Owrite an Assembly Language Program of 8086 to display the message on the screen.

; Assembly Language Program to display welcome message

ASSUME CS: CODE OS: DATA

PATA SEAMENT ; Beginning of Data Segment MSA OB "WELLOME TO ASSEMBLY LANGUAGE PROGRAMMING &" DATA ENDS

COPE SEGMENT

START:

MOV AX, DATA

MOU DS, AX

LEA Ox, MSG

MOU AH, OQH

INT 214

; Initialize the data segment

, Offset Address of the mag into Dx

; Load 09H into AH

, Invoke Dos function call 094

MOV AH, 4CH

INT 21H

, Control seturns Des Rompt

CODE ENDS

19891A1225 - GBhwan Sev Feya

EXECUTION

C:/198911~1>cd 8086

C:\198914"1 >\ 8086 > moum wellome asm

Object filename (welcome .08)

Source disting [NUL. LST]:

Cross reference [NUL-CRF]:

C:\19891Aie1\8086> Link welcome. Jobj

Run file [welcome. exe]:

List File [NYL. MAP]:

Libraries C.LIBJ:

LINK: warning 14021: no stack segment.

C:\ 19891A18051\8086 > Welcome.exe

WELLOME TO ASSEMBLY LANGUAGE PROGRAMMING

3 Write an Assembly Canguage Problem of 8086 for addition of two 8 bit numbers.

; assembly language program for addition ; ALP for adding two 8-bit numbers.

ASSUME CS: CODE DS: DATA

OPRI DB ORH

OPRI DB ORH

Soperand 1

Operand 2.

PESULT DB ?

: a byte of memory reserved for result

CODE SEGMENT

; beginning of code segment

mou dx, PATA

nou ds, Ax

initiate data segment

mov AL, OPRI
mov BL, OPRI

ADD AL, BL AL <-- AL+BL

MOU DI, OFFSET RESULT
MOU DI, AL
MOU AH, 4CH

INT RIH

CODE EVOC

ecc

Execution .

C:119891Ari | 8086 > moum add.asm

Object filename [add .08]:

Some Listing (NUL 15t):

Cross -reference CNUL-CRFJ:

C:\198914~1\8086 > Link add.06j

Ron File [ADD EXE]:

List File [NUL. MAR]:

Libraries (. LIB?:

C:\198914"1\8086 > debug add.exe.

-0

0768:0000 B86407 -MOU Ax,0764

0768:000F BF0200 MOU PI, 0002

-d 076A: 0000 0002

076A:0000 02 03 00

-9
Program terminated normally

-d 696410000 BOOZ

076A:0000 02 03 05

- W.

3) Write an Assembly language program of 8086 for subtraction of two 18-bit numbers.

ASSUME CS: CODE OS: DATA

DATA SEGMENT OPRI PB 07H opre obb 04H REJULT DB 7 DATA ENDS COPE SEGMENT SMART: MOU AX, DATA - MOU DS, AX MOU ALOPRI MOU BY OPRZ ac SUB ALIBL MOU DE, OFFSET RESULT mov cos, AL mov AH, 4CH INT 214 CODE ENDS END START

beginning of Down segment define variable opri , défine vavioble oprez. ; define varieble RESULT - end of data segment 3 Beginning of God segment ; Initialize data segment i AL G Open and 1 i BL & operand 2. : Clear carry flog 3 AL E AL-BL - Load address of result into DI ; store rull in addres in DI ; doad dos func. into A4 ; involve dos function call , end of lode segment , end of the program.

Execution C: \1989(A"1\ 8086 > masm sub. 95 Object Filename Cold-08]: Source Listing CNUL. LST3: Gross - reference [NUL.CRE]: c:\ 1989645~1\ 8086 > maysmadink sub.obj Run File [sub exe]! List File [NUL MAP]: Libraries C. CUBJ. SUB. EXE C: [-198914"1] 8086 > debug -0 Ax,076A. MoU 07GB:0000 B86A07 OI, 0002 076B 1000F 880200 mou -d 0764:0000 0002 076A:0000 07 04 00 Porogram Germinated Garafithe normally -d 076A:0000 0002 076A:0000 07 04 03

-qr

@ write an awembly language Program of 8086 for multiplication of two 8-bit numbers.

