

Project Description

# Scrum-Up!

Students

Florin Bordei

Jaume Lopez

David Le

Supervisors

Joseph Chukwudi Okika

Jakob Knop Rasmussen

Software Technology Engineering

3rd semester

18/9/2019

Table of Contents

[Background description 3](#_Toc20922324)

[Problem statement 3](#_Toc20922325)

[Definition of Purpose 3](#_Toc20922326)

[Main question 4](#_Toc20922327)

[Sub-questions 4](#_Toc20922328)

[Delimitation 4](#_Toc20922329)

[Methodology 4](#_Toc20922330)

[Time schedule 5](#_Toc20922331)

[Risk assessment 5](#_Toc20922332)

[Sources of information 7](#_Toc20922333)

# Background description

The Danish educational system encourages the use of the PBL approach to learning, as it helps students to make a deeper integration of theoretical and practical learnings. At the same time, it supports collaborative learning and helps the students to become more motivated and independent learners with a deeper subject understanding.

VIA University College is also using this learning approach inside of the course named “Semester Project” that is taught every semester. Each semester involves unique methods and requirements to be fulfilled by the students. Therefore, the students must identify a problem on which they are going to work collaboratively to find a solution using certain methods and frameworks.

As a result, the software engineer students are required to develop a software solution system for a given or identified problem. In this process, it is required to use certain development methodologies and frameworks.

Starting with the first semester, students apply the Waterfall model, that comes with certain limitations. Most significant limitations include high amount of risk, long waiting time for running software, inability of changes.

Starting with the second semester, students are introduced to new methodologies and frameworks, that they can apply in their new Semester Project. As an alternative to Waterfall Model, the students are required to use Unified Process, that is popular iterative development process for building object-oriented systems. As mentioned earlier, UP overcomes the limitations of the Waterfall Model by being able to deliver running parts of the system through its iterations. Each iteration includes its own requirements analysis, design, implementation, and testing activities.

Alongside the UP, students are also required to use SCRUM framework, which addresses complex adaptive problems, while productively and creatively delivering products of the highest possible value. The framework consists of Scrum Teams and their associated roles, events, artifacts and rules. Each component within the framework servers a specific purpose and is essential to Scrum’s success and usage. The rules of Scrum bind together the roles, events, and artifacts, governing the relationships and interaction between them.

The Scrum Team consists of a Product Owner, the Development Team, and a Scrum Master. The Product Owner is responsible for maximizing the value of the product resulting from work of the Development Team. The Development Team consists of professionals who do the work of delivering a potentially releasable increment of “Done” product at the end of each Sprint. The Scrum Master facilitates the implementation of Scrum framework and is a servant-leader for the Scrum Team. Scrum Teams are self-organizing and cross-functional. The teams deliver products iteratively and incrementally, maximizing opportunities for feedback, incremental deliveries of “Done” product ensure a potentially useful version of working product is always available.

The heart of Scrum is a Sprint, a time-box of one month or less during which a “Done”, useable, and potentially releasable product Increment is created. Sprints have consistent durations throughout a development effort. A new Sprint starts immediately after the conclusion of the previous Sprint. Sprints contain and consist of the Sprint Planning, Daily Scrums, the development work, the Sprint Review, and the Sprint Retrospective.

Artifacts defined by Scrum are specifically designed to maximize transparency of key information so that everybody has the same understanding of the artifact. The Product Backlog is an ordered list of everything that is known to be needed in the product. It is the single source of requirements for any changes to be made to the product. The Sprint Backlog is the set of Product Backlog items selected for the Sprint, plus a plan for delivering the product Increment and realizing the Sprint Goal. The Scrum Burndown Chart is a visual measurement tool that shows the completed work per day against the projected rate of completion for the current project release. Its purpose is to enable that the project is on the track to deliver the expected solution within the desired schedule.

Even though the Scrum and UP are simple to understand, it is difficult to master and fully implement them as it has been observed from previous second semester students.

Regarding Scrum, initiating and managing the artifacts causes misunderstandings among the students as there are not many templates available. Additionally, there are issues in storing artifacts in a logical manner. For example, in the Sprint Backlog the students omit the assigning the responsibility of a user story to one of the member’s group and breaking down the user story into multiple tasks with their specific story points. Consequently, if the user story was not broken down into tasks, the Product Backlogs’ user story points will not be successfully updated, this situation includes also Burndown chart. Another issue the students are facing while using the Scrum framework is that they are not properly following the order of events and a lack of a clear overview regarding the issues that have been reported in each meeting. Because of a badly stored and managed data, it is difficult to extract required documentations for the Project and Process Reports. In some cases, it has been noticed a lack of communication from the student’s side towards their supervisors and this has created situations, where the supervisors were not aware of the lack of progress.

Regarding UP, the biggest challenge faced by the students is a rush to code instead of following strictly UP model. That is a consequence of misunderstanding UP model, but also a lack of task management. To help the reader to understand better, in each iteration (Sprint) the selected user stories are being considered as “Done” once the following have been completed: Analysis, Design, Implementation, Testing, Deployment.

