

Software engineering individual report (Ethan Grant)

The first term of the year our group worked on the Project Proposal. The goal of this section of the assignment was to outline the problem presented to us by the client (Successful brothers) then provide them with a solution in the form of what we believed to be the functional requirements of the system they described in the initial brief and document these as part of a use-case model.

I believe the key to getting the project proposal correct was making sure myself and every one else in the group had a firm understanding of what the clients were asking for in their brief. To this we tried to break the brief down bit by bit into a list of requirements for the project. This document not included in the project proposal helped us to write our introduction to the project proposal. being able to ask questions to the tutors to get more insight into what was required was also very useful as in the real world if you were unsure or confused by something in a brief you would ask your clients to clarify. Most of our initial confusion was around how the databases worked and how many different types of staff were going to be handling the system, which turned out to be more than I originally thought.

Part of the project proposal was stating what tools we would be using throughout the entire life-cycle of the project, describing how we would be using them and when in the life-cycle they would be used. Looking back at the project proposal the tools we actually used compared to the tools we said we were going to use are very different as we ended up using tools such as 'Visual paradigm' and 'Visual studio' to develop the prototype in C++. I think if we were to work on the project again or a similar project we would be able to more accurately describe what tools we were going use and how.

Identifying the stakeholders was something I didn't quite grasp straight away, having not really understood the correct definition of a stakeholder. My first opinion of who the stake holders were was just the clients and the users of the product. I now understand that the stakeholders aren't just limited to the client and the users it's really anyone who has a vested interest in the system and each stake holder should have some representation in the design process of the system.

Creating the project schedule using Microsoft project I found to be quite a difficult process as I hadn't used the software before and at first I didn't find it particularly easy to use. I used the specification to split the all of the assignment tasks up into different phases of the Rational Unified Process and then came up with dates of when things should be started and finished based off the milestones we were given. During this process I did keep making simple mistakes as setting wrong dates purely by accident so I had another group member check over dates as I was doing them ensure we had it correct. Now having finished the project I have a much greater appreciation of how important it is to try and stick to the original schedule. If we had done this as a group there would have been much more time for us to get our work looked over by tutors and receive feedback on our work, this would have greatly improved the quality of the individual and group aspects of our assignment, this is a very important lesson that has been learnt and I'll definitely working harder to achieve this in future projects.

The final part of the project proposal we developed a system level use-case diagram along with separate diagrams for each use case specified in the system level diagram. These use cases detail all the functional requirements and define how actors are interacting with the system. This is where understanding what your client wants becomes most useful because you can't produce a fully accurate system level use case without knowing what you client wants. This section of the assignment I learnt how to construct a use-case diagram and the importance of Use-case modelling of a system. Problems I faced during this section of the assignment was knowing whether or not the use-case diagrams were correct as changes were being made to them all the time. I found that everyone in the group had slightly different ideas on what should be included or what shouldn't be included. Ultimately the best thing that could be done here was to make sure we all checked each others diagrams to make sure things weren't missed. I also found it very useful at this point to ask tutors for feedback even though they couldn't tell us if our diagrams were correct.

Overall my experience during the first term of the assignment was very good I myself didn't run into any major issues neither did the group as a whole.

During the second term of the year we were expected to produce a Requirements document which specifies an introduction to the problem, actor specifications, individual use-case specifications along with a sequence diagram of one main sub-flow, class model and Non-functional requirements.

During the start of the second section of the assignment our group began to fall behind the original schedule created during the project plan. This was due to not enough work being done outside of practical sessions because of commitments to other assignments. At the time I myself believed it was more important to get these assignments completed first as they had formal deadlines. Looking back I should have taken the milestones given to us more seriously as the run of the project would have been more smooth and maybe completed to a higher standard.

The problem I faced drawing my individual Sequence diagram was I didn't have a very good understanding of sequence diagram notation when I first went into it. Therefore the first diagram I created was pretty awful, I think I had a good understanding of the flow of my use-case I was just using all the wrong notations. I overcame this problem by getting advice and feedback from my group and tutor, I also found the "Software Engineering" book by Sommerville to be very useful. Because I jumped right into the task without much preparation and understanding this did waste quite a lot of time for me as I basically had to start my diagram from scratch because my first wasn't up to a decent standard.

One of the things I didn't like from the start of the assignment was that the spec stated we had to design the prototype in Java. My issue with this was that at no point during the course had we been taught Java having to learn it alongside completing this assignment and others would have been quite a task. This was something our group was quite concerned about from the start of the assignment. Once this issue had been cleared up and we were told by tutors that it was okay to design the prototype in another language we decided to use C++. The only problems here were setting up the environment once the prototype was complete. None of us could set up the correct environment on our home computers to complete the testing specifications for the use-cases. To get around this we all performed our tests on the prototype from the computer it was built on.

The biggest problem we faced when trying to do the class model and the solution architecture was that none of us had any previous experience modelling either of these so whatever we were producing was pretty hit and miss. There was always a chance that it could be completely wrong, we made sure though we used the practical sessions to our advantage and got feedback from tutors.

An improvement we could make to the system would be to have heavy validation on the prototype and of course the final system would also have it. As it was stated in the Non functional requirements that all our input fields should really be validated. I believe this would be very important to the successful brothers if they were a real client to reduce the amount of possible human errors that could occur and maybe directly affect their business.

Along with the validation, having useful error messages would also be great to explain to an average user what errors are occurring so they don't have to try and diagnose the problem themselves.