

## **1. Which processes and practices did you use in your project?**

As a higher level project practice we decided to use SCRUM to structure our work over the entire course. What SCRUM meant to us in a more practical perspective is that we basically had guidelines and tools to help us structure, such as dividing the project in sprints in which we had a sprint planning as well as a sprint review.

So the first thing we did as a part of using SCRUM was making a list of features that we wanted to be included in our project. This list has been the foundation of the whole project.

Each week we have had a new sprint. This sprint has been divided into goals which has been divided into features which in turn has been divided into tasks. Our goals have just been our thoughts of what we would like to have achieved in the end of the week. After we set up our goals we took a look on our list with features. From the list we then selected features fitting our goals as good as possible. Then we divide our features into a list of tasks as we just take from during the week.

The planning has been a big deal during the project, and to our help with planning we have used the whiteboard as an important tool and a common Google Drive, in which we have stored everything we felt should be documented and stored.

We have also taken into practice to work as much as possible with each other, in the sense of sitting together in a room, spending the day working on the project. When working together in the same room, we tried to work in pairs.

Regarding code practice we tried to follow as many common code conventions and code practices as possible to ensure that our code held the highest quality we could possibly produce.

## **2. Approximately, how much time was spent (in total and by each group member) on the steps/activities involved as well as for the project as a whole?**

We held a rather high and steady pace from the very beginning and have done much of our work sitting with each other. As we haven't held an hour schedule it's hard to say exactly how much time we have spent both as a group and as individuals. Some of us have, naturally, worked more

and some have worked less, although the difference isn't that big.

Anders: 20 h/week

Victor: ~22 h/week

Tobias: 20 h/week

Christoffer: 17 h/week

Marcus: ~28 h/week

Erik: ~23 h/week

Daniel: ~30 h/week

All of the numbers above are numbers not including the weekly lecture(s). This gives us a total of about 1200 hours.

**3. For each of the techniques and practices used in your project you should answer all the questions:**

**1. What was the advantage of this technique based on your experience in this assignment?**

Deep planning of the work:

Although it took some time, it was a great help for us as we from the beginning of each sprint got a sense of what we wanted to have achieved in the end of the sprint and of how to complete the smaller parts such as specific features or even tasks.

Feature list:

In accordance with SCRUM we made up a feature list in the very beginning of our project process, this list has been the foundation on which our project now sits. Though we must admit that we, from the beginning, were a bit over ambitious as we didn't really have a good estimation of what we would be able to do in the amount of time that we had. The feature list made the whole project a bit more substantial from the very beginning, which of course is an advantage as it made it easier for us to visualize what our end product might look and/or work like.

#### Sprints:

Also following the rules of SCRUM, we divided our project into sprints, which in our case, were one week long. We then decided what we would like to achieve in the sprint. From these goals we picked some features of our list that went well with our goals and then broke them down into tasks. We believe that the technique with working in sprints were good because it made the way to the final goal seem much shorter, which had a positive effect in the moral.

#### Working together as a group as much as possible:

This practice is perhaps the trademark of our project process. We tried to work as much as we possible could, together as a group in a room with a whiteboard. This was an great advantage because of the positive effect it had on the communication, which, we believe, resulted in a more efficient work process.

#### Pair programming:

The most obvious advantage with this practice was that we were able to come to conclusions much faster and more efficient when working as a pair, which we believe is because we simply had two minds set on the problem instead of one. More advantages with this technique is that we, in these cases, always made decisions two and two, which made us more confident that our ideas resonated with the rest of the group.

2. **What was the disadvantage of this technique based on your experience in this assignment?**

Deep planning of the work:

The disadvantage of the practice would have to be that it took quite a lot of time and it's very hard to predict exactly everything that is needed to be done in order of implementing the feature and thus achieving the goal. The fact that it's hard to do this made our time estimations even harder to form, and we always wanted to be done with what we set out to do into the beginning of the sprint before handing it in. Not being able to finish could have a negative effect on moral.

Feature list:

The main disadvantage with the feature list is that it's hard to predict at the very beginning which of the features that are good and which of them that are bad when you later implement them. It's also very hard to predict how long time we need for each of the features, which makes it hard to rate them. In the end we were forced to make a cut in our feature list due to lack of time to complete them all, which is something that we didn't want to be forced to do.

Sprints:

The greatest disadvantage with this practice was that it sort of tied us to what we had decided to do. The whole idea was that we decided to do a list of things for the sprint, and then we did them and nothing else, if it came up something else, while working on the sprint, we was forced to put this on next week's sprint, even though we wanted to do it straight away. So the practice with working with sprint kind of took away some of our freedom, which is something that everyone of us didn't appreciate.

Working together as a group as much as possible:

While the process as a whole was very beneficial it did have some downsides. Piecing together everyone's schedules to find time where everyone was available was not always easy and on some occasions one or more group members were unable to attend. There was also some time wasted on travelling to and from the workplace which would have been eliminated by working from home.

#### Pair programming:

It's kind of hard to say what disadvantages there were with this practice as it only seemed to be better, but one disadvantage that we can think of is that if you do get stuck on something and can't get further, then you have two persons sitting and doing nothing while trying to figure out how to move forward. In a case like this one it maybe would be more efficient to assign one of the persons to another problem while just one tries to solve the current one.

### **3. How efficient was the technique given the time it took to use?**

#### Deep planning of the work:

We believe that this technique was very efficient compared to the time we spent planning because of how effective it was for us to just go to the list of things to do this week every time you found yourself without anything to do. We also did the planning so well, so you didn't just get something to do, you got at least some declaration of it as well.

