

C++作业六

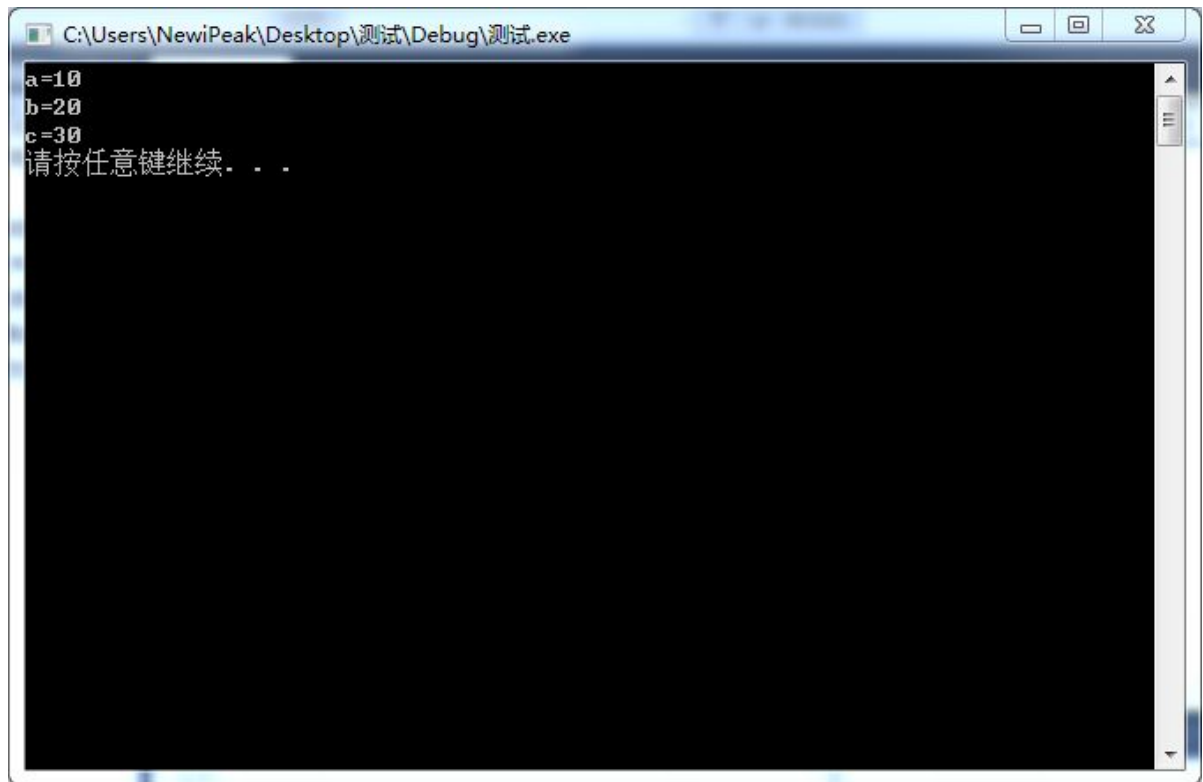
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班级：12 级计算机科学与技术 1 班

