// P1 W2.cpp : Defines the entry point for the console application.

//

#include "stdafx.h"

#include<iostream>

#include<string>

#include<cmath>

using namespace std;

//Exercise 1

class Time{

public:

Time(int, int, int);

void SetTime(int, int, int);

void PrintTime();

void TickSecond();

private:

int hour;

int minute;

int second;

};

Time::Time(int h, int m, int s){SetTime(h,m,s);}

//Exercise 2

class Rectangle1{

public:

Rectangle1();

void SetLength(float);

void SetWidth(float);

float GetLength();

float GetWidth();

void PrintPerimeter();

void PrintArea();

private:

float length;

float width;

};

Rectangle1::Rectangle1(){length=width=0;}

//Exercise 3

class Rectangle2{

public:

Rectangle2();

void SetCoordinate1(float, float);

void SetCoordinate2(float, float);

void PrintPerimeter();

void PrintArea();

private:

float x;

float y;

float x1;

float y1;

};

Rectangle2::Rectangle2(){x=y=x1=y1=0;}

int \_tmain(int argc, \_TCHAR\* argv[])

{

//Exercise 1

Time tick(23,59,59);

tick.PrintTime();

//second change forloop

for(int a=0; a<120; a++)

tick.TickSecond();

tick.PrintTime();

//Exercise 2

Rectangle1 t;

t.SetLength(8.2);

t.SetWidth(3.4);

t.PrintPerimeter();

t.PrintArea();

//Exercise 3

Rectangle2 z;

z.SetCoordinate1(2,5);

z.SetCoordinate2(6,7);

z.PrintPerimeter();

z.PrintArea();

return 0;

}

//Exercise 1

void Time::SetTime(int h, int m, int s)

{

hour=(0<=h && h<24)?h:0;

minute=(0<=m && m<=59)?m:0;

second=(0<=s && s<=59)?s:0;

}

void Time::PrintTime()

{

cout<<((hour<10 || (hour-12)<10)?"0":"")<<(hour>12?hour-12:hour)<<":"<<(minute<10?"0":"")<<minute<<":"<<(second<10?"0":"")<<second<<(hour>=12?"PM":"AM")<<endl;

}

void Time::TickSecond()

{

second=((second+1)<=59)?second+1:0;

if (second==0)

{

minute=((minute+1)<=59)?minute+1:0;

if(minute==0)

{

hour=((hour+1)<=23)?hour+1:0;

}

}

}

//Exercise 2

void Rectangle1::SetLength(float a)

{

length=(0<a && a<20)?a:0;

}

void Rectangle1::SetWidth(float a)

{

width=(0<a && a<20)?a:0;

}

float Rectangle1::GetLength()

{

return length;

}

float Rectangle1::GetWidth()

{

return width;

}

void Rectangle1::PrintPerimeter()

{

cout<<"The Perimeter of this rectangle is "<<length\*2+width\*2<<"."<<endl;

}

void Rectangle1::PrintArea()

{

cout<<"The area of this rectangle is "<<length\*width<<"."<<endl;

}

//Exercise 3

void Rectangle2::SetCoordinate1(float a, float b)

{

x=(0<a && a<20)?a:0;

y=(0<b && b<20)?b:0;

}

void Rectangle2::SetCoordinate2(float a1, float b1)

{

x1=(0<a1 && a1<20)?a1:0;

y1=(0<b1 && b1<20)?b1:0;

}

void Rectangle2::PrintPerimeter()

{

cout<<"The Perimeter of this rectangle is "<<std::abs(x-x1)\*2+std::abs(y-y1)\*2<<"."<<endl;

}

void Rectangle2::PrintArea()

{

cout<<"The area of this rectangle is "<<std::abs(x-x1)\*std::abs(y-y1)<<"."<<endl;

}