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17EPG02/01

COMPUTER ENGINEERING

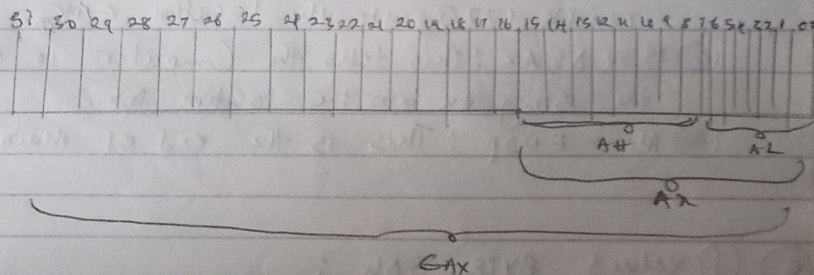
Purush

Assembly language (COE306)

- 1(a) Because when ever a new variable is inserted before an existing variable the address coded in the instruction would have to be updated.
- (b) Object and listing (.OBJ and .LST)

2(a) Portability in relation to Programming is a situation in which a programming language can be used or run in ~~any~~ a different environment to the one it was created from.

(b) ~~AX~~ stands for a general purpose register. the 16bit Ax register can be addressed as AH (high byte) and AL (low byte). the EAX register is the 32 bit version of the Ax register. the E stands for extended.



(b) No they are not because each assembly language is based on either a processor family or a specific computer.

Question

(b) Segmentation is the process of dividing the system memory into groups of independent segments referenced by pointers located in the segment registers. Segments are divided into

(*) Data segment which is used to declare the memory region where data elements are stored.

(*) Code segment - which is where instruction codes are stored

(*) Stack where the data values passed to functions and procedures within the program

(b) (*) Main proc : This defines the procedure.

(*) MOV AX, #7104 : This tells the Computer to copy the number 7104 into the location AX

(*) ADD EAX, 1270 : tells the Computer to add the variable 1270 into the location EAX.

(*) MOV DS, AX : This tells the Computer to copy the string AX into the location DS.

(*) Main ENDP : This is the end of Main.

(c) (i) value 1 BYTE 60h ;

(ii) value 2 DWORD ? ;

(iii) value 3 SBYTE -10, -20, -30, -40, -50

Question

(H) Include Irvine32.inc
• Data
val1 DWORD 10000h
val2 DWORD 50000h
val3 DWORD 30000h
final_val DWORD ?
• Code
main PROC
MOV eax, val1 ;
Sub eax, val2 ;
Sub eax, val3 ;
move final_val, eax ;
Call DumpRegs
Exit
Main ENDP
END main