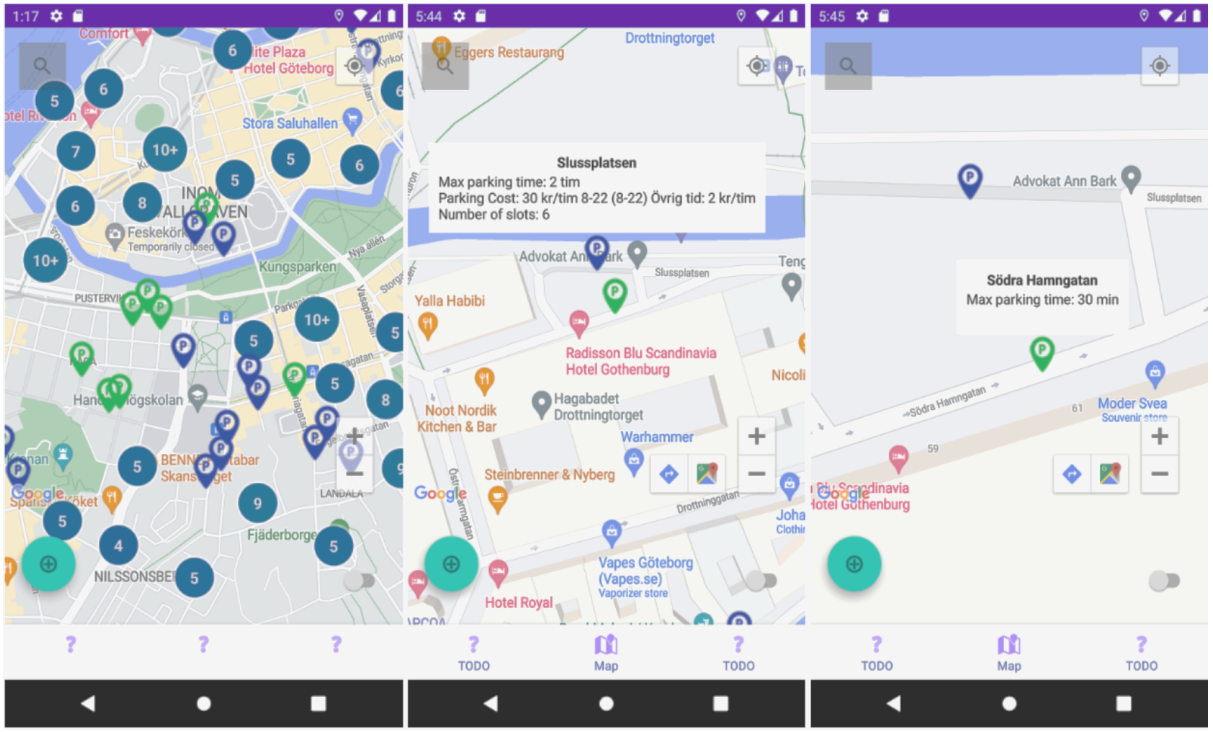
Final Team Report

Team Mustafar



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Github repository: https://github.com/Love-Ry1/mustafar

1. Customer Value and Scope

1.1 Scope of the application, prioritization and creating value

Step A)

During this course, everyone in the team feels as if we have learned how to define a good scope for our application and also in relation to the timeline that the course ran under. Prioritizing some features over others is also something that we have gained experience in as we saw how much value they created and for whom they created value for. We have created a lot of value mainly for the customers and users of the application but also for other developers through user stories regarding the documentation of code.

Step B)

In the future and in future projects we all want to get hands-on experience in doing longer projects that last longer since we felt that It has been hard to know whether or not we should prioritize value for the developers. These are things that might be considered when doing longer-lasting projects but maybe this is not part of the course.

Step C)

To go from step A to step B, we would like to partake in a “real” project with real requirements to really experience all of the benefits of the agile workflow. Maybe even if we could find a longer-lasting course in Chalmers or at other universities with more than 7.5 credits to learn about the long-term effects of the agile workflow.

