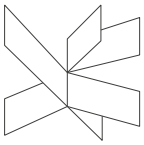


Food and recipe assistant

Process report

Students:

Patrik Kucerka (260026)

Patrik Ihnat (260010)

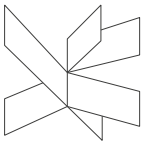
Supervisor: Michael Viuff

Character count: 29028

ICT Engineering

7th semester

Date: 21.5.2020



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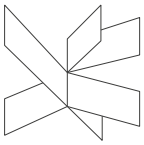

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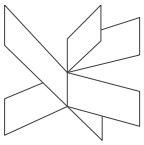
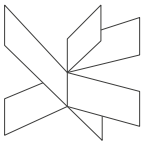


1 Introduction

For this project it is necessary to say that we as a group were working together before. We knew our strengths and weaknesses based upon our previous work. It was easier for us to discuss the project idea, our approach and what should be our structure who should handle which tasks. We started doing our initial documentation in our previous semester where we had dedicated subject just to do the preparations for this project. This gave us a clear vision of what are our goals and which of those tasks are going to be the most challenging.

At the beginning of our last semester we had our first meeting with supervisor where he evaluated our initial documentation and we discussed the whole project with him. We had to do some minor changes in our documentation but overall, we were given a green to start working on project.

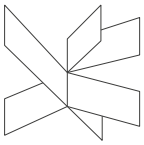
We were up to a good start considering that we had everything approved and we knew how to manage our workloads. In this project period we concentrated on SCRUM and Unified Process. Which was useful and important for us to keep track of our work. During this project we learn a lot in previous semesters we were working with scrum and “U P” so it was easier for us to apply them for this project. There were things which should have been done in better way and we still have much to learn but considering our effort which was put in this project we are satisfied that we did our best. We managed to learn new knowledge which is not only technical but also things about our friendship.



2 Group Description

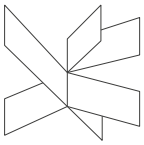
We as a group became working together back in 1st semester of ICT engineering. It was occasional work on different assignments and even semester projects which achieved good results. Our work methods differ a lot but, in the end, they make a good synergy. That and many more are the reasons why we decided to work together on our final project in VIA.
The team consist of two different personalities, but in the end that one essence which connects us is hard work and constant mindset that we want to create something better in every project we make. There were and are hard times in this team when miscommunication happens, but it can last only for few minutes and every time we can be back on track in matter of minutes. This is good asset to this team since there is no such a distraction.
In this project we decided to use certain technologies and work approaches which are quite familiar to us therefore it is a great asset. Since we had this knowledge we could perform on better level and our time efficiency was almost perfect.
Its is important to mention that in this project SCRUM was used to manage all our actions during project period. There were some complications since we could not meet so much and discuss face to face due to COVID-19 lockdown but in the end we managed to still stay on track and finish project.

My name is Patrik Ihnat, I came from the same country as my collaborator (Slovakia) and I'm studying ICT engineering at VIA University College in Horsens, Denmark. I'm 23 years old and currently attending my last - 7th semester. Before I came to this school, I was attending Gymnasium where in my last year of studies I took programing as subject. Therefore, I had an idea about what I'm going to study here. I managed to quickly develop interest in application programing and databases, so Cross media specialization was right for me. In our 5th semester we had internship, during that period I chose to go back to my hometown and apply to position of SAP ABAP/HANA Developer in company named Swiss-Re. I never had experience with this programing language, but I managed to quickly pick up the skills. This experience gave me such a



great overview how development is being executed in big companies, where many teams work on one product.
My personality is quite simple, I'm open and expressive person. I lack motivation, but I have a pretty good overview of my tasks which must be done. During this project I realized that motivation is very important and I'm glad to say that I managed to improve in many ways.

The second team member is me – Patrik Kučerka. As Patrik mentioned I am from Slovakia and I am 23 years old. Similarly, I took A-levels from informatics as it was one of my biggest interests since the elementary school. Since I am still a student, I do not have much experience in the field except the internship. During this period in my 5th semester I worked as full stack developer, occasionally I was involved in the system tests as well. My main focus in the terms of technologies were TypeScript / JavaScript, Java / Scala and Angular. This experiences also motivated me to choose these technologies as a foundation of our project as I have gotten familiar with them.
Regarding my personality, according to the 16 personality test I match the description of INTJ – analyst / architect which means that I have tendency to almost never be happy about the work done and always find things that could be improved. Even though this might be annoying for some people, in my opinion each group works better if somebody is pushing a little bit forward.

