1、定义学生类CStudent，包含数据成员姓名和学号，静态数据成员numbers保存学生的总数。定义类的构造函数、析构函数、拷贝构造函数，Print成员函数输出学生信息和学生总数，静态成员函数GetTotal用于获得学生总数。

#include <string.h>

#include <iostream.h>

class CStudent

{

public:

CStudent(char \*name,int no);

CStudent(CStudent& s);

~CStudent();

void print();

static int GetTotal();

private:

char \*name;

int ID;

static int numbers; //总数

};

int CStudent::numbers=0;

CStudent::CStudent(char \*name1,int id)

{

name=new char[strlen(name1)+1];

strcpy(name,name1);

ID=id;

numbers++;

cout<<"学生"<<name<<"被创建"<<endl;

}

CStudent::CStudent(CStudent &s)

{

name=new char[strlen(s.name)+1];

strcpy(name,s.name);

ID=s.ID;

numbers++;

cout<<"学生"<<name<<"被拷贝函数创建"<<endl;

}

CStudent::~CStudent()

{

cout<<"学生"<<name<<"被释放"<<endl;

delete name;

numbers--;

}

void CStudent::print()

{

cout<<"姓名："<<name<<" 学号："<<ID<<endl;

}

int CStudent::GetTotal()

{

return numbers;

}

void main()

{

CStudent s1("Tom",1001);

s1.print();

cout<<"目前学生数是"<<s1.GetTotal()<<endl;

CStudent s2(s1);

s2.print();

cout<<"目前学生数是"<<CStudent::numbers<<endl;

}

2、定义一个点类Cpoint，用于表示二维平面的点，在main函数中定义两个点对象，求出两点距离并输出。(要求定义一个求距离函数Distance实现)

#include <math.h>

#include <iostream.h>

class Cpoint

{

public:

Cpoint(double x=0, double y=0)

{

X=x;Y=y;

}

void print()

{

cout<<"("<<X<<","<<Y<<")";

}

friend double Distance(Cpoint c1,Cpoint c2);

private:

double X,Y;

};

double Distance(Cpoint c1,Cpoint c2)

{

double d=sqrt((c2.X -c1.X)\*(c2.X -c1.X)+(c2.Y -c1.Y)\*(c2.Y -c1.Y));

return d;

}

void main()

{

Cpoint c1(3.5,5.6),c2;

double d=Distance(c1,c2);

cout<<"距离是"<<d<<endl;

}