



SENG 637 - Dependability, Reliability and Testing of Software Systems

Suggested Project List

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Below is a list of suggested projects for SENG 637. This list may be used as a reference or as the last choice. You are encouraged to bring and define your own project.

1) Transit tracking system

Description: Calgary's Transit System can help a lot of student's from freezing out in the winter. Currently the website has a scheduling system that probably works out of a database backend and shows the timings of a bus at different stops. Your job is to write an application that will give "real time data" as to where the bus is at any given time. It would be nice if the program could be intelligent enough to know how long it takes the bus to reach from one stop to another given past experiences.

2) Gas price tracker

Description: With the high gas prices a lot of websites are posting gas prices across Calgary. These prices are basically entered by individual users. When a user goes to such a website the site lists the highest and lowest 10 prices of the day. However this does not say much. Users want to know how much they are saving. If the user has to drive 30 km to get the lowest price it may or may not be worth it. It would be very helpful if the user could get a more intelligent answer as to how much will he/she will save going to that gas station from the user's origin.

3) Document management system

Description: Executives in companies share a lot of documents. Documents that were written and viewed years ago sometimes need to come alive when someone needs to view it. Generally the practice is to keep these documents on a share drive on the network. However when documents are saved in the same place and the share drive grows, the task of browsing through all the documents one by one is a very hard one. It would save executives a lot of agony if they could somehow search for documents. Keep in mind the possibility of overwriting of files by different users.

4) Course management system for students

Description: Some students are not sure whether or not they can handle a certain course load given their schedule and other commitments. Generally when they sign up for courses all it says is when the course is and how long it lasts and whether or not it conflicts with other courses that he/she is signed up for. It would help if the application is intelligent enough to make suggestion as to whether a certain course load

will be difficult, easy, impossible etc. A lot of factors can be considered. It is up to the creative programmer to decide which factors should be used and what kind of information should be presented to the user.

5) Hotel reservation system

Description: Write a specification for a hotel booking system which keeps track of current guests, available rooms, future bookings and payment of accounts. Include a part for room service orders which keeps track of the orders, bills them to the appropriate room, and will show the total sales for a given period.

6) Hospital

Description: Write a specification to manage a hospital system. There will be a waiting list of patients needing different treatment e.g. surgical, medical. The bed state should be determined and if beds are available, the next appropriate patients on the list notified. Nurses should be allocated to wards depending on ward sizes, what type of nursing is needed, operating schedules etc.

7) Library

Description: Write a specification to organize the lending of library books. Only so many may be borrowed, and if a user has the maximum one must be returned before another is borrowed. Books are subject to recall. The librarian will have special borrowing privileges. There may be several copies of a particular book on the shelf, or they may all be out on loan.

8) Online registration system

Description: Write a specification for an online registration system in which students could add courses, drop courses, view their courses, view all courses, look up their grades for courses, etc. Teachers could view the students in their courses, and assign grades online. Administrators could create, read, update and delete course info, including assigning teachers to courses, assigning courses to classrooms, etc. The system could have some intelligence, such as denying registration to students with unpaid fees, doing prerequisite checks, etc.

9) Realtor system

Description: Write a specification for a system to manage a real estate catalogue. It should keep track of properties with their amenities, selling price or rental etc, and be able to be queried by potential customers with different priorities. Take into account constraints on the property such as offers made, terms and conditions, etc.

10) Electronic shop

Description: Write a specification for an electronic shop that allows several vendors set it up and sell their goods to several customers on the Web.

11) Software Design documents management system

Description: Write a specification for a software design documentation repository system for saving several forms of documents from various phases of a software development project and indexing them for future use, using data-centered structure. The documents may be either unstructured (pure text) or structured (Word, PDF, Excel, etc.). The system should answer to queries from users via intranet.

12) Other

Define your own project. Consult with course instructor regarding the depth and scope of the project and obtain approval.