ASSUME ES:CODE OS:DATA

DATA SEGMENT

OPRI DB 02H

OPRZ DB 08H

RESULT DB OI OUP(?)

DATA ENDS

CODE SEGMENT

START: MOU AX, DATA

mov pr, AX mov AL, OPRI

mov BL, OPR2

MUL BL

MOU DE OFFSET RESULT

MOV [DI], AL

mov AH, 4CH

INT 214

CODE ENDS BNO START Succetion

C:/1989147/1/8086 > masm mul. asm

Object file name [mul. 08]:

Soorce Listing [NUL-187]: Gross -reference [NUL-CRE]:

C: 1989140, 1 8086 > link mul-06

Run File [MUL.exe].: List File [NUL.MAP]! Libraries [LIB].

C: 1 198914 1/ 8086 > debug mul. exe.

-0

076820000 B86 A07 MOU

mov AX,076A

0768:000E BF0200

mov DI, 0002

-d

076A:0000 0002

076A:0000 02 03 00

-9

Perogram terminated normally.

-d 0764:0000 0002

076A:0000 02 03 06

- q/.

D write an avently language program for 8086 to divide divide 16 bit number by ain 8-bit number. ASSUME CS: CODE DS: DATA DATA SEGMENT MICH STORY Ow 00 0414 \mathcal{B} $\mathcal{O}_{\mathcal{B}}$ 02H Q $\rho_{\mathcal{B}}$ R DB DATA ENDS CODE SEGMENT START: MOU AX, DATA mou os, Ax mou Ax, A mov BL, B DIV BL ; siemainder in AH, LEA OI, & avotient in AL. 1 get offset of Q. mou (DI), AL i doad Quotient into 9 LEA DI, R ; get offset of R. mou [DE], AH MOU AH, UCH INT RIH CODE ENDS

Succution

C:\ 1989142118086 > masm div.asm

Object filename (div. 08):

Source Cisting CNUL LST]:

Gross - reference [NUL-CRP];

C: \ 19891471\ 8086>-dink div. 06j

Ron File Ensulv. exel!

List Rile [NUL . MAP] !

Libraries C. LIB]!

C:\ 198914^1\ 8086 > debug div. exe.

-6

076B:0000 B86A07

mou

AX, 076A

076 B.º 00 14 8 03 B0400

UBA

DT, C0004].

-d. 076A!0000 0004

0764:0000 04 00 02 00 00

Program terminated normally.

-d 0764:0000 0004

076A 20000 04 00 02 02

@ write anous awambly language program box 8096 to find averge of array elements. ASSUME CS: CODE DS: DATA DATA SEGMENT ARRAY DB 1,4,2,8,8,6,7,5,9 AUG DB ? MSG OB "AVERAGE = \$ DATA ENDS CODE SECOMENT START: MOU AX, DATA mou PS, AX. LEA SI, ARRAY LEA DX, MSG MOU ALL OPH INT 21H mov Ax, 00 mov B49 LOOP 1 º ADD ALARRAY [SZ] INC SI LOOP LOOPI

DI U BL

ADD AL, 30H

mov OL, AL

mov A4, 2

INT 21H

mov AH, 4CH

INT 21CH

CODE ENDS

C: 198912 11 8086 > masm aug asm, oriect filename laug. obj? Source Listing [NOL.18]: Cross-reference [NUL.CRE]: e: 198914" | 8086 2 link aug. aug. Ron File CAUG-enez.: List File [NUL. MAP]: Libraries C-LIB:

C:\ 19841AN 1\8086 > @ aug.exe.
AUERAGE = 5