Software Engineering Project

Final Individual Reflection

Tom Bjurenlind

- What do I want to learn or understand better?

A: During this project I've first and foremost learned alot about working in a bigger team for a software engineering project. I've learned about the things needed to make a group project of this size work; such as group chat in order to make up plans and coordinate with the team (Messenger), a Version Control System and a team-wide repository for collaborating on the project and integrating separate features of each team member into the app (Git and GitHub), and lastly a shared Scrum Board (Trello) for every team member to read and edit the User Stories, features, Sprint Backlog tasks encompassing the app. From working with these tools I've also learned much about how SCRUM works; how each team member plays a role in this organized approach to software development, and how its associated workflow brings significant structure to a team project of larger scale. This has been very educational since I hadn't done much of this before.

Furthermore, I've learned a great deal about Android development and Android Car development; including their APIs, IDEs (Android Studio), emulators and simulation tools (Python with SimPy) for simulating the car signals to the Android Car emulator in Android Studio.

B: In a future project I'd very much like to further explore the topics I mentioned above, as well as new ones which might be relevant and helpful for the project at hand. It would especially be interesting to apply a similar approach (Agile, SCRUM) to a larger-scale project with even more team members, since I'd imagine its benefits will be even more obvious. I'd definitely also like to learn more about Android development in general, and how I can use languages such as Python to make tools such as simulations for future projects; which in this case was necessary to develop and test our application.

A->B: For me to learn and explore what I described above, I'd have to participate in more and possibly bigger software engineering projects, and in these projects apply the SCRUM approach. To learn specifically about Android development as well as using Python to make tools for enabling and/or simplifying development, I'll have to either do so from home, through a future course, and/or in one of the larger-scale projects mentioned before.

- How can I help someone else, or the entire team, to learn something new?

A: During this project I've had plenty of occasions where I could assist my team members in various topics regarding the project. These topics ranges from creating and configuring an Android Car emulator, configuring various OSs for running Python scripts (for the Android Car simulation), installing Python libraries, running Python scripts, explaining

concepts regarding the Android APIs (such as layouts), and more. Fortunately we had a Scrum Master (Daniel) arranging weekly group meetings for the team; making it much easier to assist my team members, as well as enabling for planning, discussion and collaboration within the team. It also motivated you to actively work on tasks for the app, as well as enabling for a better team dynamic in general. I also helped team members through our online group chat (Messenger) at times, but it greatly simplified the process when doing it in person instead; which was noticeable since we didn't have weekly group meetings the initial weeks.

B: In a future project I'll stay firm in my belief, obtained through experience, that meeting up in person within the team enables for much more beneficial and efficient assistance among the team members. An online group chat is crucial for other things though, such as arranging when to meet and more general questions not regarding things like configuration of programs and implementation of tasks.

A-B: In order for me to help someone in the way described above, I'll have to vouch for having group meetings frequently to my team members, and that an online group chat isn't an efficient replacement of meeting in person (but still crucial).

- What is my contribution towards the team's application of Scrum?

A: My contribution to the team's application of Scrum during this project could be summarized as a mix between a Scrum Master (you could say we had more than one at times) and a Scrum Team Member. This in the sense that set up the Scrum Board (Trello) for the team, imported and pushed the initial Android Car template project to our GitHub repository, granted lots of assistance regarding various topics (discussed in previous question) in person and in our weekly group meetings, formulating and dividing User Stories into manageable Sprint tasks, as well as reminding people to do things like pushing their individual reflections to the team repository. As a Scrum Team Member I contributed with code for the tasks encompassing the project both directly and indirectly (through assistance at our group meetings).

B: In a future project I'd love to explore these roles further - as I found both useful, necessary and interesting when dealing with a project of 6 members. Who knows, maybe I'll even explore the Scrum Product Owner role one day!

A->B: For me to be able to further explore these roles I'll have to participate in projects applying the SCRUM approach and be open as well as available to contribute in one or more of these roles.

- What is my contribution towards the team's deliveries?

A: My direct contribution to the team's deliveries during this project - defining this as code for tasks I specifically implemented, integrated and pushed to the team repository, can be summarized as:

* Modifying the simulation script to inject engine ignition signals (ON/OFF) and belt sensor signals randomly (ON/OFF). This was some of a hassle since there were only one predefined signal for a belt sensor, and this one along with many of the other predefined ones didn't seem to be received in the registered listeners in the Android app. Eventually I found 5 different boolean signals (for various other purposes such as AC) which were correctly received in the app. (Neither did I manage to register for self-defined signals injected from the simulation script.)

* Implementing handlers for the above mentioned car-simulation signals, as well as registering these handlers in the Android app. These handlers included updating all score labels, image views and counters appropriately when one of these events occurred; i.e. updating image display of passengers appropriately when a belt sensor turned on or off, and setting current score label to 0 when ignition turned off as well as adding this score to the total balance when this happened.

* Implementing and making use of methods for retrieving the number of passengers currently in the car, displaying the number of passengers currently in the car with an intuitive image of a car and green dots at the side of it (depending on number).

* Refactoring and commenting code in order to introduce some more structure and make it more easily maintainable.

B: In a future project I want to continue contributing actively and enthusiastically with code for tasks making up a project, hopefully interesting and challenging ones!

A->B: In order to be able to to this I'll have to participate in various software engineering projects, and then actively, persistently and enthusiastically take on and tackle tasks encompassing the projects at hand, with the aid of my already attained knowledge, as well as my ability to acquire new knowledge where needed (which certainly will mostly be the case).