一、读程序，写出程序运行结果。

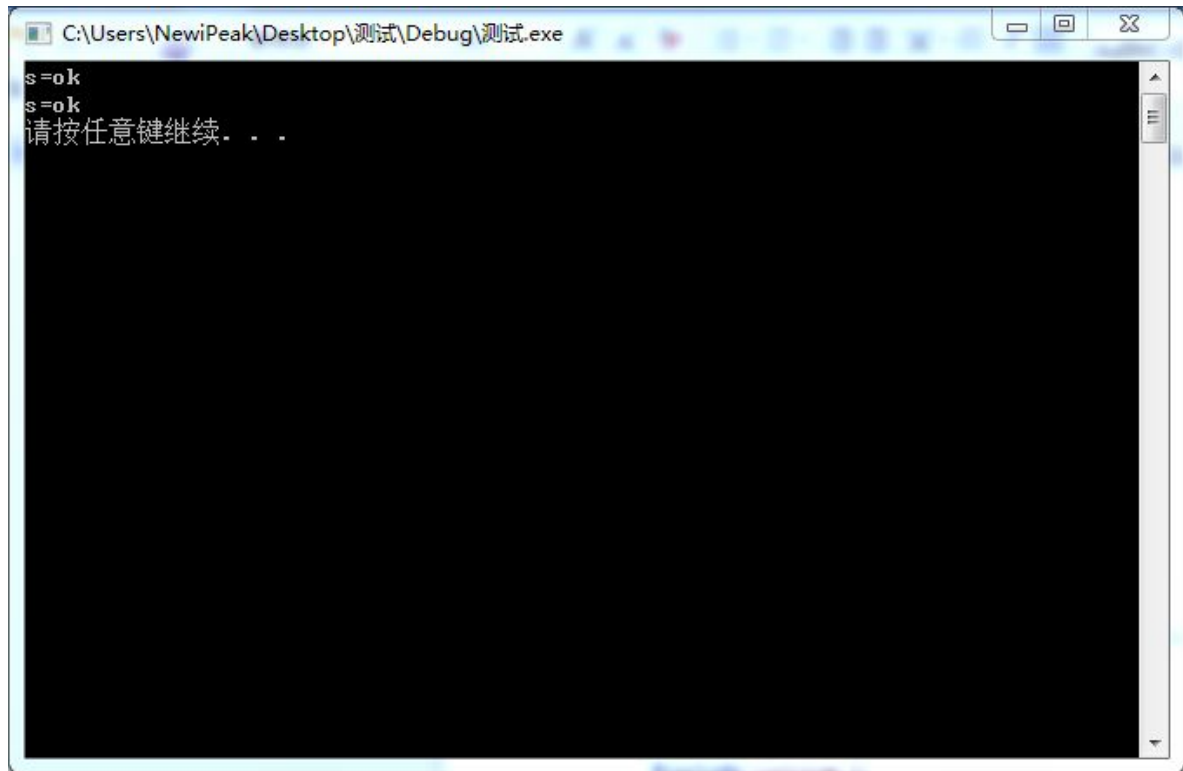
(1)

```
#include<iostream>
using namespace std;
class ABC{
    int a,b,c;
public:
    ABC(int x,int y,int z):a(x),b(y),c(z) {}
    friend ostream &operator<<(ostream &out,ABC& f);
};
ostream &operator<<(ostream &out,ABC& f){
    out<<"a="<<f.a<<endl<<"b="<<f.b<<endl<<"c="<<f.c<<endl;
    return out;
}
void main(){
    ABC obj(10,20,30);
    cout<<obj;
    system("pause");
}
```



(2)

```
#include<iostream>
#include<string>
using namespace std;
class X{
private:
    char *s;
public:
    X(char *b) {
        s=new char[sizeof(b)+1];
        strcpy(s, b);
    }
    ~X() {delete s;}
    void display() { cout<<"s="<<s<<endl;}
};
void main() {
    X x1("ok");
    X x2(x1);
    X x3=x1;
    x2.display();
    x3.display();
    system("pause");
}
```



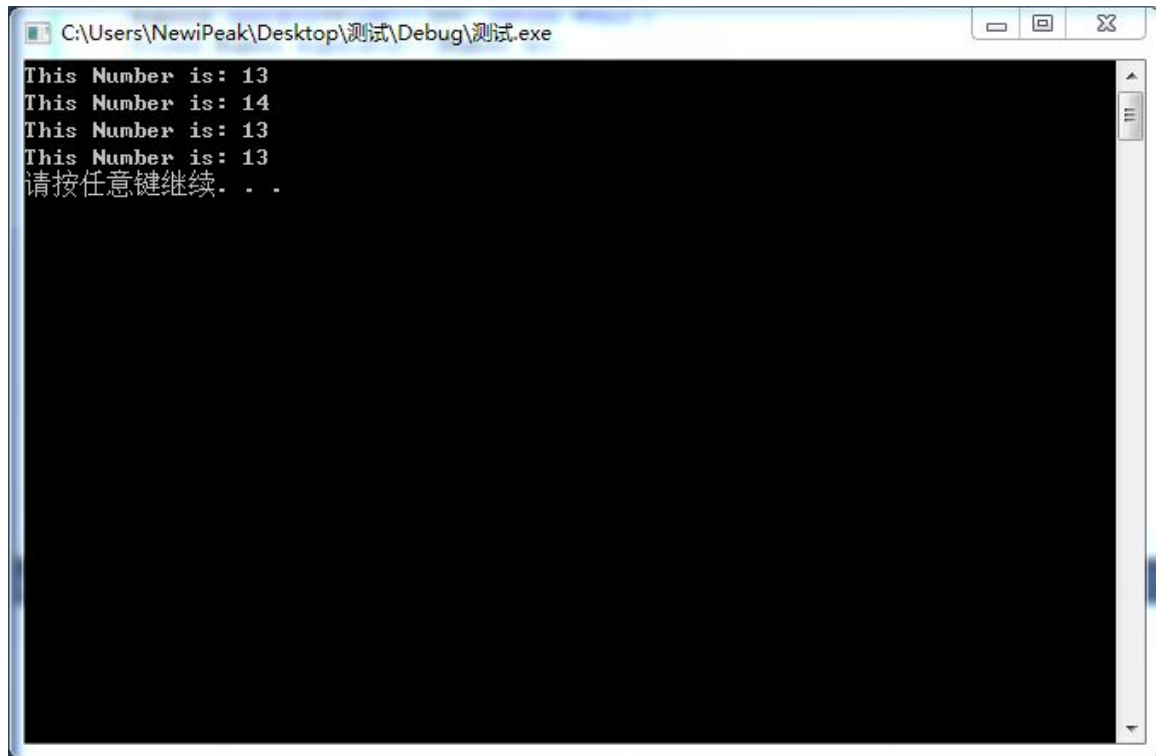
(3)

```
#include <iostream>
using namespace std;
class Number{
    int n;
public:
    Number(int x):n(x){}
    Number& operator++() { ++n;return *this;}
    Number& operator++(int) { n++; return *this;}
    friend Number &operator--(Number &o);
    friend Number &operator--(Number o, int);
    void display() {cout<<"This Number is: "<<n<<endl;}
};
Number &operator--(Number &o) { --o.n;return o;}
Number &operator--(Number o, int) {o.n--;return o;}
void main() {
    Number N1(10);
    ++ ++ ++N1;
    N1.display();
    N1++;
    N1.display();
    --N1;
    N1.display();
}
```

```

N1-- -- --;
N1.display();
system("pause");
}

