

Homework Assignment 1

Java Applets

ECE 155B – Spring 2012

Due Friday, April 13, 2012

Overview

In this first assignment you will exploit Java's universal "write-once-run-anywhere" feature by using a Java applet for your Healthcare Services Project. Applets are Java's Web-based, client-side application technology, capable of running in any Java-enabled browser.

The first assignment requires you to implement the Doctor part of the Healthcare Services project using a Java applet to record information about a doctor, the doctor's patients (who are already registered), and records related to the patients.



Figure 1. Sample GUI.

The Java applet will run in a Java-enabled browser on your local computer.

Later, patients will be able to access their accounts, and request appointments from the doctor's calendar.

Your applet will have a menu-based Graphical User Interface (GUI) with the functionality listed below. You need a GUI component to update information about the doctor, the doctor's patients and their records. The example screenshot is for illustration purposes only; you can have any kind of GUI design, as long as it is appropriate and easy-to-use.

You should store information for the doctor in an XML-formatted file. In the first discussion section, the TA talked about the XML format, and will provide necessary XML parser classes for the project on the class Web site.

Functions:

- Doctor information
 - Enter doctor information (first name, last name, keep record of last login)
 - Edit this information
 - View this information
- Patients of doctor
 - Add patient profile
 - Modify
 - Delete
 - View
- Notes related to patient
 - Add a note related to a patient
 - Modify
 - Delete
 - View

In the first assignment, you will be required to implement the Doctor part of the project. You will reuse most of the code in subsequent projects. Therefore, it is better to put in more time and thought at this stage to avoid more work in later projects.

Swing GUI

This assignment requires that you build a GUI using the Java Swing toolkit, which enables you to produce a GUI quite quickly and easily. You should spend some time thinking about the types of GUI elements that you will use before you begin coding (read the overall project description and think about future GUI requirements). While much of your input will be obtained using text input fields, consider the use of other elements such as drop-down lists for standard inputs. You should also consider the overall look-and-feel of your GUI. *We want to see polished GUIs, rather than disorganized GUI elements without a general cohesiveness.*

XML Format

You will format the information about the doctor, the doctor's patients and their records using the eXtensible Markup Language (XML), so that the data are self-describing and portable across different hardware and software platforms. You will need to implement methods for writing this information in XML format. You will be provided with the necessary parser classes for XML files.

Design Considerations

The data should be obtained from the user in a clear and easily understood manner. *Prompting for information is a suitable mechanism. In case of errors, inform the user.* Ultimately, the behavior of the system is up to you. The exact information that your system stores is at your discretion, but it should make sense in terms of the project. You are encouraged to think about the project, and to discuss it with the TA and the professor for further understanding.

Security Issues

Because of the nature of applets, there are several security issues related to an applet's reading and writing files on your local computer. Instructions on how to deal with those issues will be provided on the class Web site and in the discussion section. The template from the class Web site includes necessary scripts to get started with the project.

Report (10%)

In addition to the programming portion of this assignment, you will write a small report. The report should be clear, well organized and concise. It needs to include the following:

- 1) An overview of how your system operates
- 2) Details of your design
- 3) A class diagram sketch outlining the hierarchy of your class structure
- 4) *Sample input and output, e.g., the content of your XML elements before and after an operation, such as add or update.*

README File

You are required to submit a separate README file that explains how to compile and run your program, etc.

Demonstration (10%)

You will be performing project demonstrations for this first assignment and all others. You will be responsible for scheduling a 5-15 minute timeslot for your demonstration with the TA. Because time is limited, you should run your application on the PCs on which you will do your demo before the demo. In particular, make sure that those PCs are set up correctly.

Demonstrations will be on Fridays, and will fall between specific times. You will be required to demonstrate your application's functionality, and answer several questions covering the technology and your particular implementation. Demonstrations for the first assignment will be scheduled through email, or during office hours/discussion.

Submission (10%)

You will submit a compressed file (*tar*). You will need to type "*ant submission*" in order to create your submission file. If there is anything missing in the submission file, edit the *build.xml* file to include the missing information.

Make sure you modify the *User* property in the *build.xml* file. The *ant* call will create submission file with the username you provide.

The compressed file should include a folder with all project content necessary to build/run the program (.java, README, Report). The projects are to be sent to **ece155b.s12@gmail.com** with subject line "Project 01: Name LastName".