COSC/ITEC 3506 Projects

General

A major component of the course is a software development project, which you will be required to work on throughout the course. The aim of the project is to let you experience several facets of software engineering that will help you appreciate the topics covered in COSC3506/ITEC3506, and will hopefully help you to participate effectively in real-world projects in the future.

For this purpose, during the first two modules of the course, we will form project teams with 4 members. During the semester, the project team will work together through the full development cycle from understanding the requirements to delivering a functioning product and making a presentation of your work to the "client".

In the following sections, you will find information about starting up your project, the software engineering environment as well as the project assessment scheme.

Starting up the project

The first thing to do is to read the project descriptions at the end of this document and select your preferred project(s). During the first two modules, you will be assigned to a team and a project. The information you provide will greatly assist us in forming project teams and assigning them to projects. Despite all the efforts, however, there is no guarantee that you will get your most preferred project or people to work with.

A member from each team will be appointed *contact person*. They will initially make contact with the instructor. The team may choose to have a democratic organization, but they should still have a formal contact person. You can also choose a team leader. The list of teams along with their assigned contact people and projects will be posted on the web.

It is important that you *start working on your project as early as possible*. Delays, even at the start, can cause problems when deadlines approach.

Project Meetings

You are **required** to hold semi-weekly team meetings. This is where you discuss managerial and technical issues, conduct reviews and so on. The team leader or the contact person should prepare an agenda before the meeting, chair the meeting, arrange someone taking minutes, and should circulate the minutes after the meeting.

The main lab area is generally *not to be used for project meetings* unless they involve only 2-3 people who can discuss things without disturbing other students there.

Projects

The projects will only concern with **Classic** stream using a traditional, document-based **waterfall** methodology.

As part of the project work, each team *must* produce and hand in the following documents by the given dates. These deadlines must be kept strictly (there is simply not enough time to catch up later if you get behind schedule, and the completion of the project will be in danger).

Document name	Deadline -> Refer LMS
D1 Project Plan (do not hand in)	XXX
D2: Requirements and specification	XXX
D3: Architecture and User Interface Design	XXX
D4: Detailed Design	XXX
D5: Implementation	XXX
D6: Testing	XXX

Each document is to have an editor who has the final responsibility for turning in the document, sets deadlines for what the other members are to write, and may have to apply pressure on the other team members to do their part. Each team should prepare for a binder.

Assessment of project

As software development is rarely an individual effort these days, you have to learn the basic skills of working in teams in order to participate successfully in real software engineering projects. We attempt to create an environment that reflects real-life situations to a large extent as well as stimulates cooperation among team members. While software development is a team effort, we also want to acknowledge the fact that individual differences do exist.

As mentioned in the syllabus, a significant part of your final grade comes from your project mark. The project mark has two components: the group mark and the individual modifier. The group mark is how well the project went overall, and will be made up from marks for the individual documents and other related items. Each time when a report is handed in, a Time Recording Log sheet, Project Time/Effort Summary for each team member should be included.

Components	Weight
Project Plan (D1)	00%
Requirements and specification (D2)	15%
User Interface Design (D3)	05%
Detailed design (D4)	25%
Deliverable (D5)	40%
Testing (D6)	10%
Progress presentation	05%

Note: As group project work is a one single assessment (however, required to be submitted in multiple parts) would be evaluated as per the above weight-age as a single assessment at the end of the term.

Technical environment

Projects will be implemented using C++/Java for Windows.

Project Progress Presentation and Final Demonstration

There will be one project progress presentation and one final demonstration. The progress presentation will be hold in XXX, which worth 5% of your project. Towards the last week (probably during the last week, but possibly earlier), each team will demonstrate the program they have developed to the "client(s)". These should be geared towards "selling" the product. These presentations not only are assessed, but also the products on which they are based will be assessed.

Project Descriptions

Project 1：Traffic Citation and Reporting System

Some governmental agency at the provincial level has the responsibility for assembling state-wide information about traffic citations and disseminating it upon request by an appropriate agency such as a sheriff's office or the highway patrol. This same agency also maintains information about vehicles licensed and registered within the province. When an officer makes a traffic stop, s/he wants to be able to ask a dispatcher to query the central agency to determine the status of a vehicle (for instance, registered? stolen? wanted for some reason?), the status of the driver (license suspended? revoked? outstanding warrants?), and the driving record of a particular driver.

