chapter15

代码

```
1   assume cs:code,ss:stack
2
3   stack segment
4       db 128 dup (0)
5   stack ends
6
7   code segment
8   start:
9       mov ax,stack
10      mov ss,ax
11      mov sp,128
12
13      call install_int
14
15      call ShowABC;添加延时，可以看到按下F1，a后的效果
16
17      call RenewInt9
18      mov ax,4c00h
19      int 21h
20
21  ;======== ShowABC ===========
22  ShowABC:
23      push ax
24      push bx
25      push cx
26      push dx
27      push ds
28      push es
29      push si
30      push di
31
32      mov ax,0b800h
33      mov es,ax
34      mov di,160*12+40*2
35      mov al,'a'
36      LoopS:
37          mov es:[di],al
38          ;mov byte ptr es:[di+1],01010000b
39          call delay
40
41          cmp dl,'z'
42          jna LoopS
43
44
45      pop di
46      pop si
47      pop es
48      pop ds
49      pop dx
```

```asm
50        pop cx
51        pop bx
52        pop ax
53        ret
54
55    delay:
56        push ax
57        push dx
58
59        mov dx,1000h
60        mov ax,0
61
62        s1:
63            sub ax,1
64            sbb dx,0
65            cmp ax,0
66            jne s1
67            cmp dx,0
68            jne s1
69
70        pop dx
71        pop ax
72
73        ret
74    ;====== install_int =========
75    install_int:
76        install_int_bg:
77            ;save
78
79            mov ax,0
80            mov es,ax
81            push es:[9*4]
82            pop es:[200h]
83            push es:[9*4+2]
84            pop es:[202h]
85
86            ;set new
87            cli
88            mov word ptr es:[9*4],204h
89            mov word ptr es:[9*4+2],0
90            sti
91
92
93            ;load
94            push cs
95            pop ds
96
97            mov ax,0
98            mov es,ax
99
100           mov si,offset int9
101           mov di,204h
102           mov cx,offset int9_end - offset int9
103           cld
104           rep movsb
105
106       install_int_end:
107           ret
```

```asm
108
109
110  ;====== int9 =================
111  int9:
112      push ax
113      push bx
114      push cx
115      push dx
116      push es
117      push ds
118      push di
119      push si
120
121      int9_bg:
122
123          in al,60h
124
125          pushf
126          call dword ptr cs:[200h]
127
128          cmp al,9eh
129          jne F1
130
131          mov ax,0b800h
132          mov es,ax
133          mov bx,1
134          mov al,'A'
135          mov cx,2000h
136          s9: ;inc byte ptr es:[bx]
137              mov es:[bx-1],al
138              add bx,2
139              loop s9
140      ;改变屏幕颜色
141      F1:         cmp al,3bh
142                  jne A
143
144                  mov ax,0b800h
145                  mov es,ax
146                  mov bx,1
147                  mov cx,2000
148          sF1:    inc byte ptr es:[bx]
149                  add bx,2
150                  loop sF1
151      ;屏幕山显示A
152      A:          cmp al,1eh
153                  jne int9_iret
154                  mov ax,0b800h
155                  mov es,ax
156                  mov bx,0
157                  mov cx,2000
158              A_L:mov al,' '
159                  mov es:[bx],al
160                  add bx,2
161                  loop A_L
162
163      int9_iret:
164          pop si
165          pop di
```

```
                pop ds
                pop es
                pop dx
                pop cx
                pop bx
                pop ax
                iret
        int9_end:
                nop

;===================================
RenewInt9:
        mov ax,0
        mov es,ax
        push es:[200h]
        pop es:[9*4]
        push es:[202h]
        pop es:[9*4+2]

        ret
code ends
end start
```