1.2 The success criterias

Step A)

We believe that we have accomplished everything that we wanted and even more in regard to the application. Firstly we created success criteria based on some functionality that we wanted to have in our application and also how we should work as a team in the agile workflow and we believe that we have accomplished these goals that we set up for ourselves.

Step B)

One thing that we should reconsider is defining more clearly our goals when it comes to what we want to learn and how we are going to work together. We never specified how much better we should be at the agile workflow and our communication skills at the end of the sprints and we believe that this lack of measuring our progress stalled our project.

Step C)

To be able to go from Step A to step B (i.e to go from not measuring our progress/goals to measuring our progress/goals) we would simply take the time early in the course and during the project to clearly define these goals. Also to make sure that they are in the range of being attainable but at the same time not being too easy to attain. We could also have regular check-ups for the goals by tying them together with the KPIs for better understanding and analysis.

1.3 User stories, task breakdown and effort estimation.

Step A)

During the course, we have learned the basic and standard steps in defining and creating user stories. “As an X, I want Y, since Z”. We have also learned the importance of acceptance criteria and when they are useful since larger user stories that are harder and more complex are benefited from having acceptance criteria to know what should be achieved before marking the user stories as “done”. We have also learned how to slice one user story into many different ones and to do it in a vertical manner in several different tasks. Also to use effort estimation when planning our sprints and new user stories to our advantage.

Step B)

We believe that what we could have changed next time is to really understand what characteristics a good user story has. As we understood this during the course of the project and automatically learned it through supervision meetings as time went by we feel that we could have taken more time earlier in the course to become more familiar with this area. We were very eager to start coding and we forgot the importance and meaning of really grasping these ideas early on. Although we used the effort estimation tool all team members come from different backgrounds in regard to programming and how confident they were and we realized that not everyone's voice was heard. This is something that we also would change next time.

Step C)

To go from Step A to Step B we would first take some time in researching literature in regards to what makes a good user story and what makes a bad user story. We shouldn’t have begun coding so early and instead focused more on the pillars of the course earlier. Effort estimation would be solved by voicing everyone's opinion more by maybe involving a third-party online service that we could use to do the effort estimation. In this way, we would get an opinion from everyone in the group and actually see what people in the group are thinking.

1.4 Acceptance tests

Step A)

We manually tested the code to see if it works on the application and with the help of the acceptance criteria. Once it met the criteria and we checked the DoD we approved it. This was carried out by one of the team members at random. Then we also consulted with our product owner if he was happy with the implementation. Lastly, we merged it and pushed it into the repo. We gave everyone on the team an opportunity to look at the implementation and also review the code which gave great value to the team and also the code in general.

Step B)

We could have tested our tests using Junit as this was the initial plan of the project and for the tasks. But because of bad planning we never carried out this and when we realized this it was already too late to implement these tests.

Step C)

To go from Step A to Step B we would implement the Junit tests right at the beginning of the project and plan it better. These tests could have added greater value to our code and looked for bugs or other faults.

1.5 The three KPI's

Step A)

We made use of three KPIs in our project which aided our sprint reviews and progress. Velocity, Control chart, and Reviews and testing.

Velocity:
The velocity was how many user stories we managed to complete during a given sprint. It gave a lot of value to us since we could track our progress and maybe identify faults in our workflow if one week we didn't finish as much as we wanted to.

Control Chart:
The control chart was used to estimate how much time each team member spent working on user stories in terms of hours. This wasn't that exact but each team member would give an estimate of how much they thought they worked during the week. We used this as an engagement tool for the project so that we could question why someone has not spent as much time as someone else for whatever reason. Luckily this never occurred during the project but it was nice to have it as a precaution.

Reviews and testing:
Here we kept track of how many user stories we reviewed and tested for functionality and also if we had to re-review a user story because it might not have passed all criteria. This helped us to always test based on the acceptance criteria and tracked our progress greatly.

