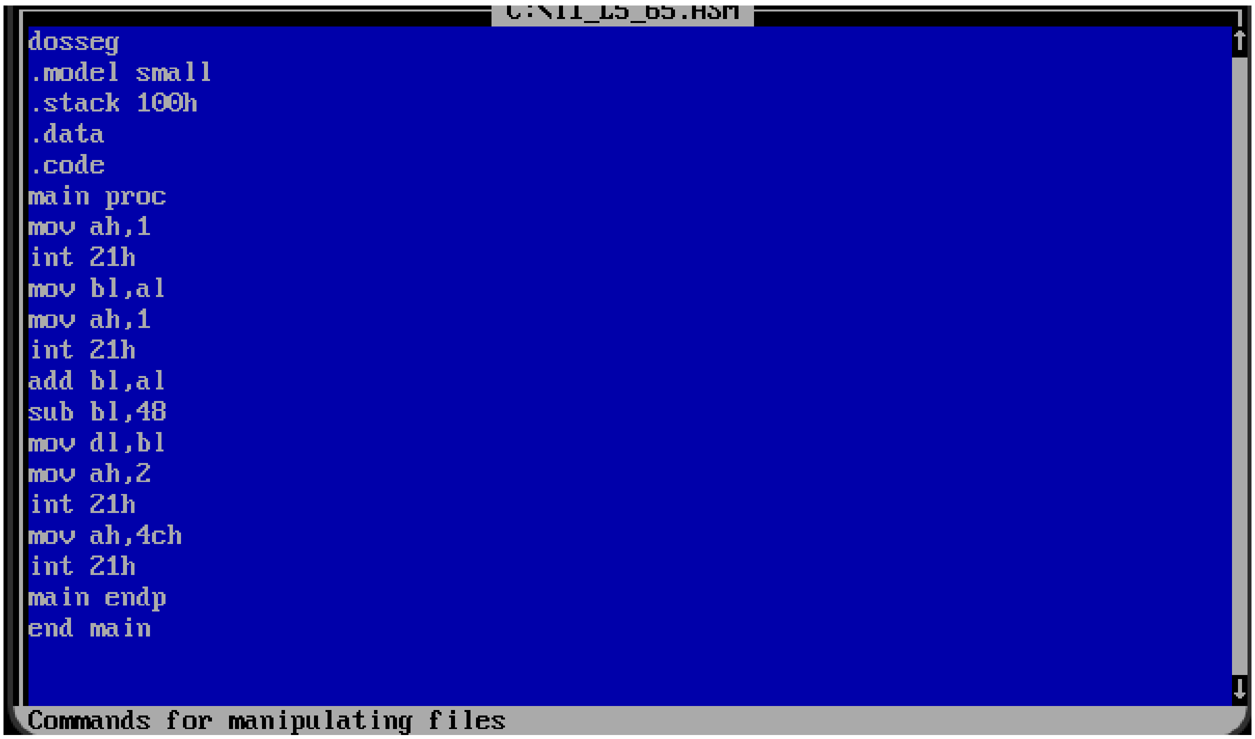
NAME: Babar Ali

SAP ID: 65731

SUBJECT: COAL

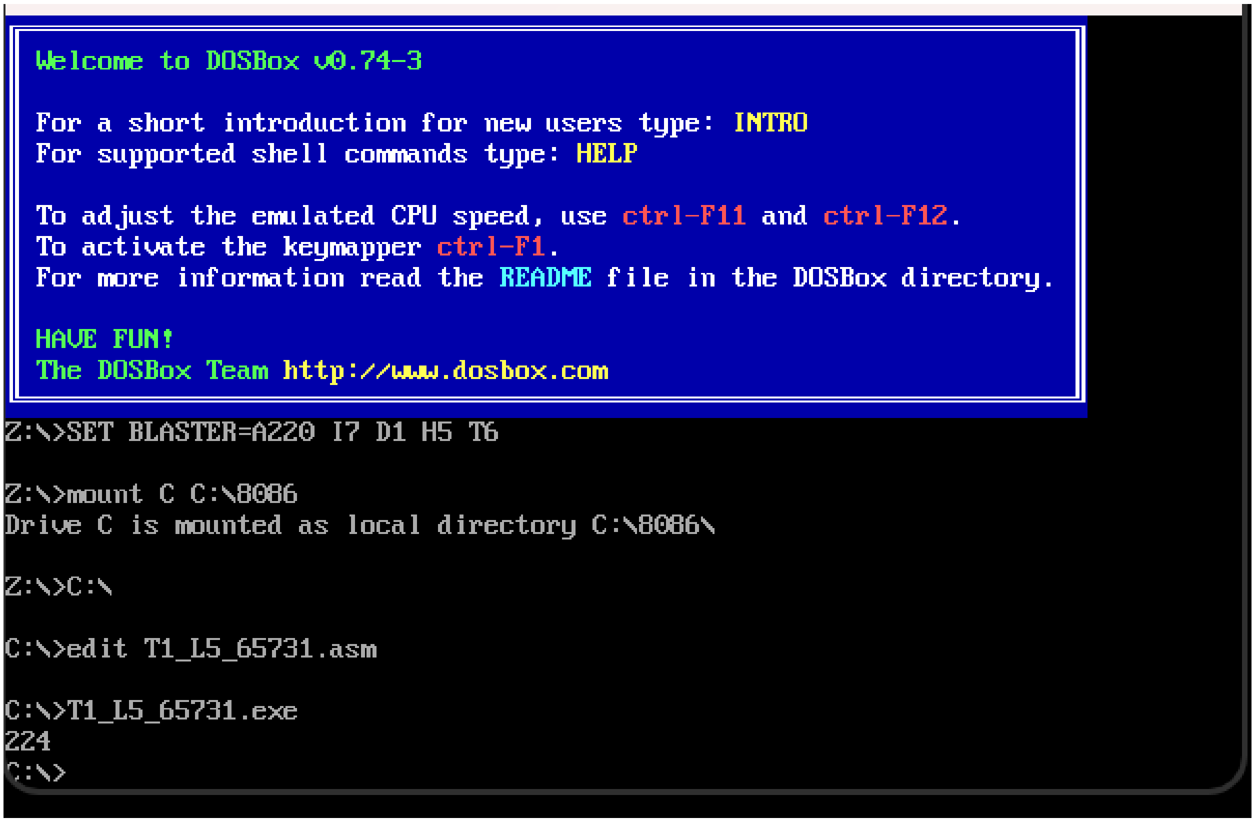
LAB-5:

