Individual Reflections Week 9

Group Bulbasaur

Johan Mejborn

Denna veckans mål var få ordning på sorteringsalgoritmen. Detta mål blev lite åsidosatt eftersom vi bestämde oss för att prioritera om och fokusera på att färdigställa sådant som ger mer kundvärde och som därför måste bli klart innan presentationen. Ett annat mål var att planera hur presentationen ska se ut vilket vi lyckats med även om en del av det content som ska visas upp ännu inte blivit gjort. Istället har jag försökt programmera en filter-funktion tillsammans med Nils vilket vi lyckades skapa ett skal för även om funktionen inte riktigt fungerar som den ska.

Sett till detta projekt började jag med väldigt lite förkunskaper till programmering med det initiala målet att jag vill förstå hur lång tid ett utvecklingsprojekt tar samtidigt som jag ville utveckla mina utvecklingskunskaper. Detta tycker jag att jag uppnått i projektet och det har varit otroligt lärorikt att få sitta ner och skapa något från början. Hjälpen som IT-grabbarna bistått med har varit ovärderligt och jag tycker att vi som grupp fungerat alldeles utmärkt ihop. Ett annat mål var att lära mig om SCRUM vilket jag också anser mig ha gjort. Vidare var ett tredje mål att vara med och programmera en tjänst som går att använda, om än i liten skala, vilket vi faktiskt lyckats med på bara 8 veckor. Grymt!

Lärdomar jag tar med till nästkommande projekt är att arbeta mer med uppföljning av effort per vecka för att det ska bli så tydligt som möjligt. I detta projekt har vi haft några veckor där vi legat bra till vad gäller gjorda user stories per vecka men vissa veckor där vi inte lyckats med så mycket vilket har varit svårt att härleda. Vidare tar jag med mig att vara noga med att inte lägga för mycket tid på enskilda aktiviteter som eventuellt inte är värdeadderande utan sätta en pott av timmar per uppgift som man maximalt får sitta med dem utan ta hjälp eller helt enkelt släppa uppgifterna. Detta för att projektet ska fortlöpa i så bra takt som möjligt. För att nå dit i nästa projekt tror jag det är viktigt att ha en dialog och kommunikation i teamet så att man har en övergripande koll på vad alla gör och hur lång tid detta tagit, kanske genom tidrapportering, för att se till att teamets medlemmar lägger energi på rätt saker vid rätt tid. Slutligen tror jag bättre kommunikation i övrigt hade gjort arbetet enklare vilket givetvis blir lättare genom att jag nu personligen innehar med kompetens om utvecklingsprojekt vilket gör att jag har bättre koll på hur lång tid saker och ting tar och därför är enklare att kommunicera med.

Nils Netz

Denna veckas arbete har fortsatt på ett bra sätt. Genom enkäten fick vi reda på vad kunderna värderar med vår app och vad vi ska lägga fokus på att utveckla. Detta ger oss en insikt, som kanske kommer lite sent. Vi hade behövt göra denna enkätundersökning tidigare i projektet för att undvika att lägga tid på sådant som ändå inte ger kundvärde. Detta tar jag med mig till nästa projekt.

Mina mål under kursens gång har ändrats en del. I början ville jag lära mig mer om scrum och user-stories eftersom det är ett nytt sätt att arbeta på. Jag känner att jag blivit bra på det och har en

