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Corona Fighter
Project Description

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1 Background description

The outbreak of COVID-19, which began in January 2020, has affected the lives of everyone around the world.

Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people, and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illness.

The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes, so it's important that you also practice respiratory etiquette (for example, by coughing into a flexed elbow).[1] *(WHO, 2020)*.

Since COVID-19 is a respiratory disease and can be transmitted through the air, people have to reduce their time for outdoor social activities, which has greatly affected many people's work, study and daily life.

"Strict measures have recently been taken in many countries to combat the spread of the coronavirus. The institutions that normally give structure and variety in our daily lives – work, school, shops, fitness, bars, etc. – no longer function as before. Routines lose their relevance, travel is restricted, and our social contacts are limited or take place through other channels."[2] *(Vrije Universiteit Brussel TOR research group and research bureau, 2020)*.

In this case, everyone's life is being affected. As a patient or suspected patient, the supply of some daily necessities can become a problem because of being unable to go out. Secondly, people's mental and physical health can also be negatively affected by being in isolation.

In many cases, doctors could find it difficult to apply direct treatment to patients when face-to-face in a hospital. Professional skills of doctors can provide guidance to patients online if they could get a good description of the patient's symptoms.

As well as protecting themselves as healthy people, many are willing to contribute to the fight against the epidemic. Patients and governments also need the help of volunteers."The Danish health agency SSI wants to recruit up to 15,000 people in Denmark to help better monitor the penetration of coronavirus pandemic."[3] *(The Local news@thelocal.dk@thelocaldenmark, 2020)*.

"The need for mental health services has never been greater and, sooner or later, most of the population will experience increased discomfort and stress, particularly those with existing mental health problems. We must rethink mental health and mental health care in the era of coronavirus. It is recognised that situations similar to lockdown can increase boredom, frustration, anxiety and even panic as we try to equip ourselves in the face of a danger which is strong and present, although invisible. Some may resort to
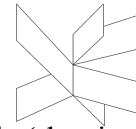
denial and escape from reality, obstinately maintaining their habitual lifestyle 'despite everything'. But, above all, long-term isolation can foster a condition of generalised trauma, with potential short-term as well as long-term consequences."[4] *(Mezzina et al., 2021)*

While there is progress with the development of COVID-19 vaccines, the future of this pandemic is still unknown, because of new mutations that came out in different countries like Denmark, the UK and India.

"COVID-19 vaccines are being rolled out in many countries, but this does not mean the crisis is close to being resolved. We are simply moving to a new phase of the pandemic."[5] *(David Skegg et al., 2021)*

Therefore, this pandemic will take time to allow people around the world to go back to their normal life.

"Vaccines alone, unless they achieve high population coverage, offer long-lasting protection, and are effective in preventing both SARS-CoV-2 transmission and COVID-19, will not end the pandemic or allow the world to return to "business as usual"." [5] *(David Skegg et al., 2021)*
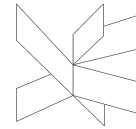
2 Definition of purpose

The purpose is to develop a web application where patients can get help as well as access to video resources regarding the coronavirus, doctors can provide counseling and guidance to patients remotely and volunteers can use the information on the website to organize mutual events between doctors and volunteers to help patients.

3 Problem Statement

Many users face daily challenges regarding the coronavirus outbreak, which can lead to anxiety and stress. Mental and physical issues can also be a problem for the user which can cause problems with their overall wellbeing the result of which is a poor lifestyle of the user and inefficiency at their (online) workplace causing problems with their work ethics. Patients need a way to get in touch with doctors in a remote manner. Doctors also face the challenge with too many patients coming to the clinic that they work and can get overloaded.

4 Delimitation

1.We cannot verify the qualifications and held licences of registered doctors automatically.

2. We will not be responsible for missed events by patients.

3. We will not be responsible for volunteers not being active in regards to offering help to patients.

4. We will not obligate people to provide personal information such as CPR.
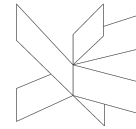
5 Choice of models and methods

5.1 Unified Process

The Unified Process (UP) will be used for Project management, where the team will separate the workload of the system into four phases, Inception, Elaboration, Construction and Transition.

At the end of each phase there will be a milestone, where in each milestone the team will check if they reached what is expected or not.