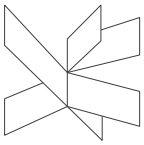


3 Project Initiation

This group was formed intentionally. We know each other, speak the same language and share some interests. We knew that if we work together, we can bring this project to end without any personal difficulties. We formed the idea of this project randomly, based upon our small research done on the internet we quickly came up with idea of food assistant. We wanted to make application which can be accessed on different platforms because nowadays the market with mobile phones and operating system is so wide that we wanted to make sure that all our users who wants to use the app won't be affected by compatibility issues.

Based on all this information which we had in our heads and later in process also documented. We realized that we need to perform prioritization of our tasks to ensure that the project will be finished within the given time. We divided our goals into user stories and prioritized them by giving them "weight".

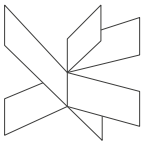
In the end we had a clear overview what and how to perform during this project. We expect us to be a quite short on time, but we managed to overperform and finish before we ran out of time. Our schedule turned out to be well planned which in retrospective way gave us good feeling that we overperformed our expectations.



4 Project Description

When we started to look around for project ideas, Patrik I. was currently going through diet and came up with idea that he needs to use many different applications to keep track of his recipes and shopping list. So, we became to investigate, defining the exact problem so we can form a project idea to solve this. Some of the research consisted of downloading many applications and writing down what is missing, what is useful and on the other hand what is not useful. That gave us very detailed overview of the problem we were trying to solve – for example imagine talking with your friend about some amazing recipe which he wants to try as well, in our solution we want to focus on easier and more straight forward way of sharing recipes and keeping track of your health.

We wanted to develop a system that would achieve our goals that we prioritized. There were some things left out with less priority because we weren't sure about them and first, we wanted to have nice and reliable system that would work even without those. We finished all our goals with high priority together with some of less priority ones, which to us occurred surprising. We managed to overcome problems with new technologies which we did not used before, learned and improved in many ways. The addition of list with our goals for this project helped a lot to keep our motivation and focus. Our goals were prioritized very well, and we even managed to add some more.



5 Project Execution

5.1 Sprint 1

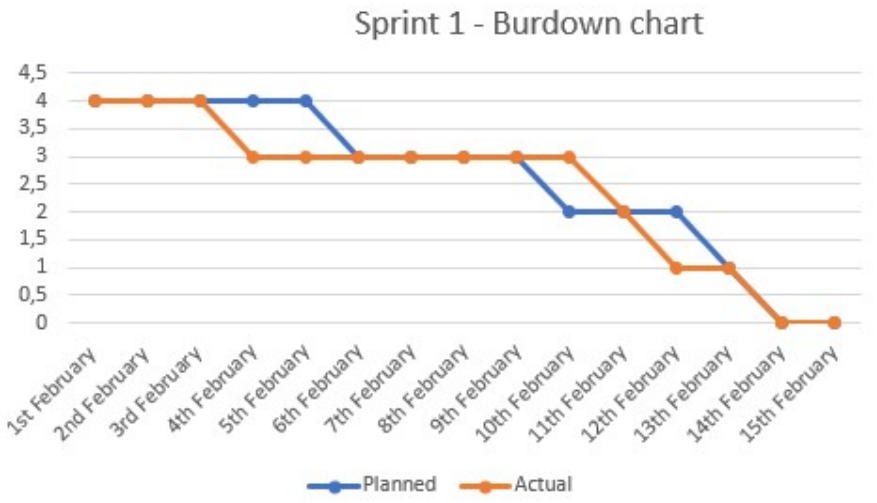
Instead of sprint 0 which was done in previous semester on BPR1, we decided to continue with numbering from 1 since the preparations done in sprint 0 had to be corrected and additional stuff was added into our project description. During this sprint majority of our supportive documents were created or corrected such as like timeline with milestones, product backlog. Since there were only 2 of us working on this project collaboration was done via personal communication and notes. At beginning we decided what approach we want to have in this project, so we went with SCRUM and Unified Process it was easier for us to keep track of what happened and keeping us on right path when we had scrum meetings. During this period, we also had small issues with Patrick's I. IntelliJ where gradle which was downloaded from GIT hub was not cooperating.
We used this time to focus on our Project and process reports structure, so we began to write down what technologies we will be using and what needs to be done database vise. Overall basic database design was done during this sprint when we took MySQL editor and executed basic structure. At the end of this sprint we held meeting with our supervisor which was used to make sure that all our documentation and project description is correct, and we can proceed further without any more corrections needed.