övergripande koll på hur man arbetar enligt denna metodik. Jag har till och med börjat inkorporera det i annat plugg och andra engagemang som jag har. Det är väldigt effektivt och tydligt att sätta upp mål för varje vecka istället för över en längre period. Det blir som delmål som är lätta att följa upp och gör det givande att se när de uppfylls. En nackdel jag kan se med metoden är att när målen inte uppfylls sjunker självförtroendet och man tappar motivationen. Det är inte heller alltid helt lätt att uppskatta hur mycket man hinner med på en vecka, vilket antingen leder till över- eller underprestation. Dock har iallafall jag blivit bättre och bättre under kursens gång och jag tar med mig den erfarenheten till nästa projekt. Till dess skulle jag också vilja komma in i arbetssättet snabbare, eftersom det slösade lite tid att lära sig det. Till nästa projekt tar jag också med mig vikten av reflektioner som denna. Även om man når sina mål och allt går som på räls är det viktigt att utvärdera varför det går bra. Under kursen tog det ett tag innan vi stötte på ett farthinder, men då visste vi inte hur vi skulle ta oss tillbaka till den arbetstakt vi hade haft innan eftersom vi inte utvärderade varför det gått så bra dittills. Till nästa projekt tar jag därför med mig vikten av utvärderingar, även av de bättre delarna.

Senare under projektet var mitt mål att lära mig koda självständigt. Detta uppnåddes delvis, då jag aldrig fick tid att sätta mig helt själv och arbeta på projektet. Mina färdigheter inom programmering känns dock mycket större nu än innan projektet startade, vilket jag ser som positivt, även om det egentligen inte är det kursen handlar om. Till nästa projekt tar jag därför med mig att jag borde ta lite mer risker med mitt kodande och verkligen sätta mig själv på prov. Mycket går att lista ut på egen hand med hjälp av google och att läsa annan kod i projektet. Jag gör detta genom att tro mer på mig själv i början av projektet, nu kände jag mig underlägsen redan i starten eftersom vi skulle arbeta tillsammans med flera som pluggat mycket mer IT än jag.

Gruppens användande av scrum har som sagt utvecklats under kursens gång. Jag har bidragit genom att göra det som förväntas av mig och att lära mig mer om scrum. Alla i gruppen har tagit ansvar för sin egen kunskap om scrum, och Hassan har haft övergripande ansvar för mötena. Detta har fungerat prima men en ansvarig som ser till att mötena fungerat enligt metodiken och att alla tar ansvar för sitt eget lärande. Detta tar vi med oss till nästa projekt.

Överlag är jag nöjd med min insats sett till både gruppens deliverables och arbetet som helhet. Jag känner att jag gjort det som förväntats av mig och tagit på mig en rimlig mängd arbete. Jag har gjort varje veckas reflektion och bidragit till teamreflektionen. Jag kommer också dra ett stort lass i final reflection, eftersom jag vill ta på mig det och lära mig av erfarenheterna gruppen samlat ihop. Jag ser fram emot att färdigställa projektet och räknar med att det kommer bli som vi tänkt oss. Det jag tar med mig till framtiden är att lägga tid på projektet varje vecka, vilket jag knappt gjort i någon kurs fram till nu. Det gav en bra kontinuitet med att alltid reflektera över ens arbete varje vecka och var skönt att sätta krav på sig själv att prestera kontinuerligt så att inte allt arbete hamnade i slutet. Jag ser fram emot nästa projekt!

Matthias Andersson Baumgartner

Denna veckans arbete har gått bra. Genom survyn fick vi reda på de tre funktioner som kunderna värderar högst. En av dessa var en filterfunktion för kartan, som jag och Mejborn började koda på. Detta

gick förvånansvärt bra varav vi löste grunden med GUI och logik kring funktionen. Det som saknas är hur den ska implementeras i utmålningen av MeetUpsen. Detta valde vi att vänta med då vi inte var helt hundra på hur vi skulle lösa det och valde därför att ta hjälp av IT-studenterna istället. Vi har även påbörjat final reflection. Målet att kunna programmera mer självständigt förändras inför nästa vecka då vi är i slutfasen av kodandet och fokus kommer istället skiftas till att förbättra GUI och att skriva en final reflection. Därför kommer det nya målet istället att vara att skriva så mycket jag kan på reflektionen. För att nå mitt nya mål ska jag försöka avvara så mycket tid som möjligt och samtala i gruppen så att allas åsikt i de olika frågorna tas med. Utöver detta ska vi även fila på en presentation. För att alla ska vara delaktiga i skapandet av presentationen valde vi att inte bestämma vilka som presenterar innan vi färdigställt presentationen. Kommande vecka kommer jag, och I-studenterna, förmodligen kunna bidra genom att skriva mycket på final reflection då vi är vana med denna typen av uppgifter plus att IT-studenterna har mycket plugg inför tentor.

