CP317 PROJECT

Project Requirement

This project can be done in group of three.

First, your group should propose a web app. *Do not start the project until your proposal is approved by the instructor.* The project involves writing the requirement, analysis and design documents, and implementing the app. The language Javascript will be used to implement the project.

Tasks:

1. Perform a complete Object-Oriented Requirement, Analysis and Design of the software project.
2. Perform a Gane and Sarsen's structured analysis of the project. Draw the Data Flow Diagram.

Due dates: missed deadlines are subject to mark reductions.

1. Thursday Oct 23, at 4PM: Submit your app proposal by email to choang@wlu.ca
2. Thursday Oct 30, at 4PM: Signed timelines-work division document (see Project-Timelines-Activities note) and three-page preliminary report on Requirement. Submit hard copy in class and electronic copy at mylearningspace (P1)
3. Thursday Nov 6, at 4PM: three-page preliminary report on OO Analysis. Diagrams and drawings should be in the report but they are not COUNTED for the page requirement. Submit hard copy in class and electronic copy at mylearningspace (P2).
4. Thursday Nov 13, at 4PM: three-page preliminary report on OO Design (diagrams and drawings should be in the report but they are not COUNTED for the page requirement). Submit hard copy in class and electronic copy at mylearningspace (P3).
5. Thursday Nov 27, at 4PM: complete report (requirements, analysis, and design) in hard copy and electronic copy. Electronic copies are to be submitted on line, at the project submission page. The hard copy should be submitted at the instructor's office before 4PM, or in class at 4PM. This last deadline is firm. (P4).
6. Monday, Dec 1, at 11:30PM: The implementation of the app. A zip file should be submitted . This last deadline is firm. (P5).
7. Tuesday Dec 2, at 4PM: App presentation, in class (P6)

The submission should contain a report on group meeting(s): time, place, agenda, discussions, decisions. Submit hard copy in class at 1PM **AND** electronic copy (on line, before 1PM, at the project submission page).

Group submission	Percentage of final project marks
P1	3
P2	3
P3	4
P4	40
P5	50
P6	20

Missing any of the above deadlines results in mark deduction. Missing the final deadline results in the project not being marked.
If you have any questions about the project, email them to your instructor for the benefit of everyone in class. The questions will be discussed in the next class.

All submitted documents must be files in html, OpenOffice Writer, or MS Word (pdf is NOT accepted).

Electronic submission: Anybody in a group may make the submission.

The hard copy submissions should be stapled or bounded. The final report is likely to be large and thus should be bounded.

Check list

OO Requirement

- Identifying actors
- Identifying scenarios
- Identifying use cases
- Refining use cases
- Identifying relationship among use cases
- Identifying participating objects
- Identifying nonfunctional requirements
- Use case diagrams

OO Analysis

- Identify initial objects from use cases.
- Try to understand the problem by constructing
  - state diagrams (finite state machines) for important objects,
  - sequence diagrams.
- Define classes.
- CRC cards for initial objects.
- At any step you may want to refine the use cases and go through the analysis again. Once the model is stable, the analysis phase is over. In analysis, we identify attributes and operations of the objects without specifying their types or their parameters.

OO Design

- **System Design**
  - explain how the system is decomposed into subsystems,
  - subsystem responsibilities,
  - dependencies among systems,
  - subsystem mapping to hardware, and
  - major policy decisions such as
    - control flow,
    - access control and
    - data storage.
  - Discuss rationale for choosing your design. Why did you choose layering, or partitioning? Is the system design a combination of both?
- **Object Design**
  - In object design, we refine the analysis and system design models by adding type and visibility information.
  - Complete the object descriptions.
  - Complete detailed class diagrams (CRC cards).
  - Class diagrams.
  - Description of all modules and their methods (in pseudo-code).

- **Discuss cohesion and coupling between subsystems.**

1. **Perform Gane and Sarsen's analysis**
    - This step is done in parallel with the OO Analysis. Explain how performing Gane and Sarsen's analysis affect your OO Analysis, and vice versa.

There are several software to draw UML diagrams such as Rational Rose, Magic Draw, etc. Magic Draw is installed on the department's PCs.

Project Evaluation

Your group will have to decide how to organize itself. If you are very lucky, your tasks will be divided evenly into an equal-size task per person with obvious boundaries between individual tasks. You should note that your group will have to take care of the communication between individually assigned tasks which could be a nontrivial matter. However, it is likely that your group tasks will not be or cannot be divided evenly and that some individual contributes less than others in the same group.

Before beginning work on the project, your group should try as best as you could to write down a document describing how the work will be divided among individual members. Make sure everybody agrees to this. This document should be *signed* and submitted to your instructor. Also, you should put your name on the codes that you write.

Your group should prepare a group statement or peer evaluations but not both.

Group statement

On the due date, your group should submit a *signed* statement describing the contribution of each individual. For example, this group evaluation may say that everybody contributed evenly (you are lucky) or that individual A contributed 10%, individual B contributed 40% and the remaining two individuals contributed 25% each.

Peer evaluations

There may be disagreements on the group statement in which case each member of the group should prepare a peer evaluation of all members in his/her group, and submit this assessment confidentially by email to your instructor (choang@wlu.ca) *three* days after the last due date (Nov 30).

How should you write a peer evaluation? Prepare a paragraph on the contributions of each group member. Try to be as objective as you can. Did they attend all meetings? Was their work done on schedule? Did they take a leadership and/or organizational role? Did they stay late when extra effort as required? Be sure to evaluate yourself as well, and as honestly as you can. Give each member a numerical mark between 1 and 5. A mark of 1 indicates someone who was a disaster. A mark of 5 indicates someone who was exceptionally good, who took leadership role, who did the extra work that others did not.

Your instructor will not take an average of submissions to determine your mark. He will use common sense based on having read all the evaluations. If one evaluation

seems out of line with the others, it will not unduly influence your grade (don't just give yourself a 5 and think your instructor will not notice.)

If all members of your group agree and sign on the group statement then you don't have to prepare the peer evaluations. In this case, everybody in the group will receive the same project marks.