

Corona Fighter

Process Project

Students:

Angel Iliyanov Petrov – 266489

Ziad Akram Bathish – 273442

Chunhui Liu – 273452

Supervisors:

Joseph Chukwudi Okika - JOOK@via.dk

21941 characters

Software Engineering

7th semester

4th of June 2021

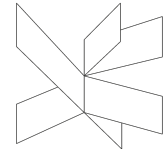
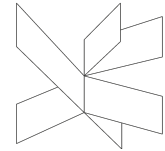


Table of content

1. Introduction	2
2. Group Description	3
2.1 Team roles in group	4
2.2 Group member introduction	7
3. Project Initiation	9
4. Project Description	10
5. Project Execution	11
6. Personal Reflections	15
7. Supervision	17
8. Conclusions	18
9. Appendices	19
10. Sources of Information	20



1 Introduction

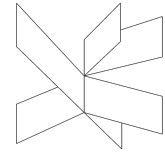
The project planning phase started during the sixth semester at VIA University College. The starting date of the bachelor project was on the 2nd of September 2020 with the start of BPR1. In the inception phase, we had time to come up with a project idea that appealed to us and our supervisor by writing a project description. Our initial goal was to develop a social media website. Later on, with the help of our supervisor, we decided that we should create something more practical and trending for current market needs that would aid the end-user and bring motivation in their daily life and wellbeing and as such, we decided to make a web application for allowing users to be more aware of the coronavirus.

BPR2 and the actual development of the system started on the 18th of February 2021 at which point we started work on system development and writing documentation. This process report has the aim of introducing its readers to the process that we undertook to complete our project. Firstly, we will talk about who the development team is and what their culture and personalities are. Following that, we will talk about the project initiation, the project description, the project execution and finally, we will touch upon supervision during the project.

Since the group consists of three members, it is very important that each group member is given responsibility for a portion of developing the system and can manage on their own unless they need help from the other group members. In contrast to previous semesters where we could have up to four group members, this semester gives us more responsibility to handle on our own.

Being the last semester for us at VIA University College, we are to apply any previously acquired knowledge in this project so that our final outcome meets the standard that we expect to accomplish.

In order to have a good workflow, the group must follow a development framework for documenting the workflow. In this project, we have utilized a Kanban board to keep track of our tasks.



2 Group Description

During BPR1, the group consisted of two members - Liu and Ziad. Shortly after, Angel joined the team and thus, the group was made up of three members. Since we had a good outcome for our sixth semester, we decided to stick together for our final bachelor project. These three group members are the development team behind the Corona Fighter web application. Each group member is of different nationality which produced a very vibrant and diverse group and gave us different perspectives to work with for applying our problem-solving skills to the project.

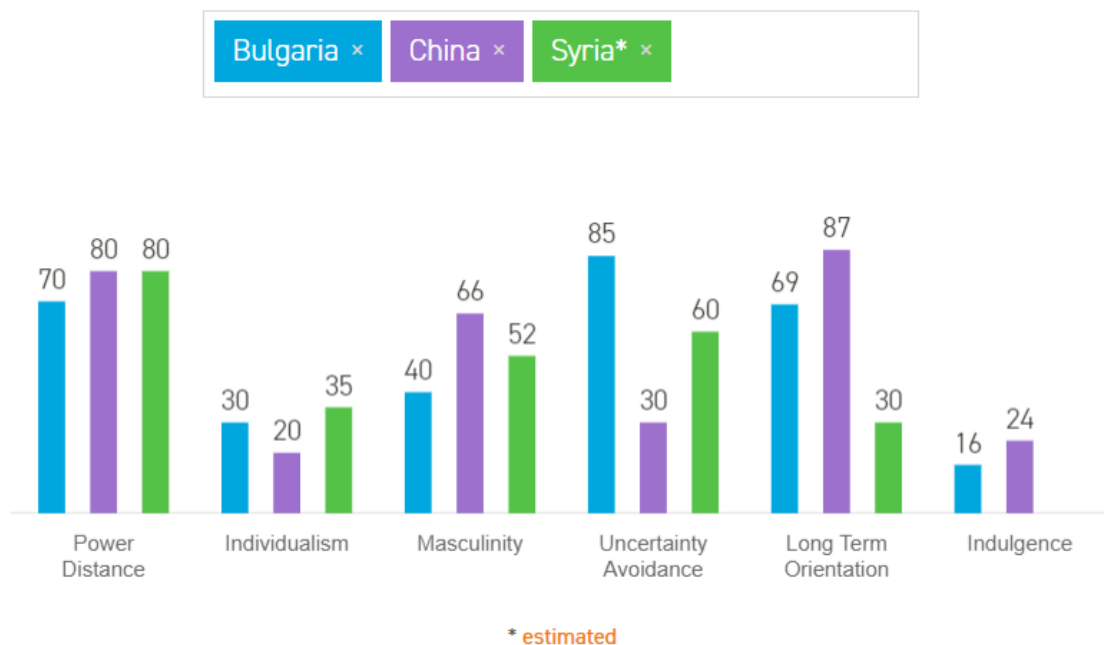
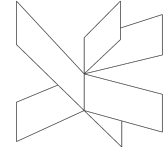