Mitt bidrag till gruppens deliveries denna veckan är således påbörjan av filterfunktionen och final reflection. Mitt bidrag till gruppens användande av Scrum är att jag närvarat på alla möten, gjort de uppgifter som jag tagit på mig, skrivit individuell och delar av final reflection.

Mina mål och färdigheter har ändrats mycket genom kursens gång. Vid början av projektet hade jag aldrig ens hört Scrum, Github och än mindre hur man kodar i Android studio. Idag skulle jag vilja påstå att jag har en bra uppfattning vad allting är och hur det används, Scrum framförallt. Detta till stor del tack vare att IT-studenterna har varit mycket hjälpsamma och guidat oss I-are, creds till dem!

På grund av den lägre graden av förkunskap har jag inte kunnat bidra med riktigt lika mycket rader kod som IT-studenterna under projektets gång. Men för att kunna bidra har jag, Mejborn och Nils satsat mycket på parprogrammering för att på så sätt vara mer effektiva och kunna bolla idéer mellan varandra. Inför kommande projekt är det dock just detta som borde förbättras. Man blir lätt bekväm när man parprogrammerar och utmanar kanske inte sig själv i den grad som man borde. Så inför nästa projekt är målet att testa mina vingar och våga koda vissa user-stories själv. För att nå dit ska jag våga mer och öva problemlösning via google, där egentligen alla svar finns.

Mitt bidrag till användandet av Scrum har ändrats markant från början av projektet tills nu. I början visste jag, som sagt, inte ens vad Scrum var medans nu anser jag mig ha ganska bra koll och uppfattning av varför man använder sig av det. Den viktigaste lärdomen, gällande användandet av Scrum, jag tar med mig, och det som jag ska jobba med i nästa projekt är att kontinuerligt utvärdera både när en sprint går bra och när den inte gör det.

Överlag tycker jag projektet har gått bra! Vi har stött på motgångar då vissa veckor har gått mindre bra och vi inte fått gjort det vi ska, men jag tycker ändå vi som grupp har tacklat detta bra. Den viktigaste lärdomen i hela projektet blir att undersöka vad marknaden vill ha innan man börjar koda. Vår survey visade att vi hade en relativt bra uppfattning om vad som var viktigt, men ändå hade vi fel och la stora resurser på vissa funktioner som marknaden inte värderade alls högt. Så sammanfattningsvis, inför nästa projekt ska jag bli mer självgående och programmera mer på egen hand, bli bättre på att utvärdera varje sprint och avslutningsvis, genomföra en marknadsundersökning i ett tidigare skede.

Hassan Jaber

For this week my goal was to put a lot of effort towards the presentation of the project. This I did by coming up with the idea of filming different segments of the demo which we would present, and also having the film be a story about a certain consumer, and I put forward this idea to the group and Håkan, which was well-received. I have also, together with Johan, constructed a manuscript for the film, and important bullet points we aim to talk about during the presentation. Another goal of mine was to remind myself of the value that the application brings the consumer, this happened organically when constructing the presentation, together with the group we really reminded ourselves of what actually are the most important parts of the application in terms of value.

From my first Individual Reflection: "During the course of this project, I aim to learn a whole lot about Scrum and how it is used in a project, group dynamics, software engineering projects generally, the business side and the interplay between them all. My way of achieving my learning goals is by for one; actually developing a software engineering product, where all these aspects are in motion "Learning by doing". I will also attend as many lectures as possible, research Scrum via internet sources/the library. Lastly, I will utilize my group-members knowledge and experiences to my advantage, the individuals of our group is the greatest asset we have."