Step B)

In the future; running tests on more emulators before committing the changes to the main branch would be preferable since there came up problems with some emulators not being able to handle certain functionalities that were added, whilst this should not matter for the end user as long as they have device software corresponding to the emulator able to run the functionality it results in limitations for individual developers to work on certain functionalities.

Step C)

The solution is as previously stated to run tests on multiple emulators, however, it would be unreasonable not to use code that runs on several different emulators because of problems with a single emulator.

2. Social Contract and Effort

2.1 The social contract

Step A)

The social contract was an important guideline for us to follow when working on the project. We never had any conflicts with it since everyone on the team came to the conclusion that we were happy with the rules.

Most of us in the team did look a lot at the contract at the beginning of the course. But towards the last couple of sprints, we did not use it as efficiently. We felt like the contract's rules had been very clear and obvious to us so we didn't feel the need to check it every week. We have also made use of the contract as a conflict solver if there were any problems to arise in the team we would always have the contract as a tool to use if a situation like this were to happen.

All in all the social contract was a great tool for the team to define rules that we had when working together.

Step B)
For future projects, it would be better to go through the social contract every time we had a meeting to really apply it to our work in more depth. Although we did this in the beginning we stopped doing it after a while and this lead to us forgetting some points or rules that were defined. Since we had 17 rules defined in the contract it was very naive of us to think that we could just remember them all and go with the flow.

Step C)
To go from Step A to Step B we would encourage all group members to be engaged in the contract and to apply it when working. Putting up reminders or maybe pointing it out in meetings would also help since we did not do this during this project.

2.2 Effort and time spent

Step A)
We worked in two subgroups in this project. Group 1 consists of Mirco, Abbas, Love, and Mustafa, and Group 2 consists of Fadi, Gabriel, and Zakariya. All group members had some mixed experiences with the amount of effort and time that they spent. Although we worked in 2 subgroups and our deliverables were mostly the same for the participants in subgroups 1 and 2 there has of course been individual work done. We also feel like the team spent in the first half of the project was less than in the later half of the project as we worked more hours

during this half. As a whole the group was very happy with all the contributions made and that we fulfilled our DoD, and acceptance criteria and gave what we wanted to the customer.

Mustafa: Averaging about 10-13 hours a week.
Abbas: 11 - 13 hours
Love: 10 - 15 hours
Mirco: 10 - 15 hours
Fadi: 13 - 15
Gabriel: 13 - 15
Zakariya: 13 - 16

Step B)

Although saying how much effort one should put in as everyone has had different experiences with the practices for the project. One thing that we could however improve on is to distribute tasks more evenly among team members and give tasks that are comfortable for the one taking the given task. This is to ensure that not too much work is being laid on one or several group members.

Step C)

To go from Step A to Step B we would conduct expensive effort estimations of each user story and task with clear acceptance criteria and also have an open communication along the work process. If we work in this way we would know whether or not someone needs assistance or extra time with a given task. Also by using effort estimation more efficiently we would contribute to even better results.

3. Design decisions and product structure

3.1 Design Decisions

Step A)
We utilized the google API for maps as this is the most well-documented and fleshed out in terms of preexisting functionality that exists, to our knowledge. The look of the map generated and the way one moves across the map and zooms is also a design most users will be well acquainted with. Geocoder was used for getting coordinates for addresses since there were no other alternatives that did not involve a credit card.

The search bar was put at the top of the window since it is the main way of interacting with the application aside from clicking on icons on the map and being a recognizable pattern for most users. It made sense to click on markers on the screen to retrieve information about the parking lots, rather than having a cumbersome list interface with expandable containers for nearby parking spots, clicking on the markers for additional info also makes it much clearer to the user that they are getting information on the parking spot they want since they can easily see it's location on the map connected to the information lightbox.