Figure 1 - Hofstede Insights six culture dimensions

As we can see in the figure above, according to the Hofstede Insights analysis [1] (*Compare countries - Hofstede Insights, 2021*), the group members share similarities in some dimensions whilst they differ in others - Angel being from Bulgaria, Liu from China and Ziad from Syria. In contrast to Danish culture where there is a strong emphasis on individualism, the mentality of our group can be considered as “eastern” [2] (*Kotelnikov, 2021*) and as such all group members aim towards working in a collectivist manner and benefiting each other. This was seen in our group in terms of regular meetings at a group member’s home, pair-programming with two or all of the group members, collective problem-solving on a specific problem and even mutual cooperation in other courses that we had together during the last semester.



East	INDIVIDUALISM / COLLECTIVISM	West
A human being is an integral part of the universe and the society. People are fundamentally connected. Duty towards all others is a very important matter. COLLECTIVISM is stronger.		A human being has an individualistic nature and is an independent part of the universe and the society. INDIVIDUALISM is stronger.

Figure 2 - Collectivism and individualism [2] (*Kotelnikov, 2021*)

2.1 Team roles in group

Each group member undertook the Belbin Team Role Inventory Test [3] (*Belbin Team Role Inventory Test, 2021*) which gave each of our group's members an overview of their strengths.

Chunhui Liu:

As a team member, my role tends to be a coordinator, plant and complete finisher according to the Balbing roles.

This means that I am a creative character, I like to provide ideas for the team, and I have the ability to rally the team together. I am good at communicating with team members and understanding each person's strengths and weaknesses, so as to put forward specific suggestions for each person's work. Which will help us achieve our goals more efficiently.

The test results showed that our team lacked the ability to deal with the outside world and have a strong driving force. As a result, it may be difficult to obtain external information and communicate effectively with supervisors. The lack of Shaper may lead to a decrease in the members' work enthusiasm, and they will be easily discouraged when they encounter setbacks. We will try our best to stay motivated and always encourage each other while doing our job to ensure that this is an active and competitive team.

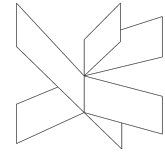


Figure 3 - Personal Role Inventory chart for group member Chunhui Liu

Ziad Akram Bathish:

According to the Belbin test, I attend to be a team worker and a specialist.

This means that I like to work and go in-depth with areas that are important to complete our project.

Where my strengths are is to cooperate and listen carefully to team members without any conflicts, and usually I provide good ideas that help to get better results. On the other hand, there are few weaknesses where I often avoid leading the team because I don't feel that I am good with making critical right decisions.

