      ;and store it
;display on the next line
    LEA     DX, MSG2     ;get second message
    MOV     AH,9         ;display string function
    INT     21H          ;display message and upper case
;DOS exit
    MOV     AH,4CH       ;letter in front
    INT     21H          ;DOS exit
MAIN     ENDP
        END MAIN
```

Programming Exercises

Programming Exercises

8. Write a program to (a) display a "?", (b) read two decimal digits whose sum is less than 10, (c) display them and their sum on the next line, with an appropriate message.

Sample execution:

```
?27
```

```
THE SUM OF 2 AND 7 IS 9
```

9. Write a program to (a) prompt the user, (b) read first, middle, and last initials of a person's name, and (c) display them down the left margin.

Sample execution:

```
ENTER THREE INITIALS: JFK
```

```
J
```

```
F
```

```
K
```

10. Write a program to read one of the hex digits A-F, and display it on the next line in decimal.

Sample execution:

```
ENTER A HEX DIGIT: C
```

```
IN DECIMAL IT IS 12
```

Thank You