*When it comes to how much I've learnt about Scrum and the agile process, I've definitely learnt a whole lot. Most of the knowledge has come during the aftermaths (now), I now realize the importance of evaluating **why** that week was so good and **why** that other week was so bad. This is something that flew past us during the actual project, we often only evaluated why we had a bad sprint, but neglected the good weeks, which lead to not knowing how to make the bad sprints better. I learned that it is extremely difficult to plan out every single thing in advance, we tried to make very well constructed user stories at the start, but realized it would take too much time to slice **every single user story**. Instead we only made rough drafts of the user stories and when they got picked out for a specific sprint, we developed them further. There are many examples of where I've noticed that something is wrong and then fixed it afterwards which follows my way of achieving my goals by "Learning by doing".*

When it comes to group dynamics, it's been fun, challenging and beneficial for two reasons, throughout my 2 years in the IT program in Chalmers, I've had exactly the same group members for every project; now I've worked with 3 new people, but not only that, they have been from a different program. The challenging part of it has been the gap of knowledge, they didn't know as much about software development as we did, we didn't know as much as they did about value/"business" etc. as they did. Notice my use past tense in that sentence, that is the beneficial part of our group, the exchange of knowledge. I would argue that we now have pretty much the same knowledge about those two parts. I achieved my goal of utilizing my group-members knowledge and experiences.

Furthermore, I've of course learnt a great deal of things that I didn't think I would. For example it's been a learning experience dealing with group members for example being off on vacation abroad. I made sure to communicate a solid plan before their leave and also communicate through different channels during

their leave and keep them up to date. This was very important, because in some parts of the project, we were very dependent of each other.

Also, maybe the most important thing, I've learned the importance of reflection. By the start of this course, I thought of these reflections with frustration, "Why is it mandatory to write 9-10 individual reflections?". But now, I really see the importance of it, not only for software development, but for life in general. I've actually started to set up goals for my weeks, e.g. cook this food that day, cook this other food that other day, wash my clothes this day, etc. I can then look back at that plan when the week is done and either be disappointed at myself, or very happy that I've actually achieved something that week.

*One learning experience that really stood out to me specifically was that it is important to in **before-hand** discuss how important this certain feature is, and to set a deadline on how long we should work on it if we find ourselves struggling with it. I dealt with this issue first hand when trying to implement SnapKit/Bitmoji fully. I started implementing it, got about 70% of the way done, when I started experiencing roadblocks, no matter how much and how long I tried, I just couldn't get it to work how I wanted it to. First of all, I discussed this with the group way too late, and second of all, when I did discuss it, I didn't make it clear how much of an issue this really was. This lead to me putting over 25 hours on something that didn't even end up being finished at the time of me writing this. If we had put a deadline on for example how many hours maximum we could put on that specific feature, we would of avoided this. If I had discussed this with the group earlier, maybe somebody would of had the time to help. This experience was very frustrating at the time, but now I take it as an incredible learning experience I take with me going forward.*

Looking forward, whether it would be further developing this specific application or working on another software project, I feel I've armormed my toolbelt enormously. I know the importance of reflecting and evaluating, how to set efforts and velocity, how to deal with group members on vacation, how to work together with people from different backgrounds, setting deadlines, discussing issues early, group dynamics, value and so much more. If I were to start up a new project with new group members, the bullet points I'd stress that I would want us to work on and think about would be:

- *Slicing the cake*
- *Discuss, **alot,** just communicate with each other*
- *Don't underestimate the value of daily scrum*
- *Set deadlines*
- *Make sure everyone's happy and satisfied with their own work and with each other*

All in all, I am incredibly proud of myself and my own journey, I've progressed as a person, a software developer and as a fellow group member of a software engineering project. I am also extremely proud of my group members, the progression was amazing to see, especially from the I-students that at the start said that "they cannot program", which was proven not to be true.

