

## Experiment 2 Flexible use of different addressing modes

Purpose of the experiment: Familiarize yourself with and master the usage of 7 different operand addressing modes.

Experiment content: access the data of the specified memory unit in different addressing modes.

1. The two operands are subtracted, and the result is placed in the data segment at offset address 0016H.

- (1) The AX and BX registers are copied as 0038H and 0010H respectively.
- (2) The contents of AX and BX are subtracted (SUB instruction), and the result is in AX (the instruction is SUB AX, BX).
- (3) Use the direct addressing mode to save the result of the subtraction to the 0016H unit.

code:

```
ASSUME CS:abc
```

```
abc SEGMENT
```

```
MOV AX,0038H
```

```
MOV BX,0010H
```

```
SUB AX,BX
```

```
MOV ds:[0016H],ax
```

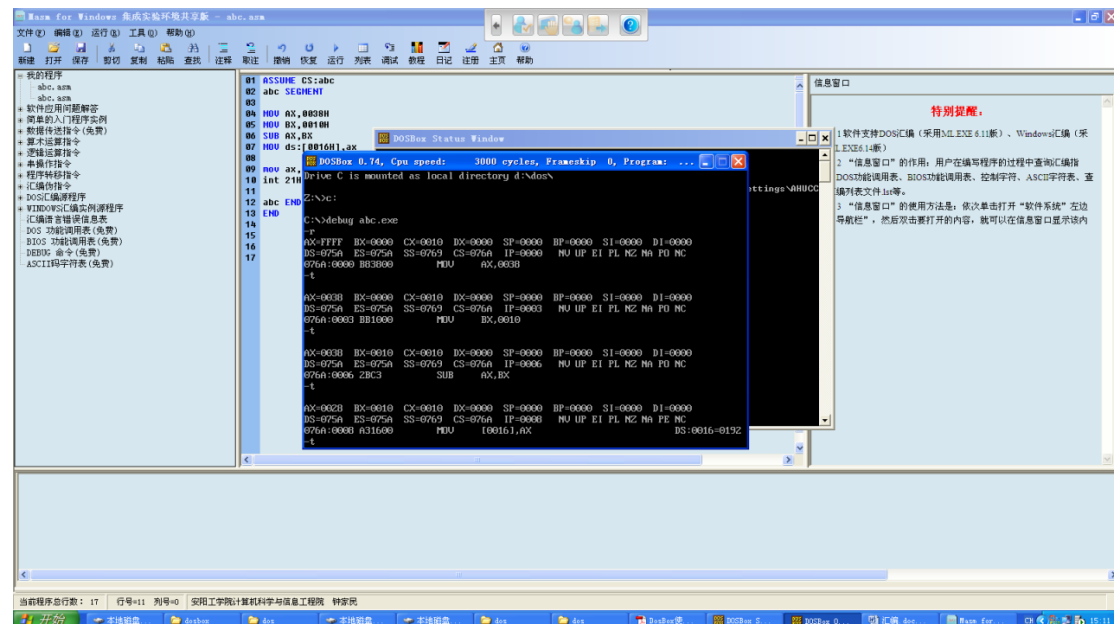
```
mov ax,4c00H
```

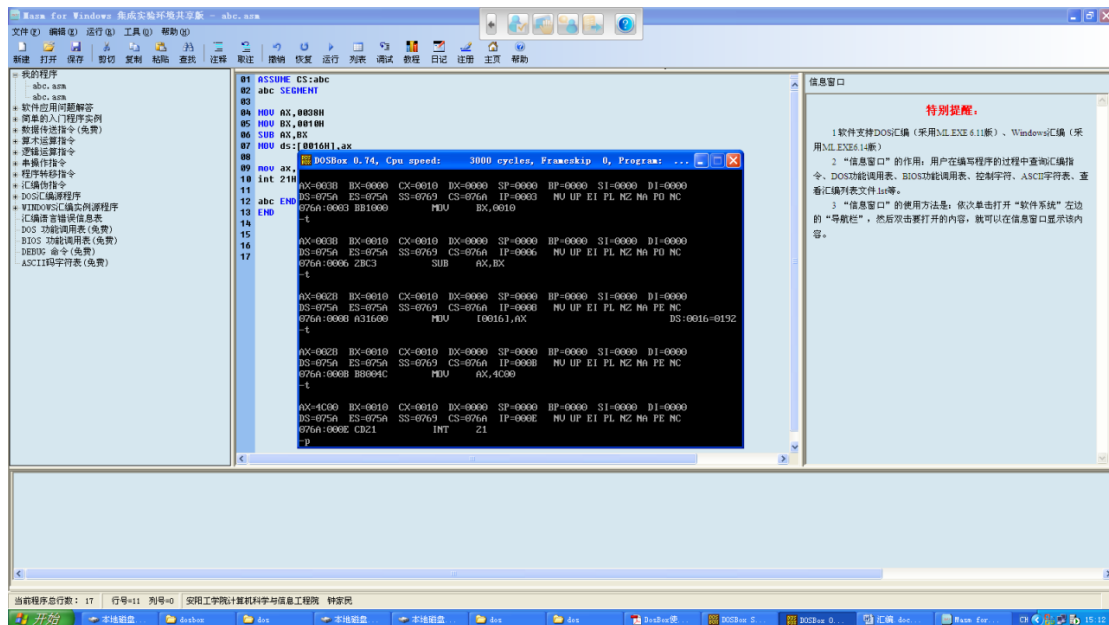
```
int 21H
```

```
abc ENDS
```

```
END
```

screenshot:





2. The two operands are added together, and the result is placed in the 0020H unit of the additional segment.

(1) The value of AX is 0034H.

