

Reflection of internship

In general, I consider my internship at Siemens an amazing opportunity. It was, of course, very challenging to adapt to a system of such a scale. On the other hand, the tasks were generally assigned to me with very well thought through complexity - starting from single tasks, such as writing unit tests, to more complex solutions of implementing test steps for automation tests framework. I am also glad the team let me put my hands on defects - which was unusual for interns.

Being able to see the team operate by a certain system development, methodology and participate on all SCRUM meeting, was as well very enriching experience.

3.1 Knowledge, reflection and the ability to generate ideas

3.1.1 Understanding complex problems

Development of such complex application like syngo.via was unknown to me and I wanted to find out more about it from the beginning. There are three things that have stood out when it came to this topic - testing, code design and development methodology.

Firstly, I realized how essential testing is for development, especially of a product of such a scale. I have learned how several tests serve different purposes and needs as well as when and how to use them.

Secondly, I have learned how big impact can a code design have on the development process. Code design is one of the things I believe I have managed to improve the most. I have realized the importance of it when I was writing unit tests and I have experienced the difficulty of mocking badly designed classes.

I was also taught proper coding standards, how important code readability is and what are the ways to improve it. More specifically, I was introduced to the concepts of fluent API, such as extension methods, method chaining and the importance of naming conventions. Besides, I have been shown how to use LINQ library.

I have learned not only to quickly orientate in other people's code, but also produce a code in a way that others can easily understand it.

Besides I was introduced to SOLID principles and several basic design patterns, such as factory or builder and used them when developing automated tests or test steps.

3.1.2 Thinking innovatively

Working on syngo was a wonderful experience. It is a project that is revolutionizing the healthcare industry. It was great to be a part of something that is pushing the limits of advanced visualization. The application and the abilities of it impressed me and motivated me from the very beginning.

I was surprised when I experienced the level of adaptability of my team and the project. Considering that the project is more than 20 years old, it was adapting to the latest trends, technologies and coding practices that I talked about in the section: [3.1.1 Understanding complex problems](#).

3.2 Personal insight and development, relations and co-operation

3.2.1 Collaborating with others

Siemens showed me, that great things cannot be built by individuals. When something is developed, every individual has his place in the team. It was very constructive to watch how the team operates and tries to overcome possible problems together.

I have seen how SCRUM helps the development. There were many meetings and discussions the team members had throughout the development process and I have participated at. Different types of meetings were happening - from regular SCRUM meetings (stand up, review and retrospective), to grooming, group code reviews, quality assurance meetings, sit downs, etc.

I have gained a better understanding of SCRUM roles, how SCRUM master, product owner and development team communicate and what meetings they participate in.

What surprised me the most were the discussions about the code that was ready to submit. Sometimes, the whole team sat down and talked about the code design and possible implementation improvements. In a case of a defect the architect reviewed the code and evaluated whether the fix had any impact on other parts of the application.

3.2.2 Being able to establish trust

I believe that trust is crucial and the most important thing in the company and in the team. It should be established not only between the SCRUM master and the team, but also between the individuals themselves. Although trust cannot be seen directly, throughout the internship I have observed, that a great level of it was present within the team.

Developing the trust is a difficult and a long-term task. I think that by the end of the internship I have managed to do so, especially with my supervisor. The gained trust was reflected on the tasks that had been assigned to me. By the end of the internship I was working on the tasks that were much more difficult compared to the beginning. I started to do work that other developers did, and that potentially could have a huge impact on the application.

I believe I have established trust with the team, the SCRUM master and the supervisor with my structural approach to work, preparation and the show of will.

3.3 Initiative and responsibility

3.3.1 Turning theory into practice

There was a number of things that I thought are only theoretical and cannot be applied in big companies, especially certain extreme programming principles. This opinion has turned out to be a delusion and I have realized that, in fact, some of these principles work very well and have their major advantages. An example of such principles is pair programming or test driven development.

3.3.2 Having the ability and will to take initiative

Being able to take initiative is crucial for improvement and it is the only way how positive changes can happen. I have done my best to show it and I believe that is the reason, why I was able to do some of the more difficult tasks I have progressed to during the internship.

My initiative was repeatedly positively commented by my SCRUM master, supervisor and the team itself .