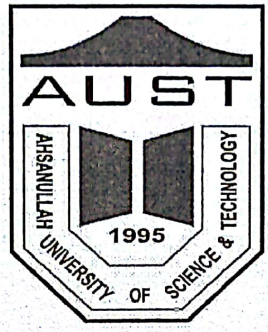

Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No : CSE2214
Course Title : Assembly Language Programming Sessional
Assignment No : 10

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Submitted To : Mr. Sajib Kumar Saha Joy & Zarin Tasnim Shejuti

Submitted By
Group : B1
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Section : B

Question No: 01

Question: suppose the class records are stored as follows:

```
CLASS
DB 'MARY ALLEN', 67,45, 98, 33
DB 'SCOTT BAYLIS', 70,56,87,44
DB 'GEORGE FRANK', 82,72,89,40
DB 'SAM WONG', 78, 76, 92, 60
```

Each name occupies 12 bytes. Write a program to print the name of each student and his or her average (truncated to an integer) for the four exams.

Answer:

```
.MODEL SMALL
.STACK 100H
.DATA
FOUR DB 4
CLASS DB 'MARY ALLEN', 67, 45, 98, 33
      DB 'SCOTT BAYLIS', 70, 56, 87, 44
      DB 'GEORGE FRANK', 82, 72, 89, 40
      DB 'SAM WONG', 78, 76, 92, 60
AVG DB 4 DUP(0)
NEWLINE DB 0DH, 0AH, '$'
```

```
.CODE
MAIN  PROC
        MOV  AX,@DATA
        MOV  DS,AX
        MOV  DI,0
        MOV  SI,12
        MOV  CX,4

        ALL_AVG:
        XOR  AX,AX
        XOR  BX,BX

        FIND_AVG:
        XOR  DH,DH
        MOV  DL,CLASS[SI+BX]
        ADD  AX,DX
        INC  BX
        CMP  BX,3
        JLE  FIND_AVG

        DIV  FOUR
        MOV  AVG[DI],AL
        INC  DI

        ADD  SI,16
        LOOP ALL_AVG

        XOR  BL,BL
        MOV  CX,4
```

```
    MOV DI,0
    MOV SI,0

    PRINT:
    XOR BX,BX
    MOV AH,2
    PRINT_NAME:
    MOV DL,CLASS[SI+BX]
    INT 21H
    INC BX

    CMP BX,11
    JLE PRINT_NAME
    ADD SI,16
    MOV DL,"="
    INT 21H
    XOR AH,AH
    MOV AL,AVG[DI]
    INC DI
    CALL OUTPUT

    MOV AH,9
    LEA DX,NEWLINE
    INT 21H
    LOOP PRINT

    MOV AH,4CH
    INT 21H
    MAIN ENDP
INCLUDE OUTPUT.ASM
END MAIN
```

```
OUTPUT  PROC
    PUSH AX
    PUSH BX
    PUSH CX
    PUSH DX

    END_IF1:

    XOR CX,CX
    MOV BX,10D

    REPEAT1:
    XOR DX,DX
    DIV BX
    PUSH DX
    INC CX

    OR AX,AX
    JNE REPEAT1

    MOV AH,2

    PRINT_LOOP:
    POP DX
    OR DL,30H
    INT 21H
    LOOP PRINT_LOOP

    POP DX
    POP CX
    POP BX
    POP AX
    RET
    OUTPUT ENDP
```

Question No: 02

Question: Write a Program that uses XLAT to (a) read a line of text and (b) Print it on the next line with all small letters converted to capitals. The input line may contain any characters - small letters, capital letters, digits, characters, punctuation and so on.

Answere:

```
.MODEL SMALL
.STACK 100H

.DATA
INPUT_MSG DB "ENTER A LINE OF TEXT : $"
CAPITAL_KEY DB 65 DUP(' '), 'ABCDEFGHIJKLMNOPQ
                              RSTUVWXYZ'

ANS DB 100 DUP ('$')
NEWLINE, DB 0DH, 0AH, '$'

.CODE
MAIN PROC
    MOV AX, @DATA
    MOV DS, AX
    LEA BX, CAPITAL_KEY
    LEA DI, ANS
```

```
MOV AH,9
LEA DX, INPUT_MSG1
INT 21H

INPUT:
MOV AH,1
INT 21H

CMP AL,0DH
JE PRINT

CMP AL, 60H
JLE NOT_DECODE

CMP AL,7BH
JGE NOT_DECODE

SUB AL,20H
XLAT

NOT_DECODE:
MOV [DI], AL
INC DI

JMP INPUT

PRINT:
MOV AH,9
LEA DX, NEWLINE
INT 21H
```

```
LEA DX, ANS
INT 21H

EXIT:
MOV AH,4CH
INT 21H
END MAIN
```