

Workshops 5 & 6

Description:

This assignment lets you practice concepts such as Object Serialization, and Swing (or Java FX) GUI.

In this assignment, you will be working with some objects of a **Student** class (which should be serializable.)

This class has fields such as **stdID** (int), **firstName** (String), **lastName** (String), and **courses** (an array or preferably an ArrayList which contains the names of the courses the student currently has). Please provide constructors, getters, and setters, where appropriate.

In the second class, you will need to enter some information for some student objects from the console and save these student objects in a file.

And finally, in the third class of this project, you need to read those student objects from the file, and then show their info in the console, to verify that they had been saved (and serialized) correctly.

For Workshop 6, after we have covered GUI programming in Java in the next lectures, you should design a Swing (or Java FX) GUI-based Java application to do the same job. It could be as simple as (at least) a **JFrame** with some **JTextFields** and a **JButton** (to let the user enter the information of the students and save them), and a **JTextArea** and another **JButton** (to let the application to read the information of all saved students from the file and show them to the user.)

Note that we should be able to run the third class and retrieve the data (student objects) already stored in the file independent of running the second class first (assuming we have serialized some objects by running the second class in advance). These two classes should be treated and/or run as two independent processes/programs in your project. The same applies to the GUI version; you could have an interface which lets you choose whether you want to read/load or save students' info.

Marking Criteria and Tasks:

Please note that you should:

- a- have appropriate indentation.
- b- have proper file structures and modularization.
- c- follow Java naming conventions.
- d- document all the classes properly.
- e- not have debug/useless code and/or file(s) left in assignment.
- f- have good intra and/or inter class designs.

in your code!

- **Workshop 5:** Developing and running the desired solution (The three classes mentioned above,) correctly, in the console: **5 marks**.
- **Workshop 6:** Developing and running the desired solution (The three classes mentioned above,) correctly, using Swing (or Java FX) GUI: **5 marks**.
- **Note that you should submit your source code - just individual .java files and screenshots which demonstrate all the scenarios your code runs.)**

Deliverables and Important Notes:

- You are supposed to **submit your solution online on Bb by the end of the day on Tuesday, 5th of July 2022 for Workshop 5** and by the end of the day on **Tuesday, 12th of July 2022 for Workshop 6.**)
- Please note that you would be allowed to **submit just once**, so please **be super careful and double-check before you hit submit**.
- There would be a **20% penalty** for each day (or part of it,) in case you submit late!
- Remember that you are encouraged to talk to each other, to the instructor, or to anyone else about any of the assignments, **but the final solution may not be copied from any sources.**