

示例代码：

```
1  // 4. 多重虚继承有虚函数.cpp : 定义控制台应用程序的入口点。
2  //
3
4  #include "stdafx.h"
5  #include <iostream>
6  using namespace std;
7
8  // 床类
9  class CBed {
10 public:
11     CBed() {
12         printf("CBed::CBed()\r\n");
13         m_nBed = 1;
14     }
15
16     ~CBed() {
17         printf("CBed::~~CBed()\r\n");
18         m_nBed = 0;
19     }
20
21     virtual void sleep() {
22         printf("CBed::sleep()\r\n");
23     }
24
25     void sleep2() {
26         printf("CBed::sleep2()\r\n");
27     }
28
29 private:
30     int m_nBed;
31 };
32
33 // 沙发类
34 class CSofa {
35 public:
36     CSofa() {
37         printf("CSofa::CSofa()\r\n");
38         m_nSofa = 2;
```

```
39     }
40
41     ~CSofa() {
42         printf("CSofa::~~CSofa()\r\n");
43         m_nSofa = 0;
44     }
45
46     virtual void sit() {
47         printf("CSofa::sit()\r\n");
48     }
49
50     void sit2() {
51         printf("CSofa::sit2()\r\n");
52     }
53
54 private:
55     int m_nSofa;
56 };
57
58 // 沙发床多重继承，既继承了沙发的特点，又继承了床的特点。
59 class CSofaBed : virtual public CSofa, virtual public CBed {
60 public:
61     CSofaBed() {
62         printf("CSofaBed::CSofaBed()\r\n");
63         m_nSofaBed = 3;
64     }
65
66     virtual void sleep() {
67         printf("CSofaBed::sleep()\r\n");
68     }
69
70     virtual void sit() {
71         printf("CSofaBed::sit()\r\n");
72     }
73
74     void test() {
75         printf("CSofaBed::test()\r\n");
76     }
77
78 private:
79     int m_nSofaBed;
80 };
```

```

81
82 int main()
83 {
84     CSofa sofa;
85     CBed bed;
86     CSofaBed sofabed;
87     //对象大小
88     cout << sizeof(CSofa) << endl; // 8
89     cout << sizeof(CBed) << endl; // 8
90     cout << sizeof(sofabed) << endl; // 32
91 }

```

对象大小

```

1     //对象大小
2     cout << sizeof(CSofa) << endl; // 8
3     cout << sizeof(CBed) << endl; // 8
4     cout << sizeof(sofabed) << endl; // 32

```

对象内存分析

CSofa sofa;

地址: 0x001BFE70

0x001BFE70	7c 8b 1d 00	虚函数表
0x001BFE74	02 00 00 00

名称: &sofa, &sofabed, CSofa

CBed bed;

内存 1

地址: 0x001BFE60

0x001BFE60	34 8b 1d 00	虚函数表
0x001BFE64	01 00 00 00
0x001BFE68	cc cc cc cc	????

监视: 0x001D8C00, 0x001D8C04

名称: &bed, &sofa, &sofabed

CSofaBed sofabed;

```

78 | private:
79 |     int m_nSofaBed;
80 | };
81 |
82 | int main()
83 | {
84 |     CSofa sofa;
85 |     CBed bed;
86 |     CSofaBed sofabed;
87 |     //对象大小
88 |     cout << sizeof(CSofa) << endl;

```

内存 2 sofabed 偏移到对象的偏移量

地址	0x001D8BDC
0x001D8BDC	00 00 00 00 ...
0x001D8BE0	0c 00 00 00 ...
0x001D8BE4	18 00 00 00 ...
0x001D8BE8	00 00 00 00 ...
0x001D8BEC	43 53 6f 66 CSof
0x001D8BF0	61 42 65 64 aBed
0x001D8BF4	3a 3a 43 53 ::CS
0x001D8BF8	6f 66 61 42 ofaB
0x001D8BFC	65 64 28 29 ed()
0x001D8C00	0d 0a 00 00 ...
0x001D8C04	00 00 00 00 ...

38 + 0c = 44 sofabed 到 sofa
38 + 18 = 50 sofabed 到 bed

名称	值	类型
&sofa	0x001bfe70 (m_nSofa=2)	CSofa *
&sofabed	0x001bfe38 (m_nSofaBed=3)	CSofaBed *
CSofa	{m_nSofa=2}	CSofa
__vptr	0x001d8bc8 (4. 多重虚继承有虚函数.exe!const CSofaBed::vftable{'for 'CSofa'}) {0x001d1195 (4. 多重	void **
m_nSofa	{m_nSofa=2}	int
CBed	{m_nBed=1}	CBed
__vptr	0x001d8bd4 (4. 多重虚继承有虚函数.exe!const CSofaBed::vftable{'for 'CBed'}) {0x001d10b9 (4. 多重	void **
m_nBed	1	int
m_nSofaBed	3	int

名称	值	类型
0x001BFE38	dc 8b 1d 00 ??..	
1BFE38	03 00 00 00 ...	
1BFE40	00 00 00 00 ...	
1BFE44	c8 8b 1d 00 ??..	
1BFE48	02 00 00 00 ...	
1BFE4C	00 00 00 00 ...	
1BFE50	14 8b 1d 00 ??..	
1BFE54	01 00 00 00 ...	
1BFE58	cc cc cc cc ????	

函数调用

参考虚函数调用部分。