# Section #03

# (Writing assembly using Debug)

## 1) A → Assemble.

A Assemble Used to enter assembly language.

```
C:\>debug
-a100
073F:0100 mov ax,1
073F:0103 mov bx,2
073F:0106 mov cx,3
073F:0109 add ax,bx
073F:010B add ax,cx
073F:010D int 3
073F:010E
```

## 2) U → Unassemble.

- Can be written in two formats [U StartA EndA, U StartA L#bytes].
- You cannot assemble lower than 100 because the beginning 256 bytes are reserved by DOS.

```
-u 100 10d
073F:0100 B80100        MOV     AX,0001
073F:0103 BB0200        MOV     BX,0002
073F:0106 B90300        MOV     CX,0003
073F:0109 01D8          ADD     AX,BX
073F:010B 01C8          ADD     AX,CX
073F:010D CC            INT     3
```

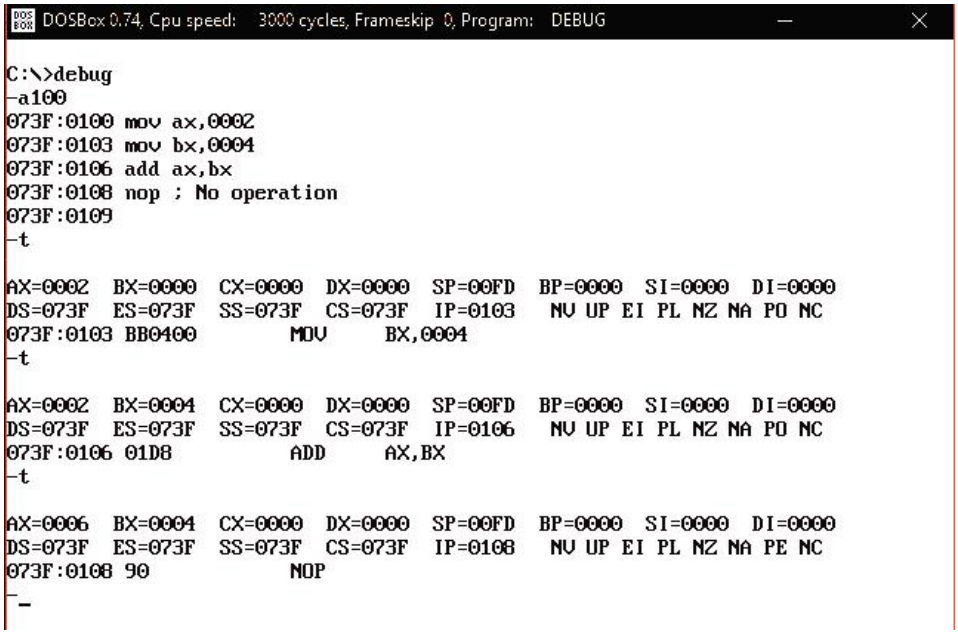
## 3) G → Go

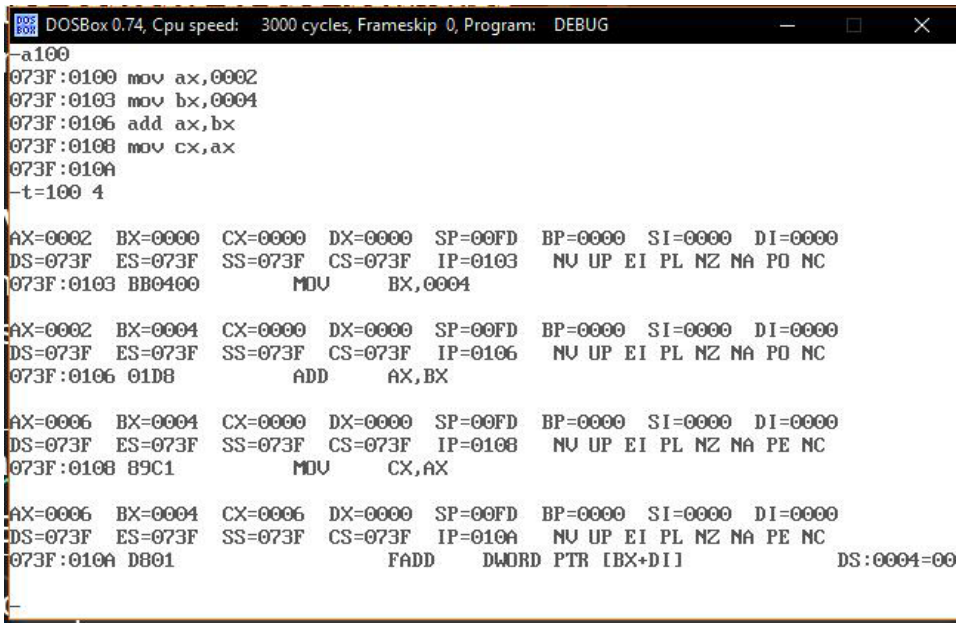
- Execute instructions between two addresses.
- If no address begins execute instruction at CS:IP until a breakpoint is reached.
- INT 3 terminate execution.

```
DOSBox 0.74, Cpu speed:   3000 cycles, Frameskip  0, Program:   DEBUG

C:\>debug
-a100
073F:0100 mov ax,2
073F:0103 mov bx,3
073F:0106 add ax,bx
073F:0108 int 3
073F:0109
-g

AX=0005  BX=0003  CX=0000  DX=0000  SP=00FD  BP=0000  SI=0000  DI=0000
DS=073F  ES=073F  SS=073F  CS=073F  IP=0108   NV UP EI PL NZ NA PE NC
073F:0108 CC            INT     3
-g=100 103

AX=0002  BX=0003  CX=0000  DX=0000  SP=00FD  BP=0000  SI=0000  DI=0000
DS=073F  ES=073F  SS=073F  CS=073F  IP=0103   NV UP EI PL NZ NA PE NC
073F:0103 BB0300        MOV     BX,0003
-g=100

AX=0005  BX=0003  CX=0000  DX=0000  SP=00FD  BP=0000  SI=0000  DI=0000
DS=073F  ES=073F  SS=073F  CS=073F  IP=0108   NV UP EI PL NZ NA PE NC
073F:0108 CC            INT     3
-
```

## 4) T→ Trace

- Trace the contents of one instruction.
- Can write in form [T begin address #of Instruction].



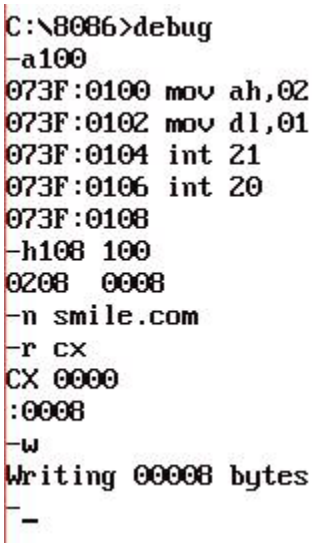



**True or False:**


## 5) W → Write

## 6) N → Name

- Steps used to save an assembly program:
- Obtain length using "h"
- Name your program using "n"
- Put length on "CX"
- Write your program on disk using "w"



## 7) L Load

- First give the name of the file you want to load.
- Load file using " L "

```
C:\8086>debug
-n smile.com
-l
-u 100 108
075A:0100 B402          MOV     AH,02
075A:0102 B201          MOV     DL,01
075A:0104 CD21          INT     21
075A:0106 CD20          INT     20
075A:0108 0000          ADD     [BX+SI],AL
-_
```

## Q→ Quit.

- Exit from debug program.