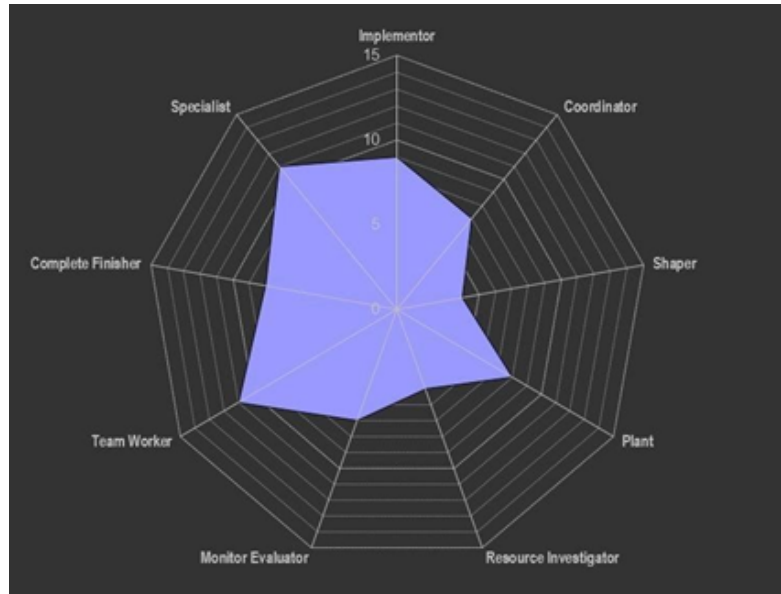
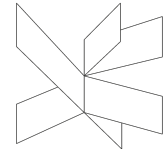


Figure 4 - Personal Role Inventory chart for group member Ziad Akram Bathish

Angel Iliyanov Petrov:

According to the Belbin Team roles test which I undertook, my personal character specializes in being a Coordinator, Plant and Specialist. This would imply that I excel in being mature, confident, and able to identify talent within my team as well as putting a clear objective for me and my team to follow towards reaching our success goal. Thanks to my Plant personality trait, I am able to offer high creativity and good problem-solving skills to my team whilst also contributing in-depth knowledge of a key area to the team thanks to my Specialist personality trait.

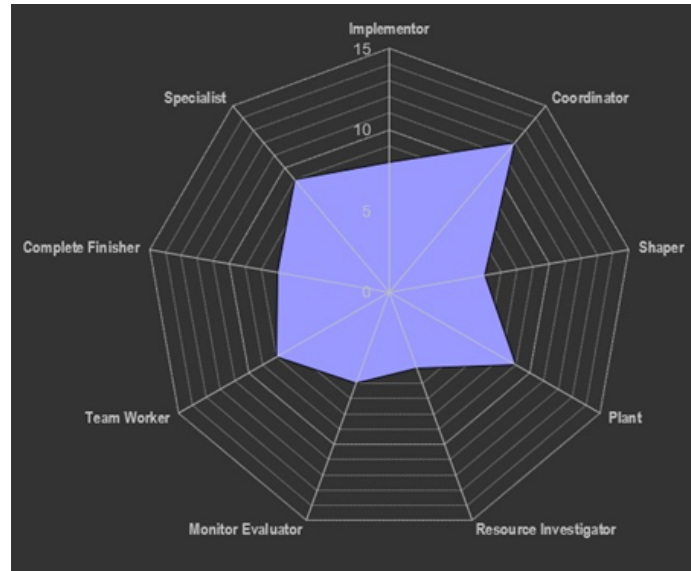
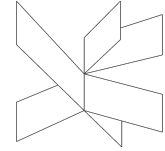
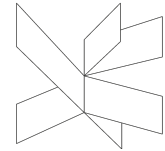


Figure 5 - Personal Role Inventory chart for group member Angel Iliyanov Petrov

2.2 Group member introduction

Angel Iliyanov Petrov

I am a 23-year-old student who is in his seventh semester at VIA University College. My experience with web development came from the fact that my internship was about deep-web development – extracting and filtering data from web sources. During my internship which was held in the United Kingdom, I had the chance to work in a global company with both front-end and back-end to accomplish my given tasks and had the opportunity to work with very talented, experienced, and bright people in my international development team. As such, my gained experience led me to pursue creating a project that was in the scope of web development, however, my interests in the software engineering sphere are not only limited to web development. During the development of the Corona Fighter application, I worked with UI for the different web pages and back-end logic implementation such as writing the logic in the various controllers of the application. I focused mainly on the implementation of administrator functionalities by creating a special admin panel which contained various administrator-related functionalities such as adding videos to the user video library. My decisive thinking led me to achieving great results in the project and fulfilling my expectations to a satisfactory acceptance.



