Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No : CSE 2214

Course Title : Assembly Language Programming Sessional

Assignment No : 01

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Submitted To : Ms. Tahsin Aziz &
Ms Nawrin Tabassum

Submitted By-

Group : C1

Name : Sharjil Shabab Khan

Id : 20210104108

Section : C

Question no: 1

Suppose the class records are stored as follow.

```
CLASS
  DB   'MARRY 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 occuples 12 bytes. Write a program to print the name of each student and his or her average (truncted to an integer) for the four exams.

Answer:

- CODE

```
MAIN   PROC
 MOV   AX,@DATA
 MOV   DS,AX
 LEA   DX ,INPUT
 MOV   AH,9
 INT   21H
 LEA    SI, CLASS
 MOV   BH,4
 MOV   BL,16
```

```
CALL DISPLAY_ARRAY
LEA DI, AVERAGE
LEA SI, CLASS
ADD SI, 12
MOV CX, 4

COMPUTE_AVERAGE:
    XOR AX, AX
    MOV DX, 4

SUM:
    XOR BH, BH
    MOV BL, [SI]
    ADD AX, AX
    INC SI
    DEC DX
JNZ SUM
    MOV BX, 4
    DIV BX
    MOV [DI], AX
    ADD DI, 2
    ADD SI, 12
LOOP COMPUTE_AVERAGE
    LEA DX, RESULT
    MOV AH, 9
    INT 21H
    LEA SI, AVERAGE
    LEA DI, CLASS
    MOV CX, 4
PRINT_RESULT:
    MOV BX, 12
    MOV AH, 2
S_NAME:
    MOV DL, [DI]
    INT 21H
    INC DI
    DEC BX
JNZ S_NAME
    MOV DL, "="
    INT 21H
    MOV DL, 20H
    INT 21H
    MOV DL, 20H
    INT 21H
```

```
XOR   AH,AH
MOV   AL, [SI]

CALL  DECIMAL_PRINT

  MOV AH,2
  MOV DL ,0DH
  INT 21H

  ADD SI,2
  ADD DI, 4

LOOP PRINT RESULT

   MOV AH,4CH
   INT 21H
  MAIN ENDP

DISPLAY_ ARRAY_PROC

   PUSH AX
   PUSH CX
   PUSH DX
   PUSH SI
 MOV CX, BX
OUTER_LOOP:
   MOV CL,BL
   MOV AH,2
PRINT_NAME:
   MOV DL, [SI]
   INT 21H
   INC SI
   DEC CL
 CMP CL,4
JG PRINT_ NAME
 MOV DL,20H
   INT 21H
INNER_ LOOP:
    MOV AH,2
    MOV DL,20H
    INT 21H
    XOR AH, AH
    MOV AL, [SI]
CALL DECIMAL PRINT
    INC SI
    DEC CL
```

```
JNZ  INNER_LOOP
    MOV AH,2
    MOV DL,0DH
    INT 21H
    MOV DL, 0AH
    INT 21H
    DEC CH
   JNZ OUTER_LOOP
   POP SI
   POP DX
   POP CX
   POP AX
   RET
DISPLAY_ARRAY ENDP

DECIMAL_PRINT PROC
   PUSH BX
    PUSH CX
    PUSH DX
   XOR CX, CX
    MOV DX,10
```

```
OUTPUT:
 XOR DX,DX
  DIV BX
 PUSH DX
 INC CX
  OR AX,AX
JNE OUTPUT
    MOV AH,2
PRINT:
    POP DX
    OR DL,30H
    INT 21H
    LOOP PRINT

POP DX
 POP CX
 POP BX

RET
  DECIMAL_PRINT ENDP

END MAIN
```