

# CS 3415 Team Project

Fall, 2018

Instructor: Dr. Ruizhong Wei

## General information:

A team project is an important part of the Software Engineering course. Students in this class will be partitioned into teams. Each team should complete the project in this semester following the project time frame. Using theories, principles and methods discussed in classes, each team should deliver a complete, correct, well-structured, and robust project by Thursday November 22th. During the semester, each team also needs to give presentations of the project in the class (time TBA). Because this project is a team work and it will last for one term, every member should keep working on it and learn how to collaborate with your teammates.

## Team activities

We will use the evolutionary process model (incremental model) for the team project. The following activities are not sequential activities of the team. We will discuss team project weekly activities in classes.

- Outline of the project.
- Project requirements development which includes
  - domain analysis;
  - requirements gathering;
  - requirement analysis;
  - requirement reviewing;
  - requirement documents typing; etc.

The techniques discussed in the class should be used.

- Project designing which includes
  - architectural design;
  - modelling design;
  - user-centred design and possible pattern usage;
  - modelling interactions and behaviour;
  - user interface design;
  - detailed design documents typing; etc.

Theories discussed in classes and UML techniques should be comprehensively used during the whole designing procedure.

- Implementation and testing: Since we will use the evolutionary model, the implemented software is not the final version. Each team can consider to implement several versions of the system.
- Weekly team meetings. Each team should set up a meeting day every week. You can use the course lab time and room, but team members also can set up other time. Each team should have a team leader. The team can elect a team leader or let each member of the team be a leader in turns. Each team meeting should have meeting records. Communications between team members regarding the team project can also be included to the record.
- Individual records. Each student should record her/his work or activities for the team project for each week. This record can be used to determine the distribution of the marks of the team project.

All the documents should be nicely arranged and assembled with all the attachments as appendix. If you have any questions or problems, the instructor is ready to help. However, the project is a timely issues. If some step was not finished on time, then whole project will be difficult to complete.

Effective human collaboration is always a challenge. The team project gives you a chance to learn and practise interpersonal communications, leadership, collaboration, organization, and help each others.

#### **Hand in:**

Each team should hand in the followings before the deadline:

- Project report which is proved by all the team members.
- All the documents related to the project.
- Weekly team meeting records and personal records.
- Any other materials which show the team's work.
- Percentage of credit for each member of the team.

Each student should hand in a report including:

- A record of your role and activities in the team project.
- A summary of your team project in your opinion: best part of the project, insufficient or inadequate of the project, etc.
- Any other comments about the project.

**Grade:**

The highest mark for a project is 20 multiply the number of members of the project team. The grade a student obtained is his/her credit percentage multiply his/her team's project mark (but the highest grade will be no more than 20). The individual report will be counted as one assignment.

**Proposed topic:**

The following is a brief description of proposed projects. Details will be followed. In fact, requirement analysis of a project is one of the important topics in this course. A team needs to find out the requirements of the project in the following weeks. Note that the description of the projects is purposely simple and incomplete.

Each team should choose one of the following projects:

**Project 1: *A Residence Registration Automation System:***

Accommodations at the Lakehead University Thunder Bay Campus currently are divided into three primary living styles: residence halls, apartments and townhouses. Each style provides a unique environment that allows you to experience freedom while receiving the academic and social support that you need to be successful. The residence halls have double, basic single, and single rooms and come with the convenience of a full meal plan. The apartment and townhouse accommodations are reserved for upper-year students. Now your team is asked to develop a registration automation system to manage these accommodations. Using the system

- A new student should be able to find out on campus housing information, detailed available rooms, cost and other information to help her/him to decide what accommodation best fit her/him.
- A student can use this automation system to request, be approved and register in a suitable room of the on campus residents.
- A resident should be able to submit notes and requirements, such as special requirement, need to repair some device etc.
- Mobile devices are supposed to be used for the system.
- A manager should be able to monitor the residence system and manually correct any possible errors.
- A manager should be able to use the system to maintain all the facilities of the Residence. For examples, replace or add facilities, schedule some maintenance activities, add or delete rooms and buildings, etc.
- A manager should be easily find out information for each room of the residence, such as what kind devices provided in the room, who is living in the room and the duration, etc. The manager can also put notifications, advertise activities etc.
- Other useful facilities and functions for housing management.

*Project 2: Fight with aliens (computer game):*

This is a computer game. Suppose some aliens from a unknown galaxy come to the earth. They want to harvest of our planet's resources. The player of the game needs to arrange people fight with the aliens and protect the earth. The aliens need to get the resources from the earth to maintain their life. When they are fighting, they cannot obtain resource. During the fighting, their strength will reduced, but their strength increase when they get resources. There are different resources on the earth: some places have powerful rich resources, other places have weaker resources. In general, the people in earth has less strength than aliens. Anyone used out all of the strength will die.

- In the beginning of the game, the aliens will be set up by the player, which include: the number of aliens, the strength of the aliens, the lifetime of the alien if it cannot get resources, etc.
- There are more people than aliens. People can fight with the aliens and move powerful resources. But in the beginning the strength of people is less than that of an alien.
- The alien cannot move the resources, but it can consume the resource for their strength.
- The aliens are controlled by the computer, but people are controlled by the player.
- The purpose of the player is to eliminate all the aliens with less costs.

*Project 3: Telemedicine system for remote residents:*

There are many remote residents around Thunder Bay, who will be difficult to get medication from the Thunder Bay Regional Hospital. The hospital needs a system to take care of these remote residents.

- A remote resident can register this system and upload her/his health information.
- The system can automatically upload real time health information obtained from sensors or other medical devices when the remote resident uses this system.
- By permission, a doctor can access residents' health information.
- The doctor can give instructions about medicare to the remote resident through the system.
- In case the remote resident needs emergency care, the system alarm the hospital immediately.
- The system will keep the privacy and security for all of the medical information.

## CS 3415 Team Project schedule

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Week	Activity
1	Project description
2	Requirement analysis
3	Requirement document
4	System design for first version
5	System design Document
6	Implementation for the first version
7	Testing the first version of the system
8	Complete the first version of the system
9	Requirement analysis for incremental
10	Design and implementation second version
11	Project report document

Presentations for team project:

- Presentation for requirements and design: third Tuesday in October.
- Presentation for first version of the system: second Thursday in November.
- Presentation for the second version of the system: last week in November.