DD2480 - Assignment 1 DECIDE - Essence

Group 15:
Christofer Vikström, Ouday Ahmed, Yiming Ju, Oscar Knowles, Elin Liu

January 2023

Contents

1 Way-of-working

1.1 Principles Established

1. Principles and constraints are committed to by the team.
The principles and constraints were formulated and committed to by the team.

2. Principles and constraints are agreed to by the stakeholders.
The stakeholders are both the members of the team and the examiner. All established principles and constraints by the examiner were agreed to by the members of the team.

3. The tool needs of the work and its stakeholders are agreed.
This was established when the groups were formed and the tool needs were identified.

4. A recommendation for the approach to be taken is available.
A recommendation for the approach was given in the form of the instructions for the assignment and lectures in the course DD2480 Software Engineering Fundamentals.

5. The context within which the team will operate is understood.
The context was clearly identified and understood by the team.

6. The constraints that apply to the selection, acquisition, and use of practices and tools are known.
Yes, the constraints were known.

1	2	3	4	5	6
✓	✓	✓	✓	✓	✓

1.2 Foundations Established

1. The key practices and tools that form the foundation of the way-of-working are selected.
During our first meeting we discussed and identified ways-of-working and came up with a set of rules for communication and collaboration.

2. Enough practices for work to start are agreed to by the team.
We created and agreed on backlog of issues to start with the project.

3. All non-negotiable practices and tools have been identified.
Lack of communication, work outside of agreed practices and project scope.

4. The gaps that exist between the practices and tools that are needed and the practices and tools that are available have been analyzed and understood.
Collaboration and tools such as git.

5. The capability gaps that exist between what is needed to execute the desired way of working and the capability levels of the team have been analyzed and understood.
Strengths and skill sets of each individual have been identified and provided information for filling gaps.

6. The selected practices and tools have been integrated to form a usable way-of-working.
An agreement of ways-of-working have been conducted after our initial meeting.

1	2	3	4	5	6
✓	✓	✓	✓	✓	✓

1.3 In Use

1. The practices and tools are being used to do real work.
The practices and tools used in the project amounted to an actual functioning program, which we would consider somewhat real work.

2. The use of the practices and tools selected are regularly inspected.
The usage of tools and practices were regularly inspected using GitHub to track activity and during the group's stand-ups.

3. The practices and tools are being adapted to the team's context.
The chosen practices and tools were selected for their adaptability and were adapted to the context of the project.

4. The use of the practices and tools is supported by the team.
The team was in favor of the selected practices and tools. An established way to use the practices and tools was supported by the team.

5. Procedures are in place to handle feedback on the team's way of working.
One of the primary functions of the stand-ups was to provide helpful feedback. Each pull request on GitHub also had a similar purpose as it allowed people to give feedback when noticeable improvements could be made.

6. The practices and tools support team communication and collaboration.
Some practices were implemented to enable communication and collaboration between team members, such as our chosen communication platform Discord. This allowed the members to do some pair programming.

1	2	3	4	5	6
✓	✓	✓	✓	✓	✓

1.4 In Place

1. The practices and tools are being used by the whole team to perform their work.
By following the established ways-of-work. A framework for task creation was created.

2. All team members have access to the practices and tools required to do their work
By reading the "Meet your group" document written during our first meeting all members have access to our established ways-of-working.

3. The whole team is involved in the inspection and adaptation of the way-of-working.
By frequent stand-ups the whole team can give input on the groups ways-of-working. Additionally reviewing each others commits the team can assure quality of work.

1	2	3
✓	✓	✓

1.5 Working well

1. Team members are making progress as planned by using and adapting the way-of-working to suit their current context.
The team members adapted continuous integration with set milestones, which enabled an easy adaption and usage of the established way-of-working suited for each member's current context.

2. The team naturally applies the practices without thinking about them.
As the project progressed, the practices and frameworks became more natural for the team, making these practices less of a continuous conscious decision/process and more of a natural norm.

3. The tools naturally support the way that the team works.
The tools are supportive of the way the team works.

4. The team continually tunes their use of the practices and tools.
The team members' understanding of the tools and practices was expanded as different challenges within the project arose over time, leading to continuous tuning of said tools and practices.

1	2	3	4
✓	✓	✓	✓

1.6 Retired

1. The team's way of working is no longer being used.
As the project is done and the ways-of-working will be discontinued.

2. Lessons learned are shared for future use.
The team reflect over the practices and ways-of-working during the project time line for future projects.

1	2
✓	✓

2 Alphas

2.1 Customers

2.1.1 Opportunity

The opportunity could be identified as being a part of the examination in the course DD2480 Software Engineering Fundamentals at KTH. The solution needed is the problem description of the assignment, which describes how to create and test a hypothetical anti-ballistic missile system program. The established value is completing the course for the team members and for the examiner it is for the students to achieve the stated intended learning outcomes of the course.

2.1.2 Stakeholders

The project's stakeholders are the team members and the examiner. A hypothetical stakeholder is the potential users of the anti-ballistic missile program.

2.2 Solution

2.2.1 Requirements

The examiner decided that the assignment, with its requirements, was to be produced. The requirements of the project were documented, as well as the mechanisms for managing the requirements. What a successful project would look like was established, which created an understanding of the big picture and potential usage scenarios. The implementation contained enough requirements to be acceptable to the established requirements.

2.2.2 Software System

The architecture of the project was iterated upon, starting at a simple, atomic level but moving towards a better-suited structure as the project progressed. The platforms, technologies, and programming languages were selected based

on the preexisting competencies in the group. The project had functionality and performance tests to ensure that the software was moving in the correct direction. Key architectural characteristics could be clearly demonstrated and approved during the lab presentation. The user documentation was created and made available to potential users when the system was operational and made available for the intended users.

2.3 Endeavor

2.3.1 Work

Identifying clear constraints consisted of realizing the scope of the project timewise. The preparation was mainly about understanding the acceptance criteria to pass the assignment. By understanding the scope of the project and its acceptance criteria, planning was possible to reach said goals. The work process was monitored with task management in GitHub and communication, which made tasks more atomic. This was a functional tool for risk mitigation and allowed both the structure of the group and the tasks to be iterated upon and improved over time. The work was then concluded as the desired results were achieved, resulting in the remaining housekeeping tasks being completed and the project officially being closed.

2.3.2 Way of Working

The principles and constraints were established early in the project, which shaped the general *way to work* within the group. The key practices were decided upon, as well as what tools and programming language to use. With an established way to work, paired with practices and tools, the group members could start adopting the framework and get started. This framework was improved upon over time as the group became more comfortable with the practices and tools, which helped with task completion. One practice used in the project was to have stand-ups where each member presented what they had been working on and what they have in their pipeline moving onward.

2.3.3 Team

The team's mission was clear from the beginning; Follow the instructions, and create functional structures to complete the needed tasks. The team consisted of 5 members with a varied set of competencies. After identifying what members had specific required competencies for the project, the group could establish both group and individual responsibilities. The communication between members was enabled early so that it could be honest and open, which led to valuable dialogue during the planning stage of the project and the actual work that comes with it.