Task-1:



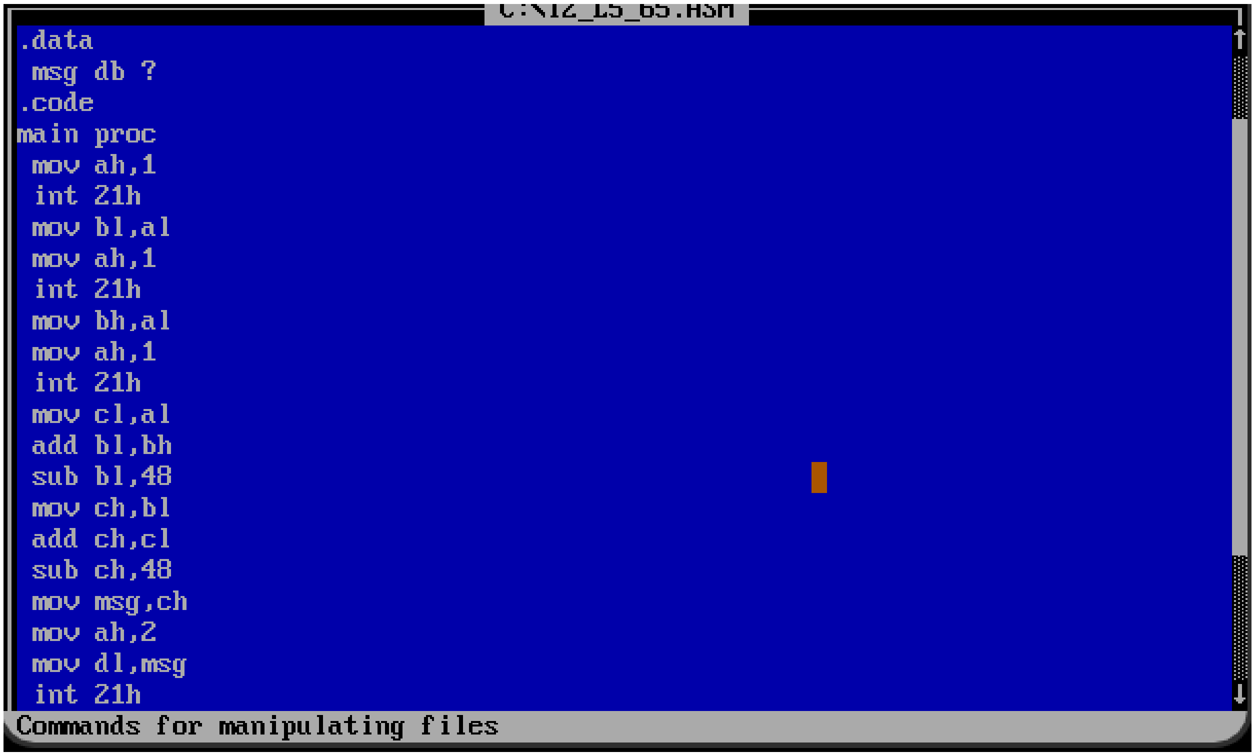
```
dosseg
.model small
.stack 100h
.data
.code
main proc
mov ah,1
int 21h
mov bl,al
mov ah,1
int 21h
add bl,al
sub bl,48
mov dl,bl
mov ah,2
int 21h
mov ah,4ch
int 21h
main endp
end main
```

Output:



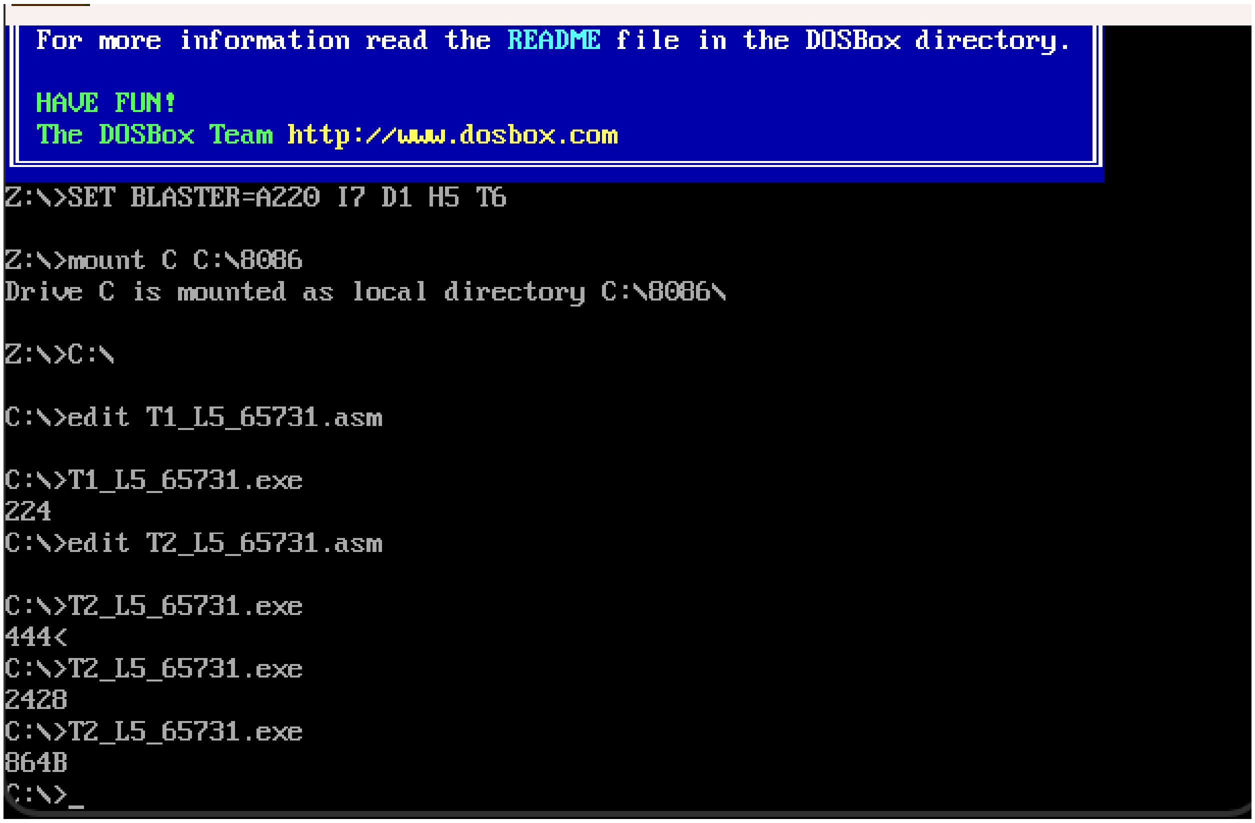
```
Welcome to DOSBox v0.74-3

For a short introduction for new users type: INTRO
For supported shell commands type: HELP

To adjust the emulated CPU speed, use ctrl-F11 and ctrl-F12.
To activate the keymapper ctrl-F1.
For more information read the README file in the DOSBox directory.

HAVE FUN!
The DOSBox Team http://www.dosbox.com
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:\>edit T1_L5_65731.asm

C:\>T1_L5_65731.exe
224
C:\>
```

