

IST 256

## **FINAL PROJECT**

### ***Due Dates***

*Project Groups finalized on April 21*

*Class Presentations, Tuesday, May 3 (last class)*

*Submit Project Report and NetBeans Project to the iLMS by Tuesday, May 8*

The final project will be a team project. It will be an information application programmed in Java using NetBeans and will also include an in-class (short) presentation of the design and a written report.

The information application will be of your choice, but it must include data that is read from a file and a user interface where the user can interact with the data or perform some task on the data.

### **Forming Project Teams:**

The teams will be assigned by your professor, but you will be able to give preferences and those preferences will be followed if possible. Teams will consist of from 1- 4 people. Preliminary team assignments and preferences will be discussed in class on April 19. Final team assignments will be given in class on Thursday, April 21. Teams will be given time to meet during that lab. At this meeting, you should choose the topic of your project and agree on team roles. Each person on the team will play one or more of the following roles, as needed by the project:

Data Lead: Collect or make-up data for the file and design the file format

UI Lead: Design and create the form for the user interface

Lead Programmer: Write and debug the code

Testing Lead: Test the code and user interface

Documentation Lead: Write/check code documentation

Write the problem statement and report

Although each role should have one person who takes responsibility for that task; team members will take multiple roles and/or participate in tasks for other roles. In particular, you are encouraged to do pair/team programming, where you sit together to discuss and write the program. And each person on the team should understand the final version of the code and how it achieves the problem solution. During the class presentation, each member of the team should speak about their part of the project and should be prepared to demonstrate their understanding of the logic of the programming solution.

### **Example Projects**

Some descriptions of example projects are being prepared. The first example is a Used Book Seller, with an example file of used book data. This example will also serve as an example of some parts of the report that you must write. The second example consists mainly of query log data and a simple application is sketched. A third example is being prepared, possibly to have song data downloaded from an iPod.

These examples will serve to give you an idea of the type of project that you can do. Feel free to invent data and user applications, as long as the design of the application will meet the technical requirements given below.

These examples will be made available in the iLMS under Final Project Resources.

### **Project Technical Requirements**

For this project, you will collect or create data. The amount of data should be fairly large, depending on the project, several hundred data examples, unless the nature of the data requires fewer. Note that one way to create data is to collect it into an Excel spread sheet and then export it as a CSV file, which should help with formatting the data correctly (except for some issues with some text characters that we can discuss later).

You will implement a user interface and the application in NetBeans Java. The functionality of the application must include the following three elements in some form:

- Reading data from the file and storing into an array, whose elements are objects of a class designed to fit the data, being able to display a restricted portion of the data
- Searching the data, based on a user request
- Sorting data

In addition, your project will be required to include at least 4 of the following list of items:

- Multiple classes
- Significant methods in the classes (not just accessor or display functions)
- Additional Form Elements besides the ones we've already done.
  - Examples: Displaying image(s) on the form, drop-down list of choices, etc.
  - [examples will be available]
- Using multiple forms for the user interface [an example will be available]
- Using an external API for data
- Writing data to a file
- (you may propose alternatives)

### **Project Results**

Each team will give a short 5 minute presentation about their project in the final class. The presentation will be informal (no powerpoint!)

- Description of the problem (Documentation Lead)
- Description of the data (can show the text description or actual data file) (Data Lead)
- Display the user interface in NetBeans and describe its functioning (UI Lead)
- Describe how the code meets the technical requirements (Lead Programmer)
  - include a description of the data class

The presentation can also include a demonstration of the functioning of the project, but groups will not be required to do so if their project is not running yet.

Each team will submit a project report to the iLMS along with a functioning project. The report should include

Problem Statement

Description of the data

Description of the user interface design and functionality

Description of the main structure of the code, including the class, and how the project meets the technical requirements

Each student in the class will also be expected to submit to the iLMS a few sentences that are the individual team performance feedback. This statement should include your roles and contributions to the group and your feedback on the performance of other people in the group.

### **Submitting the Project**

By the due date, **each team** should make one submission to the Final Project assignment dropbox in the iLMS system. This submission will include the project report (as a document) and the zipped folder consisting of the project.

By the due date, **each student** should make a submission to the Final Project Evaluation assignment dropbox, giving their evaluation of their own and their teammates' performance.

The project grade will include the project report and whether the project implementation meets the technical requirements and includes good documentation. Although the grade for the project will start out the same for each team member, this grade will be adjusted individually to take account of the project performance evaluations and in-class presentations.