Université Concordia University
CENTRE FOR CONTINUING EDUCATION

CEJV 569-1 DESKTOP APPLICATION DEVELOPMENT WITH JAVA

Day/Time: Mo 18:00 to 22:30 Room: FB107

2018-04-09 to 2017-06-11

Instructor Coordinates:

- Amin Ranj Bar
- cejv.ranjbar@gmail.com

Course Prerequisites

- CEJV416

Course Description

This course will continue the work done in CEJV 416 with an emphasis on developing desktop applications using the JavaFX and JDBC frameworks. Students will learn how to develop systems that are composed of presentation, business (domain) and persistence layers. The data structures that make up the Java Collections Framework will be explored and then applied to a range of problems. Additional topics in this course will include concurrent programming using threads, file access using NIO and the development of Create, Read, Update and Delete (CRUD) applications using JDBC. Upon completion of this course, the student will have acquired the necessary skills to begin developing real world software solutions.

Course Objectives

Upon completion of this course the student will be able to:

- Utilize industry standards in program design, coding and testing
- Apply patterns when structuring code
- Understand the purpose of and then use in code data structures such as Stacks, Queues, Deques and Maps
- Write object oriented code for accessing relational databases
- Implement basic threads for concurrent processing
- Read and write text files and properties files
- Develop multi panel GUI layouts utilizing a range of JavaFX Components
- Employ the techniques of internationalization in a program

Course Methodology

- Lectures
- In-class exercises
- Assignments

Learning Resources:

- Class notes, presentations and sample code are available on Moodle
- Recommended book:
  - Introduction to Java Programming, 11th Edition, Y. Daniel Liang, ISBN-13: 978-0134611037

Course Content:

	Topics
1	Overview of Java Multidimensional arrays Processing two-dimensional arrays Passing multidimensional arrays to methods
2	Object Oriented Thinking Array of Objects Immutable objects and classes Abstraction Encapsulation Class relationships Processing primitive data type values as objects Examining the Object class Inherited methods of Object
3	Coding to the interface Decoupling code Comparable and cloneable interfaces Polymorphism
4	Persisting data to text and binary files NIO File processing File class Reading Data From the web
5	Building GUI programs with JavaFX Catalog the available components High level and low level event handling Using the Gluon Scenebuilder editor to create multi panel interfaces Developing software for multiple languages Internationalization
6	Event Driven Programming Animation
7	Persisting data to a relational database JDBC coding Create, Update, Read & Delete coding Testing code JUnit
8	Employing data structures from the Java Collections Framework Interfaces Implementations

	Algorithms Stacks, Queues, Deques and Maps Applying software patterns such as Abstract Factory Decorator Facade Factory method Singleton Proxy Adapter Iterator MVC
9	Employing concurrent programming Threading Tasks Synchronization Locks

Communication outside course hours

- If you have any questions please use my email address of cejv.ranjbar@gmail.com
- I will do my best to respond within 48 hours

Assessment/Evaluation:

- Assignments 70%
- Final Exam 30%

A minimum grade of 60% is required to successfully complete this course.

Software:

- The IDE for this course is NetBeans 8 and is available for free from:
  http://netbeans.org
  Download the Java EE bundle.
- The version of Java will be 1.8 JDK available for free from:
  http://www.oracle.com/technetwork/java/index.html
  Download the most recent versions
- Scene Builder 9 will be employed for creating GUI user interfaces by drag and drop
  http://gluonhq.com/labs/scene-builder/
  Download the most recent versions
- This environment can be setup on Windows, Mac, and Linux

Assignment Submissions:

All submissions must be in electronic form. The NetBeans project folder and its contents must be compressed into a zip file and submitted on Moodle.

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This could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work. It also includes oral presentations, computer assignments and artistic works. Finally, if you translate the work of another person into French or English and do not cite the source, this is also plagiarism.

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