5.1.1 Inception phase

The focus here will be on the scope of the project, requirements and if the project is feasible or not, where the team will start planning for writing requirements and what will be needed, then the requirements will be established and the analysis can be planned at the end of this phase. Communicating and planning are the most important here.

5.1.2 Elaboration phase

In the Elaboration phase the maximum workload will be on the analysis and the design, the team will establish the core architecture of the system.
The main artifacts here will be domain model, design model, system architecture and data model.

5.1.3 Construction phase

The maximum workload here will be on the implementation and testing, where the team will start implementing the tasks using Kanban board where the team will implement user stories from the backlog depending on the priority of the task, and test the implemented user stories in the end.
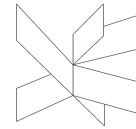
5.1.4 Transition phase

The phase here will be focusing on finalizing and documenting everything, usually this phase is focusing on the deployment but the system is not planned to be published so far.
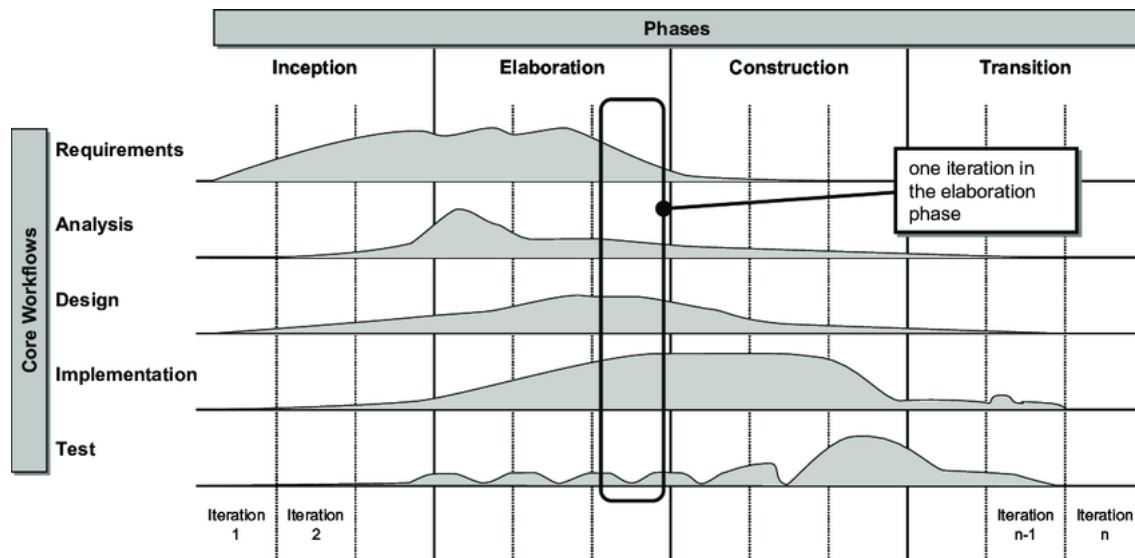

Figure 1 - Unified Process

[6] *(The core workflows and phases of the Unified Process, 2021)*

5.1.5 Kanban

Kanban will be used as the workflow management method to improve and to have a better management of the work process.

As mentioned before, Kanban will be started at the end of the Elaboration phase.

There are many kanban tools available these days. The team chose to use Github Projects Automated kanban board, where it is free and give a full control of the kanban board, the disadvantage of Github kanban board that it does not give any charts of the working process, but the team decided to use Sprints as in Scrum where there will be Sprint backlogs during the working process to have a detailed and managed process.

The tasks will be divided depending on the priority of user stories.
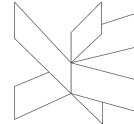
In Kanban the Agile Coach is one of the team members, so the roles will be divided in each two sprints where one of the members will be the agile coach who will choose the most priority three tasks from the backlog and pull it to the "To Do" List, then each task will be assigned to one of the team members.

Each member can choose the task by discussing and getting others opinion, but there will be a limit where tasks on the board must be moved to the "Done" list before asking the Agile Coach for a new task. In case a member finishes their task, they will be working together with another member to finish the task and when all board tasks are done then a new sprint can be started.

Team members will help each other during the development process so that overall progression on tasks is faster.

When all tasks are tested and completed, then the system is ready to be deployed and tested by the end user.