Task-2:



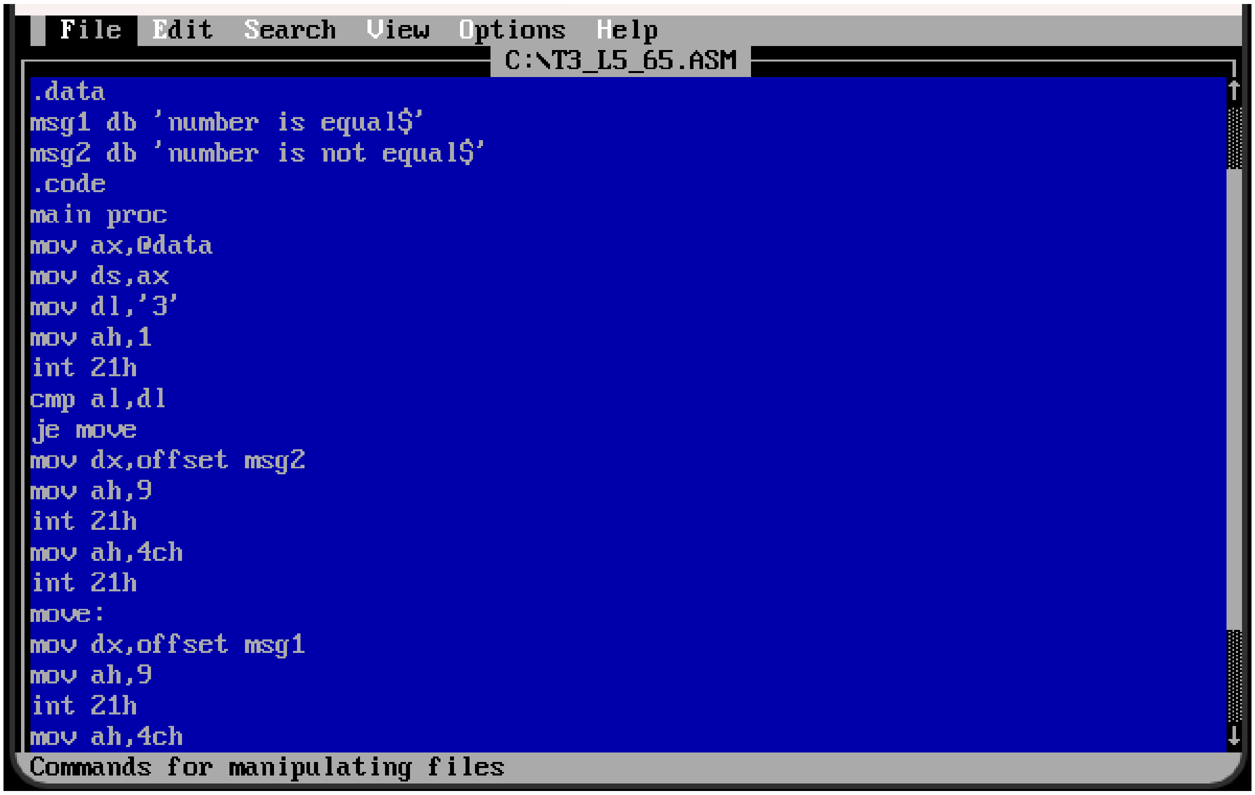
```
C:\T2_L5_65.ASM
.data
 msg db ?
.code
main proc
 mov ah,1
 int 21h
 mov bl,al
 mov ah,1
 int 21h
 mov bh,al
 mov ah,1
 int 21h
 mov cl,al
 add bl,bh
 sub bl,48
 mov ch,bl
 add ch,cl
 sub ch,48
 mov msg,ch
 mov ah,2
 mov dl,msg
 int 21h
Commands for manipulating files
```

Output:



```
 For more information read the README file in the DOSBox directory.

 HAVE FUN!
 The DOSBox Team http://www.dosbox.com
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:\>edit T1_L5_65731.asm

C:\>T1_L5_65731.exe
224
C:\>edit T2_L5_65731.asm

C:\>T2_L5_65731.exe
444<
C:\>T2_L5_65731.exe
2428
C:\>T2_L5_65731.exe
864B
C:\>_
```