Alexander Örnbratt

Last week's goals and objectives were to completely finish the MeetUp view and try to work on another user story with high priority if I had the time. I was confident that I could finish the MeetUp view, but did not believe that I could get much more work done, considering I was still abroad. However, I was able to find the time and worked an immense amount on finishing both the MeetUp view, as well as QR code-scanning and viewing functionality, along with showing a list of friends who wish to join the event in the MeetUp view, in addition to fixing a bug with how the log in/log out button in the navigation menu worked. I am very pleased with my achievements pertaining to this specific goal of mine. Another goal of mine was to be more present in the group discussions in the Sprint and have continued communication with the other group members. While I believe that I kept as much contact as I could with them, I did not get the chance to actively take part in their discussions at the set meeting times throughout the Sprint, however, now I am back from my trip so I can pick this back up again.

My contribution towards this Sprint's use of Scrum was almost the same as last week, to be active during the meetings and work sessions. Because I was abroad, I could not be physically present at the meetings, however, I was able to schedule my own work sessions and contact my team members to make sure I was working on the relevant issues. At a meeting this week, they wrote down important ToDos, so I was able to follow these and fix the problems that they deemed most urgent. I was able to contribute towards this week's deliverables in the same way as last week: to write my individual reflection. I was told that we are not supposed to write a team reflection this week and instead focus on the final reflection.

As described above, I am very pleased with the amount of work I finished this week, and even more so when considering the fact that I wasn't in Sweden. My goal for next week is to take part in planning the project presentation, doing some work on the final reflection, as well as making any last-minute changes to the project code that are needed. Since I am back in Sweden, I will increase my presence at the meetings and work sessions that we have this week. To achieve these objectives and goals, I will work on the weekend on finishing up the code and the presentation, in accordance to what the group believes in most necessary, as well as continue working after the presentation on getting the final reflection completed.

As this is the last individual reflection for the project, it is worth mentioning my progression in terms of my goals and objectives since Sprint 1. The first few weeks for me were focused on getting to know the group and the way that we would be working, with Scrum. This was achieved through team-building activities, and lectures and exercises on the correct use of Scrum. These objectives slowly progressed into planning the project, both in the sense of the application code and ideas, as well as how we would function as a group during the course of the project. This was achieved through several planning and brainstorming sessions in order to come up with a good plan for the app, as well as assigning a primary role to myself: secretary and meeting planner, which is a role I sustained for a large duration of the project, only decreasing during the time I was away. The goals eventually progressed into improving the formulation of the user stories and tasks, and then proceeding to implement them. This goal stayed the same for several weeks as I was implementing the user stories. I ended up working on many different parts of the project, but mainly MeetUps and their views, as well as general fixes and work on registration, logging in, users, the database, and the map views. Reflecting on how my goals and objectives progressed over the weeks, I believe I stuck to good plans and a good schedule, worked on

what I wanted and needed to work on, and thus achieved all my goals that I seeked to achieve. All in all, I am very pleased with my contribution to this Software Engineering Project.

Axel Svensson

My objectives for this week was to complete my user story from last week, have a good demo for Håkan or Jan-Philipp and to work on the presentation.

The user story regarding my first objective was to finish the view and the functionality for a friends profile. In the beginning of the week I had no problem working on the user story, but as the time past by, some group members changed a little in the database whilst I was working on an old branch that wasn't up to date with the communication. So I had a lot of nullpointerexceptions to handle while I was working on fetching data and sending it around from activity to fragments. However, I was able to solve my tasks anyway and made the code more secure by preventing other nullpointerexceptions to happen. Unfortunately, I didn't complete it in time for the demo session. So when we showed Håkan this view, it had everything except that there were two lists that wasn't populated with meetups. But otherwise I think the demo session went pretty good until we got an nullpointerexception. This was one of the problems that caused nullpointerexceptions that I later fixed, as I stated above.

