The University of Newcastle
SENG6110 Object Oriented Programming

Computer Lab – Week 3

- You will receive instructions in the beginning of each computer lab.
- Try to do all exercises. If you can't finish during the computer labs, finish later.
- Ask questions!!! A lot of them!! Use the discussion board on Canvas.

1. Watch the Lab-week3a–SMS Demo video available in the Week 2 'computer lab' folder. This video explains the SMS code that we have seen in lecture.
2. Download the code Salary.java from Canvas. Compile and run the code. Modify the code adding the following requirements (one by one):
    a. If the total salary is less than 500, the worker will receive 10% bonus. If the salary is between 500 and 1000, the worker will receive 5% bonus.
    b. Suppose the program should calculate the salary for 2 weeks: modify the code to accept the normal hours and extra hours in week 1 and then in week2 (in total your program should take four inputs). Then, calculate the total salary and calculate the bonus.
    c. Now redesign the interface. This code uses terminal TIO. Code a GUI using dialog boxes.
3. Download, compile and run DivideTwo.java, and observe the output. The program prompts the user for two integers that represent the numerator and the denominator of a fraction. The Scanner object named keyboard is used to read the integers provided by the user. Modify the program to include an if/else statement to check for division by zero. If the denominator is not equal to zero, display the result of the division, otherwise display a message to the user that division by zero is not allowed. Modify the code to use GUI.
4. Using a text editor, download and open the file SwitchErrors.java. The program evaluates an integer entered by the user and displays the colour assigned to the integer. Compile the program. The program has several syntax and logic errors. Fix the syntax errors and compile and run the program. Does the program run as you expected? Locate and correct the errors in the program logic.
5. Using the program structure templates provided via the program files ExampleTio.java and ExampleGui.java that you can download from Canvas, write Java codes for the problems given below.
    5.1. First watch Lab-week3b-Strings video available in 'computer lab' folder. It will give some examples of methods in String class.
    5.2. Write a program where the inputs are three strings, two first names (first1 and first2) and one last name (last). The program should create two complete names: first1+last and first2+last and output these two complete names. Use also in this code at least three different methods from String class (you can find some ideas in the lecture slides, book or the Java API documentation). Use your imagination!
    5.3. Write a java program where the inputs are three sides of a triangle, then check if the values represent a valid triangle and if so, which type. A triangle has the following properties:
        - No side of a triangle can be greater than the sum of the other two sides.
        - An isosceles triangle has two equal sides.
        - An equilateral triangle has three equal sides. -
        - A scalene triangle has three different sides.

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