

汇编语言程序设计课程作业（八）

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8.6 寻址方式的综合应用

将 8.6 节中的应用案例补充成完整的汇编语言程序，并对程序进行编译和调试。

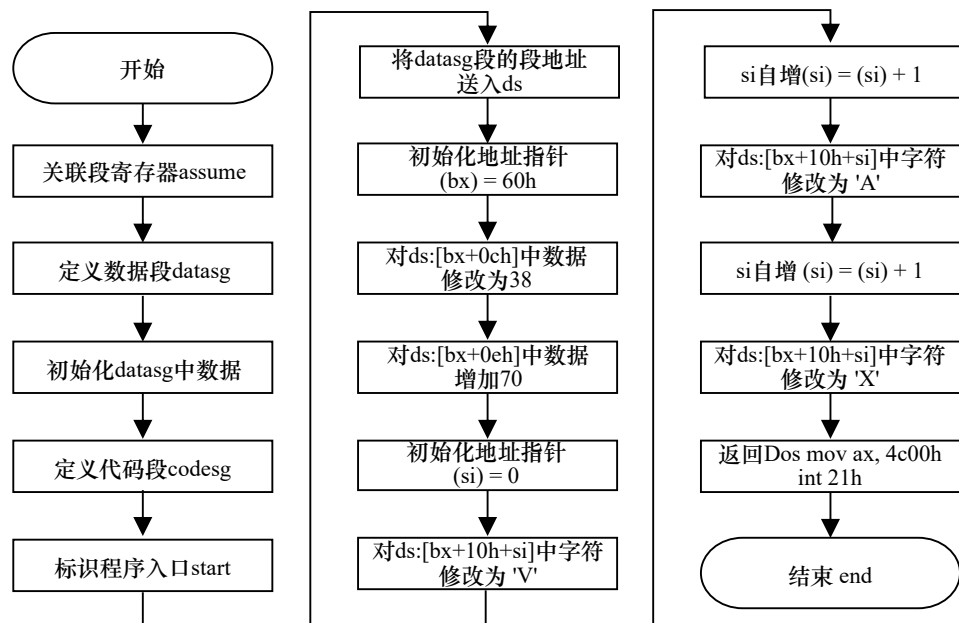
关于 DEC 公司的一条记录（1982 年）如下。

公司名称：DEC
总裁姓名：Ken Olsen
排 名：137
收 入：40（40 亿美元）
著名产品：PDP（小型机）

以上是该公司 1982 年的情况，到了 1988 年 DEC 公司的信息有了如下变化。

公司名称：DEC
总裁姓名：Ken Olsen
排 名：38
收 入：70（70 亿美元）
著名产品：VAX

(1) 程序流程图：



(2) 源代码：

```
assume cs:code,ds:data

data segment
    db 60h dup(0)
    db 'DEC'
    db 'Ken Olsen'
    db 137
    db 40
    db 'PDP'
```

```

data ends

code segment
    start: mov ax,data
           mov ds,ax
           mov bx,60h

           mov word ptr [bx+0ch],38
           add word ptr [bx+0eh],70

           mov si,0
           mov byte ptr [bx+10h+si],'V'
           inc si
           mov byte ptr [bx+10h+si],'A'
           inc si
           mov byte ptr [bx+10h+si],'X'

           mov ax,4c00h
           int 21h
code ends

end start

```

(3) 编译、连接:

```

DOSBox 0.74-3-1, Cpu speed: 3000 cycles, Frameskip 0, Program: DOSBOX
Z:\>SET BLASTER=A220 I7 D1 H5 T6

Z:\>mount c ~\MYDOSBox
Drive C is mounted as local directory /Users/tommy/MYDOSBox/

Z:\>c:
C:\>masm t1:
Microsoft (R) Macro Assembler Version 5.00
Copyright (C) Microsoft Corp 1981-1985, 1987. All rights reserved.

51574 + 464970 Bytes symbol space free

0 Warning Errors
0 Severe Errors
C:\>link t1:
Microsoft (R) Segmented-Executable Linker Version 5.13
Copyright (C) Microsoft Corp 1984-1991. All rights reserved.

LINK : warning L4021: no stack segment
C:\>_

```

(4) 跟踪、调试:

```

DOSBox 0.74-3-1, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG
C:\>Debug t1.exe
-r
AX=FFFF BX=0000 CX=00A8 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=049E ES=049E SS=04AD CS=04B6 IP=0000 NU UP DI PL NZ NA PO NC
04B6:0000 B8AE04 MOV AX,04AE
-t
AX=04AE BX=0000 CX=00A8 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=049E ES=049E SS=04AD CS=04B6 IP=0003 NU UP DI PL NZ NA PO NC
04B6:0003 8ED8 MOV DS,AX
-t
AX=04AE BX=0000 CX=00A8 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=04AE ES=049E SS=04AD CS=04B6 IP=0005 NU UP DI PL NZ NA PO NC
04B6:0005 BB6000 MOV BX,0060
-d 04ae:0
04AE:0000 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0010 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0020 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0030 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0040 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0050 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0060 44 45 43 4B 65 6E 20 4F 73 6C 65 6F 89 00 28 00 DECKen Oslen C.
04AE:0070 50 44 50 00 00 00 00 00 00 00 00 00 00 00 00 00 PDP.....

```

```
DOSBox 0.74-3-1, Cpu speed: 3000 cycles, Frameskip 0, Program: DEBUG
Z:\>c:
C:\>Debug t1.exe
-r
AX=FFFF BX=0000 CX=00A7 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=049E ES=049E SS=04AD CS=04B6 IP=0000  NU UP DI PL NZ NA PO NC
04B6:0000 B8AE04      MOV     AX,04AE
-t
AX=04AE BX=0000 CX=00A7 DX=0000 SP=0000 BP=0000 SI=0000 DI=0000
DS=049E ES=049E SS=04AD CS=04B6 IP=0003  NU UP DI PL NZ NA PO NC
04B6:0003 8ED8      MOV     DS,AX
-g
Program terminated normally
-d 04ae:0
04AE:0000  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0010  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0020  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0030  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0040  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0050  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 .....
04AE:0060  44 45 43 4B 65 6E 20 4F 73 6C 65 6F 26 00 6E 00  DECKen Osler&.n
04AE:0070  56 41 58 00 00 00 00 00 00 00 00 00 00 00 00 00  Unx.....
```

说明：程序运行前，使用 d 命令查看数据段内容，相关字段被正确存储到相应单元中（137、40 两个数据对应十六进制为 0x89、0x28）；程序运行后，使用 d 命令查看数据段内容，相关字段已经被正确修改(38、110 两个数据对应十六进制为 0x26、0x6e)。