SE 211 SOFTWARE CONSTRUCTION

TERM PROJECT

PROJECT TOPIC

Develop an object-oriented solution to an interesting problem. You can find the project topic yourself. You can develop/improve a project that you are doing or you have done before for one of your other courses. Please contact me after you decide a project topic for my approval.

DOCUMENTATION

Your project report document should explain the problem in an introduction section.

Another section should contain the details of your solution as follows:

1. Design (including UML diagrams)

2. Frameworks (if you use)

3. Source code complexity analysis results

    a. Analyze your final code with Eclipse Metrics plugin (http://sourceforge.net/projects/metrics/)

    b. Add analysis results to your document (tabular and graphical data).

4. Source Code Analysis

    a. Analyze your code with PMD (http://pmd.sourceforge.net/)
    b. Add analysis results to your document

In the same section, you should explain the factors that influence your design decisions. Finally, in a conclusion section briefly mention about the problem and your solution.

In an appendix section,

- Please provide the source code of the project.

SAMPLE PROJECT TOPICS

1. Similar to Midnight Commander (MC) << https://www.midnight-commander.org/>>, a file manager application which can do basic file operations like listing, copying, moving, deleting, etc. (Should be a GUI application). It should have the same user interface, way-of-use, ease-of-use, without needing to use mouse ever as MC.

2. A strategy game like Tic-Tac-Toe (options like 3x3, 4x4) or Mastermind to play against computer. Graphical interface is important.

3. A simulation application like the simulation of a bank's teller-desks, simulation of lifts in a building, etc. Simulation should be presented visually, and simulation parameters should be supplied by the user, such as teller count, customer appearance distribution and its parameters, average processing time at a teller desk, etc.

4. For the Physics course, a GUI application which simulates the projectile motion visually. Parameters like velocity, mass, angle, etc. should be easily adjusted by the user. Trajectory of the projectile should be drawn/tracked easily & visually, and timing of the motion should be realistic or can be slowed-down if desired by the user. (A similar application is also OK).

5. A simple e-mail client

   a. User should retrieve, list, display, delete, and send e-mail message via e-mail servers that support POP and SMTP.

   b. The user interface must support more than one e-mail accounts.

   c. Attachment capability is not required.

   d. No need to store e-mail messages on a db; only an interface is adequate. E-mail accounts and passwords should be stored.

GENERAL RULES

- You are expected to make your designs and write your codes considering the principles you have learned in this course like: simple, easy-to-read, understandable, easy-to-maintain, giving meaningful names to identifiers, having a good layout & style. This is very important! If I can't read your design and code, I will not evaluate it!
- You should follow the course guidelines: defensive programming, exception handling, naming conventions, etc.
- No late submissions will be accepted!
- Please do not submit duplicate works. Exactly matching or very similar reports and codes will get zero grade.

DELIVRABLES

1. Deliverable-1: Problem Statement, General Idea, Feasibility Study
   - Deadline: 20/10/2014
2. Delivrable-2: UML designs [Use cases, Class Diagrams, Sequence Diagrams]
   - Deadline: 19/11/2014
3. Delivrable-3: Code, Metrics Report, PMD Report
   - Deadline: 17/12/2014
4. Delivrable-4: Presentation
   - In the last week.