Computing Science Course Outlines  2022 Spring

CMPT 213 - D100 Object Oriented Design in Java

Instructor(s): Brian Fraser

SFU Surrey

Calendar Objective/Description:
Object Oriented Design in Java

Instructor's Objectives:
Throughout the course, you will learn and use Java to solve interesting problems but no background in Java is expected. The course will cover a number of design patterns which you will use in the assignments. There will be a focus on designing and writing good maintainable code, as such all code submitted will need to conform to a coding standard which will be discussed in class.

Prerequisites:
see go.sfu.ca

Topics:
- Introduction to Java, including advanced features such as enum, generics, and mutable vs immutable.
- Inheritance, polymorphism, interfaces and abstract classes.
- Introduction to object oriented design (OOD) and some UML diagrams.
- Code construction, best practices and coding standard.
- Basic software design patterns such as iteration, singleton, observers, or template methods.
- Introduction to refactoring.
- Basic introduction to event driven user interface programming or web servers, and use of threads.
- Software development tools, such as advanced IDE features, build tools, debuggers, and JavaDoc.

Grading:
35% assignments and project, 20% midterm, 45% final exam. Grading will be confirmed in the first week of class.
Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).

Reference Books:
Head first design patterns, Freeman and Freeman, O'Reilly, 2004, 9780596007126
Patterns in Java (Volume 1), Mark Grand, Wiley, 2002, 9780471227298
Object-Oriented Design & Patterns, 2nd ed, Cay Horstmann, Wiley, 2006, 9780471744870

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