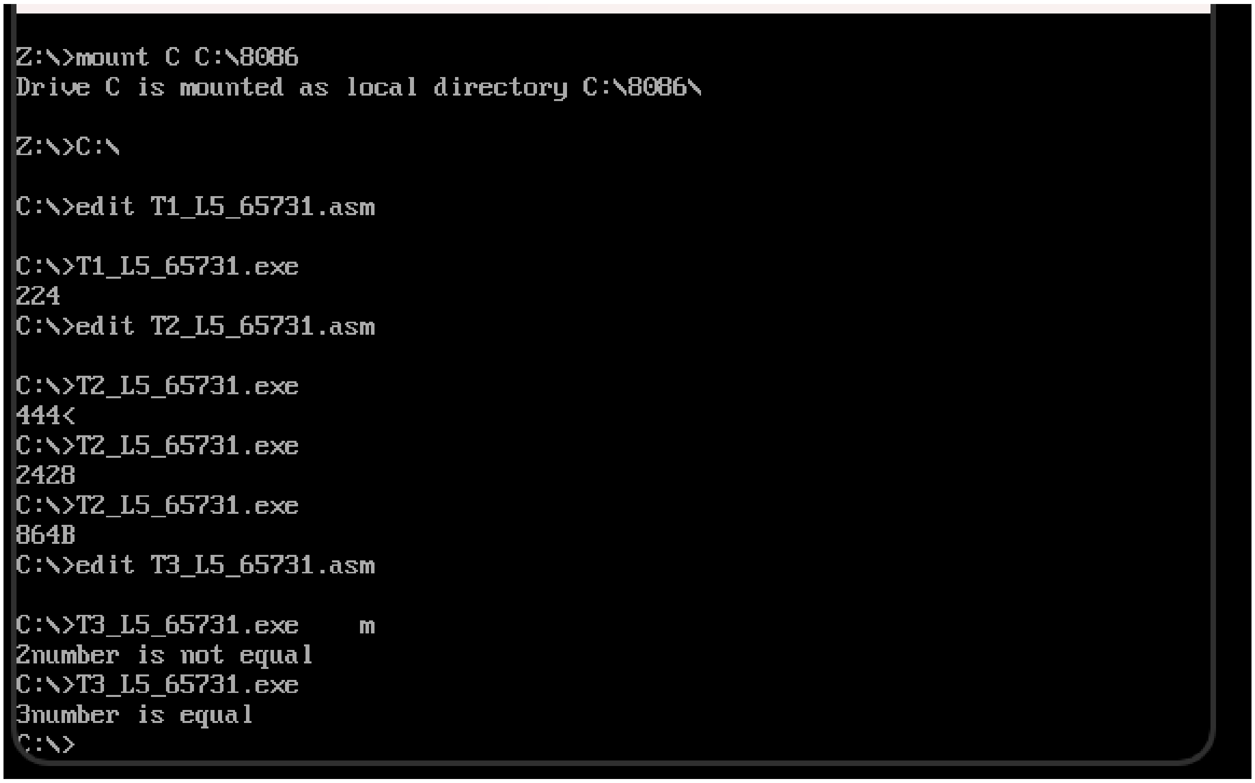
Task-3:



File Edit Search View Options Help
C:\T3_L5_65.ASM
Commands for manipulating files

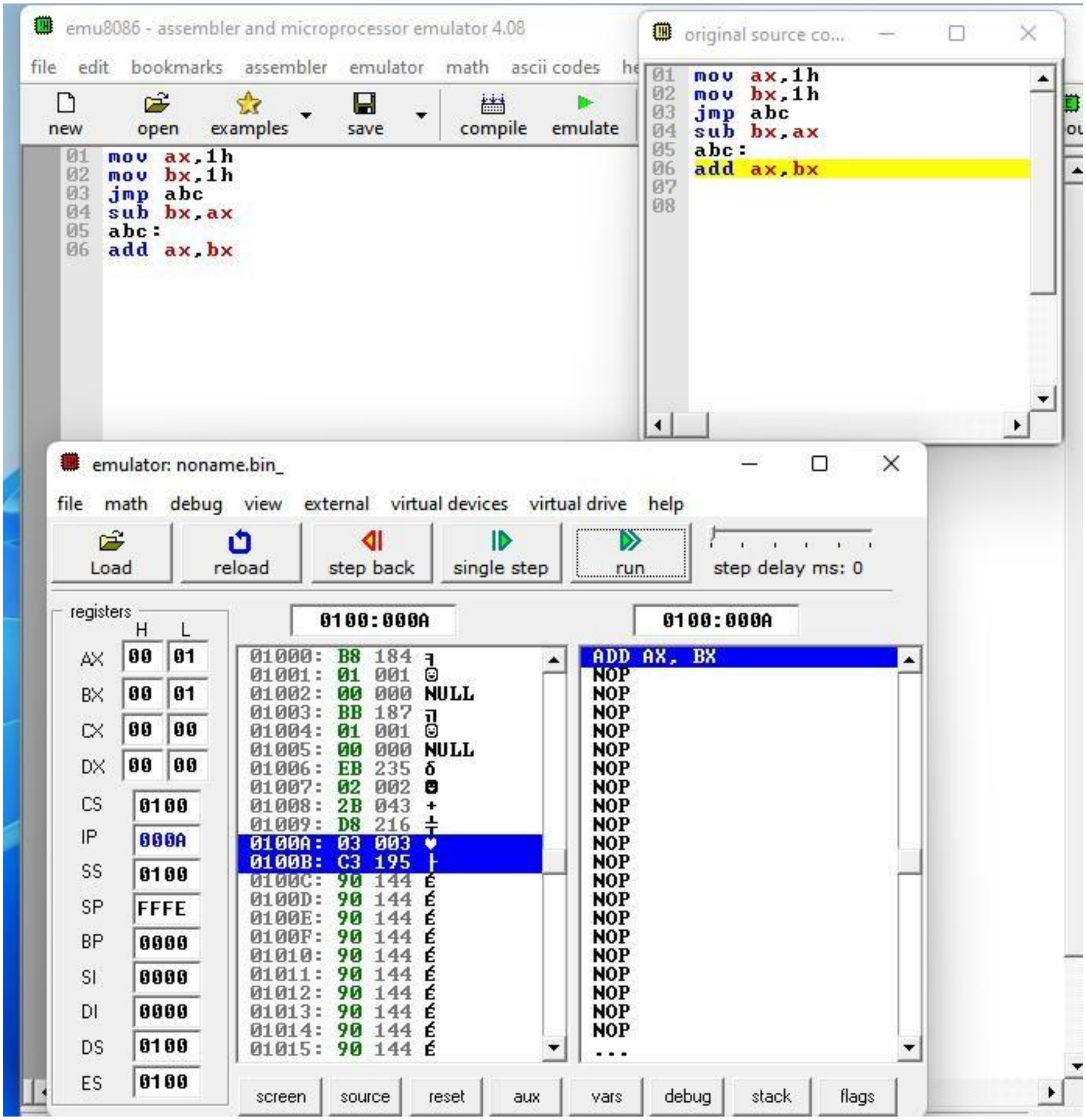
```
.data
msg1 db 'number is equal$'
msg2 db 'number is not equal$'
.code
main proc
mov ax,@data
mov ds,ax
mov dl,'3'
mov ah,1
int 21h
cmp al,dl
je move
mov dx,offset msg2
mov ah,9
int 21h
mov ah,4ch
int 21h
move:
mov dx,offset msg1
mov ah,9
int 21h
mov ah,4ch
```

Output:



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

Z:\>C:\

C:\>edit T1_L5_65731.asm

C:\>T1_L5_65731.exe
224
C:\>edit T2_L5_65731.asm

C:\>T2_L5_65731.exe
444<
C:\>T2_L5_65731.exe
2428
C:\>T2_L5_65731.exe
864B
C:\>edit T3_L5_65731.asm