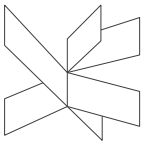
5.1.1 Sprint retrospective

This sprint we made our final version of basic documentation, we managed to do some extra small task in this sprint which were planned to be done in sprint 2, diagrams for database and use case diagrams were added to this sprint but were not finished. Because of that we saw that we realized that we need to strictly follow plans for sprints so we won't overlap with upcoming sprints plans. After all we decided to redo our planning for upcoming sprints.

- Patrik I.: This sprint left me with some great expectations since we were on tracks besides some small adjustment, we managed to do some little extra work than planned. But since it turned out that it was not good for our overall plans, I thought that we may be too ambitious, so we changed our whole approach towards the project. We found a good balance between workload for the sprints and same time keeping track that we were making some progress. Since we managed to do so much documentation vise and some diagrams it left me with great feeling of optimism.

- Patrik K.: This sprint was basically about gathering relevant knowledge to initiate the project and to do some planning. Since I did some research before this sprint it went fast without any issues and we were done earlier then planned which resulted in doing some stuff from the next sprint, so we had to do some plan reorganization. Overall, I think this sprint went well.





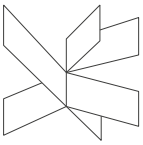
5.2 Sprint 2

Since this sprint was still part of “Elaboration” we wanted to deliver our basic diagrams which will later in process help us, since these things were planned for sprint 2 but already some work on them was done in previous sprint due to our inconsistency. Since we were also a bit ahead of our timeline, we managed to lay down some basics of our system as well.
Our main concerns started when we sat down and started to discuss functionalities of our system (“Functional requirements”) we knew what needs to be done but we were having hard time on agreeing, what exact properties we are going to have.

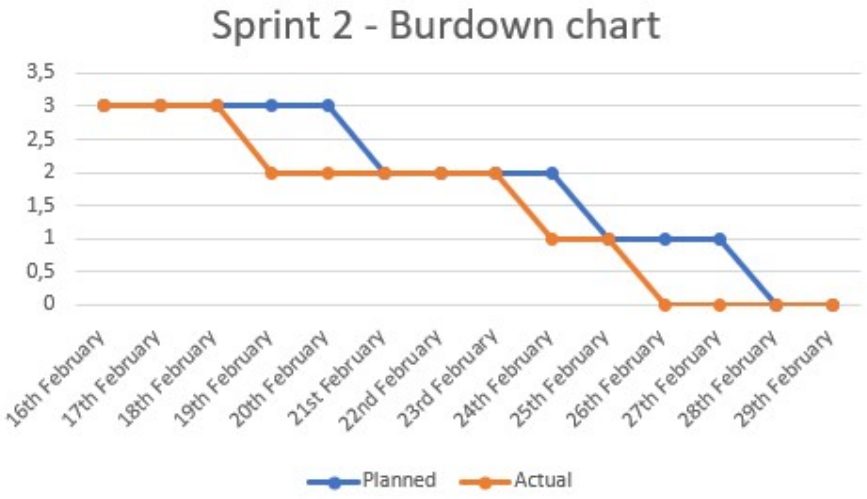
5.2.1 Sprint retrospective

This sprint left us with very positive feelings, because it was already the second sprint where we managed to be ahead of our time schedule. There were some complications among the way just because we could not meet on properties which needs to be used for our FR 1 -> 2.1, once we managed to settle everything about those user stories, we continued with our work a done it on time with some extra time to reconsider our planning. We also agreed that before next sprint we will redo our prioritization of Functional requirements.