Chunhui Liu

I am a 23 years old student from China who is interested in app design and development.

During the bachelor project, I worked mostly on webpage design and implementation. I did not have relevant work experience before, so I did a lot of preparation work before the project started, including the conception and preliminary planning of the project framework. Due to my interest in the web development and accumulated programming ability, I soon had a preliminary idea of the project and started to implement it.

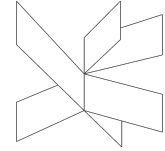
In this Corona Fighter project, my main work is to complete the design and implementation of group and post functions, including UI design in the front section, logic development in the back end and realization of database-related functions.

In this project, I learned a lot about the communication methods of team members and improved my ability to be a good team member.

Ziad Akram Bathish

I came from Syria to Denmark 5 years ago, where I left my country because of the war and I came here to have a better future and live in a peaceful environment with my family. I am 26 years old now. I lost almost 4 years because of the war, but I came here and tried my best to continue with studying. I have always been interested in softwares and technologies but did not have any experience before starting at VIA.

Web development is one of the most interesting topics for me, where we started learning the basics in the third semester and in my internship I got a better experience with it where I worked on developing a survey system using the ASP.net core. Therefore it was interesting to work on the Corona Fighter Webapp using ASP .Net MVC, where it was a bit difficult in the beginning to prepare the system environment and analyse how the functions will be handled to send and receive data from the database and show it to the user.



3 Project Initiation

After forming the group, the project is initiated by brainstorming about what problems that people are facing and how the team can create a project to solve a common problem. The team came out with different ideas but in the end all members agreed on finding a solution to help corona patients where we make it easier for them to be in touch with doctors and volunteers.

After getting the acceptance from the teacher about the idea, the team started making research about the Covid-19 pandemic and looking for statistics about the countries that got affected by this pandemic.

While the group is formed and the idea is accepted by the supervisor and all members, the team is ready and motivated to start working and achieve best results in the end.

The Project Initiation was counted as part of our first Sprint where the tasks of forming the group and finding the idea were completed at the end of the sprint.

Sprint 1:

08/Feb/2021 - 14/Feb/2021

Task	Estimate	Status	Who
Group formation	3	Done	Liu, Ziad, Angel
Project Idea	3	Done	Ziad, Angel, Liu
Project Description	5	Assigned	Ziad, Angel, Liu

Sprint Description:

The working on the project started here where the group was formed and members started brainstorming to find a problem and what project can be made to solve the problem.

After finding the project idea the group got acceptance from the supervisor on the idea and the work started on writing the project description.

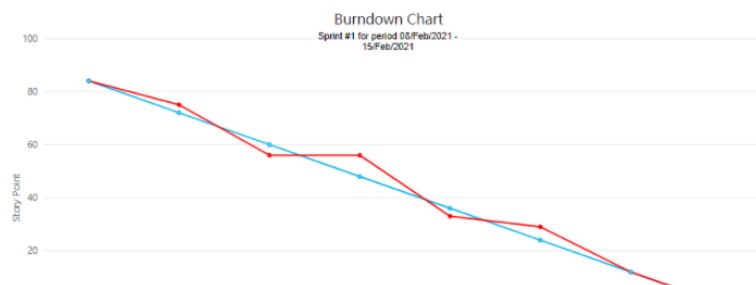
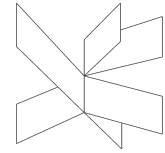


Figure 6 - First Sprint Backlog / Inception 2



4 Project Description

Before starting with project execution, it was important to work on project description and the most important part here was to define our problem statement where it was needed for the team to know exactly what the problem is and how to solve it.