C:\>T3_L5_65731.exe     m
2number is not equal
C:\>T3_L5_65731.exe
3number is equal
C:\>
```

Task-4:



emu8086 - assembler and microprocessor emulator 4.08
file edit bookmarks assembler emulator math ascii codes he
new open examples save compile emulate

```
mov ax,1h
mov bx,1h
jmp abc
sub bx,ax
abc:
add ax,bx
```

```
mov ax,1h
mov bx,1h
jmp abc
sub bx,ax
abc:
add ax,bx
```

emulator: noname.bin_
file math debug view external virtual devices virtual drive help
Load reload step back single step run step delay ms: 0
registers
H L
screen source reset aux vars debug stack flags

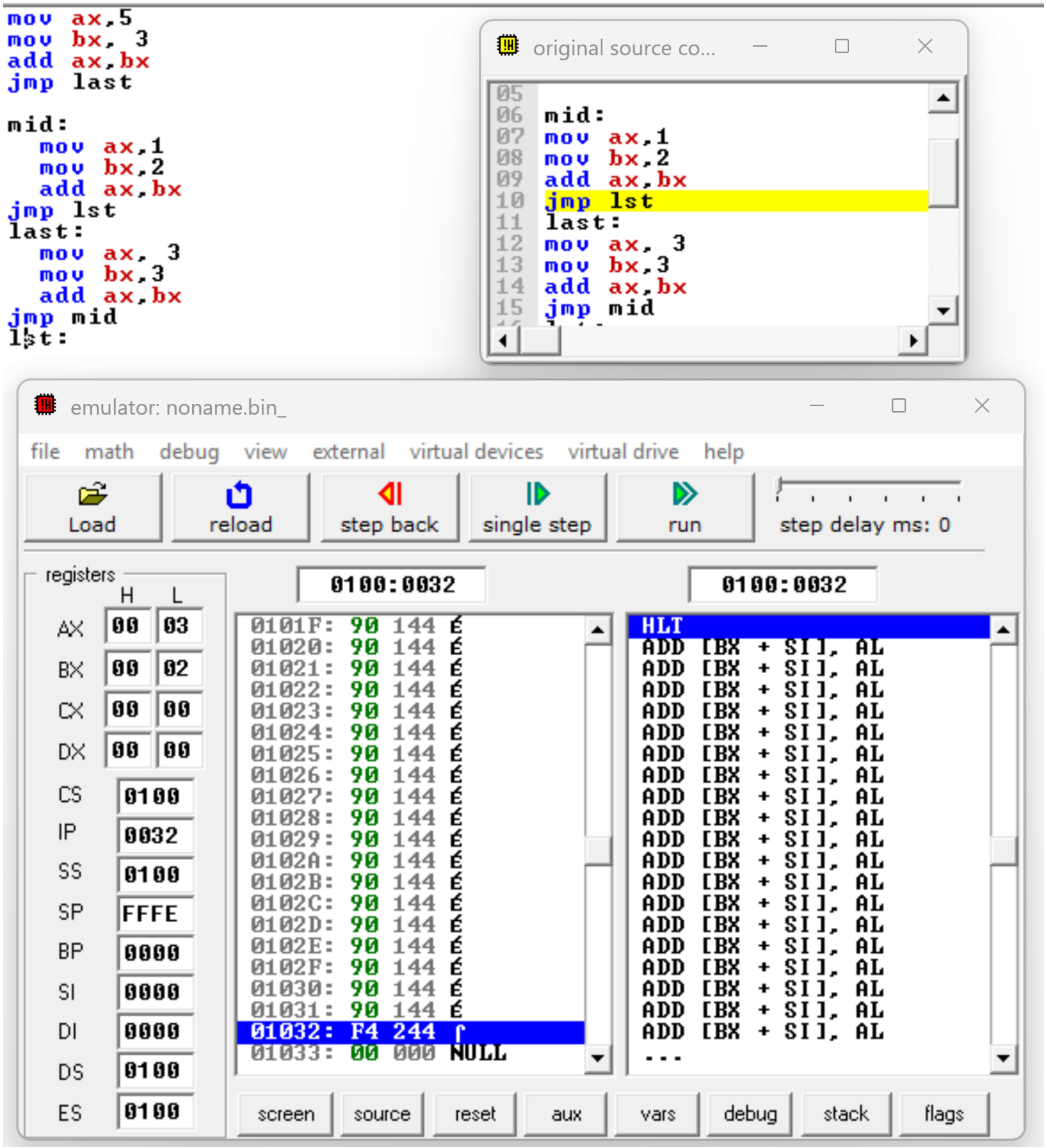
	H	L
AX	00	01
BX	00	01
CX	00	00
DX	00	00

CS	0100
IP	000A
SS	0100
SP	FFFE
BP	0000
SI	0000
DI	0000
DS	0100
ES	0100

```
0100:000A

01000: B8 184 ╕
01001: 01 001 ☺
01002: 00 000 NULL
01003: BB 187 ╗
01004: 01 001 ☺
01005: 00 000 NULL
01006: EB 235 δ
01007: 02 002 ☻
01008: 2B 043 +
01009: D8 216 ╪
0100A: 03 003 ♥
0100B: C3 195 ├
0100C: 90 144 É
0100D: 90 144 É
0100E: 90 144 É
0100F: 90 144 É
01010: 90 144 É
01011: 90 144 É
01012: 90 144 É
01013: 90 144 É
01014: 90 144 É
01015: 90 144 É
```

```
0100:000A

ADD AX, BX
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
NOP
...
```

Task-5:



