HW3: Objects

1. a. Create a class called Rectangle. The class contains:
   a. Two public double data fields named width and height with defaults values of 1 for both.
   b. A public no-arg constructor with an empty body.
   c. A public constructor with 2 double parameters for width and height and sets the values accordingly.
   d. A public method called getArea() that has no parameters and returns the area of the rectangle. The area of a rectangle is width X height.
   e. A public method called getPerimeter() that has no parameters and returns the perimeter. The perimeter is the sum of all sides of the rectangle.

   b. Create a class called TestRectangle that has a main method which creates two Rectangle objects. The first has a width of 4 and a height of 40. The second has a width of 3.5 and a height of 35.9. Print the width, height, area and perimeter of each rectangle.

   See my output below:

   | Rectangle1: | Width: 4.0 | Height: 40.0 | Area: 160.0 | Perimeter: 88.0 |
   | Rectangle2: | Width: 3.5 | Height: 35.9 | Area: 125.64999999999999 | Perimeter: 78.8 |

2. a. Create a class called Course. The class contains:
   a. A private String name.
   b. A private int called numOfStudents.
   c. One constructor that accepts a String representing the course name and number of students and sets the values accordingly.
   d. public Getter and setter methods for course name
   e. public getter and setter methods for numOfStudents.

   b. Create a class called TestCourse which has a main method which creates 3 objects of type Courses: “CS 200”, “CS 201”, and “CS 207”. All have 20 students. Next, modify the number of courses for CS 200 to 25, and modify the number of students for CS 201 to 27 (you will need to use the appropriate set methods). Print the number of students and name of each course with the appropriate methods for all 3 courses.
See Output Below:

<table>
<thead>
<tr>
<th>Course</th>
<th>Code</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course1</td>
<td>CS 200</td>
<td>25 students.</td>
</tr>
<tr>
<td>Course2</td>
<td>CS 201</td>
<td>27 students.</td>
</tr>
<tr>
<td>Course3</td>
<td>CS 207</td>
<td>20 students.</td>
</tr>
</tbody>
</table>

Submission: Zip up a folder with your name on it containing all 4 .java files and 2 output files. Submit through the D2L Dropbox labeled HW3.