

```

//
// main.cpp
// union-demo
//
// Created by 丁保荣 on 2017/11/3.
// Copyright © 2017年 丁保荣. All rights reserved.
//

//以下是关于内存占用的演示

/*
#include <iostream>
using namespace std;
union U
{
    char c;        //1 个字节
    int i;         //4 个字节
    double d;     //8 个字节
};

struct S
{
    int i;         //4 个字节
    double d;     //8 个字节
};

struct S2
{
    char c;        //1 个字节
    int i;         //4 个字节
};

int main(void)
{
    U u;
    S s;
    S2 s2;
    cout << "the size of u is "<<sizeof(u) <<endl;
    cout << "the size of s is "<<sizeof(s) <<endl;
    cout << "the size of s2 is "<<sizeof(s2) <<endl;
    cout <<endl;

    cout << "the address of s is "<< &s <<endl;
    cout << "the address of s.i is "<< &s.i <<endl;
    cout << "the address of s.d is "<< &s.d <<endl;
    cout << "the address of u is "<< &u <<endl;
    cout << "the address of u.c is "<< &u.c <<endl;
    cout << "the address of u.i is "<< &u.i <<endl;
    cout << "the address of u.d is "<< &u.d <<endl;
    cout << "the address of u.c is " << static_cast<const void *>(&u.c)<<endl;
    u.c='A';
    cout << "the address of u.c is " << &u.c<<endl;

    return 0;
}

```

```
}  
*/
```

//以下是关于 union 如何储存的展示

```
#include <iostream>  
using namespace std;  
struct S  
{  
    int a;  
    int b;  
};  
  
union U  
{  
    S s;  
    int c;  
    int d;  
};  
  
int main(void)  
{  
    U u;  
    u.s.a=1;  
    u.s.b=2;  
    u.c=3;  
    u.d=4;  
  
    cout <<"a="<<u.s.a<<endl;  
    cout <<"b="<<u.s.b<<endl;  
    cout <<"c="<<u.c<<endl;  
    cout <<"d="<<u.d<<endl;  
    cout <<endl;  
    cout <<"the address of u.s.a is "<<&u.s.a<<endl;  
    cout <<"the address of u.s.b is "<<&u.s.b<<endl;  
    cout <<"the address of u.c is "<<&u.c<<endl;  
    cout <<"the address of u.d is "<<&u.d<<endl;  
  
    return 0;  
}
```

