

南京林业大学



汇编语言上机实验

任务书

实验二 编程、编译、连接、跟踪

一. 实验目的

编程、编译、链接、跟踪

二. 实验内容

1.通过 edit 输入实验内容



The screenshot shows a DOSBox window titled "DOSBox 0.74-3-3, Cpu speed: 3000 cycles, Frameskip 0, Program: EDIT". The window title bar also displays "C:\T1.ASM". The menu bar includes File, Edit, Search, View, Options, Help, and a file path C:\T1.ASM. The main text area contains the following assembly code:

```
assume cs:codesg
codesg segment
    mov ax,2000
    mov ss,ax
    mov sp,0
    add sp,10
    pop ax
    pop bx
    push ax
    push bx
    pop ax
    pop bx
    mov ax,4c00
    int 21H
end
```

The status bar at the bottom shows "F1=Help" and "Line:1 Col:1".

2.查看文件系统

```
Run File [T1.EXE]:  
List File [NUL.MAP]:  
Libraries [.LIB]:  
LINK : warning L4021: no stack segment  
  
C:\>dir  
Directory of C:\.  
|. <DIR> 05-11-2025 10:25  
.. <DIR> 31-10-2025 10:11  
EX <DIR> 03-02-2017 8:31  
DEBUG EXE 20,634 10-01-2000 20:00  
DESKTOPINI 317 19-10-2008 14:34  
EDIT COM 69,886 10-01-2000 20:00  
EDIT EXE 30,776 04-04-1996 13:30  
EDLIN COM 4,608 08-03-1983 12:00  
LINK EXE 64,992 21-05-1992 10:22  
MASM EXE 103,184 21-05-1992 10:21  
T1 ASM 267 05-11-2025 10:24  
T1 EXE 534 05-11-2025 10:25  
T1 OBJ 74 05-11-2025 10:24  
a 10 File(s) 295,272 Bytes.  
3 Dir(s) 262,111,744 Bytes free.  
  
C:\>_
```

3.执行 t1.exe

```
LINK : warning L4021: no stack segment  
  
C:\>dir  
Directory of C:\.  
. <DIR> 05-11-2025 10:25  
.. <DIR> 31-10-2025 10:11  
EX <DIR> 03-02-2017 8:31  
DEBUG EXE 20,634 10-01-2000 20:00  
DESKTOPINI 317 19-10-2008 14:34  
EDIT COM 69,886 10-01-2000 20:00  
EDIT EXE 30,776 04-04-1996 13:30  
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LINK EXE 64,992 21-05-1992 10:22  
MASM EXE 103,184 21-05-1992 10:21  
T1 ASM 267 05-11-2025 10:24  
T1 EXE 534 05-11-2025 10:25  
T1 OBJ 74 05-11-2025 10:24  
10 File(s) 295,272 Bytes.  
3 Dir(s) 262,111,744 Bytes free.  
  
C:\>t1  
C:\>t1.exe  
C:\>
```

4.通过 debug 执行 t1.exe

```
DOSBox 0.74-3-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG

-r
AX=FFFF BX=0000 CX=0016 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0000 NV UP EI PL NZ NA PO NC
076A:0000 B80020      MOV     AX,2000
-t

AX=2000 BX=0000 CX=0016 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=0769 CS=076A IP=0003 NV UP EI PL NZ NA PO NC
076A:0003 8BED0      MOV     SS,AX
-t

AX=2000 BX=0000 CX=0016 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=0008 NV UP EI PL NZ NA PO NC
076A:0008 83C40A      ADD     SP,+0A
-t
|
AX=2000 BX=0000 CX=0016 DX=0000 SP=000A BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000B NV UP EI PL NZ NA PE NC
076A:000B 58          POP    AX
-t
|
AX=01A2 BX=0000 CX=0016 DX=0000 SP=000C BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000C NV UP EI PL NZ NA PE NC
076A:000C 5B          POP    BX
-t
```

```
DOSBox 0.74-3-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG

AX=01A2 BX=0000 CX=0016 DX=0000 SP=000C BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000C NV UP EI PL NZ NA PE NC
076A:000C 5B          POP    BX
-t

AX=01A2 BX=7206 CX=0016 DX=0000 SP=000E BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000D NV UP EI PL NZ NA PE NC
076A:000D 50          PUSH   AX
-t

AX=01A2 BX=7206 CX=0016 DX=0000 SP=000C BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000E NV UP EI PL NZ NA PE NC
076A:000E 53          PUSH   BX
-t

AX=01A2 BX=7206 CX=0016 DX=0000 SP=000A BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=000F NV UP EI PL NZ NA PE NC
076A:000F 58          POP    AX
-t

AX=7206 BX=7206 CX=0016 DX=0000 SP=000C BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=0010 NV UP EI PL NZ NA PE NC
076A:0010 5B          POP    BX
-t
```

DOSBox 0.74-3-3, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG

```

AX=7206 BX=7206 CX=0016 DX=0000 SP=000C BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=0010 NV UP EI PL NZ NA PE NC
076A:0010 5B          POP     BX
-t

AX=7206 BX=01A2 CX=0016 DX=0000 SP=000E BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=0011 NV UP EI PL NZ NA PE NC
076A:0011 B8004C      MOV     AX,4C00
-t

AX=4C00 BX=01A2 CX=0016 DX=0000 SP=000E BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=076A IP=0014 NV UP EI PL NZ NA PE NC
076A:0014 CD21        INT     21
-t

AX=4C00 BX=01A2 CX=0016 DX=0000 SP=0008 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=F000 IP=14A0 NV UP DI PL NZ NA PE NC
F000:14A0 FB          STI
-t

AX=4C00 BX=01A2 CX=0016 DX=0000 SP=0008 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=F000 IP=14A1 NV UP EI PL NZ NA PE NC
F000:14A1 FE38        ???     [BX+SI]                         DS:01A2=7A
-t

```

5.t1.exe 执行完成，退出

```

AX=4C00 BX=01A2 CX=0016 DX=0000 SP=0008 BP=0000 SI=0000 DI=0000
DS=075A ES=075A SS=2000 CS=F000 IP=14A1 NV UP EI PL NZ NA PE NC
F000:14A1 FE38        ???     [BX+SI]                         DS:01A2=7A
-q
H
C:\>_

```

6.PSP 的头两个字节是 CD 20，用 debug 加载 t1.exe，查看 psp 的内容

```

C:\>debug t1.exe
-d 0
075A:0000 CD 20 FF 00 EA FF FF-AD DE 4F 03 A3 01 8A 03 . ....0.....
075A:0010 A3 01 17 03 A3 01 92 01-01 01 01 00 02 FF FF FF .....P.L.
075A:0020 FF FF FF FF FF FF FF-FF FF FF FF 50 07 4C 01 .....Z.....
075A:0030 63 06 14 00 18 00 5A 07-FF FF FF FF 00 00 00 00 c....Z.....
075A:0040 05 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00 .....!
075A:0050 CD 21 CB 00 00 00 00 00-00 00 00 00 00 00 00 00 ..!.....
075A:0060 00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 .....0.....
075A:0070 00 00 00 00 00 00 00 00 00 00-00 00 00 00 00 00 .....0.....

```