The last objective was done when we were all together and discussed how we should present our work to the others on monday(27th of may). We discussed what to be included and what we had to do before the presentation. I got some extra tasks that included making some activities look better and make the whole application more uniform be changing that all views had the same color scheme and changing some structures in some views.

I also participated as much as I could in the discussion regarding the presentation and the final team reflection.

My contributions to this weeks usage of SCRUM has been to as mentioned above, participated in the meetings regarding the final presentation and final team reflection. I have also actively participated in all other meetings we had this week and tried to help others with their user stories when they asked me, so that everyone would be done in the end of the sprint.
My contributions to this weeks deliverables has been to write this final reflection and to plan the final team reflection and presentation as mentioned before.

As this is my last individual reflection for this course, I want to reflect on what i've learnt, which skills I will continue with and what I want to change for upcoming projects.

In the beginning of the project my first goals were to get to know the team members that i didn't know in beforehand and get more knowledge how to use and get and idea how to apply scrum in a bigger scale project. I got to know the "I:arna" through all of the exercises and when we brainstormed to come up with an idea for the project. Beyond that, we also got to know eachother better throughout the course when we hade scrum meetings and work session together. Every week we had at least two occasions

where we were together. But the most important thing is that I think we've always got along with each other. This made the work super fun.

I got more knowledge about scrum when I attended all the lectures, exercises and of course by applying it to our work on the whole project. I think that our usage of scrum in a whole has been good because we made a great deal of our initial plans about the application. Every week we had something to work on and something to show our teammates when the sprint was ending. What could be changed for a future project is to have more daily scrum meetings. But having in mind that the some of the group members had bachelor thesis at the same time as this project, I think we did as much as we could.

My contribution to the groups usage of scrum during the whole course has been to attend all of our scrum meetings, even when I was home during easter holiday, I attended through discord. I actively participated in all of our discussions and planning meetings. I also made sure to get my deliverables done in time and tried to finish all of the user stories I've chosen for every sprint. It was towards the end I had troubles with finishing all the tska in the user stories. This is because i overestimated my time and the planning of tasks and user stories was not good enough. Why I think the planning became worse towards the end is because it went so good in the beginning, which led to me putting less effort into planning what I would have time for. So this is one thing I want to take with me as an experience in the future.

Another experience I want to apply to future project is how important it is to make an survey on what the customers value the most. We did a survey pretty late, and we were lucky to almost having everything that they valued the most. And if we had this information in the beginning, we could have planned better on which features we should focus on and how much time we should spend on fixing them.

Initially, I had no specific goal in terms of getting better at programming except getting more comfortable creating applications for android. However, I feel like a got a lot of knowledge in how to create programs overall by learning how to use different APIs such as google maps api and firebase. This has given me more comfort in being a programmer and will help me in the future.

Overall, I'm happy with the result of this project. The group got along all the way, we had some troublesome times but we worked together and solved the problems. The project itself turned out good and I'm sure that the final team reflection will as well.

Ludwig Hultqvist

Since last week I have finished the goals I set with completing the discover page of the app. It can now fetch and display real featured users/meetups from the database, as well as friends and meetups of an actual user. Even if this is just "small progress" since the last sprint, it is still a big improvement in terms of the user value for that part of the application. Another goal this week where for the group to get started with planning our final presentation, where we all started discussing what content of the app are the most important to display.

In terms of my contributions towards the groups usage of SCRUM this sprint, I have contributed by participating in the meetings as well as the coding sessions. During those sessions I have actively tried to make sure that not only I, but the group as whole is making progress. This has been done by checking in on the other members and synchronizing our work to make progress efficiently.

Another contribution of mine is to actively take part in the discussions and planning of what to include in the five minute span of the final presentation. I have also started planning ahead for the final reflection together with the other group members.