The team started doing research to support the project idea. All members were able to understand the problem domain and can explain the background, define the purpose and make a plan to what risks, methodology and time schedule will be used.

The choice of methodology was good enough for our three members team while we used Kanban together with Unified Process that helped us to come with better outcomes and having better time management.

The team chose to use Sprint from Scrum and use it in the project to keep track of the working process, where the team started documenting all meetings and specifying what has been accomplished and what must be done later.

The project description was part of the first Sprint where all team members worked together to write a good background description with all necessary information sources, also tried our best to explain the problem statement to be easily understandable, and worked on all different chapters with almost daily communication to have the best results in the second Sprint where the team could finish the project description.

Sprint 2:

15/Feb/2021 - 21/Feb/2021

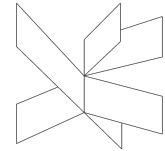
Task	Estimate	Status	Who
Project Description	5	Done	Angel, Liu, Ziad
Requirements	4	Assigned	Angel, Liu, Ziad
Analysis Planning	3	Assigned	Angel, Liu, Ziad

Sprint Description:

The sprint here started by continuing working on the project description where the team worked together to complete it.

At the end of the sprint the project Description was done and new tasks assigned for the team where the team now needs to work on requirements and Analysis planning to be able to move to the next sprint which will be about the Elaboration phase.

Figure 7 - Second Sprint Backlog / Inception 2



5 Project Execution

Project Execution started by gathering data where the team made a survey that has been sent to many people to check who had and who is having the Coronavirus currently, what they think about the web application and their suggestions about having a better system that can really help patients.

Do you think people are having difficulties with getting in touch with their doctors during Corona Quarantine?

35 responses

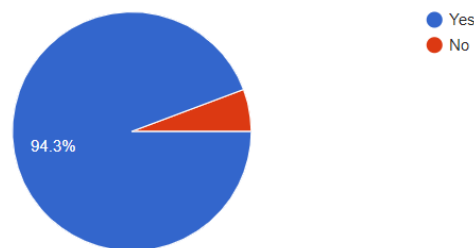


Figure 8 - Results from conducted Corona Fighter Web App survey

What do you think about a system that can help Covid-19 patients to connect easily with doctors and volunteers?

35 responses

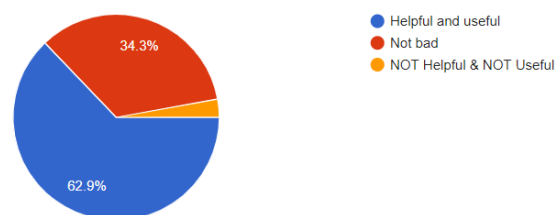
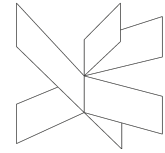


Figure 9 - Results from conducted Corona Fighter Web App survey

In the survey, doctors and volunteers were mentioned and there are a few questions about what they think and what can motivate them to join the system.

The attached image shows answers by doctors about what can motivate them:



What can motivate you to join the Corona fighter web app and help patients?

6 responses

The idea of helping people itself motivates me
I like to meet and help patients
Because I am a doctor
Help world become better
As a doctor I want to do everything I can to help people who are suffering from diseases get well
gift cards

Figure 10 - Results from conducted Corona Fighter Web App survey

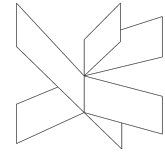
The processes here were assigned in the first and the second sprints where the data collection was done in the second sprint.

Depending on the collected data and project description, the team started writing the requirements based on the problem domain in the project description and following SMART principles to have Specific, Measured, Attainable, Relevant and time-based requirements.

When the functional and Non-functional requirements were ready the team could move to the Elaboration phase where we started with the analysis and moved forward to the design.

The process here was done in five sprints, at the end, the team started with the longest phase which was the Construction.

We started with implementing what we have in the design according to the Product Backlog.