- Patrik I.: This sprint was a bit special to me, since there were some misunderstandings, we managed to stay on track and continue our work. But again, at the end of this sprint we realized that we are sometimes a bit too fast and skipping important stuff. So, we decided somewhere in middle of this sprint that we will redo our prioritization of our functional requirements and that we will look at our timeline to understand what kind of tempo is better for us.
- Patrik K.: In this sprint I came to a realization that some functional requirements require reordering. This was due to the relations among them, some requirements needed to be implemented before the others even though they seemed less important. The reason was that simply the “cooler” requirements were dependent on them e.g. sharing recipes had to be implemented after a

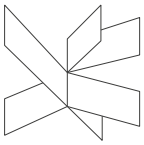


functionality to add a friend. Personally, I think that setting up the project was the most time-wasting process since relatively simple tasks took too long as I had no experience with setting up a spring project.



5.3 Sprint 3

Sprint number 3 was our overlapping sprint. There was an end of “elaboration” phase and start of “construction” phase. The elaboration phase was done with ease and we managed to have all our basic documents and design done with supportive diagrams. Our main goal for end of Elaboration phase in this sprint was to have strong go to documentation which can be only partially updated trough out the process of creation the project and at the end used as final documentation.
When we transitioned into construction phase it was our time to fully concentrate on development. Since we already had some foundation of our system, we could continue without any harm with following functional requirements. We started with adding new recipes, it was our first big challenge because we wanted automatic update which looked easy on paper but JavaScript together with JDBC were not cooperating. Solving problems with MySQL database later occurred to be our daily bread. In this sprint we managed to finish Functional requirements 2.2 -> 4.2.

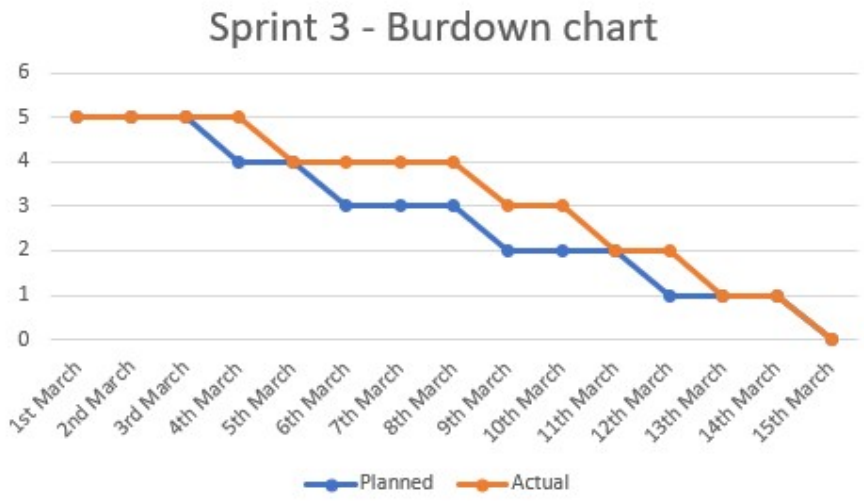


During this sprint it also came to light that we will from now on work from home since COVID-19's strikes the world. We were forced to move on skype/discord to progress more with this project. Which at the end showed again some complications mainly with equipment and communication.

5.3.1 Sprint retrospective

We started to see that the system was coming together piece by piece we had pretty good foundation from previous sprint but this one added more futures like recipe management system. Which was also crucial because we overcame many problems which occurred just by using JDBC driver. The "sql strings" which were party of our "Data access object" were sometimes parsed differently, none of us knew what the exact problem was but according to forums that happened usually in specific cases and sql operators.

- Patrik I.: This sprint was for me really challenging since I was the one who managed database and server side of thing for this system, I needed to overcome many difficulties with our database design which shown that it needed some corrections due to my lack of knowledge. But at the end I was happy that we managed to achieve our goals for this sprint and finish it on time without any need for moving or postponing tasks.
- Patrik K.: In this sprint my focus was on implementation of the planned features on the client side, however I also took part in the server side to help out Patrik with issues mentioned above.

