



同濟大學  
TONGJI UNIVERSITY

## School of Software Engineering

### Object-Oriented Programming OOP (2016)

#### Exercise 6

Please submit the source files, program results after running the .exe file and related documents. The submitted package/files should be named by “yourname\_studentid\_exerciseno”. Submit the package/files to your own folder on server ([\\10.60.41.1](http://10.60.41.1)). It should be the C++ folder.

**Due day:** 12:00 noon, Wednesday, Apr.27, 2016

#### Problem 1

Write a class named **Circle** to represent circle. **Circle** is defined by central point location ( $x0$ ,  $y0$ ) and radius. Implement constructors, access methods, and the following methods: *double findArea()*, *double findPerimeter()*, *void display()*. Each method should report about its activity to standard output. Method *display()* has to report parameters of the object. Test the class **Circle** by creating a few objects of the class and sort them by perimeters.

#### Problem 2

Write a class named **Rectangle** to represent rectangle. **Rectangle** is defined by upper left location, weight and height. Implement constructors, accessor methods for the properties, and methods *double findArea()*, *double findPerimeter()*, *void display()*. Each method should report about its activity to standard output. Method *display()* has to report parameters of the object. Test the class **Rectangle** by creating a few objects of the class and sort them by areas.

#### Problem 3

Create a class called **Date** that includes three pieces of information as data members—a month (type *int*), a day (type *int*) and a year (type *int*). Your class should have a constructor with three parameters that uses the parameters to initialize the three data members. For the purpose of this exercise, assume that the values provided for the year and day are correct, but ensure that the month value is in the range 1–12; if it isn't, set the month to 1. Provide a set and a get function for each data member. Provide a member function *displayDate* that displays the month, day and year separated by forward slashes (/). Write a test program that demonstrates class Date's capabilities.