Figure 2 - Kanban board [7] *(All you Need to Know about Kanban Method, 2021)*
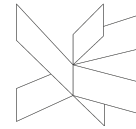
6 Time schedule

The following diagram shows the project development plan, and the estimated milestones.

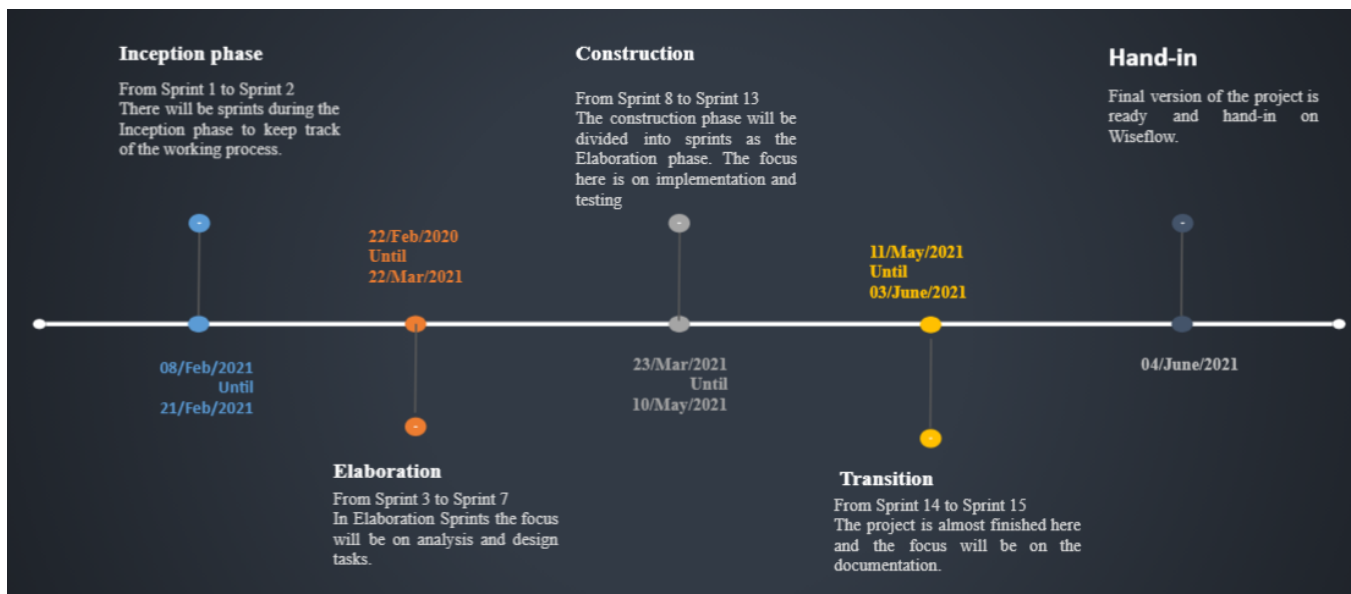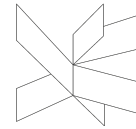Each member will spend around 412.5 hours working, which makes 1237.5 hours in total.
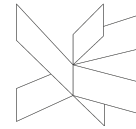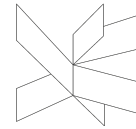

Figure 3 - Time Schedule

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7 Risk assessment

Risks	Likelihood Scale: 1-5 5 = high risk	Severity Scale: 1-5 5 = high risk	Product of likelihood and severity	Risk mitigation e.g. Preventive- & Responsive actions	Identifiers	Responsible
The progress of the project is influenced by Covid-19	4	3	12	Use Zoom to meet online and keep communication using WhatsApp.	Covid-19 limit group members' ability to meet physically and work together	Ziad
Lack of time	2	4	8	Try to reschedule the leftover project in a way that we can finish the most important parts of the project.	Could not follow the time schedule	Liu
A member quits	1	5	5	Will talk to the teacher if the leaving member can join another group or continue working on the project by minimizing it.	A member who looks uncomfortable or failing to finish tasks	Angel

8 Sources of Information

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7. Bocasay. 2021. All you Need to Know about Kanban Method. [online] Available at: <https://www.bocasay.com/kanban-method-it-development-projects/> [Accessed 3 June 2021].

9 Appendices

Appendix A: Group Description and Contract

List of Figures