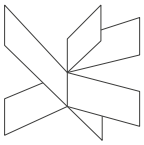


5.4 Sprint 4

In Sprint 4 we were in fully blown construction phase, for this time period we mainly on managing friends in our system. We wanted to have “friend sharing” experience which was easy to handle but at the end of the day strong and straight forward. The biggest problem during this sprint occurred when we were working on new friends right after friend request is accepted that they occur in friends list. Other functional requirements were with same weight and we managed to make them according to our plan. Closer to ending this sprint Patrik I. updated the documentation since we made a lot of changes to oud database structure and added some features which were not in the initial documentation. During this sprint we managed to cross off half of our functional requirements which helped us to keep our pace and focus on goals ahead of us.

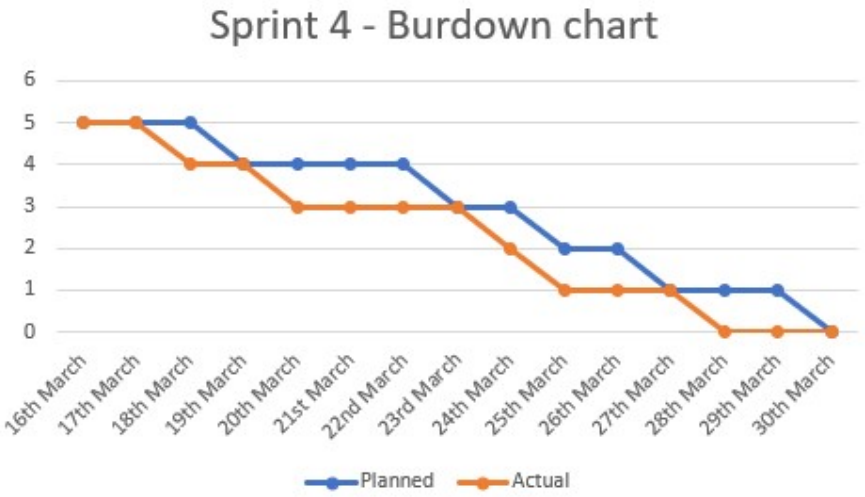
5.4.1 Sprint retrospective

This sprint contained a lot of adding and modifying, we had initial documentation on point but when we came to friend management system, we had to do some major changes, which affected our database design mainly. At the end of the day those changes seemed good and on point since everything was working and we had no other



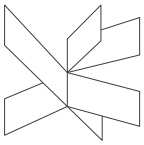
problems with this implementation. We again managed to before given time and at the end focused on updating all our documentation.

- Patrik I.: During this sprint I have learned a lot about good database planning, Since I oversaw making database and its relatives in java, I realized that some of the thing were not good and needed to be reworked. But overall, I have good feeling about this sprint since team progressed a lot in this sprint.
- Patrik K.: As Patrik I. stated this sprint went quite well. The main question we faced was how the friendship should be represented in the database as there is more possible options and the most efficient one was desired.



5.5 Sprint 5

In this sprint we continued working around recipes. There were some functionalities whit lower priority postponed to this sprint. The functionality for searching recipe by name/ingredient/category was somehow tricky because we had to decide where are these properties going to be stored. Database wise the most common solution would be to put it into separate tables which would refer to main table with recipe. We tried to do this but unfortunately were not able to finish design of it. And due to urge of other functional requirements we decided to go with the basic design of these functionalities.

