

Reflection on the Honours Project

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Introduction

This report presents my experience of completing my honours project divided into the categories of computer science, project management, people and project impact.

To complete the project I worked with Zahraa Mathews. We knew each other prior to the project since we have been friends for three years and have worked in larger groups together as well. The project we completed, ScriptView, was chosen by us and it was our first choice.

Computer Science

This section focuses mainly on the technical skills which I acquired or applied during the honours project. During the completion of my capstone project last year, I needed to learn about image processing. That knowledge was applied this year in addition to learning more about the limitations of image processing and the importance of dedicating time to parameter tuning.

I also gained a lot of experience with Android development which involved implementing gesture recognition and efficient memory management. The former included gaining a better understanding of the complexities involved and the compromises which need to be made in order to make it as accurate as possible.

In terms of the practice of computer science I learned the importance of user involvement in both the design and development phases. While this is something I was aware of, I never had first-hand experience with it prior to the honours project. The involvement of users in my honours project allowed for adjustments to the system to be made based on their feedback. Feedback on the screen layout was one particular area where I feel that the user feedback greatly improved the quality and usability of the final system. Involving users in the design and development phases of the project lifecycle is something that I will strive to do in all future projects where applicable.

The agile methodology is another aspect of computer science of which I was aware before commencing the project but which I had limited experience with. The balance between planning and the willingness to adapt is something that was essential to the success of my honours project.

Project Management

The division of work played an important role in the success of the project as both Zahraa and myself were aware of our capabilities and shortcomings. As a result work was divided equally and such that each person responsible was be capable of completing their tasks. While we assisted each other if there were difficulties, both of us understood that the other person was not there to assist them through every step of their components.

In order to improve the probability of project success, the agile methodology was followed and the tasks within each sprint were prioritized based on user feedback. The user testing helped keep the project on

track since both Zahraa and I respected our users and thus wanted to ensure that their time was used effectively. Both of us also understood the amount of time the project would require to complete and were realistic about the amount of time we dedicated to each component including time to fix any errors.

Even with the motivation of the user testing and an overall project plan, there were still times when I lost all motivation to complete the project. I recall this being especially severe during the beginning of the third semester, this was because I had started with other modules and had trouble coping with the amount of work. I resolved this problem by taking one Saturday to relax and refocus my attention by planning the weeks to come. This allowed me to successfully get back on schedule. Even though the loss of motivation seemed negative at the time, I now realise that it had a positive effect on the remainder of the project as I learned to plan my tasks for a few weeks ahead, in detail, as well as document all progress to keep myself motivated. I feel that this was not apparent to me before since I had never worked on a single project for this amount of time before.

The initial goals of the project were to create a web and tablet interface for marking scripts and a web application to view the test results. In the end a much more comprehensive test management solution was developed which limited the changes to the current system while still improving it in a meaningful way. Since more was accomplished than we initially set out to do and that all of this is of a high degree of quality, I feel the project can be deemed a success.

People

Working in the group was one of the best group experiences I have had in all four years at university. I think this is due to the fact that there was mutual trust and respect within the group. Both Zahraa and I had the same work ethic and dedication to the completion of the project. There was also no need for a team leader as we each took responsibility for our components. Even though we were forced to make a rapid decision regarding which project we wanted to do, we were lucky enough that the project we wanted was still available and that it was our first choice. This meant that we were able to work on something we both enjoyed and were interested in.

Both of us also handled criticism well which allowed us to be honest with each other regarding all components and this not only meant that the final system was of a higher quality, but also contributed to a positive working environment which increased productivity.

I feel that I was a good and reliable team player since I ensured that my sections were complete on time, I was always willing to help and tried my best even though I had very limited knowledge of the language Zahraa was using. I also ensured that we could work together in person when necessary since this allowed us to motivate each other when things seemed tough.

During my design of the memo processing component of the project, I missed an important part that I only discovered too late into discussion with the supervisor. The fact that I had missed this and that neither I nor Zahraa had noticed, made us realise that we had communication issues which needed to be resolved. We realised that while we were communicating often, it was not very focused on specific aspects of the project and thus we made sure to resolve all concerns as soon as possible from then onwards. This ensured that we would not forget, about it in future discussion.

The fact that I had missed an important part of the system, made me feel incompetent for a few days and I spent approximately a week trying alternative ways to fix it. After this I found a solution but realised that time would not allow me to implement it and complete the project. From this experience I learned an important lesson and it was, to accept that I had made an error and to try my best to fix it but if it is not possible, then I should accept the consequences of my mistake and focus on completing the project to the best of my ability. It also taught me to consult the client at every step of the design process to verify that the design is in line with their expectations which again is something which I was aware of but did not have first-hand experience with.

From my supervisor I learned that face-to-face communication is always best to ensure that any ambiguities are resolved. My supervisor also made me see the importance of putting the user first and focusing on reducing the amount of work required by users.

Project Impact

There were various ethical concerns which arose during the completion of the project which arose due to the data we were working with. This is because the project requires the use of test scripts which could affect the students' academic standing. There were also ethical concerns regarding the user testing. Both of these were anticipated from the beginning of the project and ethical clearance was sought from the university and the Faculty of Science.

The image processing which is performed on the scanned test scripts also raised ethical concerns since students could claim that their tests were altered and thus their results are not valid. This was mitigated by saving the unprocessed version of the test scripts on the server alongside the processed ones and making them easily accessible to administrative users.

There are currently no plans to further develop, research or commercialize the project outcome. Although I have gained a lot of interest in the field of test script management and how technology can be applied to improve the process.

Conclusion

While the completion of the project posed many technical challenges, the group dynamics were such that I was able to focus on the work and not on solving group issues. This allowed the final deliverable to be of a high quality and something that I am very proud of. The biggest lesson I feel I can take away from this experience is that the working relationship between the members of the team have a drastic impact on the final product. This is because when I compare this to my capstone project of 2013, which was not completed to the expected quality, the only difference is the relationship between group members. While in both projects all team members were highly skilled, the honours project was completed to a much higher quality because there was effective communication as well as mutual trust and respect among group members.

Overall the honours projects and honours year has been a very rewarding experience and the lessons learned will continue to impact my future work.