

Group Cooperation and Coordination

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1 Group Collaboration

1.1 Organising the Project

This is a short description of the various group structures we have used to organise our group throughout the BDSA course at ITU. To establish common grounds and expectations for the project, we revisited a prior group contract we all prior agreed too and choose to reestablish the contract. Our group contract provided a relaxed and open-minded work environment, but we felt we needed a sharper separation between group work and private life, which lead to our definition of office hours. Each group member specified in which timespan he was available and when he wasn't. This allowed us to avoid trespassing on group members spare time. and kept us more motivated

Like in prior groups, we kept the meetings informal without a Mediator, but with a Note Taker. If the debates should get heated, a Mediator would get elected.

While we had a group contract we all supported, we lacked a dedicated strategy to tackle our weekly assignments. Task were randomly given to group members without any real understanding the workload of the task. This resulted in unbalanced work distribution among group members which led to minor internal frustration.

To solve this problem we iteratively improved our workflow by experimenting with different techniques like Scum. We could not implement a faithful Scrum implementation due to limitations like time constraints, but features like the taskboard proved especially valuable. The Taskboard helped us visualise the current task as well as quality control of the solved tasks. On the taskboard, each task would start in the **Backlog** area. Then we would move the most vital tasks to the **Current Sprint** area. From here each group member would assign themselves to a task. When a Task is completed we moved it to the **Review** area. Here would other group members evaluate it and either approve the solution and move it to the textbfDone area or fail the solution and move it back to the **Current Sprint** area. This assured all items would be reviewed and not forgotten in the heat of a deadline.

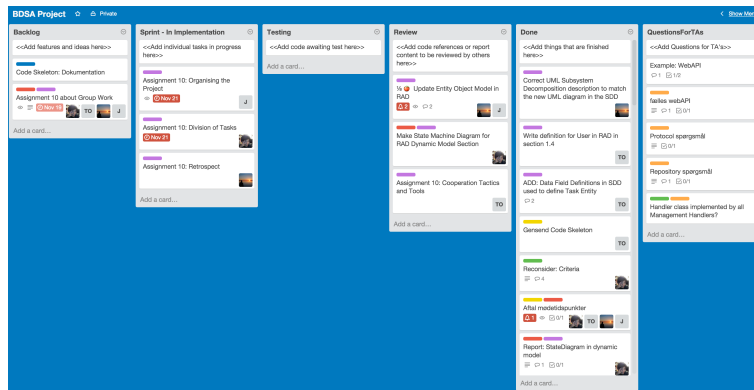


Figure 1: An example of our taskboard

1.2 Division of Tasks

Whenever new tasks were brought up at group meetings they were initially divided into parts and subcomponents that could be iteratively delegated to each member of the group. For instance, the requirements analysis document sections were marked as tasks which could either be worked on individually or in groups. The group members have chosen tasks independent from time consumption and scope as one does not know this until they have worked with the given task.

Each member was to work on a given task single-handed although if a distributed task was exceedingly great, it was either divided even further or was assigned with additional members. However, the group does analyze in some degree if a given task had a tremendous impact for the whole project and was thus regarded as a task that demanded the whole group's focus. By example, when working on the Design Goals in the system design document the whole group was required to work on this section before they could proceed with the document.

The distribution of work/tasks for each part of the project can be seen on figur 2, figur 3 and figur 4. Notice how each task is divided into sections that are delegated to each member. Each member had some main tasks that they were responsible for (which can be seen on the high percentage). However, one may also notice that other members do have a smaller percentage on some given tasks. This is because the given task was either too great, difficult or because the other member was simply done with their own task and was, therefore, placing their resources into other tasks.