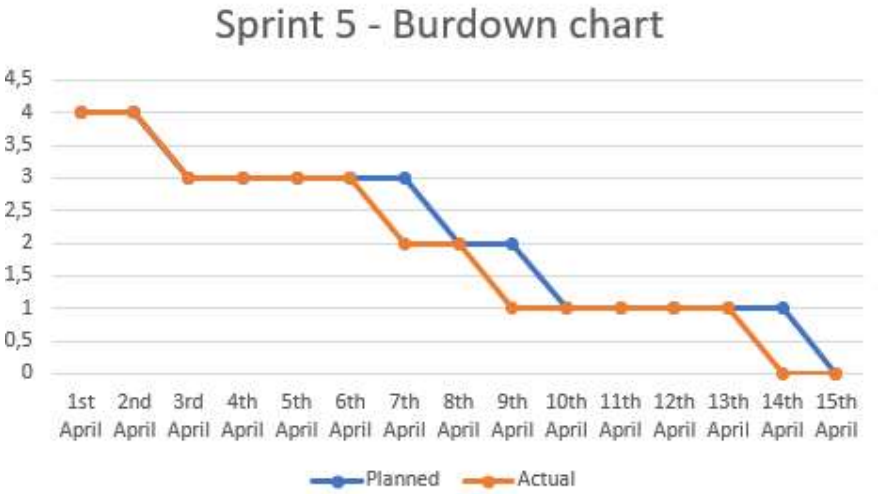


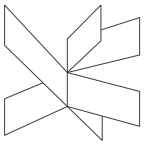
That maybe if we have time at the end of last sprint, we would come back to this and redo it.
Another functionality was random recipe suggestion. This was firstly meant that we will take any recipe from database of the recipes and suggest it to user based on his selected filters. Which at the end occurred that its rather tricky.

5.5.1 Sprint retrospective

This sprint went rather well, because at the end of it we already had 11of our functional requirements done. We were working hardly on client side of thing for the recipe functionalities which went well without any major breakdowns. This was also very good for our mental state because we were coming closer to end of the construction phase, we had more than half of our functional requirements done so we were doing great at this point.

- Patrik I.: This sprint felt good for me especially when I saw that server and database are good and don't need any more tweaks. We also managed to update our supportive diagrams which was crucial for our overview of project.
- Patrik K.: This sprint was more cheerful then the previous ones as the core functionalities were already implemented and we were working on the simpler but nice to have functionalities.





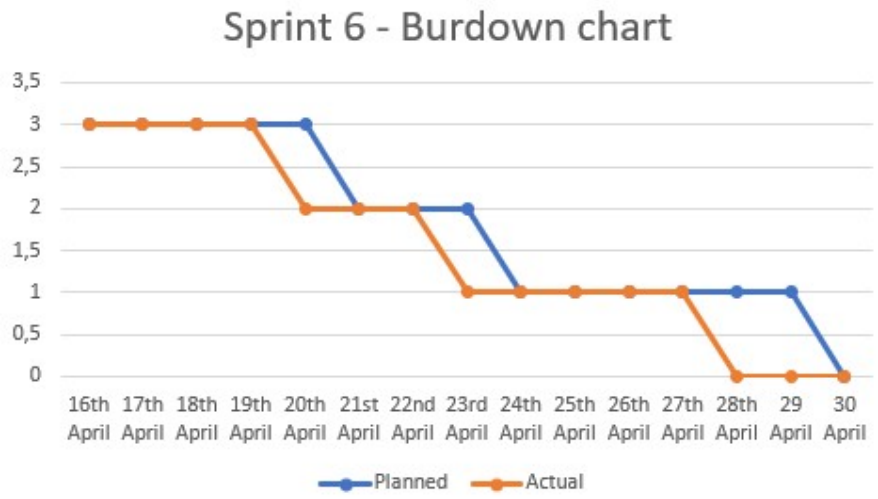
5.6 Sprint 6

Since this was the last sprint in construction phase, we decided that the rest of the functional requirements needs to be finished by end of this sprint. Therefore, there were only 3 it was easy task. Two of them were functions for shopping list since it was our desire to have this kind of functionality. The implementation of shopping list was quite easy since database wise, we only needed one table for it with no inheritance, server side was only few sql queries, for this FR the client side was the hardest of those 3. Also, by end of the construction phase we needed all of our diagrams and supportive documentation finished so once we start transition phase we can start working on our final documentation (Process / Project report).

5.6.1 Sprint retrospective

This sprint went easily, we were concerned if we will manage to finish our supportive documentation on time since there were quite a lot of outdated documents. But for the beginning we had last 3 functional requirements to finish implementing. Those 3 FR's were implemented and tested a bit in advance during this sprint which gave us some extra time which was used to perfect our supportive documents.

