多重虚继承

class [类名] : virtual [继承权限] [类名] [, [virtual] [继承权限] [类名], ...]

```
class A : virtual public B, public C
```

```
class A : virtual public B, virtual protected C, virtual private D
```

示例代码：

```cpp
// 2. 多重虚继承无虚函数.cpp : 定义控制台应用程序的入口点。
//

#include "stdafx.h"
#include <iostream>
using namespace std;

// 床类
class CBed {
public:
    CBed() {
        printf("CBed::CBed()\r\n");
        m_nBed = 1;
    }

    ~CBed() {
        printf("CBed::~CBed()\r\n");
        m_nBed = 0;
    }

    void sleep() {
        printf("CBed::sleep()\r\n");
    }

private:
    int m_nBed;
};

// 沙发类
class CSofa {
public:
    CSofa() {
        printf("CSofa::CSofa()\r\n");
```

```cpp
        m_nSofa = 2;
    }

    ~CSofa() {
        printf("CSofa::~CSofa()\r\n");
        m_nSofa = 0;
    }

    void sit() {
        printf("CSofa::sit()\r\n");
    }

private:
    int m_nSofa;
};

// 沙发床多重继承，既继承了沙发的特点(虚继承)，又继承了床的特点。
class CSofaBed : virtual public CSofa, public CBed {
public:
    CSofaBed() {
        printf("CSofaBed::CSofaBed()\r\n");
        m_nSofaBed = 3;
    }

private:
    int m_nSofaBed;
};

// 沙发床多重继承，既继承了沙发的特点(虚继承)，又继承了床的特点。(虚继承)
class CSofaBed2 : virtual public CSofa, virtual public CBed {
public:
    CSofaBed2() {
        printf("CSofaBed::CSofaBed2()\r\n");
        m_nSofaBed = 4;
    }

private:
    int m_nSofaBed;
};

int main()
```

```
75  {
76      CSofa sofa;
77      CBed bed;
78      CSofaBed sofabed;
79      CSofaBed2 sofabed2;
80      //对象大小
81      cout << sizeof(CSofa) << endl; // 4
82      cout << sizeof(CBed) << endl; // 4
83      cout << sizeof(sofabed) << endl; // 16
84      cout << sizeof(sofabed2) << endl;// 16
85  }
86  /*
87  output:
88
89  CSofa::CSofa()
90  CBed::CBed()
91  CSofa::CSofa()
92  CBed::CBed()
93  CSofaBed::CSofaBed()
94  CSofa::CSofa()
95  CBed::CBed()
96  CSofaBed::CSofaBed2()
97  4
98  4
99  16
100 16
101 CBed::~CBed()
102 CSofa::~CSofa()
103 CBed::~CBed()
104 CSofa::~CSofa()
105 CBed::~CBed()
106 CSofa::~CSofa()
107 */
```

对象大小

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

```
4        cout << sizeof(sofabed) << endl; // 16
5        cout << sizeof(sofabed2) << endl;// 16
```
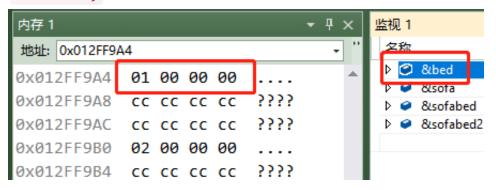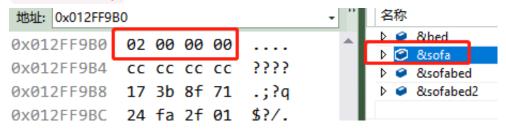
对象内存分析

```
1        CSofa sofa;
2        CBed bed;
3        CSofaBed sofabed;
4        CSofaBed2 sofabed2;
```

CBed bed;

CSofa sofa;

CSofaBed sofabed;

```
44          }
45
46      private:
47          int m_nSofa;
48      };
49
50      // 沙发床多重继承，既继承]
51      class CSofaBed : virtual p
52      public:
53          CSofaBed() {
54              printf("CSofaBed:
```

内存 2
地址: 0x00A18B84

```
0x00A18B84   fc ff ff ff   ?...
0x00A18B88   08 00 00 00   ..      bed 访问 sofa 成员变量的内存偏移量
0x00A18B8C   00 00 00 00   ....
0x00A18B90   43 53 6f 66   CSof
0x00A18B94   61 42 65 64   aBed
0x00A18B98   3a 3a 43 53   ::CS
0x00A18B9C   6f 66 61 42   ofaB
0x00A18BA0   65 64 28 29   ed()
0x00A18BA4   0d 0a 00 00   ....
0x00A18BA8   00 00 00 00   ....
```

内存 1
地址: 0x012FF98C

```
x012FF98C   01 00 00 00   ..    bed成员变量
x012FF990   84 8b a1 00   ??    virtual sofa
x012FF994   03 00 00 00   ..    sofabed
x012FF998   02 00 00 00   ..    sofa
x012FF99C   cc cc cc cc   ????
x012FF9A0   cc cc cc cc   ????
x012FF9A4   01 00 00 00   ....
```

监视 1

名称	值
▷ &bed	0x012ff9a4 {m_nBed=1 }
▷ &sofa	0x012ff9b0 {m_nSofa=2 }
▷ &sofabed	0x012ff98c {m_nSofaBed=3 }
▷ &sofabed2	0x012ff974 {m_nSofaBed=4 }

CSofaBed sofabed2;

```
59          int m_nSofaBed;
60      };
61
62      // 沙发床多重继承，既继承了沙发的特点(虚继承)，又继承了床的特点。(虚继承)
63      class CSofaBed2 : virtual public CSofa, virtual public CBed {
64      public:
65          CSofaBed2() {
66              printf("CSofaBed::CSofaBed2()\r\n");
```

内存 2
地址: 0x00A18BAC

```
0x00A18BAC   00 00 00 00   ..
0x00A18BB0   08 00 00 00   ..   0x012FF97C - 0x012FF974
0x00A18BB4   0c 00 00 00   ..   0x012FF980 - 0x012FF974
0x00A18BB8   00 00 00 00   ....
0x00A18BBC   43 53 6f 66   CSof
0x00A18BC0   61 42 65 64   aBed
0x00A18BC4   3a 3a 43 53   ::CS
0x00A18BC8   6f 66 61 42   ofaB
0x00A18BCC   65 64 32 28   ed2(
0x00A18BD0   29 0d 0a 00   )...
```

内存 1
地址: 0x012FF974

```
0x012FF974   ac 8b a1 00   ??   sofabed2 虚偏移表指针
0x012FF978   04 00 00 00   ..   sofabed2
0x012FF97C   02 00 00 00   ..   sofa
0x012FF980   01 00 00 00   .    bed
0x012FF984   cc cc cc cc   ????
0x012FF988   cc cc cc cc   ????
0x012FF98C   01 00 00 00   ....
0x012FF990   84 8b a1 00   ???.
0x012FF994   03 00 00 00   ....
```

监视 1
名称
&sofa
&sofabed
&sofabed2

监视 1 | 自动窗口 | 局部变量

输出

函数调用

直接调用。