

Graded unit evaluation

Mark McAllister



1741906

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# Assignment Outline

At the outset of the project, a brief was given explaining what the project was going to be about, the desired final product, and the reason this was required. The brief informed that a Scottish based rugby club called Simply Rugby, which included teams of three different levels (mini, midi, and senior), wished to have a computerised system which would allow team coaches to track player details, skill development, game details, and training session details. As well as this, the membership secretary wished to store details of all members. This information gave an insight into the project that was going to be created but there were still details that were important to obtain before progressing with the project. These were obtained by sending questions to the chairman of the club and using the responses to the questions to get a more complete picture of what was required of the project.

With this information, and with an additional information document, it was determined that each squad would be run by coaches who are normally parents of players in the squad. The club membership consisted of non-playing members, junior playing members and senior playing members. All playing members would be required to be registered with an SRU number and junior members must have a consent form signed by a legal guardian every season. A coach in each age group is assigned to keep track of all the details of players within that age group which includes doctor and next of kin or guardian details. There would be a chairman and fixture secretary who organises fixtures in each level of junior and senior. The coaches will keep track of players, their skill levels, their training records, and their game performances and scores which will be used in the decision making for development trials and planning appropriate development activities for players to reach their potential.

After gathering all the information on what the full project would consist of, I created an inception planning document which detailed the project and laid out a timeline on when submission milestones would be worked on and completed by. Alongside this, I created a top-level use case model and a top-level conceptual class diagram of the whole system to be created. At this point, I was given a partial business model class diagram which became the focus of the solution to be created. This was a skill tracking system which would be integrated into a larger app with other related systems such as the player recording system and game recording system. I proceeded to create a solution plan for the application I would implement.

The application I created would have admin users which could create, edit, and delete coach users, squads, and members. The coach users would be able to add, edit, and delete players, view their own squad or add and remove players from their squad. Coaches would use edit players to alter the skill levels and leave notes on the skill which would be stored and could be accessed or changed as required. While developing the app, I kept logs on what was accomplished and kept track of testing throughout. After completion, I created user documentation for a coach user, providing detailed explanation of what each of the screens do.

This turned out to be a much smaller application than was originally planned for in the inception planning phase but turned out to also be much more focussed on ensuring player skill tracking is smooth and as such led to a more detailed system than if a whole app was to be created.

# Strengths and Weaknesses of outputs

Throughout the planning and creation of the application, there were multiple strengths and weaknesses with what was produced. The inception planning document was perhaps the biggest weakness in all the outputs as this failed with 1 mark short of passing on initial hand in and had to be totally rewritten in a more formal way with more in-depth descriptions to reach a more acceptable level and pass. This was a much better document, but it still lacked in certain areas that were being asked and it would be something that I will need to improve on a lot for future planning on inception phases of programs I will work on. I feel on a whole that planning and design are not strong points for myself and because of this, I believe my top-level use case and top-level conceptual class diagram for the initial plan were not as good as could have been and I would hope to have better diagrams in future projects.

There were strong points to the outputs, and I believe they began after I had been given a visual idea of what I was being tasked with from the partial business model class diagram. From this, I had a strong understanding of what was being asked for in the application that I was going to create and feel that the application I developed incorporates this with extra features by including an admin account that is responsible for creating users, squads and members. I believe I followed coding conventions and good naming practices so that it minimises potential confusion for anyone else who will work with the application. I also believe that the diagrams I created for the application after receiving the information were a large improvement over the ones I had initially created as they show relevant details of how classes interact, the idea of what the views are meant to look like, and how a coach would create a player.

# Future Development

As this is only a small system of a much larger application to be developed, there are many directions that can be taken for future development of the solution. The skill tracker would be able to be used for tracking skill progress and note on skill development in training or games. I believe that the best next step for the solution would be to implement a training system and game tracking system which archives data so a coach can look back and see how much a player is developing in a certain timeframe and decide future actions on the progress. It would also be useful to have a system that allowed members and players to be able to login and view information that is relevant to their membership. A member would be able to get an overview of squads and how they have performed in games. A player member would be able to see this data as well as be able to see their own training and skill tracking data.

This application would also benefit from incorporating a database system for storing all the information instead of serializing and deserializing. Using this alongside hashing and salting passwords would allow for increased security making it harder for those who do not have an appropriate account to be able to gain access to the application and obtain private information.

Another feature that would be useful to implement if the timescale permits would be automated testing. This would reduce the amount of testing that would need to be done by the users and in doing so could save time and money in the long run if the application becomes large.

# Modifications to Solution Plan

As my initial inception plan was below the pass threshold, I decided that it was better to create another inception plan from scratch going into more detail of everything being asked and what was going to be produced. This was a small set back which was essential to make sure I had a document that outlined a basic idea of what was being asked from the client. This did not negatively affect the progress and the planned completion points of everything, and I was ready to continue with the project when the partial business model was given to me.

Around this point, however, Covid-19 was becoming an issue in Scotland and college was closed causing a major setback and elevated anxiety about the workloads that I had. It was possible to continue discussions about the project through one-to-one and classes through Discord where a server was created for lecturers and peers to be able to have communication. This was a massive help given the circumstances and it helped to ensure that this project did not become too heavy a workload and although it may have taken slightly longer to get work finished, it was still manageable for myself to ensure that work was handed in on or before the deadlines.

# Skills Gained/Developed

I have developed my skills in using Java by creating an application that had familiar constructs but not ones that I had put together before. From this, I have improved in Java Swing, creating constructor classes that can contain multiple entities created in other constructor classes, and improved the design and layout of JFrames using Window Builder plugin for Eclipse to be more user friendly. I also gained skills in timekeeping by setting aside specific times to work on the project while in lockdown to keep myself on track and not fall behind and I also learned how to create and manipulate JTables which made presenting and manipulating information more streamlined for the users.

For future projects, I will need to improve on inception planning. I think if I ask more questions and take notes more on what is being requested, I will be able to produce a solution plan closer to that which is desired.