- Patrik I.: I have to say that after this sprint I was feeling revealed. Since it was last sprint in construction phase, it was obvious for us that we managed to do it. During this sprint we were left only with 3 functional requirements which needed to be implemented and we managed to finish them in advance. During this implementation no problems occurred. On the other hand, there was a lot of work done on outdated supportive documents. In the end after this sprint we were looking strong and ready for "Transition".
- Patrik K.: As this was the last sprint in construction, we had to finish everything that had to be done in this phase which was a little bit stressing. Eventually we managed to finish all the tasks planned on time which left us ready for the documentation and the accompanying tasks.

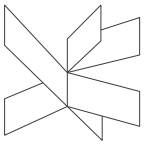


5.7 Sprint 7

This was our first sprint in transition phase, we decided to start with review of all our supportive documents. Since updated our diagrams we wanted to go and review them as group to all agree on them. It was crucial since parts of those diagrams are going to be used in our Project report documentation. Patrik I. started to work on Process report where he managed to do almost half of the sections. Patrik K. started with the Project report where he also managed to write most of the document.

5.7.1 Sprint retrospective

This sprint was smooth. Since it was already transition phase, we started to work on our documentation mainly process report. Where Patrik I. managed to finish almost half of the sections which were included in the template. Patrik K. was during this time working on structure of our documentation for hand in, since we wanted to have clear overview of what needs to be included in documentation as well as documented the analysis and design phases of this project. For this sprint we did not make any burndown chart since we were working on different tasks every day which was quite hard to track.



- Patrik I.: This sprint was relaxed for me I started to work on our process report where most of the sections were oriented to describing how the project was done and how us as people were behaving. I managed to do almost half of the process report during this sprint which was revealing. Also, we had our supervisor meeting in this sprint which was helpful for me to understand some key requirements for reports and documentation in general.
- Patrik K.: Since I was working on the project report, I got a nice review of the work done during this semester. I intended to document analysis and design phases which I also managed to do. The meeting with the supervisor was also beneficial for me as I got all the answers, I had regarding the project report.

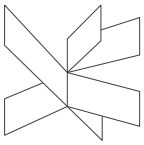
5.8 Sprint 8

This was the last sprint for us, and the team put more effort into finalizing documentation. Since the Patrik K. started to work on Project report in previous sprint he was mostly involved in constructing this part of documentation.

5.8.1 Sprint retrospective

Our final sprint was only about finishing documentation. We had to put many hours into this documentation since it was crucial for people who are going to review it to understand the process of creation behind this project. We managed to finish our process report at the beginning of this sprint, apart last section of project execution and have been working hard on Project report since it was our main part of documentation. We were glad that everything went according to our plans which we set at the beginning of February.

- Patrik I.: I'm happy that this sprint went so quick, we had so much good time working on this together with Patrik and it felt that something great is ending. Which left me with good impression, we managed to put much effort in this project, and we are happy for it. Last sprint of last project.
- Patrik K.: Finally, we split the last two sections, me taking the implementation and Patrik I. the testing. This was done without any difficulties and on the time.



At the end of this sprint a good mood took over as we were happy about the goals we achieved.

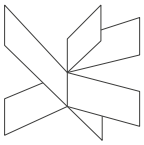
6 Personal Reflections

6.1 Patrik Ihnat:

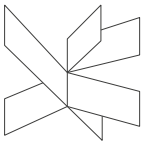
When I look back at this groups work, I think I can say it was awesome experience. Our process and decision making were on point we managed to stick to all our goals and even add some. Since we knew each other for quite some time we knew what to expect from each other. Therefore, our group contract was short but on point. The project idea credits need to be given to Patrik K. since he came up with the basic idea of food assistant, after bringing up this idea we spent some time together brainstorming what should be involved in this project. I would like to mention that our group was very good in cooperation, if there was some technical issue or knowledge hole, there was no problem for us to help each other. I like working with Patrik K. he is wise and has great overview of projects which he is working on. On the other hand, I'm more into planning and execution, so we make a good team. I have learned that asking him question can result in some strange conversation, but he will always help or answer if he can. During this project we learned even more about ourselves, which was quite surprising since we know each other very well. Based on this project I can say that it was great experience, but I must work more on my approach to projects, so I expect that in future I will be more open minded and responsible.

6.2 Patrik Kucerka:

This was a long journey, but we managed to come to the end without any bigger issues. Communication and cooperation with Patrik I. were smooth and relaxed due to the Patrick's non-stressing nature. The time spent together was always fun and when we faced some project related issue we always found and agreed upon the solution.



