

Computer Organization

Lab Work

IIIT Sonepat

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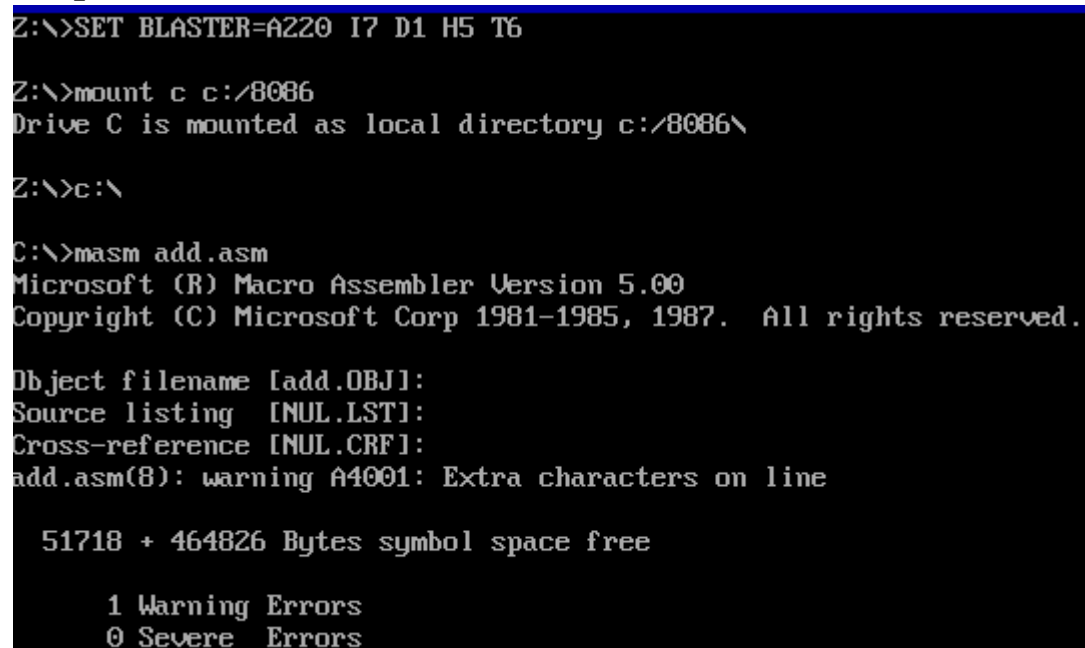
❖ Adding two numbers using assembly language:

➤ *Source Code:*

```
.model small
.stack 200h
data segment
a db 3
b db 5
data ends
code segment
assume cs:code ds:data
start:
    mov ax,data
    mov ds,ax
    mov bl,a
    mov dl,b
    add dl,bl
    add dl,48
    mov ah,2
    int 21h

    mov ah,4ch
    int 21h
code ends
end start
```

➤ *Output:*



```
Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount c c:/8086
Drive C is mounted as local directory c:/8086\

Z:\>c:\

C:\>masm add.asm
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

Object filename [add.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:
add.asm(8): warning A4001: Extra characters on line

51718 + 464826 Bytes symbol space free

1 Warning Errors
0 Severe Errors
```

```
C:\>link add

Microsoft (R) Overlay Linker  Version 3.60
Copyright (C) Microsoft Corp 1983-1987.  All rights reserved.

Run File [ADD.EXE]:
List File [NUL.MAP]:
Libraries [LIB]:

C:\>add.exe
8
```

❖ Subtracting two numbers using assembly language:

➤ *Source Code:*

```
.model small
.stack 200h
data segment
a db 1
b db 5
data ends
code segment
assume cs:code ds:data
start:
    mov ax,data
    mov ds,ax
    mov bl,a
    mov dl,b
    sub dl,bl
    add dl,48
    mov ah,2
    int 21h

    mov ah,4ch
    int 21h
code ends
end start
```

➤ *Output:*

```

C:\>masm sub.asm
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

Object filename [sub.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:
sub.asm(8): warning A4001: Extra characters on line

    51718 + 464826 Bytes symbol space free

    1 Warning Errors
    0 Severe Errors

C:\>link sub

Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.

Run File [SUB.EXE]:
List File [NUL.MAP]:
Libraries [.LIB]:

C:\>sub.exe
4

```

❖ Multiplying two numbers using assembly language:

➤ *Source Code:*

```

;program to multiply two numbers
.model small
.stack 100h
.data
.code
main proc
mov al, 5
mov bl, 4
mul bl
AAM
mov ch, ah
mov cl, al

mov dl, ch
add dl, 48
mov ah, 2
int 21h
mov dl, cl
add dl, 48
mov ah, 2
int 21h

mov ah, 4ch
int 21h

main endp

```

end main

➤ **Output:**

```
C:\>masm mul.asm
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.
```

```
Object filename [mul.OBJ]:
Source listing [NUL.LST]:
Cross-reference [NUL.CRF]:
```

```
51720 + 464824 Bytes symbol space free
```

```
0 Warning Errors
0 Severe Errors
```

```
C:\>link mul
```

```
Microsoft (R) Overlay Linker Version 3.60
Copyright (C) Microsoft Corp 1983-1987. All rights reserved.
```

```
Run File [MUL.EXE]:
List File [NUL.MAP]:
Libraries [.LIB]:
```

```
C:\>mul.exe
20
```