Kanban backlog		
Task NO.	Priority	Description
1	High	As an admin, I want to be able to authenticate doctors' documentation, so that doctors are verified in the system.
2	High	As a user, I want to be able to set what kind of user I am (Patient, Doctor, Volunteer), while signing up so that I am assigned a specific role in the system.
3	High	As a user, I want to manage my account details which include password and username, so that I am able to update my profile data.
4	High	As a user, I want to manage my posts by posting and deleting them, so that I am able to share or remove them.
5	High	As a user, I want to be able to write comments on posts, so that I am able to interact with others.
6	High	As a patient, I want to create a private group and manage my group/s, so that I have more interaction with my doctors and volunteers who can provide help.
7	High	As a user, I want to join a group by searching for the group, so that I can provide help and communicate with others.
8	High	As a user, I want to be able to leave a group by withdrawing from it, so that I am not associated with other users in the group.
9	High	As a doctor, I want to be able to manage my corona-related lecture by posting, editing and deleting it, so that I can let other users be aware of my lecture updates.
		As a volunteer, I want to be able to add and delete my offer help post, so that I

Figure 11 - Product Backlog

The Agile Coach was not the same person all the time, the team decided to switch between the roles every two sprints so all of us acquire experience and understand what is going on.

The tasks were moved from the backlog to the “To DO” list by the Agile Coach, and the other two members were picking up one task at the time.

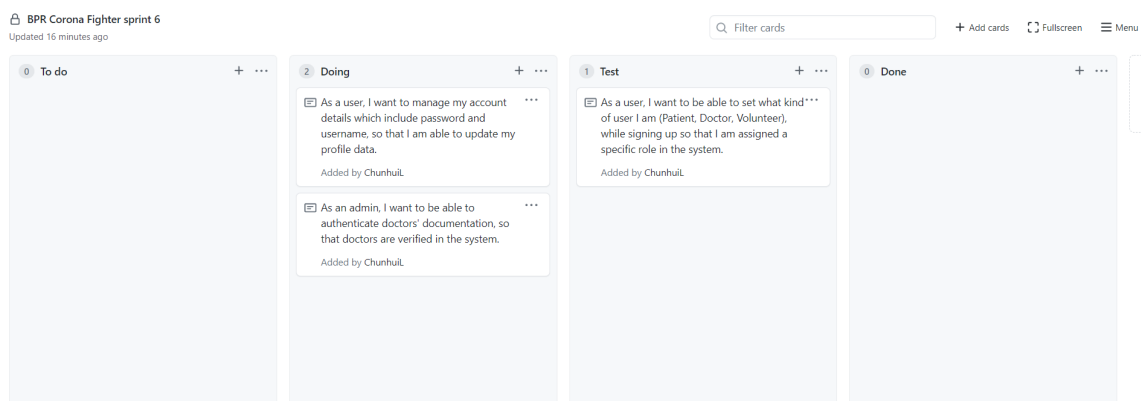
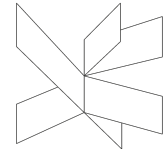


Figure 12 - Kanban board tasks in GitHub



The hard part here was the iterations where many times the team needed to go one or two steps back to the analysis and design to make small modifications on diagrams.

The Workflow was done here using Kanban board on Github where it was a really nice and flexible approach that helped us work together during the construction phase.

At the end of the project the team was almost done with all assigned tasks where most of them were in the “Done” List and “To Do” List was empty.

