

## 3.2 实验： 研究 C++ 的对象模型

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一、结果截图：

```
C:\Users\20553\Desktop\项目9 >
Constructor called for object at address: 0x4f8020
Constructor called for object at address: 0x4f802c
Constructor called for object at address: 0x73fee0
Constructor called for object at address: 0x73fed4
Constructor called for object at address: 0xe715c0
Constructor called for object at address: 0xe716d8
Inside main:
Object at address: 0x73fee0
  Static data: 10 (Address: 0x4af004)
  Non-static data: 500 (Address: 0x73fee0)
  Char pointer: Local1 (Address: 0x73fee4)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Object at address: 0x73fed4
  Static data: 10 (Address: 0x4af004)
  Non-static data: 600 (Address: 0x73fed4)
  Char pointer: Local2 (Address: 0x73fed8)
  Reference data: 600 (Address: 0x73fed4)
  Size of object: 12 bytes
Object at address: 0xe715c0
  Static data: 10 (Address: 0x4af004)
  Non-static data: 700 (Address: 0xe715c0)
  Char pointer: Dynamic1 (Address: 0xe715c4)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Object at address: 0xe716d8
  Static data: 10 (Address: 0x4af004)
  Non-static data: 800 (Address: 0xe716d8)
  Char pointer: Dynamic2 (Address: 0xe716dc)
  Reference data: 600 (Address: 0x73fed4)
  Size of object: 12 bytes
Constructor called for object at address: 0x73fea4
Constructor called for object at address: 0x73fe98
Inside func:
Object at address: 0x73fea4
  Static data: 10 (Address: 0x4af004)
  Non-static data: 300 (Address: 0x73fea4)
  Char pointer: Local3 (Address: 0x73fea8)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Object at address: 0x73fe98
  Static data: 10 (Address: 0x4af004)
  Non-static data: 400 (Address: 0x73fe98)
  Char pointer: Local4 (Address: 0x73fe9c)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Destructor called for object at address: 0x73fe98
Destructor called for object at address: 0x73fea4
Destructor called for object at address: 0x73fee0
Static function address: 0x41e059
Non-static function address: 0x41e094
func function address: 0x401410
Destructor called for object at address: 0xe715c0
Destructor called for object at address: 0xe716d8
Destructor called for object at address: 0x73fed4
Destructor called for object at address: 0x73fee0
Destructor called for object at address: 0x4f802c
Destructor called for object at address: 0x4f8020
Process exited after 0.03855 seconds with return value 0
请按任意键继续. . .
```

```
C:\Users\20553\Desktop\项目9 >
Constructor called for object at address: 0x73fe98
Inside func:
Object at address: 0x73fea4
  Static data: 10 (Address: 0x4af004)
  Non-static data: 300 (Address: 0x73fea4)
  Char pointer: Local3 (Address: 0x73fea8)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Object at address: 0x73fe98
  Static data: 10 (Address: 0x4af004)
  Non-static data: 400 (Address: 0x73fe98)
  Char pointer: Local4 (Address: 0x73fe9c)
  Reference data: 500 (Address: 0x73fee0)
  Size of object: 12 bytes
Destructor called for object at address: 0x73fe98
Destructor called for object at address: 0x73fea4
Destructor called for object at address: 0x73fee0
Static function address: 0x41e059
Non-static function address: 0x41e094
func function address: 0x401410
Destructor called for object at address: 0xe715c0
Destructor called for object at address: 0xe716d8
Destructor called for object at address: 0x73fed4
Destructor called for object at address: 0x73fee0
Destructor called for object at address: 0x4f802c
Destructor called for object at address: 0x4f8020
Process exited after 0.03855 seconds with return value 0
请按任意键继续. . .
```

二、分析

- 1、静态数据成员：类级别，所有对象共享，地址唯一。
- 2、非静态数据成员：对象级别，每个对象独立，地址不同。
- 3、对象地址：标识对象在内存中的位置，与非静态数据成员密切相关。
- 4、字符指针：指向动态分配的内存，存储字符串内容。
- 5、引用成员：别名，不占用额外内存，与引用变量共享地址。
- 6、静态成员函数：类级别，只能访问静态数据成员。

- 7、**非静态成员函数：**对象级别，可以访问静态和非静态数据成员。
- 8、**外部函数：**独立于类，可以接受类的对象作为参数。
- 9、**对象大小：**由非静态数据成员和内存对齐决定。