RAD	Introduction	Current System	Proposed System	Scenarios	Use Case	Object Model	Dynamic Model	Glossary
Dennis	10%	0%	20%	50%	15%	0%	40%	25%
Jacob	0%	100%	20%	50%	15%	30%	25%	25%
Thor	85%	0%	30%	0%	15%	30%	10%	25%
William	5%	0%	30%	0%	55%	40%	25%	25%

Figure 2: RAD Work Distribution

SDD	System Purpose	Design Goals	Subsystem Decomposition	Persistent Data	Access Control	Global Flow	Hardware
Dennis	0%	25%	5%	95%	5%	95%	0%
Jacob	0%	25%	0%	0%	0%	0%	100%
Thor	0%	25%	10%	5%	90%	5%	0%
William	100%	25%	85%	0%	5%	0%	0%

Figure 3: SDD Work Distribution

Code Skeleton	<u>UserManagement</u>	<u>ExportM</u>	<u>ProtocolM</u>	<u>StorageM</u>	<u>WebAPI</u>	<u>StudyM</u>	<u>PaperM</u>
Dennis	50%	5%	5%	5%	60%	25%	0%
Jacob	0%	0%	0%	0%	0%	50%	50%
Thor	20%	0%	60%	90%	0%	25%	0%
William	30%	95%	35%	5%	40%	0%	50%

Figure 4: Code Skeleton Work Distribution

1.3 Cooperation Tactics and Tools

The group work was coordinated primarily by using tools for planning, version control and communication. We generally applied a loose version of scrum to manage the project and become familiar with the SCRUM methodology. In practice, we tried to keep each other updated every time we met (partial stand up) and would try to give each other an overview of three things accordingly; what did we do last, what are we planning to do today and finally whether anything is blocking this purpose. If anything was blocking a team member from continuing his work, the SCRUM facilitator would try to find the required help to solve this. We also established official meeting hours and contact periods to separate study related activities from social life. This was done to cope with the otherwise stressful environment that team members felt due to the heavy workload in this semester. Communication tools such as Facebook and Messenger were used to keep in contact and inform the group about practical information. Finally, the collaboration tool "Trello" was used to keep track of everything. Note that all members are assumed to stay updated about changes on both Facebook, Git and Trello.

Trello is a collaboration tool we use to organize the project into so-called "boards". In one glance, Trello tells you what's being worked on, who's working on what, and where something is in a process. The board represent a combination of the different phases used in SCRUM and the Waterfall Model. We have a Backlog board that corresponds to the Product backlog containing all possible features and requirements in the system. Secondly, the Sprint board contains a backlog with a work that must be addressed during the next sprint (usually one for each week). When team members finish a task it is tested and reviewed by another member in the other boards and finally put in the Done board.

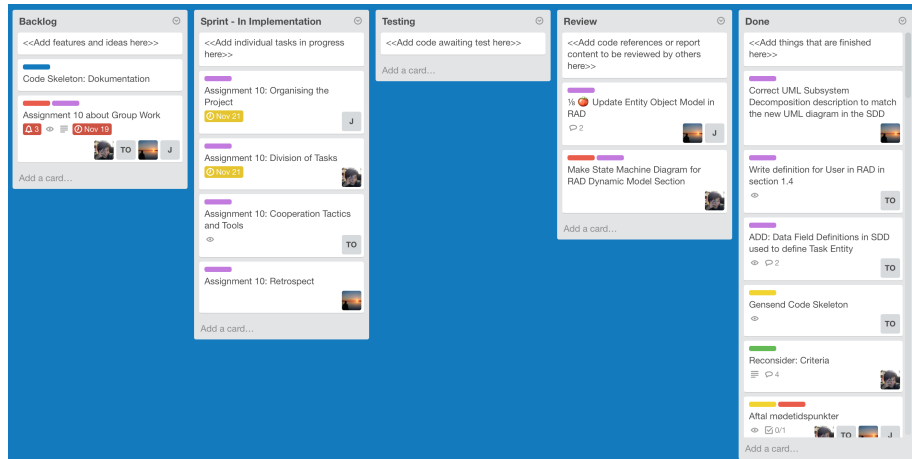


Figure 5: Trello Board

1.4 Retrospect

When thinking of the group work in retrospect it has become clear that certain things could have been done differently which would probably have improved the communication, cooperation, and efficiency in the group. The first thing which should be mentioned is the attempt to follow the SCRUM method, which only was accomplished partially since one of the core features (the stand-up meetings) was not done by the group. If these meetings had been upheld it would probably have strengthened the communication which could potentially have lead to fewer misunderstandings and less miscommunication during the work.