A governmental agency at some local level is involved in peace-keeping efforts which include jurisdiction over traffic codes. Therefore, officers of this agency can issue citations for parking violations (issued to a particular vehicle), moving vehicle code violations (issued to a particular driver), moving vehicle code warnings (issued to a particular driver), fix-it tickets (issued to a vehicle), etc. This agency needs to be able to report the number and category of citations issued by a particular officer in a particular time period, the names of individuals for whom arrest warrants are in effect because they have not paid their citation fine or been found innocent of the violation, the license numbers of vehicles with outstanding (unpaid) parking or fix-it tickets, and similar related information. This agency also reports moving vehicle citations to the state agency,

and also reports warrants for particular vehicles (for instance, for unpaid parking fines, for being reported stolen, for being reported involved in the commission of some crime, etc.)

Sometimes, in addition to paying a fine for a moving vehicle violation, an offender can pay to attend traffic school, which has the effect of preventing the reporting of the citation to the central agency. Traffic school requires that an offender attend eight hours, which can be scheduled for an eight-hour day, or four two-hour periods in the evening, or any other way the agency chooses to schedule the sessions. If an individual chooses to attend traffic school, s/he must register for a particular session and attend the entirety of that session, however it is scheduled, in order for his/her citation to be non-reported.

Project 2: Local Area Network Office Messaging System:

Design an office messaging system, like a compact messenger system, which will allow staff members to send messages to each other that can be retained, deleted, archived, and organized by both the sender and receiver. The system can function on a peer-to-peer basis, or through a centralized message server. It will utilize the office LAN – ensuring that messages do not leave the office environment. Individuals can be assigned to one or more groups, allowing messages to be sent to a single individual, several individuals, one or more groups, or broadcast to the entire office.

As a minimum, the messaging system should provide the following features:

- Identify all members of the messaging system
- Indicate the status of each member (ie. Offline or Connected)
- Ability of the user to set individual status (ie, online, away, busy, etc…)
- Provide a facility for the creation of short messages (you must decide on the feasible size)
- Display a pop-up message to recipient upon arrival of message
- Store all incoming messages in message Inbox.
- Store copies of all sent messages
- Once read, messages can be retained or removed from the Inbox.
- Backup and restore capabilities

Some additional features of the system which should be considered in it design might be:

- Sound notification option when a new message arrives
- More advanced status settings such as: Online, Busy, Out to Lunch, On the Phone, Away from Desk
- Deferred messaging to offline users that will be delivered when the recipient comes online.
- Creation of groups to which users can be assigned to facilitate group messaging
- Office wide message broadcasting that can be directed to all users or just users online.
- Out-of-Office return messages providing details such as “at meeting ABC until…”
- Long-term message archive where messages are removed from the primary storage to a secondary archive for long-term storage
- Categorization of messages based on Projects, Clients, or other Users.

Please note: this is not intended to be a chat system but rather a short message delivery system. In an office, chatting can be more efficiently handled using the office phone system or simply

meeting at the water cooler.

Project 3：COSC Club Event Management System

An application that allows the COSC Club Management Team (CCMT) to perform and track all the tasks and functions necessary to meet their responsibilities as the governing body of undergraduate students. CCMT will be able to create events, manage membership, and get up to the minute financial information for their club. The system will be able to advertise events via email and provide tracking for event attendance and expenditures. The application will allow the CCMT to create reports detailing club and event activity to assist in their interactions with the department for budgeting concerns.

The scope of this project will be to provide a system that allows the CCMT to:

1. manage undergraduate clubs
2. manage undergraduate events
3. manage financial transactions of these undergraduate clubs
4. manage system users

You can think additional functionalities and add them to the list.

Project 4：Employment Application Review System

EARS is an intranet-based Employment Application Review System for the Department of Math and Computer Science in Algoma University. The system is designed so that department faculty members can review applicants and collaborate asynchronously in order to find the best applicant for a given job opening. This system reduces the overhead of the process and lightens the workload for the search chairperson.

The scope of this project will be to provide a system that allows the CCMT to:

1. log-in EARS system
2. manage system users (add new accounts)
3. add a new faculty search (committee chair, members, position, search starting date and ending date, add new committee members)
4. List and review applications (view profile, post comments on applicants, change applicants' statues, perform a faculty review, assign faculty review)
5. set account's settings (email, name, title, password)