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17/ENG02/010

1b) The assembler produces object files and ~~or~~ listing files

2b) The assembly language is different for different processors because they are processor dependent.

3b) i) value1 BYTE 6Dh => (value1) is the name given to the variable (BYTE) is the directive that defines the data that is to be represented. (6Dh) is the initializer in hexadecimal.

ii) value2 DWORD ? => This value name is "value2", DWORD is the directive, and the question mark means that a value will be assigned to it later.

iii) value3 SBYTE -10,-20,-30,-40,-50 => This is a defined statement that contains multiple signed bytes (SBYTE) The name given to it is 'value3'.

2a) Portability as it applies to programming language is the ability of a programming language to run across all microprocessors i.e they are not processor dependent.

2c) The lower families of EAX Registers.

32 bit registers	16 bit registers		
EAX	AH	AL	AX -> accumulator
EBX	BH	BL	BX -> Base
ECX	CH	CL	CX -> counter
EDX	DH	DL	DX -> Data

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

3b)
```
main proc          -> Signifies the start of the main procedure
MOV AX, 47104      -> The mov instruction moves the integer 47104
ADD EAX, 127A          into AX Register.
MOV DS, AX         -> The ADD instruction adds 127A which is an
main ENDP              octal integer to the EAX register

                   -> This signifies the end of the main procedure
```

3c) This is so because addresses that have been coded in the instructions would be updated whenever new variables were inserted before existing ones.

4)
```
TITLE Subtract values (Add sub.asm
; Program subtracts 3 values
INCLUDE Irvine32.inc
.code
main PROC
mov eax, 10000h ; EAX = 10000h
sub eax, 10000h ; EAX = 00000h
sub eax, 10000h ; EAX = 30000h
call DumpRegs   ; Displays registers

exit
main ENDP
END main
```