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17/ENG02/006

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1.) a. It wouldn't be a good idea because the addresses coded in the instructions would have to be updated whenever new variables were inserted before existing ones.

b) (i) Listing Files

(i) ~~The assembler produces~~

(ii) Object File - Which are file containing machine language but non-executable (ELF)

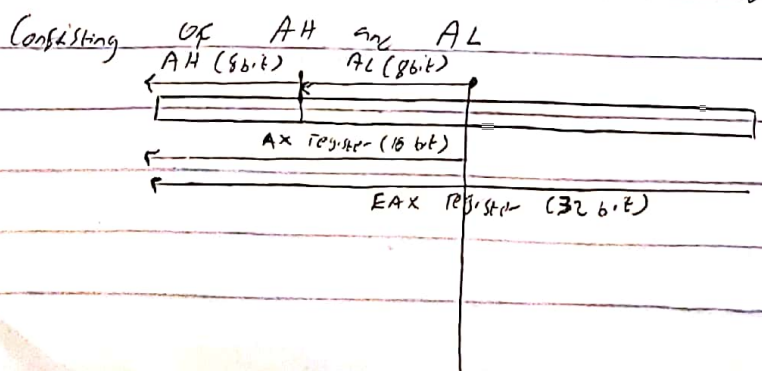
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2.) a.) Portability in programming languages involves on how wide or the range of computer systems which can access the programming language. Ideally, it is a characteristic attribute to a computer program

b) ~~Yes~~ it is different from

b) No! The x86 processors is different from AMD or Motorola 68x00 because assembly language is specific to devices of a particular computer architecture, which means that they cannot be executed on a different processor

c) The EAX register is used for arithmetic and logical operations. It is a 32-bit register which can be sub-divided into a 16-bit registers called AX which can also be sub-divided into an 8-bit register



3) a) Segmentation is achieved by using directives which are embedded commands in the source code. These ~~are~~ are:

- Code [Used to describe the area with executable instructions]
- data [Used to describe the area with variables declaration]
- Stack [Used to describe the area with stack pointers]

b) => Main Proc : It shows that the procedure has been initialized.

The "main" is used to name the procedure being executed

=> MOV AX, 47104 : It moves "47104" which is the source code, into

the "AX register" which is the destination

=> ADD EAX, 1270 : It performs an arithmetic operation on the EAX register by adding 1270 to the EAX register

=> MOV DS, AX : The move the value of the AX register into the DS register

=> Main ENDP : It ends, the procedure runs time

c) (i) Value 1 BYTE 6Ah : It declares that a variable called "Value 1" which has the equivalent size of an unsigned byte and assigns the value or initializes the variable with the value "6Ah".

(ii) Value 2 DWORD : It declares a variable called "Value 2" which has the equivalent size of a "double word" but has an uninitialized value which would be initialized at run-time

(iii) Value 3 SBYTE -10, -20, -30, -40, -50 : It declares a variable called "Value 3" which has the equivalent of a signed byte and a series of values assigned to it

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4) Main Proc

data:

num: sword

MOV AX, 600

MOV BX, 200

MOV CX, 50

MOV num, AX

SUB num, CX

CALL DumpRegs

Main END P