/\*

\* ex9\_3.cpp

\*

\* 3. 已知矩形类Rectangle 的定义如下：

\* 在Rectangle 类的基础上，设计并实现一个正方形类Square。

\*/

#include <iostream>

using namespace std;

class Rectangle{

public:

Rectangle(int wid=1, int hei=1):width(wid),height(hei){}

int getWidth(){return width;}

void setWidth(int newWid){width = newWid;}

int getHeight(){return height;}

void setHeight(int newHei){height = newHei;}

int area(){return width\*height;}//面积

int perimeter(){return (width+height)\*2;}//周长

void scale(double fw, double fh) {width\*=fw; height\*=fh;}//缩放

protected:

double width, height;

};

//---------------------------

class Square : public Rectangle{

public:

Square(int edge):Rectangle(edge,edge){}

void scale(double fe){setWidth(getWidth()\*fe); setHeight(getWidth());}

};

//-----------------------------

int main()

{

Rectangle r(2,3);

cout<<"Rectangle:"<<r.getHeight()<<","<<r.getWidth()<<endl;

cout<<"area="<<r.area()<< "\tperimeter= "<<r.perimeter()<<endl;

r.scale(1.5,2);

cout<<"Rectangle:"<<r.getHeight()<<","<<r.getWidth()<<endl;

cout<<"area="<<r.area()<< "\tperimeter= "<<r.perimeter()<<endl;

Square s(3);

cout<<"Square:"<<s.getHeight()<<","<<s.getWidth()<<endl;

cout<<"area="<<s.area()<< "\tperimeter= "<<s.perimeter()<<endl;

s.scale(2.5);

cout<<"Square:"<<s.getHeight()<<","<<s.getWidth()<<endl;

cout<<"area="<<s.area()<< "\tperimeter= "<<s.perimeter()<<endl;

}