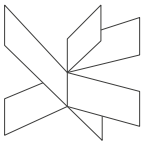
Moreover, we helped and supported each other along the way as it should be done in every team.
I also enjoyed the freedom with the functionalities of the system since the project was not done with a company. This also gave us opportunity to experiment with the technologies and explore their capabilities. During this project I have learnt a lot. I earned new experiences with the Spring Boot framework since it was totally new for me as well as deepened the knowledge about the AngularJS.
Despite of some external complications like COVID or extra class (since machine learning and linear algebra are taught only once per year), I see this project as a positive experience, which was beneficial for my future career.



7 Supervision

Michael Viuff was our supervisor for this project, even though we did not have any previous experience working with him, he showed to our group that he is helpful and always can answer our questions during the project period. He managed to help us stay on track and focus on tasks which were most important. His previous rich experience with bachelor project was really helpful during the creation of supportive documents and diagrams. For example, he provided us with templates and examples of the documentation which was needed to keep track of our progress.

We asked Michael mainly to review our documentation and give us feedback since we were a bit shy to ask for programming part. Michael tried to help us to keep the high standards of bachelor project to achieve our desired quality of work. We used all the feedback from Michael to improve our documentation. We as group are very happy that we had chance to work with Michael. Without his guidelines and help with this project, some of the project would look very different.

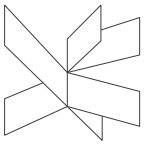


8 Conclusions

At the end we can conclude that the work which was done on this project has made many improvements in our approach to projects and teamwork in general which will appear in future. This improvement was by no means the greatest since it was our biggest project during our studies at VIA University College. During this process we managed to write down some of our key recommendations:

- Good initial preparation with overall understanding of project
- Helping each other sometimes even without asking.
- Being honest about work which was done.
- Work as a team or better as friends.
- Feedback as much as you can to give your thoughts to your team.
- SCRUM and unified process helped a lot.

When both of us look back to this project we see it as a success. The comparison between starting point and finish feels like we learned a lot, especially importing concepts of planning and execution into our personal lives so we can manage ourselves better. Since this was our last project at this university, we are grateful that we had one last opportunity to work together.



9 References

Schwaber, K. and Sutherland, J., 2019. The Scrum Guide. [Online] Available at: https://www.scrumguides.org/scrum-guide.html [Accessed 21 September 2019].
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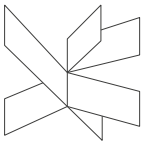


- **Appendix A - Group Policy Contract**

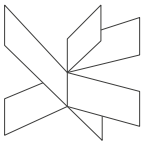
Food and recipe assistant

GROUP POLICY CONTRACT

Rules and signatures

Each group member is as important as the other and every effort made towards achieving set goals is of high value. Therefore, the group is expected to function professionally with members that are committed and honest in carrying out tasks.
We will meet every day of the week from 09:00 to 16:00. This will help eliminate the communication weakness. Before work proceeds, we will be having update meetings at 09:00, where each member presents briefings on the status of the tasks given at hand to the group.
Rules governing our group performance, were as follows:
1. No gaming.
2. No social media.
3. no more than 5 coffee breaks a day

Each member is responsible for his work, tasks and coming up with agendas for the meetings.
Punctuality is essential always for all group members. When a member is running late, he should inform the other group members before the meeting time and if he does not inform other group members a warning will be given to him.
All updates concerning the group tasks and log processes will be monitored.
Decision making will be made based on a mutual discussion involving all group members and everybody can speak their mind if they want to be heard or make a positive point. But if no mutual decision is met the member responsible for that task has the last say.



During working periods, it is important for the group to have coffee breaks and talk about other things to refresh our minds.
As individuals in a group we have different strengths and weakness. Therefore, we cannot expect each member to contribute the same amount of work as another member would. Output is determined by the task at hand for each member. But if one member is done with his task, he must help any member in need of help with completing the task.
If any member consistently displays indifferences towards the project goals or tasks in general, he would be kicked out of the group.
For us to prevent our group from falling apart we must behave responsibly during the project.

Patrik Ihnat
Patrik Kucerka