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COMPUTER ENGINEERING 17/ENG.02/1028
ASSEMBLY LANGUAGE COE 306

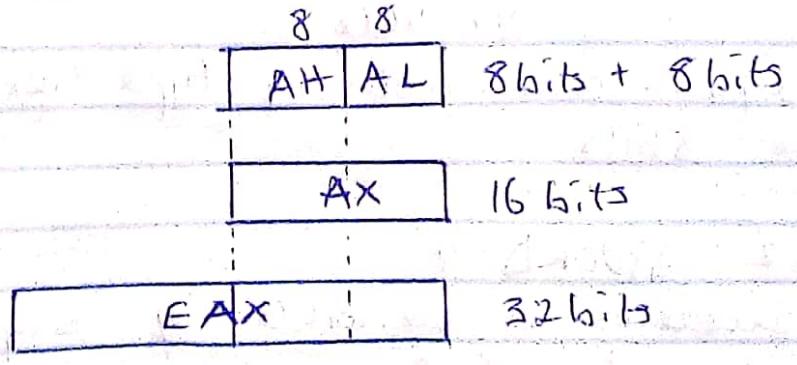
1a.) When we make use of numeric addresses, they tie us to specific locations in memory as such using numeric addresses when writing instructions that access variable, we would have to change or update the addresses coded in the instructions when a new variable is inserted before an existing one.

1b.) The file produced by the assembler is called an object file.

2a.) Portability as applied to programming languages, signifies the ability of these languages to be compiled and run on as much as different computer systems

2b.) No, The intel x86 is a different processor separate from those other processors. They are of different families.

2c.) The EAX register can be accessed using either the full 32 bits (EAX) or 16 bits (AX) or two 8 bits (AH) and (AL)



Haydan iBJ

3a.) Segmentation is achieved by dividing the computer's primary memory into segments or sections.

3b.)

```
Main Proc        ; Signifies the beginning of the procedure

MOV AX, 47104    ; Assigns 47104 to the register AX

ADD EAX, 127Q    ; Adds 127Q to the value stored in EAX or its 16 bits part per-sig

MOV DS, AX       ; Moves the value of AX to DS

main ENDP        ; Ends the main procedure
```

3c.)

i.) value 1 → Label; BYTE → Size of Variable; 6Dh → Value

This defines a variable of type hexidecimal of size 8bits

ii.) value 2 DWORD ?

This declares a variable of size 32bits with an empty value

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

This declares 5 variables of signed characters

Khaydarali Bs

4.) Assuming our three integers be 7, 2, 3

```
TITLE Substracting three integers (Sub.asm)
; This program substracts three 16 bit integers.

INCLUDE Irvine32.inc
.code

main PROC
mov ax,
```

Khaydarali Bs

4.)

```
TITLE Substracting three integers (Sub.asm)
; This program substracts three integers

INCLUDE Irvine32.inc
.data
intVal1   DWORD  20
intVal2   DWORD  15
intVal3   DWORD  11
resultVal DWORD  ?

.code
main PROC
mov ax, intVal1.      ; Assigns the value 20 to ax
sub ax, intVal2       ; Substracts 15 from ax
sub ax, intVal3       ; substracts 11 from ax
mov resultVal, ax     ; Assigns ax to resultVal

call DumpRegs

exit

main ENDP
```