```
mov ax,5
mov bx, 3
add ax,bx
jmp last

mid:
   mov ax,1
   mov bx,2
   add ax,bx
jmp lst
last:
   mov ax, 3
   mov bx,3
   add ax,bx
jmp mid
lst:
```

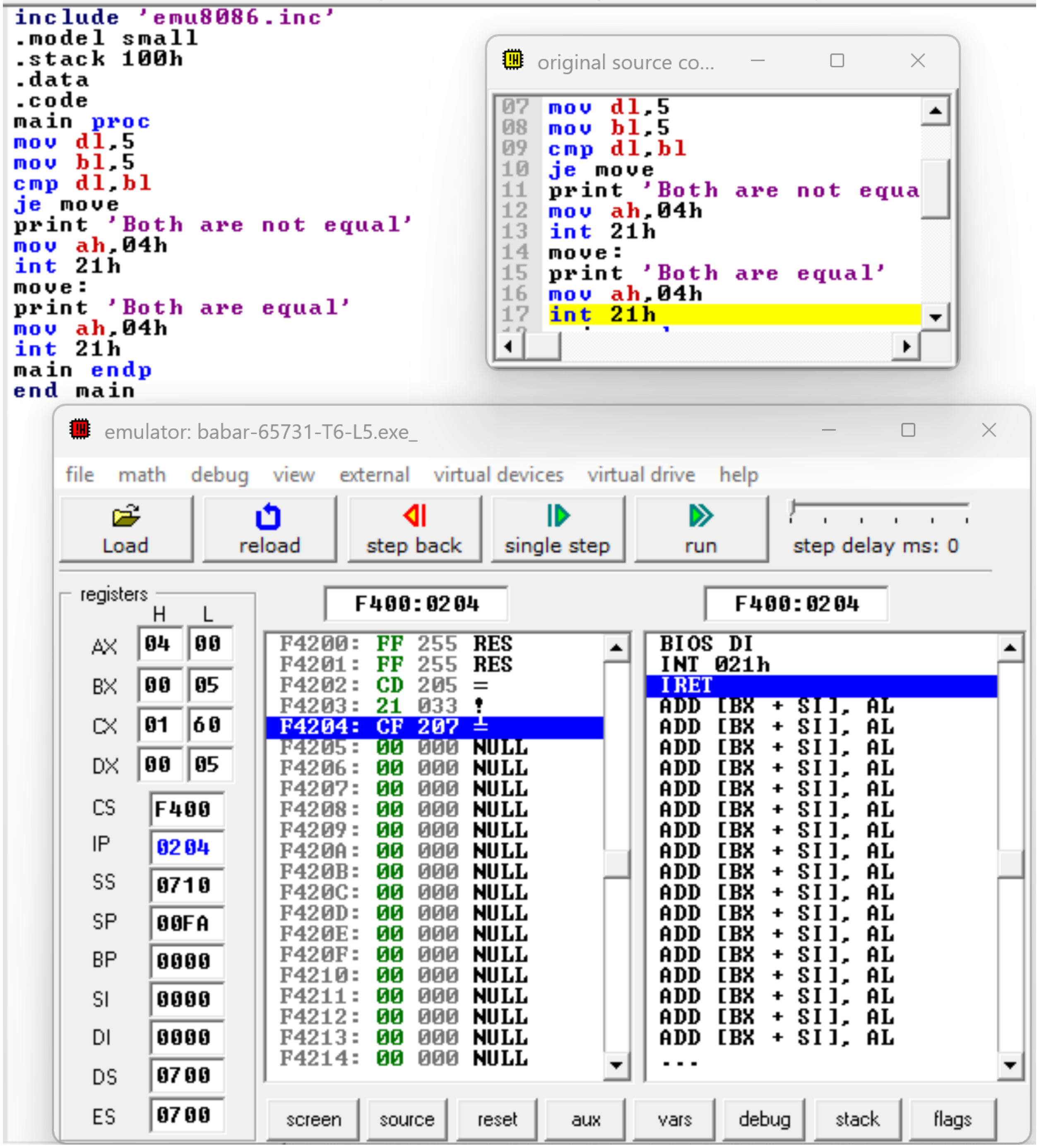
```
mid:
mov ax,1
mov bx,2
add ax,bx
jmp lst
last:
mov ax, 3
mov bx,3
add ax,bx
jmp mid
```

```
     H  L
AX   00 03
BX   00 02
CX   00 00
DX   00 00
CS   0100
IP   0032
SS   0100
SP   FFFE
BP   0000
SI   0000
DI   0000
DS   0100
ES   0100
```

```
0100:0032

0101F: 90 144 É
01020: 90 144 É
01021: 90 144 É
01022: 90 144 É
01023: 90 144 É
01024: 90 144 É
01025: 90 144 É
01026: 90 144 É
01027: 90 144 É
01028: 90 144 É
01029: 90 144 É
0102A: 90 144 É
0102B: 90 144 É
0102C: 90 144 É
0102D: 90 144 É
0102E: 90 144 É
0102F: 90 144 É
01030: 90 144 É
01031: 90 144 É
01032: F4 244 ⌠
01033: 00 000 NULL
```

```
0100:0032

HLT
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
...
```

Task-6:



```
include 'emu8086.inc'
.model small
.stack 100h
.data
.code
main proc
mov dl,5
mov bl,5
cmp dl,bl
je move
print 'Both are not equal'
mov ah,04h
int 21h
move:
print 'Both are equal'
mov ah,04h
int 21h
main endp
end main
```

```
mov dl,5
mov bl,5
cmp dl,bl
je move
print 'Both are not equa
mov ah,04h
int 21h
move:
print 'Both are equal'
mov ah,04h
int 21h
```

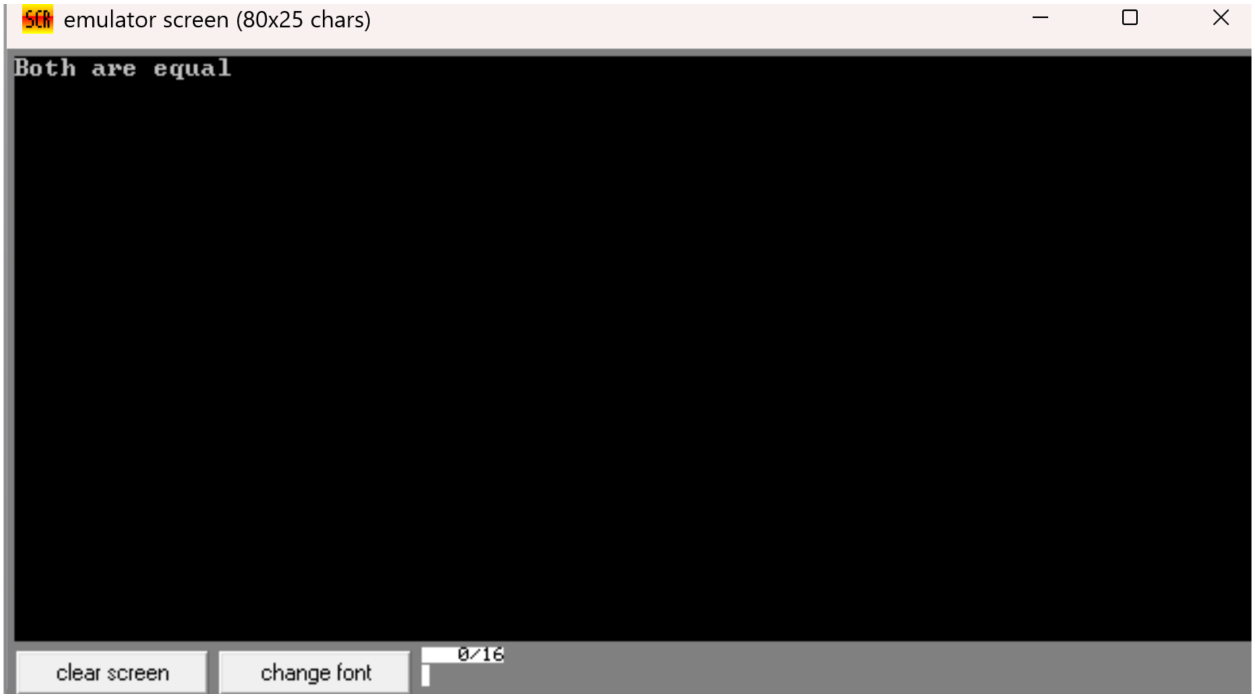
	H	L
AX	04	00
BX	00	05
CX	01	60
DX	00	05

CS	F400
IP	0204
SS	0710
SP	00FA
BP	0000
SI	0000
DI	0000
DS	0700
ES	0700