Regarding the decision to use clustered markers Group 1 decided to implement this design decision to easily display where on the map certain markers are located at. It also displays how many parking spots there are in a location so that a user can know easily without counting how many parking is located in a certain area.

This connects to customer value since it will be easier to clearly define future user-stories if programmers have a clearer view of the overall code structure, hopefully making it more likely to accurately judge what can be achieved in a given amount of time.
MyRecyclerViewAdapter is a separate class only concerning how the recyclerView displays and connects a list of addresses in the form of strings from mData with text_row_item. The AddressHandler class is used to initialize a list of strings extracted from Addresses.txt via a separate thread in onCreate; addresses1, which is utilized by the Adapter.
Since the searchView and the override for onItemClick are handled in MapsActivity, filterList methods that these utilize are therefore left in this class as it felt more natural to work with this way.
Step B)

Something that we could have improved upon was separating our code into different classes early on in our project. Even though this was something that we started to implement in the later half of the course we should have done it much earlier to avoid conflicts.

Step C)

To go from Step A to Step B we would start to think about the design at the beginning of the course. So that this would not lead to other tasks being delayed which ultimately affected our customer value negatively.

3.2 Technical Documentation

Step A)

We have provided the classical Java doc as a form of documentation in the project and in the source code. We have also provided documents in the form of meetings and what we aim to achieve in the next sprint. There is also some slight documentation in the commits in the repository specifying who worked on the project but also what the commit was all about.

Step B)

One thing that we could improve on is to have a more centralized view of our requirements in the project to track our progress better.

Step C)

To go from Step A to Step B: If we were to have better and more meaningful documentation a document could have been written together with the project requirements to track our progress better and reduce time spent on redundant documentation. Another thing that we could do is document our solution and code before actually starting to code to make it more clear on what needs to be done.

3.3 Update and usage of documentation during sprints

Step A)

In the project, we have used our documentation to keep track of our progress and to reflect on things that we have completed or are expected to complete in the future. We also went through things that we could improve on and our effort estimation. We had regular meetings during the start of the sprint but also towards the mid and ending part, and we had these meetings when we felt the need for them. We updated our documentation in the form of maybe changing user stories in our Javadoc when we felt that a change was needed.

Step B)

One thing that we could have improved on was using documentation more efficiently during the sprints to provide a better view of the task. This in terms would result positively in our

progress since having a more unified view of the documentation makes it easier to look for things.

Step C)

To go from Step A to Step B we would spend more time and effort on making sure that the structure of the documentation was finalized at the beginning of the course. Of course, we could still make these changes now but this is a lot of time that would be spent and could have been avoided easily.

3.4 Ensurance of code quality and enforcing code standards

Step A)

In our social contract, we have specified things to apply when ensuring code standards and code quality. So that, when someone is working with the code, knows what to do and what not to do. We enforce these standards when reviewing the code to ensure that they are indeed met. This has worked very well for us since we achieved a good structure where we didn't have any re-reviews of code where we might have gone back to it and changed it so we avoided these problems. Also, we kept merge conflicts to a minimum even though this was a challenge at first.

Step B)

One thing that we could have done is maybe to use a coding pattern like the MVC to structure our code better. We realized towards the end of our projects that we had a lot of code that we could have divided into different classes to make the code better and more structured with high quality.

Step C)

To go from Step A to Step B we should have implemented a coding pattern and started to discuss early how we are going to structure our code. We of course learned the consequences the hard way because we were too eager to start to code. We will think of this in the future to spend more time in the planning phase.

4. Application of Scrum

4.1 Scrum roles and impact

Step A)

We worked in two subgroups in our group. Group 1 consists of Mirco, Abbas, Love, and Mustafa. Group 2 consists of Gabriel, Fadi, and Zakariya. In each of these subgroups, we let Mirco submit code for group 1 and Zakariya/Fadi submit code for group 2 as other team members had problems submitting code because of merge conflicts. We also had a scrum master which was Gabriel and during the meetings, we always had someone taking notes of what was being said and how we are going to solve our given tasks. We kept it organized and created an easy routine for us to follow. Everybody helped each other in the subteams and we also communicated at large by using communication channels like discord where we had checkup meetings several times during the sprint. Our product owner was Erik, a person that was not part of the team. The PO provided essential guidelines to the team as he decided what functionality he wanted in the product as we discussed these during the sprints. He also approved of our completion of user stories and made sure that he liked the application.

