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MATRIC: 17/ENG02/054

COURSE: COE 306

TEST

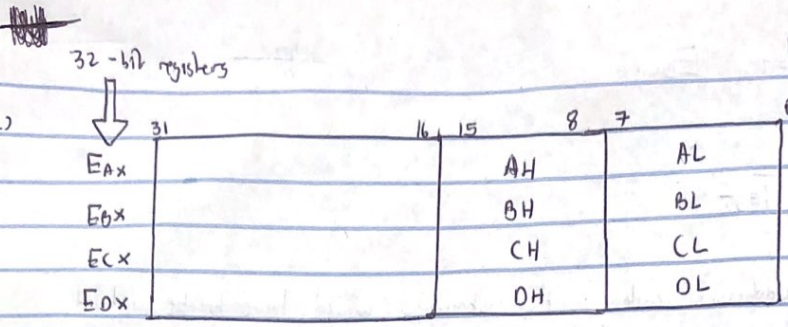
1(a) This is because the addresses coded in the instructions would have to be updated whenever new variables were inserted before existing ones.

(b) ~~ELF files~~ The assembler produces object files. (ELF files).

2(a) The concept of portability that applies to computer programming is the usability of the same software in different fields / environments.

(b) ~~Because~~ The assembly language is not the same for different processors because they are processor dependent.

(c)



3(a) Segmentation is achieved through the use of memory segments. Each segment is used to contain a specific type of data.

(b) Main PROC: This signifies the beginning/start of a procedure.
MOV Ax, 47104: This copies 47104 to the Ax register.
ADD EAX, 127Q: This instruction adds 127Q to the EAX register.
MOV DS, Ax: This instruction moves the number of the data segment from the Ax into the DS.
main ENDP: This signals the end of the main procedure.

(c) (i) Value 1 BYTE 60h => (value 1) is the name given to the variable
(BYTE) is the directive that defines the data that is to be represented.
(60h) is the initializer in hexadecimal.

(ii) Value 2 DWORD ? => This value name is "value 2"
DWORD is the directive and the question mark means that a value will be assigned to it later.

(iii) Value 3 SBYTE -10, -20, -30, -40, -50 => This is a declared statement that contains multiple signed bytes (5 Byte). The name given to it is "value 3".

4. TITLE Add and Subtract (AddSub.asm)

; Program Assignment 2 - Subtracting Three Integers
; Using the AddSub program from section 3.2 as a Re
; Write a program that subtracts three integer using only 16-bit registers.
; Insert a call DumpRegs statement to display the register values.

```
INCLUDE Irvine32.inc

.code
main PROC

mov eax, 90000h          ; EAX = 10000h
sub eax, 40000h          ; EAX = 50000h
sub eax, 20000h          ; EAX = 30000h
call DumpRegs                    ; display registers

exit
```