(2) Add AX and 65, and the result is in AX (the instruction is ADD AX,65).

(3) Use register indirect addressing mode (segment override) to save the operation result.

untie:

code:

```
ASSUME CS: bca
```

```
bca SEGMENT
```

```
MOV AX,0034H
```

```
add ax,65
```

```
mov bx,0020H
```

```
mov [bx],ax
```

```
mov ax,4c00H
```

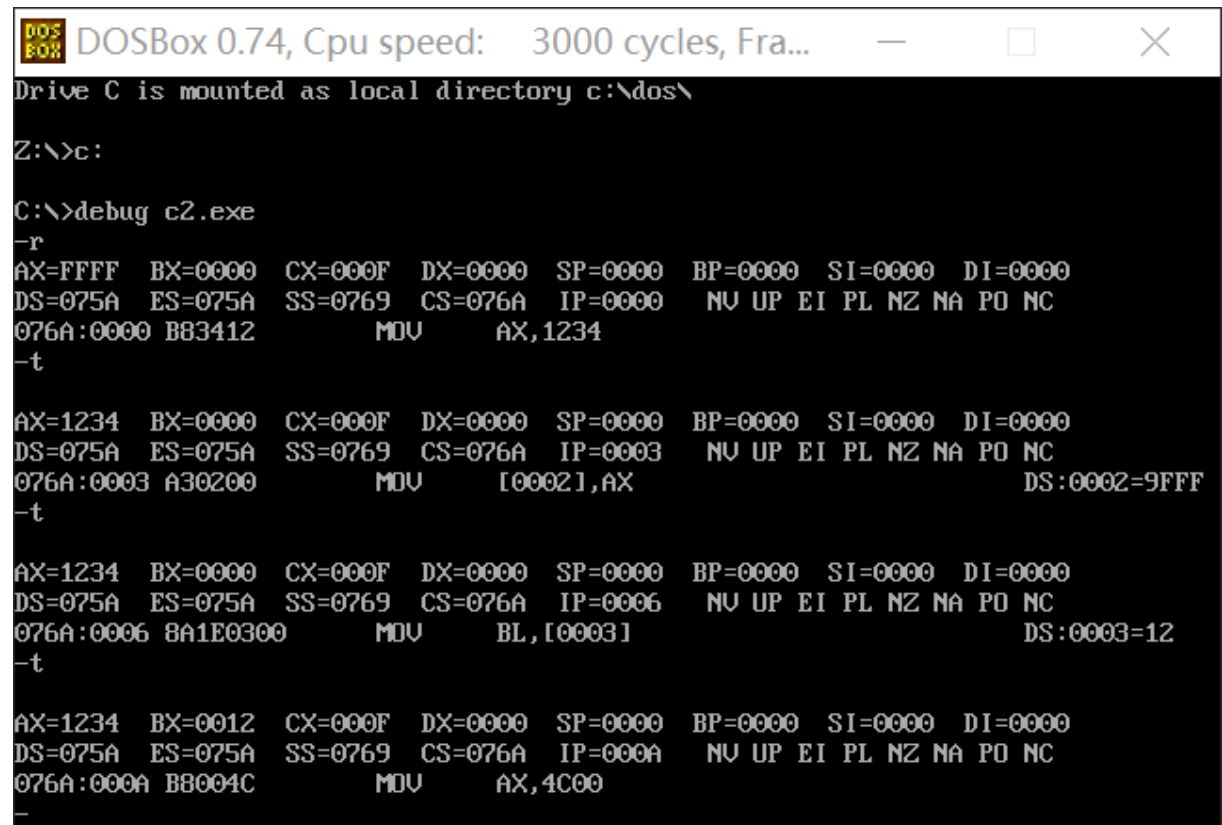
```
int 21H
```

```
bca ENDS
```

```
END
```



```
mov ax,4c00h
int 21h
c2 ends
end
```



DOSBox 0.74, Cpu speed: 3000 cycles, Fra... — □ ×

Drive C is mounted as local directory c:\dos\

Z:\>c:

C:\>debug c2.exe

-r

AX=FFFF	BX=0000	CX=000F	DX=0000	SP=0000	BP=0000	SI=0000	DI=0000
DS=075A	ES=075A	SS=0769	CS=076A	IP=0000	NU UP EI PL NZ NA PO NC		

076A:0000 B83412           MOV     AX,1234

-t

AX=1234	BX=0000	CX=000F	DX=0000	SP=0000	BP=0000	SI=0000	DI=0000
DS=075A	ES=075A	SS=0769	CS=076A	IP=0003	NU UP EI PL NZ NA PO NC		

076A:0003 A30200           MOV     [0002],AX                               DS:0002=9FFF

-t

AX=1234	BX=0000	CX=000F	DX=0000	SP=0000	BP=0000	SI=0000	DI=0000
DS=075A	ES=075A	SS=0769	CS=076A	IP=0006	NU UP EI PL NZ NA PO NC		

076A:0006 8A1E0300       MOV     BL,[0003]                           DS:0003=12

-t

AX=1234	BX=0012	CX=000F	DX=0000	SP=0000	BP=0000	SI=0000	DI=0000
DS=075A	ES=075A	SS=0769	CS=076A	IP=000A	NU UP EI PL NZ NA PO NC		

076A:000A B8004C           MOV     AX,4C00

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