SC-T-303-HUGB - Software Engineering

Overview & Sprint 1

Reykjavik University January 17, 2022

1 Introduction

During the Software Engineering course in the Fall 2021 term, you will develop a software system in a group of students. The focus of the project is on using a specified process throughout the project duration, and to use systematic software engineering practices.

Due to the short course duration, the project covers some parts of software engineering more than others. Specifically, we will use an agile process, close to Scrum, and write substantial unit tests for our code. In addition, the first sprint will have a focus on requirements and modelling, while later sprints will have elements of implementation, software architecture and design.

Since it is likely that you interact with people you do not know, we will be following a code of conduct in this project. As a first step, read the Code of Conduct: https://tinyurl.com/yx9du4wo.

The rest of this document describe the process we will be following in Section 2, the overall project domain in Section 3, and finally the concrete requirements for the first sprint in Section 4.

2 Process

You will follow a process similar to Scrum, dividing the work into five iterations, so-called Sprints. Each sprint is 2-weeks long, starting with the first sprint on 24th/25th/26th August (depending on your section), during the first lab session.

Since we have not covered Scrum until the middle of the first sprint, the process in Sprint 1 is not as strict as later on. From Sprint 2 on, we will however have a fixed way of working. This will be described in the Sprint 2 description. Throughout the project, your TA will serve as a Product Owner (PO). That is, she/he is your **client** and has final decision power over what will be implemented.

The weekly Lab/Dæmatímar slots will be used to meet your TA/PO. At the beginning of each sprint, you will do planning together with the TA. After each sprint, you will discuss your reflections and plan for the coming sprint with the TA during the Lab session. Make sure to prepare, so that you cover all relevant information during your meeting.

3 Project Domain

All groups will use the same topic. We are creating a new Hospital Management System to support different operations in and surrounding a hospital. Data, such as patient records, are critical, so important quality attributes for the system are, e.g., reliability, security and scalability. Another team (the

instructors) is writing the frontend, which you will work with from Sprint 2 on. You will have the task to develop the business logic, or backend, for the system.

Hospitals are very complicated systems with a large variety of stakeholders and processes (activities that are done in a defined number of steps). We will mainly focus on keeping track of doctors, nurses, adminstrator/receptionist users, interaction with pharmacies and administration of the hospital itself.

You are free to decide how things are implemented and you will decide together with your TA what features or functionality is most important. However, you should not expect the TA to give you the list of functions to focus on. Instead, it is part of your task to brainstorm and come up with potential user stories for a variety of tasks surrounding the hospital domain.

Documentation is a very important part of the system as well, since it is expected to be evolved and maintained over a long period of time, potentially by other developers.

4 Sprint 1

The first sprint takes the role of a planning sprint, intended to give the group an overview of the project and some time to start up the work. No implementation will take place during the first sprint, unless individual group members want to experiment with the technology (e.g., try out WebSockets[1]).

The first sprint has the following deliverables. We will describe them in more detail in the following.

1. GitLab repository
2. Project overview report
3. Product Backlog on GitLab

[1] https://websockets.readthedocs.io/en/stable/index.html

4. Decision Protocol

US1: As a TA, I want to have access to a GitLab repository, so that I can quickly access the groups' documents and planning items, assess the progress, and see the contributions of individual group members.

First, you need to set up a **repository** on GitLab. The repository has to be named **HUGB_21_G_[groupNumber]**, where **groupNumber** is the number assigned to your group. The repository has to be set to private. Include all your group members, all course TAs, and the instructor[2]. We need at least Reporter permissions. Each repository has a src folder (where all the source code will be placed), and a docs folder (where notes and protocols will be placed, sorted by sprint). For Product and Sprint backlog, we will be using GitLab's inbuilt issue tracker and boards feature. Some details on this will be explained in the Monday live stream.

You can fork the sample project that already contains the relevant folder structure. It is placed at https://gitlab.com/grischal/hugb2020template.

In order for the work in groups to be successful and to avoid conflicts, there are a few rules that we will use regarding the usage of git. They are:

1. Never push directly to main/master. Instead, use your own branches and create merge requests when ready.
2. Never merge with conflicts. Resolve the conflicts before merging.
3. Always review merge requests carefully.
4. Always assign yourself to a task and do not remove someone from a task without their approval or discussion.
5. The Scrum master takes responsibility for organizing the sprints.

[2] GitLab user names: grischal, shaliniHM, FridrikOG, birtaot, ballioli, sunnarun, sarablondal

US2: As a customer, I want to get a short overview of what the developers are envisioning, so that I can discuss with them in which direction to develop the intended system.

The second deliverable is to write a short **project overview** document, a textual document (with pictures/diagrams as needed) in which you sketch the system in its context. In this report, answer the following questions:

1. What is part of your system? What is outside?
2. What relevant stakeholders/personas exist?

The report shall further contain a domain model (see Module 03), and a at least two scenarios (see Module 01) that illustrate the use of the system. To arrive at feasible scenarios, you can use regular brainstorming, other elicitation techniques covered in Module 01, and anything you have learned in T-216-GHOH. Note that most detailed elicitation techniques (e.g., interviews or observations) will take too much time, so keep it simple.

For this deliverable, it is important to understand that it is mainly up to the group to do the elicitation and brainstorming work. The project scope is intentionally very open, and you need to come up with ideas of what features might or might not be relevant to a hospital information system. You can ask your TA for opinions or input, but you cannot expect them to list you all the possible features.

US3: As a customer, I want to have a product backlog with concrete user stories, so that I can prioritise which ones to develop in which order.

The **product backlog** in your repository shall be filled reflecting your project overview. Create issues on GitLab and assign them to a list called **Open** on your repository. The user stories shall follow the format **As a [persona], I want to [feature], so that**

[benefit], and should relate to your scenarios. Additional explanations or rationales to a user story can be added as comments to the issue.

US4: As a TA, I want to get an overview of decisions, so that I can quickly understand a group's progress.

Finally, we ask you to keep a documentation of your meetings in a **decision protocol**. For Sprint 1, this means documenting all *important* decisions that you made as a group. This document should help us to understand where you are headed, so it does not need to be excessive.

Submission and Assessment

Sprint 1 deadline: 6th September for H2, 7th September for H1/Akureyri, 8th September for HMV, 23:59

For each sprint, there is a group and an individual part. For the group work, we look at the main/master branch of your GitLab repository only, considering the latest state before the deadline. It is your responsibility as a group to make sure all relevant files are committed on time. **Any late commits will be ignored.**

The individual part is submitted through Canvas (assignments are named by Sprint). It consists of a peer assessment of all group members (including yourself). If a group member forgets submitting this part, his/her view is not taken into account - he/she effectively loses the chance to raise concerns regarding team work.

For assessment, please carefully read the rubric that is published together with this assignment.