

IST 256  
**FINAL PROJECT**  
***Due Dates***

*Project Groups finalized on April 17*  
*Submit Project Report and NetBeans Project to Blackboard by Wednesday, May 9*

The final project will be a team project. Each team will design an information application and implement the design in Java using NetBeans. Although each person will contribute in different ways to the project, each person must demonstrate their understanding of the design of the program by submitting a written report with a description of the application design and its code.

The information application will be of your choice, but it must include large amounts of 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. Since the data is large, one of the design goals will be ways in which the user can view smaller portions of 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 12. Final team assignments will be given in class on Tuesday, April 17. 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  
(projects using RSS or Web APIs for data do not need a Data Lead)

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

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. In the final report, each member of the team should discuss their contribution to the project as well as demonstrating 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. A fourth example shows how to get data from an RSS feed on the Web and a fifth one will show how to get data from the Twitter API.

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 Blackboard 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 it 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: 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 [the RSS feed or Twitter API]
- Writing data to a file
- Using other data structures: ArrayLists, HashMaps, etc.  
(you may propose alternatives)

### **Project Results**

Each student 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 data class, and how the project meets the technical requirements

For students who are not the programming lead in their group, it will be particularly important to describe how the user can view and interact with portions of the data on the user interface and to demonstrate a good understanding of how the programming details achieve that functionality. The project report should be individually written, with no copying between team members or other students.

At the end of their report, each student in the class should also give 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 Program assignment dropbox in the iLMS system. This submission will include the zipped folder consisting of the project code.

By the due date, **each student** should make a submission to the Final Project Report assignment dropbox, giving their final report.