# Problem statement

## 

The software engineer students of the second semester are facing challenges as they are new adaptors of Scrum and UP frameworks. The consequence is that students are not fully productive in their first Sprints.

## Main question

* What kind of integrated system students need, and which parts of the SCRUM process this system can manage?

## Sub-questions

* What data needs to be stored, and how?
* What kind of data analyses the system needs to perform?
* What kind of data report should the system generate?
* Who can manipulate specific data?

# Definition of Purpose

The purpose is to create a system that will help provide students with guidance through the SCRUM process from inception to delivery with the aim of learning outcome of Scrum and UP frameworks for the students.

# Delimitation

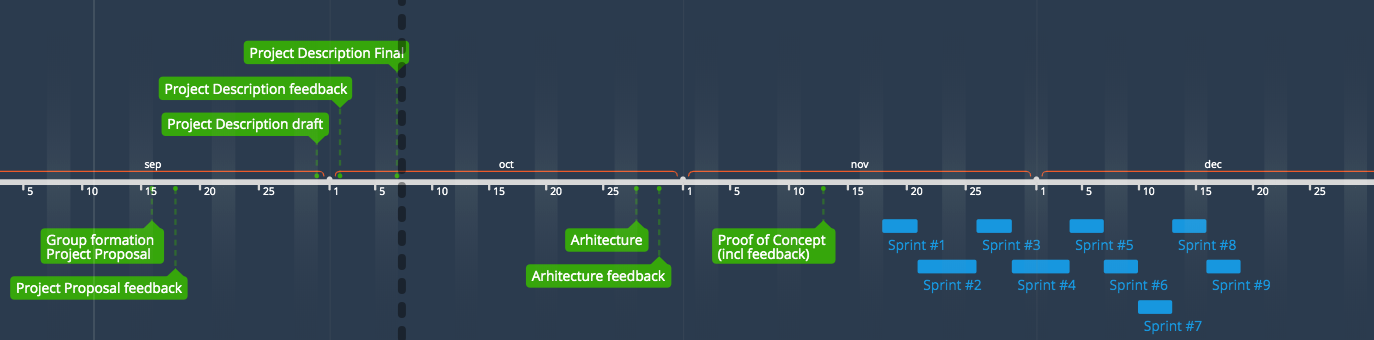
# Methodology

During this project, the team will use the SCRUM framework to develop the program. This means that the work will be split into segments of three workdays, called a sprint, in which the team will focus on creating certain features of the program. After each sprint, the team will review what has and has not been done and re-evaluate the progress. The team will then decide on which features to focus on in the next sprint and this is repeated until the program is finished.

In each sprint, the team will use the rational unified process to design and implement each feature, to ensure that the feature fits the requirements laid out and make cooperation easier.

Speaking of cooperation, to handle working in parallel, the team will use Github for sharing files.

# Time schedule



# Risk assessment

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Risks | Description | Likelihood  Scale: 1-5 | Severity Scale: 1-5 | Product of Likelihood and Severity | Risk mitigation | Identifiers | Responsible |
| Risk 1 | Lack of time before hand-in | 4 | 4 | 16 | Respect the time schedule and deadlines | Stressed to meet the deadlines | Florin |
| Risk 2 | Steering off course | 5 | 3 | 15 | Regular meetups to discuss our previous and future work | Misunderstanding short-term and long-term objectives of our project | David |
| Risk 3 | Increasing the complexity of the project | 4 | 4 | 16 | Follow the group decision on the objectives of the project | Workload increasing from normal standards to advanced standards | Florin |
| Risk 4 | Lack of knowledge | 5 | 3 | 15 | Research, study group and meetings with the supervisor | One or more members having problems implementing the solutions | Jaume |
| Risk 5 | Isolating the group from external help (supervisor, librarians or other groups) | 5 | 3 | 15 | Asking for help or advice | Getting stuck in a problem and creating a time debate out of it | All members |
| Risk 6 | Conflicts between group members | 5 | 3 | 15 | Teambuilding activities (breakfast/lunch/ beer meetings) | Time consuming debates about non-project related issues | Florin |
| Risk 7 | Group members missing team meetings | 5 | 3 | 15 | Respect the Thursday Project Day meetings and meetings set by the group | One or more group members missing to communicate and justify their absence | Jaume |
| Risk 8 | Misunderstanding the Scrum framework | 4 | 5 | 20 | Reading the Scrum guide | The tool | David |

# Sources of information

Arlow, J., 2001. Uml And The Unified Process: Practical Object-oriented Analysis And Design. Addison-wesley Professional.

Pries, K. and Quigley, J., 2019. Scrum Project Management. 1st ed. US: CRC Press.Kuada, J. (2012). Research methodology: - A Project Guide for University Students. (1 ed.) Frederiksberg: Society Literature.

https://www.scrumguides.org. 2019. The Scrum Guide. [ONLINE] Available at: https://www.scrumguides.org/docs/scrumguide/v2017/2017-Scrum-Guide-US.pdf. [Accessed 4 October 2019]

https://www.scrum-institute.org. 2019. Burndown Chart. [ONLINE] Available at: https://www.scrum-institute.org/Burndown\_Chart.php. [Accessed 4 October 2019]