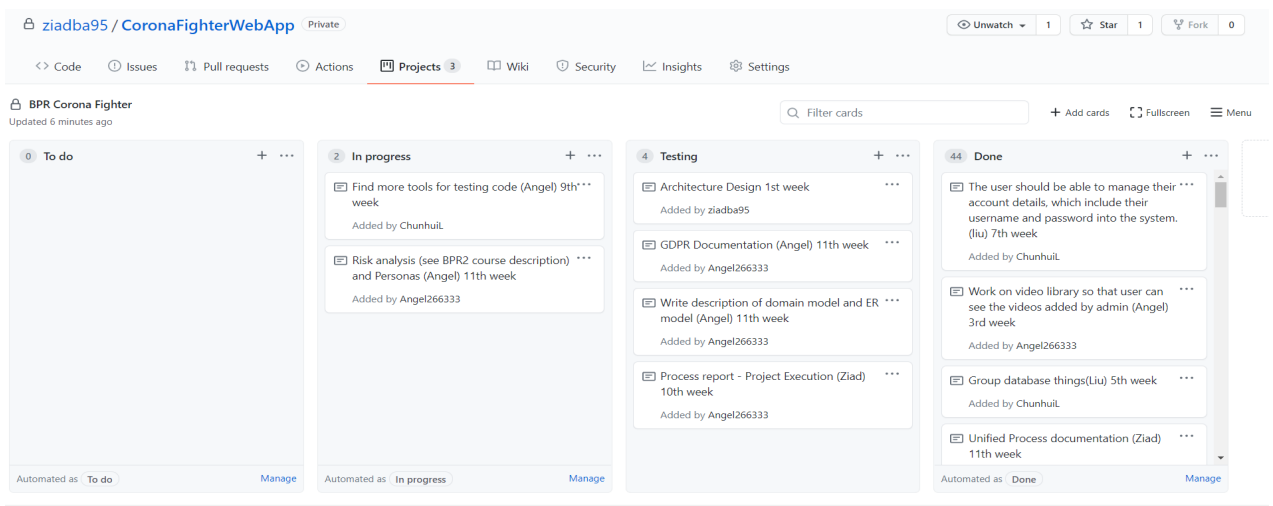
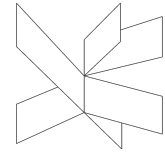


Figure 13 - Kanban board tasks in GitHub

The Transition phase of the project was about documentation, where the team started to give their full focus on it and tried to make a good report while it was also an iterative process where sometimes we discovered that there was something not so obvious as before so had to go back back and make the needed changes and go forward again. That happens in the Use Case Diagram where the team found out that the diagram still lacks view details so we tried to make it more specific and more understandable.

The process here was really good and the choice of the methods and technology helped us to have better control of the working process.

The Kanban approach together with the Unified process could be applied successfully while it was the first time we used these two approaches together, also the use of Sprints

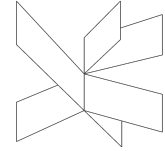


was a bit difficult but it came up with better results in having a detailed and trackable working process.

6 Personal Reflections

- Angel

My personal opinion about how this project and semester is good with some exceptions regarding the coronavirus pandemic. We had classes and did group work online on Zoom most of the time due to the fact that VIA was not open because of the coronavirus for the most part of the semester which did have a marginal impact on our performance. The project concept and execution however seem fine to me in regards to what the market might be looking for currently and in the future. My group members were a pleasure to work with and I had absolutely no issues in terms of communication or any sort of cultural barrier that might have stopped me in doing so.



- **Liu**

A year ago, when I first learned about this project, I was very nervous not only because of the difficulty of the project, but also because I did not know whether my team members had the confidence to complete the project together.

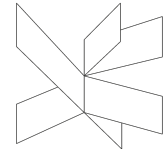
But by now I can say that those fears were unfounded, my team members are very active and self-motivated. Even under the influence of the epidemic, it is difficult for us to organize offline meetings, but everyone still works hard and makes full use of Zoom for video conferencing.

On the whole, the cooperation was pleasant. Although we came from different countries and different cultures, we still respected each other and completed the project efficiently.

- **Ziad:**

For me, I knew Liu and worked together since the second semester, and Angel joined us last semester and worked together on Sep6. I was really comfortable and happy to work with them, where they were listening, helping and giving really useful ideas and solutions when we had problems.

In this semester I wished that we had more time to work on the project and give it all our focus, but that was difficult while we have other courses and assignments that must be finished at the same time. But in general, it went well when all members did their best to work on it and help each other.

