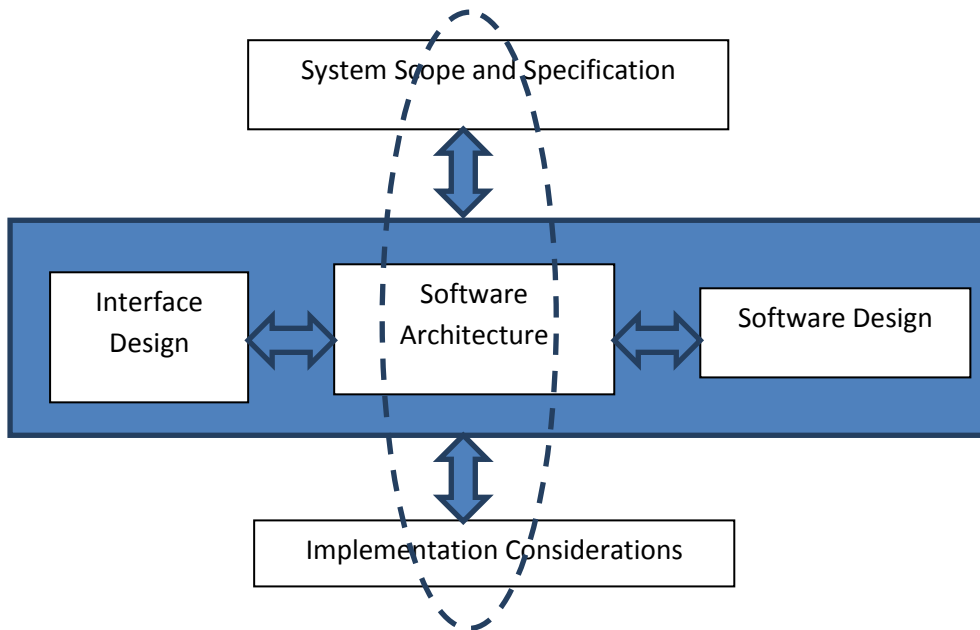# SENG2021 Design Report 1 – Week 5

Purpose of report

The report is the first step towards developing your design. The figure below show the structure of the final report that needs to be delivered in week 12:

Scope of report

The scope of the first design report is indicated by the dashed line. It is about defining the initial system scope and specification, the software architecture and deciding on the key implementation technologies to be used.

Design choices can be modified but it is important that all information in a report to be consistent and reflecting the team's progress at that time. There is a lot of freedom in choosing how to express different parts of your design as long as the resulting models are clear and consistent with existing practices. If in doubt, consult your mentor for advice.

The expectations for each section in this report are now elaborated in more detail.

System Scope and Specification

The requirements given at this stage are very wide and general. Each team must discuss the following:

- Selecting the theme: given the timetable constraints, what theme will the team select that is both interesting yet feasible ? Read and analyse the requirements document well and decide what the team will do. More importantly, what is it that the team will not do.
- Use cases: the team must answer the question of how the system will appear to the user ? What are the functions that a user will be able to perform ? Again this has to be realistic given the short time frame available. Don't be over-ambitious. Always start with something

small and then possibly extend later. Decide how you will document your use cases (using UML Use Case notation, Scrum Stories or just plain English for now).

- System functions: elaborate on some of the key system functions. Again you can use something like a formal notation (e.g. B), intuitive diagrams or English. Try give examples if possible.

You are encouraged to show/discuss these aspects during the mentoring sessions.

Software Architecture

Given the current specification of what the team has decided to do, what would be the resulting software architecture ? The software architecture elements are:

- Software components: the major software components that comprise your solution. These will include both components that need to be developed and third party components (e.g. web browser).
- Relationships between components: how components communicate with each other ?
- Deployment: which component is deployed on which machine

A software architecture is likely to be no more than a simple annotated diagram at this stage. Take time to look at some documented software architectures if you want to see how architectures are usually expressed.

Implementation Considerations

Teams must make important decisions that will affect implementation:

- The choice of an implementation/technology or framework: teams must decide now on a suitable language or combination of languages to implement a prototype. This will be decided by the software architecture but at the same time affects the architecture.
- Relating choices to components: decide which language should be used for which component of the software architecture.
- The choice of a platform: decide on machine or machines requirements (Linux, Windows etc.) for the final system

Submission information

The report is meant to be a working document so it is expected that some information will be incomplete at this stage. 4-5 pages should be enough.

Each group must submit the report Friday Week 5 at 5pm. The report must be packaged under one file called report1.zip (max size 4Mb) and submitted by email to Wilhelm Eek (richard.eek@gmail.com).