

C语言综合研究与高强度程序8

(1) 定义一个描述学生成绩的数据类型:

```
struct stu {  
    unsigned char c;  
    unsigned char os;  
    unsigned char masm;  
    unsigned char java;  
    struct stu far *next;  
}
```

`struct stu` 型数据的前四个数据项存储学生的几门课程的成绩; 数据项 `next` 存储下一个学生成绩的地址。

(2) 定义一个数组: `struct stu [375]` ;

(3) 将内存0:0处的3000个数据当作375个 `struct stu`型的数据, 将它们的c、os、masmjava数据项的内容拷贝到数组a的对应数据项中。

(4) 查找数组a中课程成绩总分小于400大于200的数据, 用next数据项将它们连接起来。(5) 将连接起来的数据打印出来。

- `a.c`

```
1  struct stu {  
2      unsigned char c;  
3      unsigned char os;  
4      unsigned char masm;  
5      unsigned char java;  
6      struct stu *next;  
7  };  
8  
9  int n;  
10 struct stu a[375];  
11 struct stu *s;  
12 int sum;  
13 main() {  
14     long address = 0x00000000;  
15  
16     for (n = 0; n < 375; n++) {  
17         a[n].c = *(char far *)address++;  
18         a[n].os = *(char far *)address++;  
19         a[n].masm = *(char far *)address++;  
20         a[n].java = *(char far *)address++;  
21     }  
22  
23     s->next = 0;  
24     for (n = 0; n < 375; n++) {  
25         if (a[n].c + a[n].os + a[n].masm + a[n].java < 400 &&  
26             a[n].c + a[n].os + a[n].masm + a[n].java > 200) {  
27             a[n].next = s->next;  
28             s->next = &a[n];  
29         }  
30     }  
31  
32     n = 0;
```

```

33     while (s->next) {
34         s = s->next;
35         if (!s)
36             break;
37         printf("%d: ", ++n);
38         sum = s->c + s->os + s->masm + s->java;
39         printf("c: %c,os: %c,masm: %c,java: %c,sum: %d\n", s->c, s->os,
s->masm,
40             s->java, sum);
41     }
42 }
43

```

- 结果

```

69: c: @,os: $,masm: ,java: =,sum: 325
70: c: ,os: $,masm: ,java: =,sum: 293
71: c: ,os: $,masm: ,java: =,sum: 261
72: c: C,os: !,masm: ,java: =,sum: 388
73: c: ,os: !,masm: ,java: =,sum: 352
74: c: ,os: $,masm: ,java: =,sum: 354
75: c: ,os: !,masm: ,java: =,sum: 352
76: c: @,os: $,masm: ,java: =,sum: 322
77: c: ,os: $,masm: ,java: =,sum: 290
78: c: @,os: $,masm: ,java: =,sum: 321
79: c: ,os: $,masm: ,java: =,sum: 289
80: c: ,os: $,masm: ,java: =,sum: 257
81: c: ,os: !,masm: ,java: =,sum: 259
82: c: ,os: !,masm: ,java: =,sum: 352
83: c: C,os: !,masm: ,java: =,sum: 384
84: c: ,os: !,masm: ,java: =,sum: 352
85: c: ,os: !,masm: ,java: =,sum: 352
86: c: ,os: !,masm: ,java: =,sum: 352
87: c: ,os: !,masm: ,java: =,sum: 352
88: c: ,os: !,masm: ,java: =,sum: 352
89: c: ,os: !,masm: ,java: =,sum: 352
90: c: X,os: @,masm: ó,java: @,sum: 252
Null pointer assignment
C:\>_

```