LAB ASSIGNMENT #4 – GUI Applications, Applets, and Binary I/O

Due Date: Wednesday, March 5, 2014.

Purpose: The purpose of this Lab assignment is to:

- Develop Complex GUI applications
- Develop Java Applets
- Develop Java applications with File I/O capabilities

References: Read the course's text "Introduction To Java Programming, 9th edition", http://www.cs.armstrong.edu/liang/intro9e/, chapter 17,18, 19 and the ppt slides. This material provides the necessary information that you need to complete the exercises.

This lab must be completed individually by all the students. You will have to demonstrate your solution in a scheduled lab session when submitting the assignment. The assignments/projects should be submitted **through the assignment link on Blackboard**.

The Eclipse project for this assignment should be named as: *FullName_CXEC320_Assignment4.* Each exercise should be included in a separate package. For example, first exercise in a package named *exercise1*, etc.

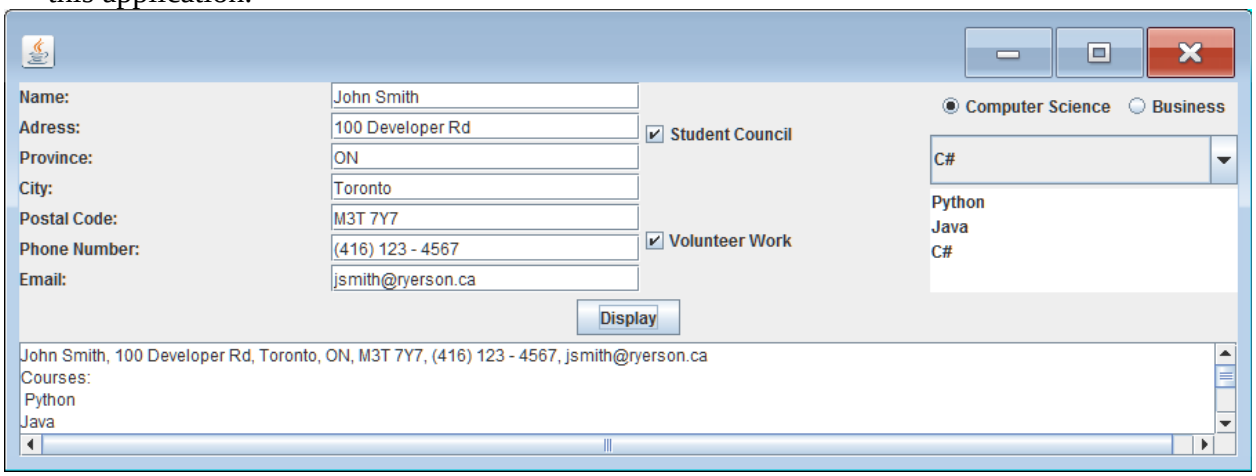
The entire project directory should be zipped in a file named as *FullName_ CXEC320_Assignment4*.

1. Read and work through Chapters 17,18,19 in textbook.

2. Write a Java application which allows the user to enter student information (see the sample design below).
   The user will enter *full name, address, city, province, postal code, phone number and email* in *text box* components. The student's *major* (Computer Science or Business) will be selected from two *radio buttons*.
   A combo box will display the list of *courses* for each program whenever the user selects the desired program.
   A course will be added to a *list box* component *w*henever the user selects a course from the corresponding combo box. Make sure that the user cannot add a course several times.

Additional information about the student will be provided from a group of *check boxes* (such as involvement in various activities, etc).

All the information about the student will be displayed in a text *area* component. Use simple layout managers, such as FlowLayout, BorderLayout, and GridLayout to create the GUI of this application.



Provide the titles for the data that will be displayed in the text area.

(5 marks)

3. **Exercise 19.7** (Restore objects from a file)

Suppose a file named Exercise19_07.dat has been created using the ObjectOutputStream. The file contains Loan objects. The Loan class in Listing 10.2 does not implement Serializable. Rewrite the Loan class to implement Serializable. Write a program that reads the Loan objects from the file and computes the total loan amount.
Suppose you don't know how many Loan objects are in the file. Use EOFException to end the loop.

(3 marks)

4. **Exercise 18.1** (Loan calculator)

Revise Listing 16.7, LoanCalculator.java, to be an applet for computing loan payment.

(2 marks)