#### Feature list:

Although it took some time, and some arguing, to put together, when we were finished with our feature list, it pretty much was something static that we always could fall back on when we found ourselves wondering what to do next. Given the time we saved on having our list to always fall back on, we would have to say that this technique was surprisingly efficient.

#### Sprints:

It's hard to determine how efficient it was to work with sprints, seen to the result we must say that it has worked very well as we always moved forward thus getting closer and closer to a finished product. We do believe, however, that this practice was relatively efficient as we always knew what we was working against in a smaller picture.

Working together as a group as much as possible:

Because this practice made our communication work as good as it possible could, we believe that this way of working was very efficient.

Pair programming:

We believe that this technique was very efficient because even though one task took the time of two persons it seemed to take less time to finish the task than it would have if just one person was assigned to it.

**4. In which situations would you use this technique in a future project?**

Deep planning of the work:

In situations where we are going to start something, either a new sprint or the project itself. To plan and know what you should do before you actually do it is something that we consider is always an advantage.

Feature list:

This is something we would use in situations where we basically have to much going on to be able to keep it in our heads. Plus it's always positive to have something as important as features written down somewhere in a list to help us have our mind on the right track.

Sprints:

This technique is something we would use in future situations when we perhaps feel that what we do at the moment isn't given us any directly progress in our project. To then divide the work into sprints is something that we feel may benefit the work progress.

Working together as a group as much as possible:

This is something that we that one should use as much as possible in every project, especially when the things you're going to do is something complex or something that requires merging of work from different people.

Pair programming:

We believe that it's important to only use pair programming when dealing with pretty complex and hard task, this to be as efficient as possible. So in future projects this is something we would use when facing a hard task.

**5. In which situations would you not use this technique in a future project?**

Deep planning of the work:

In situations where what you're about to do isn't that complex and/or hard. This is just because planning takes time, and if you don't really need, then it's better to use that time to do the actual work.

Feature list:

In situations where you don't have so many features to think about. We feel that it's unnecessary to make a list if you don't really need. If you're for example are going to the store just to buy the paper, it really isn't that necessary to write it down on a shopping list.

Sprints:

As this technique kind of put bounds on the freedom, it's something we wouldn't

use if we notice that it's working well without sprints. That is that we are doing good progress in a steady pace.

Working together as a group as much as possible:

Although this is something that we prefer to use as much as possible, you got to look at the pros and cons of the technique and make sure that the total sum is positive. If it for example takes a lot of time for some of the group members to reach the agreed place of work, then maybe it's more efficient to work from home.

Pair programming:

In situations when we are facing a pretty simple task where we feel that it would be unnecessary to have more than one person working on it as it would be a waste of time. Another problem that can arise is that the work division can be uneven in the sense that one person does most of the coding while the other person helps out.

**6. If you had the practice/technique in a part of the project and not the entire project, how was using it compared to not using it?**

Deep planning of the work:

Although we planned from the very beginning we didn't plan as deep the first sprint as we did for the rest of them. If we are to compare the first sprint with the rest according to this technique we would have to say that it went better when we planned deeper. This was probably because that we with deeper planning had better knowledge of what exactly we were going to do and also how to do it.

Feature list:

As this is something we, in accordance with SCRUM, made from the very beginning it's not possible to do this comparison.



Sprints:

As this is something we, in accordance with SCRUM, made from the very beginning, it's not possible to do this comparison.

Working together as a group as much as possible:

As this is something we did from the very beginning, it's not possible to do this comparison.

Pair programming:

As this is something we did from the very beginning, it's not possible to do this comparison.

**4. What worked well in how you worked in this project?**

We held a steady pace from the very beginning, with clear goals and visions of how we wanted the end product to be like. Although the end product didn't have all of the features desired from the beginning, we are fairly satisfied with the end result and we believe that it's a good representation of how we wanted it to look like from the start.

The communication inside the group worked well from the start, but grew better and better as time went by and as we got to know each other better. After a few weeks it was clear that the group was a dynamic one.

We will also have to say that our weekly planning and estimations worked out pretty well during the whole period as we every week managed to do what we set out to do in the beginning of the sprint. This is something that raised our confidence both as a group and individuals and it made us take on more work and with that more responsibility, and in the end it shown that we were up to the task we took on.

**5. What did not work well in how you worked in this project?**

As we were a relatively large group we had the benefit of distributing the work on a broad level. This is of course something good as we got a lot of work done in a shorter time, but sometimes we got to a point where some of us was depending on the work of others and sort of got stuck in a working clinch where one wasn't able to do anything until the other person came through. To be fair this wasn't a big deal as it didn't happen all too often, but it's of course something that we would have wanted not to happen at all.

**6. How did you work together as a group in the project? What worked and not in your interaction(s)?**

All in all we feel that we worked very well as a group throughout the whole project, the collaboration was, of course, not great from the beginning, and we can't say that it was perfect in the end, but it grew better and better as the time went by. What worked best would have to be the fact that we often were able to come to conclusions on how we should do things, with help of each other in a most satisfying way where we really used each other strong and weak spots.

**7. What would you do differently in a future but similar project?**

Upon leaving this project behind we are able to look back without any regrets as we really gave it our best and delivered a product which we all are proud of, but of course there are some things that could have been done differently.

In a future product we would, for example, start out with making deep plannings as we discovered that this was something we really benefited from.

Another thing we perhaps would try out is to divide the group into several clearly defined teams where every team would have their own field of connoisseurship. This is something that we didn't try to a full scale in this project, but that we believe is something that might improve the work.

Now with this project being done, we would probably respect any work concerning server more

in a future project as this was something that took way more time and was way harder to figure out than we originally expected it to be, thus putting us in a minor crisis.