```
F400:0204
F4200: FF 255 RES
F4201: FF 255 RES
F4202: CD 205 =
F4203: 21 033 !
F4204: CF 207 ╧
F4205: 00 000 NULL
F4206: 00 000 NULL
F4207: 00 000 NULL
F4208: 00 000 NULL
F4209: 00 000 NULL
F420A: 00 000 NULL
F420B: 00 000 NULL
F420C: 00 000 NULL
F420D: 00 000 NULL
F420E: 00 000 NULL
F420F: 00 000 NULL
F4210: 00 000 NULL
F4211: 00 000 NULL
F4212: 00 000 NULL
F4213: 00 000 NULL
F4214: 00 000 NULL
```

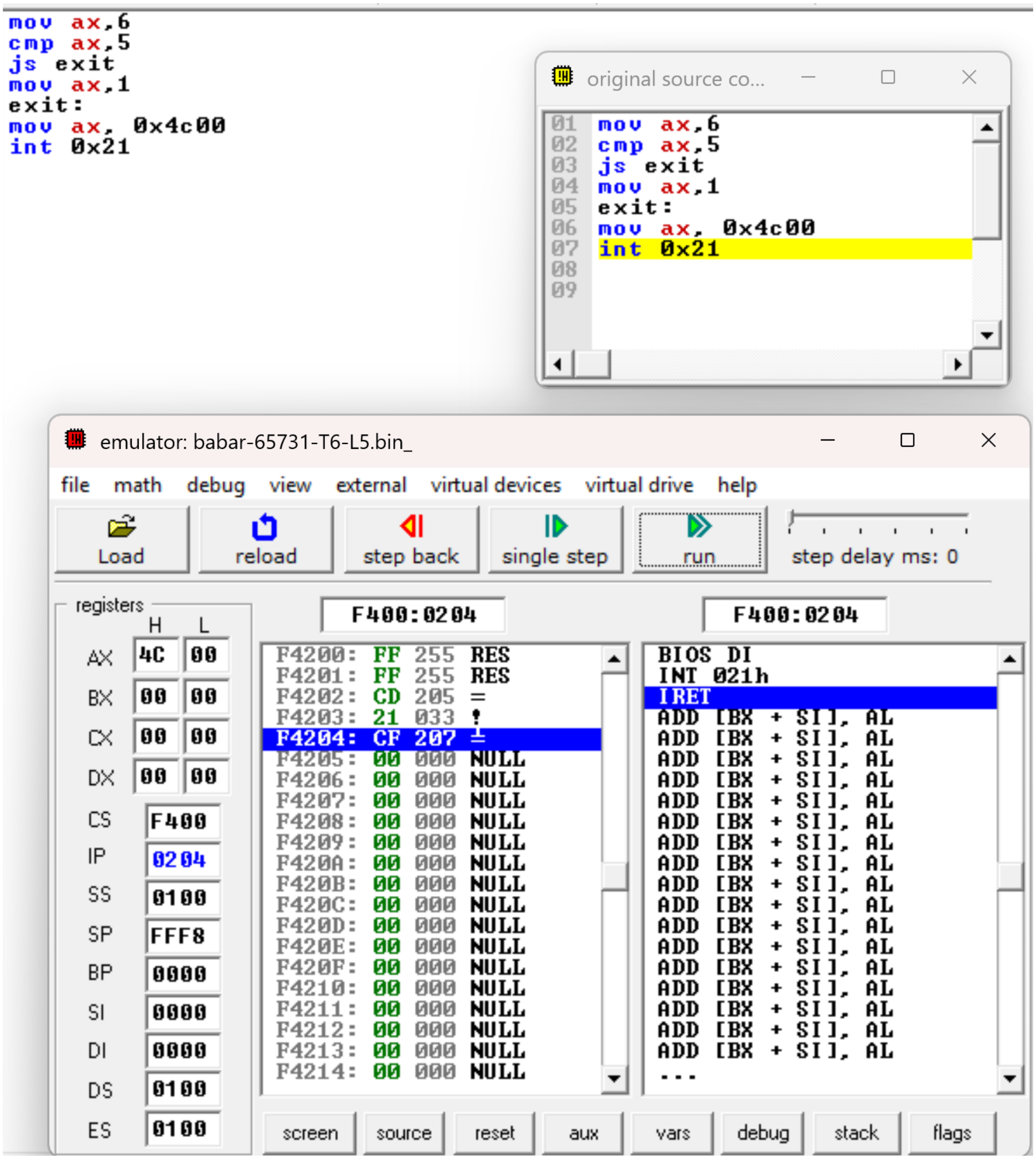
```
F400:0204
BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
...
```

Output:



```
Both are equal
```

Task-7:



```
mov ax,6
cmp ax,5
js exit
mov ax,1
exit:
mov ax, 0x4c00
int 0x21
```

original source co...