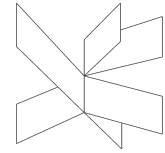


7 Supervision

The bachelor project took place during the 6th and 7th semesters. During the 6th semester, there were no scheduled meetings with our supervisor since the workload was not as intense as it would have been in the final semester. The only feedback that was given to us during the 6th semester was on the project description by the teacher of the BPR1 course.

During the 7th semester, meetings were held occasionally with the supervisor to discuss potential improvements and guide the project development team into the right direction. Meetings took place on Zoom and lasted around 30 minutes each. The supervisor provided help to us by overseeing our progress and giving feedback on the report and diagrams. The supervisor left useful comments so that we can follow his guidance to improve the progress and quality of the project and its documentation.

In contrast to previous semester projects where we had to follow a set of requirements given to us by the teachers this final bachelor project gave us total freedom to expand our horizons on what we wanted to do for the project which meant that we had to be more individualistic in our choices regarding the system which is a great way to prepare us for the real world where we are the ones in charge of a project. The supervisor was there only to give us guidelines on how we could better improve our project but not to tell us how to do the project which is a very good way of learning by us during this last semester. If we had any questions, apart from the Zoom meetings, we could always get in touch with our supervisor via email and he would reply to us momentarily.



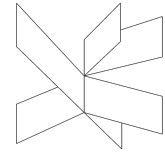
8 Conclusions

Overall, the bachelor project required a lot of team effort to complete in a relatively short amount of time this semester whilst keeping in mind that each group member had to focus on other courses as well. Even though we could not meet most of the time due to the pandemic and most of our meetings were online, we were able to finish the project to a very satisfactory level and deliver an almost ideal system.

Using Kanban helped with task distribution amongst group members. It also aided in managing our time together with Sprints for completing each of our assigned tasks. Kanban was new to all of us and we decided to try it this semester to gain more experience with different methods of working on a project.

Teamwork and communication were an invaluable part of our group which significantly improved our efficiency. Help between group members was also not uncommon to see. Whenever someone needed help another group member would try to solve the problem that they are facing together. Positivity in the team led us to having a fun and delightful way of working on the project.

In conclusion, working on this project was an exciting way to learn many new skills and technologies and thus made us better talented at developing something that will train us for our future careers in the software industry.



9. Appendices

- Appendix A: Kanban Backlog
- Appendix B: Group Description and Contract
- Appendix C: Sprint Backlogs
- Appendix D: Survey Statistics

List of Figures

Figure 1 - Hofstede Insights six culture dimensions

Figure 2 - Collectivism and individualism

Figure 3 - Personal Role Inventory chart for group member Chunhui Liu

Figure 4 - Personal Role Inventory chart for group member Ziad Akram Bathish

Figure 5 - Personal Role Inventory chart for group member Angel Iliyanov Petrov

Figure 6 - First Sprint Backlog / Inception 2

Figure 7 - Second Sprint Backlog / Inception 2

Figure 8 - Results from conducted Corona Fighter Web App survey

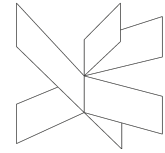
Figure 9 - Results from conducted Corona Fighter Web App survey

Figure 10 - Results from conducted Corona Fighter Web App survey

Figure 11 - Product Backlog

Figure 12 - Kanban board tasks in GitHub

Figure 13 - Kanban board tasks in GitHub



10. Sources of Information

1. Hofstede Insights. 2021. *Compare countries - Hofstede Insights*. [online] Available at: <<https://www.hofstede-insights.com/product/compare-countries/>> [Accessed 3 May 2021].
2. Kotelnikov, V., 2021. *EAST vs. WEST Differences: Eastern and Western values, attitudes towards life, culture insights, comparisons, cultural intelligence, Vadim Kotelnikov*. [online] 1000ventures.com. Available at: <http://www.1000ventures.com/business_guide/crosscuttings/cultures_east-west-phylosophy.html> [Accessed 3 May 2021].
3. Academia.edu. 2021. Belbin Team Role Inventory Test. [online] Available at: <https://www.academia.edu/29292303/belbin_test> [Accessed 1 June 2021].