

CS205 – Lab 0A

Objectives: In this lab you will learn how to

- create, edit and run a Java application in Eclipse
- generate documentation using javadoc
- make use of class fields, methods, and constructors
- make use of data structure ArrayList
- make use of a static field shared by all objects

Before starting this lab, you should have read Chapter 1 in your text. Follow the steps in this lab carefully and complete the assignments. As you embark on this lab you should practice the pair programming techniques: switching driver and navigator roles at least once and make sure that you are talking to each other throughout this exercise.

1. Download lab0a.zip file from the course web site.
2. Launch Eclipse and create a new Java project by selecting File-Import-General-Existing Projects into Workspace. Click Next. Make sure Select archive file is selected and browse to the downloaded zip file. Click Finish.
3. Examine the two source files and verify that you understand all the code.
4. Run the GreeterTester main program by right-clicking GreeterTester and select Run As-Java Application. The output will appear in the console.
5. Observe the javadoc comments that are in the form `/** ... */`. These comments contain tags like `@param` and `@return` which will generate the appropriate documentation. Generate javadoc documentation by right-clicking the default package in the navigator pane and selecting Export-Java-Javadoc. In the dialog window you should have the path to the javadoc progra and you need to select the location for the documentation (usually your project folder/doc). Click Finish. Check out the generated documentation.
6. Modify the Greeter class to add a `sayGoodbye` method. You can easily add the javadoc comments by right-clicking in the declaration line of the method and selecting Source-Generate Element Comment. Sorry, but you still have to type in the content of the comment. Add code in GreeterTester to test this method and also generate the new javadoc documentation that includes this method.
7. Add a method `void swapNames(Greeter other)` in the Greeter class that swaps the names of this greeter with another. Test this and complete the javadoc.
8. Modify the code so that instead of always saying "Hello", the code will randomly select from among several possible greetings. To accomplish this you will add a private field which is an ArrayList of Strings. This ArrayList will contain the possible greetings. You will also want to include a random number generator which is an instance of the

Random class. Because each greeter object does not need its own random number generator, you will want to make the generator **static** so that it is shared among all Greeter objects.

9. Make sure that the javadoc comments in your files indicate both members of the pair. (The javadoc `@author` tag is handy for this.) When both are satisfied with your project and documentation, export the project (right-click on Lab0 in the Package Explorer pane, select Export- General-Archive File) and submit one copy for grading .