```



(4)

```

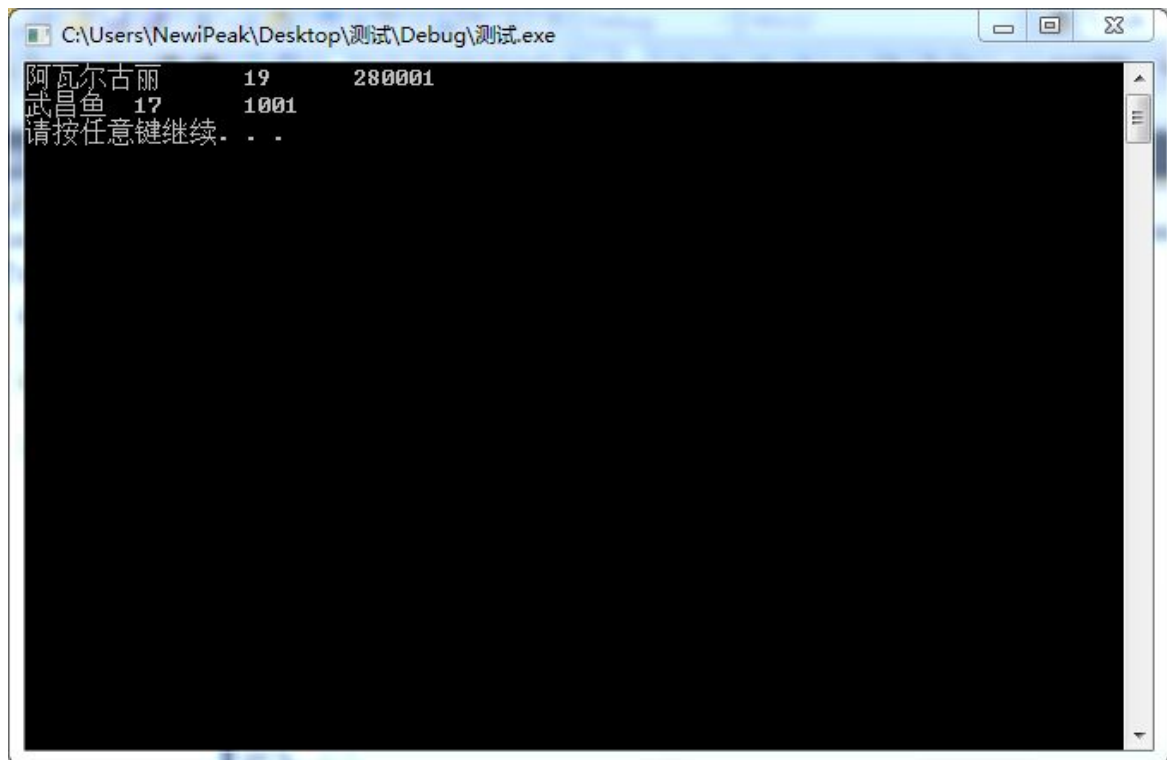
#include<iostream>
using namespace std;
class Student{
private:
    char *name;
    int age;
    double Money;
public:
    Student(char *n="NoKnow", int Age=17, double Mey=1000.998):age(Age), Money(Mey){
        name=new char[sizeof(n)+1];
        strcpy(name, n);
    }
    operator char*(){ return name;}
    operator int(){return age;}
    operator double(){return Money;}
};