```
mov ax,6
cmp ax,5
js exit
mov ax,1
exit:
mov ax, 0x4c00
int 0x21
```

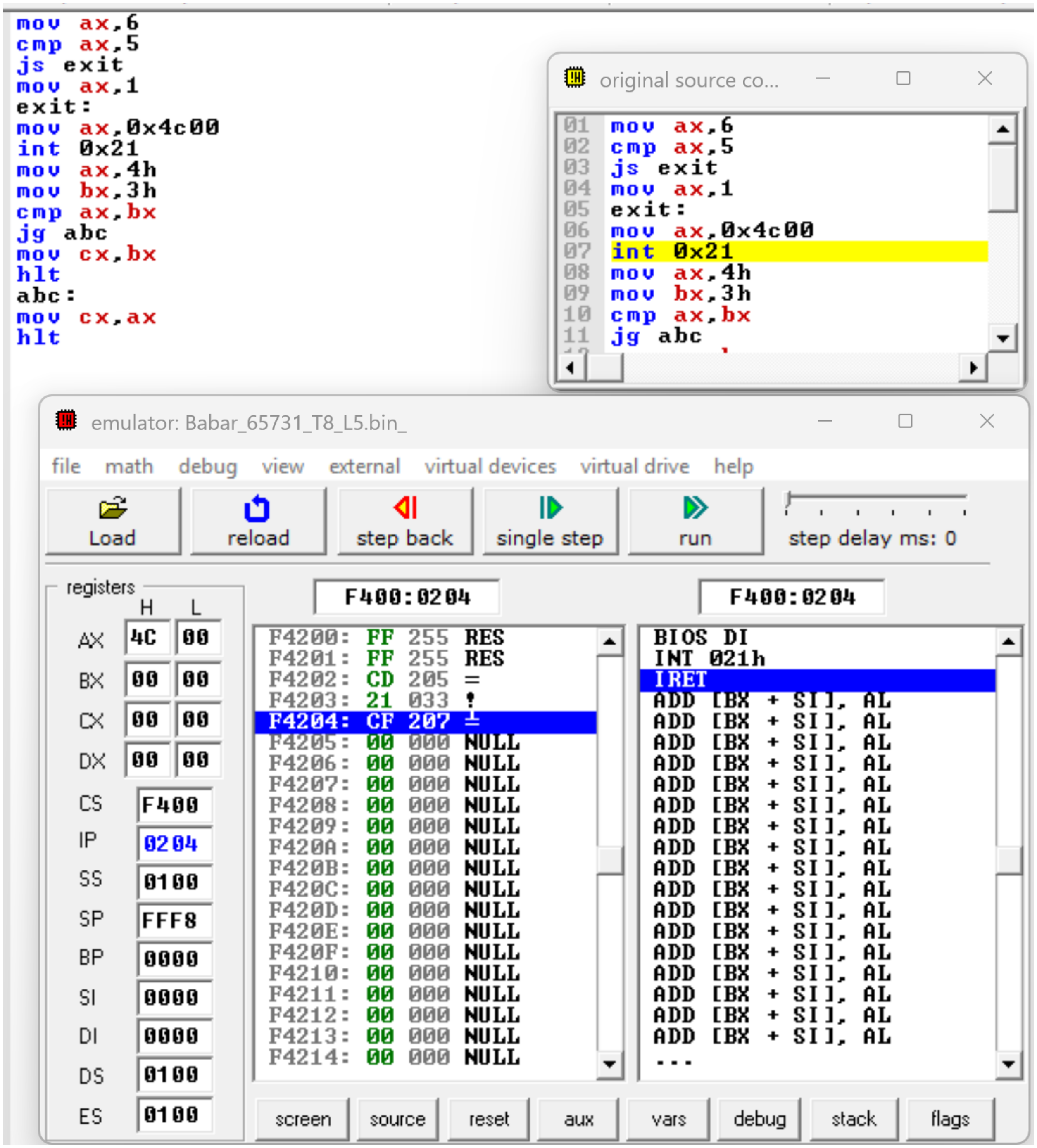
emulator: babar-65731-T6-L5.bin_

```
      H   L
AX   4C  00
BX   00  00
CX   00  00
DX   00  00
CS   F400
IP   0204
SS   0100
SP   FFF8
BP   0000
SI   0000
DI   0000
DS   0100
ES   0100
```

```
F400:0204

F4200: FF 255 RES
F4201: FF 255 RES
F4202: CD 205 =
F4203: 21 033 !
F4204: CF 207 ╧
F4205: 00 000 NULL
F4206: 00 000 NULL
F4207: 00 000 NULL
F4208: 00 000 NULL
F4209: 00 000 NULL
F420A: 00 000 NULL
F420B: 00 000 NULL
F420C: 00 000 NULL
F420D: 00 000 NULL
F420E: 00 000 NULL
F420F: 00 000 NULL
F4210: 00 000 NULL
F4211: 00 000 NULL
F4212: 00 000 NULL
F4213: 00 000 NULL
F4214: 00 000 NULL
```

```
F400:0204

BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
...
```

Task-8:



```
mov ax,6
cmp ax,5
js exit
mov ax,1
exit:
mov ax,0x4c00
int 0x21
mov ax,4h
mov bx,3h
cmp ax,bx
jg abc
mov cx,bx
hlt
abc:
mov cx,ax
hlt
```

```
mov ax,6
cmp ax,5
js exit
mov ax,1
exit:
mov ax,0x4c00
int 0x21
mov ax,4h
mov bx,3h
cmp ax,bx
jg abc
```

	H	L
AX	4C	00
BX	00	00
CX	00	00
DX	00	00

CS	F400
IP	0204
SS	0100
SP	FFF8
BP	0000
SI	0000
DI	0000
DS	0100
ES	0100

F400:0204

```
F4200: FF 255 RES
F4201: FF 255 RES
F4202: CD 205 ═
F4203: 21 033 !
F4204: CF 207 ╧
F4205: 00 000 NULL
F4206: 00 000 NULL
F4207: 00 000 NULL
F4208: 00 000 NULL
F4209: 00 000 NULL
F420A: 00 000 NULL
F420B: 00 000 NULL
F420C: 00 000 NULL
F420D: 00 000 NULL
F420E: 00 000 NULL
F420F: 00 000 NULL
F4210: 00 000 NULL
F4211: 00 000 NULL
F4212: 00 000 NULL
F4213: 00 000 NULL
F4214: 00 000 NULL
```

F400:0204

```
BIOS DI
INT 021h
IRET
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
ADD [BX + SI], AL
...
```