School of Electrical Engineering and Computer Science
The University of Newcastle
SENG1110/SENG6110 Object Oriented Programming

Lab Session 4 – Week 5

This week we will start to use a new environment to edit, compile, run and debug our Java codes. It is called **BlueJ**. Later, **after** this computer lab, you can visit http://www.bluej.org/ and download BlueJ software in your computer. Today, you will learn how to edit, compile and run using BlueJ. In the document SENG1110_6110GettingStarted2018 (available in Blackboard) you will find instructions to download BlueJ.

It will be very useful to use an IDE (as BlueJ) for SENG1110/6110. In the subsequent courses you should use a more sophisticated IDE (more information will be available in Blackboard in the end of our course).

1. Listen the **first video** available in the 'computer lab 4' in Blackboard for the first introduction of BlueJ using an example similar to the one that you will be working today.

2. Download the program Student.java and TestStudent.java from Blackboard. Now follow the instructions below.
   a. **Execute Bluej**. Just write Bluej in the command line.
   b. **Open a new project:**
      i. select new Project from project menu
      ii. write StudentProject (this will create a folder called StudentProject and all Java files related to this project will be inside this folder)
   c. **Add a class from a file**
      i. Select add 'class from file' from 'edit' menu
      ii. Select the file Student.java
      iii. Add TestStudent.java as well
   d. To **edit** your code, just clique twice and the code will open
   e. To **compile**, just choose the compile menu.
   f. To **run** the code
      i. go to the Bluej window (go to TestStudent.java icon).
      ii. use the right button of the mouse and choose main(). Don't worry about the other options now.
   g. Check the Student.java code and implement the method **getHighScore** (in the end of the file Student.java you will find more details). At this point, if you have difficult in understanding how the classes/objects work, listen the **second video** before completing this exercise. The second video show as well how to debug a code using BlueJ.
   h. Write a line of code that use the method getHighScore in TestStudent.java (use your imagination).

3. Bank example
   a. Using **BlueJ**, choose **new project**
      i. select new Project from project menu
      ii. write BankProject
   b. **Add a class from a file**
      i. Select 'add class from file' from edit menu
      ii. Select the file BankAccount.java
      iii. Again, select add class from file from edit menu
      iv. Select the file BankAccountManager.java
   c. Compile/run the program in the Bluej.
   d. Be sure that you understand the code.
   e. Notice that BankAccount.java has the instance variables name, idNumber and balance. The BankManager.java just manages the balance. Modify the program in such a way that it can work with the name and the id of the client. For example, before the menu, the program could ask the name and the id of the client (it will be necessary to complete the f)
   f. Write the methods getName and setName in BankAccount.java. Use them in BankAccountManager.java
   g. Document the program well
   h. Listen the **third video** to understand better the concept of encapsulation and how to generate documentation.

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Mar-2018