```

```

void main() {
    Student s1("阿瓦尔古丽", 19, 280000.998);
    char *Name=s1;
    int Age=s1;
    double Money =s1;
    cout<<Name<<"\t"<<Age<<"\t"<<Money<<endl;
    Student s2("武昌鱼");
    Name=s2;Age=s2;Money=s2;
    cout<<Name<<"\t"<<Age<<"\t"<<Money<<endl;
    system("pause");
}

```



二、设计一个计数器类 `calculator`，它只有一个用于计数的数据成员 `count`，该计数器的有效计数范围为 0-65535，实现计数器的前自增，后自增，前自减，后自减，两个计数器相加减等运算。

```

#include "iostream"
#include "math.h"
using namespace std;
class Calculator{
private:
public:
    int choice;
    double count;
    Calculator() {} ;
    Calculator(double a):count(a) {} ;
    double getcount() {
        return count;
    }
    Calculator& operator++();
    Calculator& operator++(int);
    Calculator& operator--();
    Calculator& operator--(int);
    Calculator& operator+(Calculator b);
    Calculator& operator-(Calculator b);
};

Calculator& Calculator::operator++() {
    ++count;
    cout<<"前自增结果为: "<<count<<endl ;
    return *this;
}

Calculator& Calculator::operator++(int) {
    count=count++;
    cout<<"后自增结果为: "<<count<<endl;
    return *this;
}

Calculator& Calculator::operator--() {
    count=--count;
    cout<<"前自减结果为:"<<count<<endl;
    return *this;
}

Calculator& Calculator::operator--(int) {
    count=count--;
    cout<<"后自减结果为:"<<count<<endl;
    return *this;
}

Calculator& Calculator::operator+(Calculator b) {
    cout<<"请输入第二个计算器的结果"<<endl;
    cin>>b.count;
    count=count+b.count;
}

```

```

        cout<<"两个计算器结果相加为："<<count<<endl ;
        return *this;
    }
    Calculator& Calculator::operator-(Calculator b) {
        cout<<"请输入第二个计算器的结果"<<endl;
        cin>>b.count;
        count=count-b.count;
        cout<<"两个计算器结果相减为："<<count<<endl ;
        return *this;
    }
    void main()
    {
        Calculator a,b;
        cout<<"请输入计算器显示的结果"<<endl;
        cin>>a.count;
        if (a.count>65535||a.count<0) {
            cout<<"计算超出可用范围,请在0-65535内重新输入"<<endl;
            cin>>a.count;
        }
        cout<<"*****"<<endl;
        cout<<"请输入要进行的运算："<<endl;
        cout<<"1、前自增"<<endl;
        cout<<"2、后自增"<<endl;
        cout<<"4、后自减"<<endl;
        cout<<"5、两个计算器结果相加"<<endl;
        cout<<"6、两个计算器结果相减"<<endl;
        cout<<"*****"<<endl;
        cin>>a.choice;
        while(1) {
            switch(a.choice) {
                case 1:a.operator++();
                    break;
                case 2:a.operator++(1);
                    break;
                case 3:a.operator--();
                    break;
                case 4:a.operator--(1);
                    break;
                case 5:a.operator+(b);
                    break;
                case 6:a.operator-(b);
                    break;
            }
        }
        cout<<"*****"<<endl;

```

```

        cout<<"请输入要进行的运算："<<endl;
        cout<<"1、前自增"<<endl;
        cout<<"2、后自增"<<endl;
        cout<<"4、后自减"<<endl;
        cout<<"5、两个计算器结果相加"<<endl;
        cout<<"6、两个计算器结果相减"<<endl;
        cout<<"*****"<<endl;
        cin>>a.choice;
    }
    system("pause");
}

```




```
C:\Users\NewiPeak\Desktop\测试\Debug\测试.exe
6、两个计算器结果相减
*****
2
后自增结果为:2002
*****
请输入要进行的运算:
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
*****
3
前自减结果为:2001
*****
请输入要进行的运算:
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
*****
4
```

```
C:\Users\NewiPeak\Desktop\测试\Debug\测试.exe
6、两个计算器结果相减
*****
4
后自减结果为:2000
*****
请输入要进行的运算:
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
*****
5
请输入第二个计算器的结果
300
两个计算器结果相加为: 2300
*****
请输入要进行的运算:
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
```

```
C:\Users\NewiPeak\Desktop\测试\Debug\测试.exe
请输入第二个计算器的结果
300
两个计算器结果相加为：2300
*****
请输入要进行的运算：
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
*****
6
请输入第二个计算器的结果
100
两个计算器结果相减为：2200
*****
请输入要进行的运算：
1、前自增
2、后自增
3、前自减
4、后自减
5、两个计算器结果相加
6、两个计算器结果相减
*****
```