13 May. 2015

Chapt. 1 SENG 422 TA Lab Log Progress Report

TA: Philip B. Alipour

General Log and Notes:

- Session Started at 4PM. The formal duration is 4 to 6:50PM.
- Due to Lab tutorial and introductory session for certain formalities involving students and the TA (me), we finished at 7PM.
- Total of 10 Students were present, 1 absent.
- It was attempted to make sure that the students learned the fundamentals of how to design their system with a freedom of choice in its logic and apply it for the project requirements as well as the upscale growth of the design based on that choice.
- The overall marks shall be finalized for 35% contributing to the three parts of the project as specified in the LSCS document and the intro slide which also summarizes the project in a nutshell. **Design patterns** shall be introduced in the next lab session.
- All points have been highlighted in terms of choice of programming languages and UML tools in order to present their architecture and logic in a flexible manner as far as OOP terms and standards are met during the development phase of their project.
- The emphasis is on the architecture, software quality attributes, conflicts, pros and cons prior to implementation.

Notes for the Attending Students on the last and forthcoming lab sessions:

1- For your project, the deadlines and deliverables have been clarified. For the first deliverable, on top of use case diagrams (see Sec. 4.1 of the LSCS document), please include a **sequence diagram** for the relevant actors involved with tasks as assigned and allocated within the system flow and implementation. This is a requirement that I ask of you in order for me to compare with the evolved architecture once you develop it against the primitive version which is currently your foundation working plan.

2- In your design it is expected to see that you have clearly established and distinguished between **actors** and their responsibilities, classes (**abstract class**, **superclass**, **polymorphic class**, etc.), **system**(s) and their **decomposition** in terms of **functional components (I/Os)**, **subsystems**, their **relationships** within explicit **timeframes** and **borders** (**data flow component** and **task management**).

There were several other points we have touched upon and discussed on the project which require further attention and clarification as you progress in establishing the **logic** behind your system design and development:

1- Defining the two main stakeholders in the project relevant to your design is crucial: The system overview description in the LSCS document, sec. 1.3, clearly states who/what as an intelligent system/agent collects data (**surveyor**) and who will be in charge of creating and reviewing a checklist, the **manager** (as well as further use by surveyors, sec. 3.2). In addition, user and/or all stakeholders have different data layers (types) as information which must be tracked associated with a specific data report e.g., weather report according to the GSI standards. (So, please establish the actors' relationships, whether direct or indirect, within the system or between systems (as discussed).)

2- This is a "data validation" layer between the report's specific content (is it of a GSI type, relevant user ID in case of security login check etc. or something irrelevant), with/without historical data and display information from external services(other online DBs) when a checklist is created (sec. 4.3 on the implementation). So I expect this to be part of your demo when IDs are checked and the rightly so reports/maps displayed from one user case to another. Also, logging the date and other necessary info on record.

3- Concurrent updates between surveyor reports (**data**) and other report submissions by other surveyors is a future challenge as given in sec. 3.6.

4- What I kept emphasizing is **the way data is submitted and interpreted (parsed) in terms of information**, **fictional** or **non-fictional**, when it comes to **functions** relative to **system performance** (data processes and task time management) in **conflict** with other **software quality requirements**, this conflict becomes visible and easy to test to see how difficult data is being managed by the system, especially when the system scales up and expands in terms of e.g. n=n+1-stakeholders.

5- If the system is designed to be **intelligent** (as an **IDSS solution** http://en.wikipedia.org/wiki/Intelligent decision support system) on the **surveyor part** (the integration of an AI agent) as well as perhaps other actors accessing the new system, would be a **future enhancement**, sec 3.6., as a solution to your project which I have exemplified (just think about it)… You can show or display a scenario and elaborate how data is gathered, **uncertainties** addressed against a **worst case scenario** for bonus marks, and thereby delivered to the new system where data is managed in terms of CRUD from a database i.e. "**a related data type to be check-listed by the manager and reviewed by the surveyor**" secs. 1.2. – 1.3

6- The previous point is part of your system architecture where you may hypothesize how this system will become in future runs as the number of people, redundant components, etc. increases proportional to system performance in terms of data management, allocation and other relevant issues to your scalable architecture.

7- All actors, users/surveyor(s) and manager(s) must be defined and then see how they fit into the **dependability** relative to **scalability** aspect (software quality attributes) of your architecture (see secs. 3.5-3.6)

You and your project shall be evaluated based on the previous points and of course, project requirements within the given criteria as well as bonus marks according to the level of implementation and system performance.

Have a productive week,

Philip

==========

Philip B. Alipour,
Ph.D. Candidate in Electrical, Computer Engineering and Quantum Physics,
Dept. of Electrical and Computer Engineering, University of Victoria, V8W 3P6, Canada
Office: ELW Room # A358,
Homepage: http://web.uvic.ca/~phibal12/