

Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No : CSE2214

Course Title : Assembly Language Programming Sessional

Assignment No : 09

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Section : B

<u>Suestion</u> No: 01

<u>Suestion</u>: Write a Progream that lets the user enters time in seconds, up to 65535, and outputs the time as hours, minutes and seconds.

 $9_a.asm$

MODEL SMALL STACK 100 H

INPUT_MSG DB "Enter the time in seconds up to 65535 = \$"

OUTPUT_MSG DB, ODH, OAH, "The time in hh:mm:ss forcmat is = \$"

SEPARATOR DB "! \$"

CODE

MAIN PROC

MOV AX, @ DATA

MOV DS, A.

LEA DX, INPUT_MSG

MOV AH, 9

INT 21H

CALL INPUT PUSH AX

LEA DX, OUTPUT_MSGI

MOV AH,9

INT 21H

POP AX

XOR DX, DX

MOV CX, 3600

CALL OUTPUT

MOV AX, DX

PUSH AX

LEA DX, SEPAROTOR

MOV AH,9

INT 21H

POP AX

XOR DX, DX

MOV CX, 60

DIV CX

CALL OUTPUT

LEA DX, SEPARATOR
MOV AH, 9
TNT 21H

CALL OUTPUT

MOV AH, 4CH

INT 21H

MAIN ENDP

INCLUDE INPUT_90.05M

INCLUDE OUTPUT_90.05M

END MAIN

INPUT_9a.asm

INPUT PROC

PUSH BX

PUSH CX

PUSH

BEGIN:

XOR BX, BX

MOV AH, 1

INT 21H

REPEAT:

CMP AL, 'O'

JNGE NOT_DIGIT

CMP AL, '9'

JNLE NOT_PIGIT

AND AX, OODFH

PUSH AX

MOV AX, 10

AU-MUL BX

POP BX

ADD BX, AX

MOV AH,1

INT 21H

CMP AL, ODH

JNE REPEAT

MOV AX, BX

EXIT!

POP DX

POP CX

POP BX

RET

NOT_DIGIT:

MOV AH,2

MOV DL, ODH

TNT 21H

MOV DL, OAH

INT 21H

JMP BEGIN

INPUT ENDP

OUTPUT_9a.asm

OUTPUT PROC

PUSH AX

PUSH BX

PUSH CX

PUSH DX

XOR CX,CX

MOV BX, 100

REPEAT!

XOR DX, DX

DIV BX

PUSH DX

INC CX

OR AX, AX

JNE REPEAT

MOV AH, 2

PRINT_LOOP!

POP DX

OR DL, 30H

TNT 21H

LOOP PRINT_LOOP

POP DX

POP CX

POP BX

POP AX

RET

OUTPUT ENDP

Svestion No: 02

Ovestion: Write a program to find the greatest common divisor (GCD) of two integers Mand N, according to the following algorithm:

- 2.1. Divide M by N, getting quotient & and Remainder R.
- 2.2. If R=0 then stop. N is the GCD of M and N.
- 2.3. If R <> 0 replace M by N, N by R, and Repeat step 1.

Answert:

9. b.asm

MODEL SMALL

. STACK 100H

. DATA

INPUT_MSGI DB "ENTER THE VALUE OF M! \$"

INPUT_MSG2 DB ODH, OAH, "ENTER THE VAWE OF N: \$"

OUTPUT-MSG DB ODH, OAH, "THE GICD IS! \$"

CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

LEA DX, INPUT_MSG1

MOV AH, 9

INT 21H

CALL INPUT

PUSH AX

LEA DX, TNPUT_MSG2

MOV AH,9

INT 21H

CALL INPUT

MOV BX, AX

POP AX

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REPFAT:

XOR DX, DX

DIV BX

CMP DX,0

JE END-LOOP

MOV AX, BX

MOV BX, DX

JMP REPEAT

END-LOOP:

LEA DX, OUTPUT-MS6

MOV AH, 9

INT 21H

MOV AX, BX

CALL OUTPUT

MOV AH, 4CH

INT 21H

MAIN ENDP

INCLUDE INPUT_96.05m INCLUDE OUTPUT_90.05m

END MAIN

INPUT_96.asm

INPUT PROC

PUSH BX

PUSH CX

PUSH DX

BEGIN!

XOR BX, BX

MOV AH, 91

INT 21H

CMP AL, '-

JE BEGIN

CMP AL, +

JE BEGIN

REPEAT:

CMP AL,'O'

JNGE NOT - DIGIT

CMP AL, '9'

JNLE NOT-DIGIT

AND AX, OOOFH

PUSH AX

MOV AX, 10D

MUL BX

POP BX
ADD BX,AX

MOV AH, 1

INT 21H

CMP AL, ODH

JNE REPEAT

MOV AX, BX

EXIT:

POP CX

POP BX

RET

NOT-DIGIT!

Mov AH,2

MOV DL, ODH

INT 21H

MOV DL, OAH

INT 21H

JMP BEGIN

INPUT ENDP

OUTPUT_90.09m

OUTPUT PROC

PUSH BX

PUSH CX PUSH DX

MOR CX,CX MOV BX,10D

REPEAT!

XOR DX, DX

DIVBX

PVSTA DX

INC CX

OR AX, AX

JNE REPEAT

AH1,2 MOV

PRINT_LODP:

POP DX

OR DL, 30H

INT 21H

LOOP PRINT_LOOP

POP DX

POP CX

POP BX

POP AX

RET

OUTPUT ENDP