Step B)

The way we worked and all the roles we had were very useful for us. One thing that we thought about was assigning a role to a person that could speak for all of us during the supervision meetings. As this should have been the scrum master this wasn't the case since there could have been informed that only one subgroup had knowledge of it. We realized this as not everyone could always attend the supervision meetings so it would have been wiser to appoint someone to speak for all of us.

Step C)

One possible solution to get from Step A to Step B is to meet more physically to know everyone's strengths and weaknesses to decide who would be most suitable for this task.

4.2 Agile practices and impact

Step A)

We had several agile practices that provided a positive impact on our project and how we worked during the sprints.

- Scrum boards made it very easy to track our progress and to see what we have to do in the sprint so that we can get a clear picture of where we currently are in the project.

- We used meetings when necessary to plan and help other team members during the sprint and also discuss how both subgroups are doing in terms of their user stories.

- We have a lot of priority to user stories that we thought would be of most value to the user, the “fancy” stuff we saved towards the end as we thought that this wouldn't be important.

Step B)

Most of the things mentioned went really well. Although communication could have been better since some days we didn’t communicate at all which caused more stress than necessary.

Step C)

To go from Step A to Step B we would consider doing stand-up meetings every day as this would increase engagement amongst all team members and this really signals that someone is signaling which would encourage feedback.

4.3 Sprint reviews and relations to scope and customer value

Step A)

We had a product owner named Erik who was not part of the course and we reported to him when we created new user stories or completed them. We did not have any external stakeholders in the course which made us combine the sprint review and the retrospective meetings where we discussed how things have gone, what problems we encountered, and how we would improve towards the next sprint. The PO reordered our product backlog on what he thought was important for our imaginary customers. Then we discussed it with him and made sure what our priorities were for the sprint.

We used the DoD when doing the reviews and before merging our code. We also double-checked with our PO to get feedback.

Step B)

As an improvement, we would seek more mid-sprint feedback from our PO on user story progress, for example determining how we should update the expected completion time (long, med, etc…)
In a future project, we would seek to have an external stakeholder that could give us more conditions to meet which would make us reprioritize our user stories.

Step C)
Simply finding external stakeholders and ask for our PO to check our progress at least once more each sprint.

4.4 Practices and tools

Step A)

We developed expertise and knowledge about the scrum board throughout the course. We always updated the scrum board, moved user stories to different states to specify where they are currently being operated and defined how hard they would be, and so on. We learned a lot of things during the project and we also learned other things by making mistakes.

Step B)

During the project, we realized that we would have merge conflicts between the two subgroups because we all worked on one branch. We also realized that we need more classes to deal with issues that we had with android studio. To plan better and add new ways to face an issue is something that definitely will be added in our future projects.

Step C)

To reduce this gap we would document our solutions better and maybe consider working on different branches between the subgroups in the group.

4.5 Relation to literature and guest lectures

Step A)

We never built any relationship with the guest lectures or the material that was provided by them and the course. We resorted to the internet when we didn't understand something or we waited for our supervision meeting with Omar where most of our questions went anyways. During these meetings, we described and discussed our issues with him.

Step B)

We know that the internet can be a very complicated place to find information and this information might not always be correct. Until next time we will look at the information nearest to us and most reliable to us from the course and guest lectures and also ask more questions to the supervisors outside of the meetings via email.

Step C)

To get from Step A to Step B we would make sure to use the resources that were given by the course first hand and if it isn't enough we supply with the internet. Another thing would be to bring questions ready to the supervision meetings.