**PPPAssembly Language – Assembly Language Fundamentals (1)**

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3-1 Basic Elements of Assembly Language

Objective: Basic Architecture of Assembly Language

Answer the following question (marked a and b in comment) in the assembly code below.

| TITLE Add and Subtract (AddSub.asm)  ; This program adds and subtracts 32-bit integers.  INCLUDE Irvine32.inc  .data  ; a.The following code have an error on it, try to find it  ; and explain it. |
| --- |
| |  | ANS: (remember to add your explanation) | | --- | --- | | Val1 BYTE 11001011b |  | | Val2 BYTE 120 | | Val3 BYTE E7h | |
| .code  main PROC  ; b. Give comment of each line below   | mov ebx,50000h | ; ebx = 50000h | | --- | --- | | add eax,30000h |  | | sub eax,20000h |  | | sub ebx,20000h |  |   L1: exit  main ENDP  END main |

c. Suppose registers below has not executed any instructions yet, the registers value will be:

| EAX | 00000000h | EBP | 0018ff94h |
| --- | --- | --- | --- |
| EBX | 00001000h | ESP | 0018ff8ch |
| ECX | 00000000h | ESI | 00000000h |
| EDX | 00401000h | EDI | 00000000h |

What will happen if the program stops at L1?

| EAX |  | EBP | 0018ff94h |
| --- | --- | --- | --- |
| EBX |  | ESP | 0018ff8ch |
| ECX |  | ESI | 00000000h |
| EDX |  | EDI | 00000000h |