During the beginning of the group work Trello was not used probably, which meant that the group work did not become as structured as it could have been. By using the Trello board probably, it would also have made the first issue with SCRUM easier to handle since it would have been possible to structure the SCRUM using this tool. Additionally, the use of a Trello board would have made the planning and distribution of tasks a lot easier.

Better communication could also have been accomplished by the use of a Trello board combined with a more structured use of the project's Facebook group e.g. by setting up some guidelines for how and what to write. By scheduling strict deadlines and communicating more about them, some of the unfortunate mistakes with missing content, which happened during hand ins could have been avoided. Furthermore, a better set of rules for VCS when writing the documents in LaTeX could have prevented some critical compile errors.

In the beginning, the working hours were very flexible and mostly decided based on people's job schedule. This lead to occasionally late working sessions and meetings where only parts of the group could attend. Moreover, it had an impact on the stress level in the group, which was why a decision was made to make a schema containing the office hours where people could be contacted and why a planning a fixed meeting schedule for the week was made. This should have been done a lot earlier in the work process since this initiative created a better working environment for most of the group members.

Besides the group work it has become clear that a better use of TAs and application domain specialists throughout the course would have been rewarding, because this would have resulted in a better understanding of the application domain from the beginning which would have meant fewer resubmissions and a better foundation for future work. Some of these challenges mentioned above might originate from a delegation of tasks which was too fast, and thus the group did not always take the time to talk about the theory and establish a solid and common knowledge before beginning the work. In this way, the approach became much more practical with a "fail faster" mentality which also had its pros because a lot of practical experience was achieved quickly, but maybe some resources could have been saved by using slightly more time on the theory before trying to solve the tasks.

2 Individual Reflection

2.1 Challenges while working on my part of the project

One of the greatest challenges I encountered regarding the project was to have an understanding on the application domain but also an understanding on how the requirement analysis document and system design document was to be written. This resulted in some sections being incorrectly written and was consequently required to be rewritten.

2.2 Impediments with regards to the team cooperation

Some impediments I encountered was the lag of communication and team planning at the initial end of the project. We did not delegate the work probably and that resulted in some group members having a greater workload than others. The lag communication resulted in some work being incorrectly made or some required work resources not being shared correctly so others can continue their activity. By example, when some UML was made one may forget to share these to the whole group so they can proceed with their section/activity.

Another thing regarding communication is the fact that we did not agree on common terminologies. Therefore, one may use one terminology while another uses a different terminology. Consequently, the report ended up being inconsistent and was therefore required to be fixed. This could all be avoided if we had a clearly communication on what was to be done and how we achieved this.

2.3 Retrospectively change something with regards to my approach to the cooperation within the team

I would have been clearer on my communication to avoid misunderstandings. I would also change the initial approach of the project in that sense of better planning and group coordination. It may have yielded greater results if we all had researched a bit more on the application domain, but also how the requirement analysis document and system design document was to be written, so we could have avoided aimlessly assumptions on how they were to be made.

2.4 Cooperation improvement throughout the project

The group did, fortunately, mature throughout the progression of the project. The group had created fixed work schedules and additionally utilized a Trello board. This has yielded great results in terms of planning and communication. The fixed work schedules enable us to plan and propose what task has to be prioritized and accomplished while a Trello board allows the group to evenly distribute the workload among the members. If the group did this from the beginning, countless work hours and resources could have been allocated on some other sections of the project. Nevertheless, the group had apprehended this issue and has in that sense improved.