In terms of my deliveries this week, I have written this final individual reflection. Like stated above, I have also started discussing important topics for the final group reflection which will be the last deliverable I and the group will have together.

Considering the fact that this is the final individual reflection that I will write, I will not only reflect on this sprint but reflect on reflect on this project as a whole, what I have learned and what I will take with me for any upcoming projects.

Starting this project, I felt that I was already comfortable with developing applications of this size in terms of the programming itself. Thus, it was not a goal of mine to develop my programming skills. The actual goals of mine were to learn and become more prominent with the workings and processes surrounding the programming itself. In more detail, my objective were to become familiar with the agile process of using SCRUM as a methodology for software development as well as developing software based on stakeholder demands and customer values. This is something I had never worked with before. Not to forget, an important goal for me was also to become better with developing applications together with larger groups, which I personally feel is not always easy for me.

During the initial part of the project, I had my focus on getting to know the team and learning the basis of SCRUM. More specifically, in my mind, was to learn about the methodology of formulating User Stories in terms of customer value and developing the based on efforts and team velocity. Also the process of Sprints, their planning/review as well as setting the terms of a User Story´s process during those sprints. This was really a big leap for me since I had never developed a project in such well structured manners. And because of this, it initially took a lot of effort for me getting use to this process. Especially with planning the sprints, where it was hard to set clear terms of the what to develop and estimating what was a reasonable chunk of work to finish in a sprint, before diving into the actual programming.

As the project where moving forward, I think that we all became more and more comfortable with planning how to make progress with the application according to our sprint plannings. However, a recurring problem were that the we often did not finish the stories we were set to do in time. The reason for this was most probably because not of us where use at estimating the size and complexity of the stories when we setting the efforts. In my opinion, this a little of a downside since I sometimes stressed out when I did not finish my work in time. But I think as the we progressed, we all become better and better on this aspect and if we were to start over now, this would not be an issue at all. In my eyes, this really showed the importance of regularly reflecting over our work and progress. After every Sprint Review and team

reflection I truly felt that I had learnt something and that I was more ready to take on the challenges of the the upcoming sprint.

Looking back at where we were going into this project, I feel that we have really grown as a group and that we are at a point where we trust each and can rely on each other doing their job. Even tho we started this with different skills and knowledge, it feels like everyone has done their best with completing what they are assigned and accepting the challenge to live up to the ambitions of the group. This despite factors like being in different countries and balancing the project with their job. One of the challenges that we could have improved, were the overall communication between the group members regarding their progress. A slight lack of communication sometimes lead to the problem of synchronizing our progress with each other, which in the long term makes the development less efficient. A factor which worked beyond expectations however, were the programming progress of the group members from Industrial Economy which stated that they "could not program". This of course was proven wrong.

In general, I have contributed to our usage of SCRUM by participating the meetings, sprint reviews and plannings, as well as coding sessions. I think I contributed most by utilizing my programming knowledge when planning our sprints and trying to set reasonable efforts. Even if it did not work great for a start, it worked better and better for each sprint as we lowered the velocity of the sprints to make sure we could more easily finish the stories. Besides the meetings etc., I also contributed by finishing all deliverables, i.e. both the individual and team reflections.

I can take a lot with after this project is finished. Even if I had no goal of specifically becoming a better programmer, I feel that I have still made progress on this aspect along the road. I have especially become more familiar with using API:s, which is something had never used directly before. However, the most important lesson I will bring with me is the importance of being consistent with truly putting the time and effort into planning the sprint in such manner that one is not dependent on another, and everyone know specifically what to make progress with. However, I strongly believe that this is something only has to do with experience.

Overall I am happy with the outcome of this project. That is both in terms what we have delivered in the end, which is the application. But as well everything I have learned and can take with me for any projects in the future. Of course, the road to where we are now has not been straight. It has been a few hiccups along the way, and even more lessons learned.