FIELD OF VISION COMPANION APP
Project Management Report

Field Of Vision

Group 21
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CS2013 – CS3013: Sample Outline for a Management Report

1. The Project Planning Process

When we began the project we established with the client the standard we needed to adhere to as far as the UI was concerned. The main thrust of the focus was on ensuring that we made the app accessible for the visually impaired without sacrificing any aesthetic choices we decided to make. This left us a lot of room to be creative and gave our front end developers the freedom to make a UI that not only looked appealing but also functioned effectively for the needs of the client. The back end, with planning only being focused on the transmission of data, was less strict as far as keeping in line with standards laid down by the client, with code readability and scalability being the chief focus as it would allow them to expand any potential future operational requirements.

The control process was managed by the meetings with the client we would have every Sunday over discord, which allowed us to show our progress and accommodate any changes they wanted us to implement. As our project goals were clearly defined in the beginning, we were able to stick to that and the client was happy with our weekly updates. Fortunately we didn't have to change a lot of the app as things developed because we were able to stick to the original deliverables.

2. Project Goals and Objectives

Our goals for the project were to deliver a companion app that was chiefly accessible and could transmit data to the device the user would need to experience the match, which we were able to deliver to a extent that the app is compatible with the device and data is sendable, and the front end is designed to be accessible as a priority. We have a fully usable volume wheel, match selection, and clean interface that allows the visually impaired user to use the app with ease. Our client is happy with these aspects of the project and the extent we were able to implement them.

One element of the project that we were not able to fully implement was the communication with a server to draw information from using libraries in the flutter development environment. Originally we opted for the use of an Amazon Web Service (AWS) server to host the coordinates that needed to be transmitted to the app, however later on we changed the server host to Firebase as it is a far easier and more accessible platform to use. The client was the one that suggested and facilitated the change, however this was suggested too late in the course of the project that we were not able to fully implement this element. We were able to add all the functionality so that our client can progress using either AWS or Firebase, but we were unfortunately not able to complete this element in the time frame.

The scope of the project was consistent throughout development, as our client had laid down an achievable goal as far as what we could deliver and what was necessary for the app to be taken to the next stage of development and eventual rollout

2.1. Product Backlog

Initially our product pipeline was centered around making sure the landing page for the app was clear and functioned correctly, and for the backend we needed to link data to the match selection elements which were initially set up to establish the link between selecting data and the data being registered. This was the first product backlog which was roughly four weeks into the project as we

needed time to establish an understanding of the platform we were using. These were our first areas of focus as identified by the client, and the impact was allowing us to begin really building the UI and aesthetics for the app, and giving us a basis for the backend functionality.

The next major product backlog was based around adding pages including the volume control and play/pause, and a match selection, and the backend linking the respective actions to their pages. We were able to sort these issues with relative ease, and this put us in a position where we could fully sort the final aesthetics that the client would be satisfied with.

The final product backlog was setting up the server links and finalising the last of the front end. This backlog was not able to be completed fully. As previously detailed we weren't able to get the server fully functional within the app, however we were able to add all the implementation without full functionality being enabled. On the front end the app's aesthetics and visuals were fully formed, with the final product satisfying the client's initial requirements

3. Project Approach

Using the Scrum Framework ,every Requirement and Feature in our Product Backlog was broken down into user stories, a term used in Agile to describe the goal of a task. Each of the user stories is given a value by our product owner and is accordingly prioritized for the next day's sprint. We specify developmentally what needs to be achieved for each user story to be considered done, as is specified in the Scrum Guide. We all decide and come to a consensus as to the complexity and difficulty of each and whether it's achievable in the scrum sprint or if it should be broken into a more manageable number of smaller tasks. This helps us avoid obvious obstacles and feelings of frustration.

We chose not to use Story Points in our scrum. With other modules and many other difficulties associated with being unable to meet in person, we felt that it was impossible to quantify how much work we could get done per Scrum Sprint, much less get a consistent figure. Instead, we settled on one manageable task each predetermined by consensus.

Our team communicated efficiently and effectively throughout the project and this meant there was rarely any confusion as to who was responsible for which task at any given time. Given the unique challenges this year, communication was always going to play a huge part in the effectiveness, or lack thereof, of the team's ability to work. Discord played a huge role in the Scrum organization. We set up channels with important information that we could use voice and text to communicate and comment upon everything we deemed necessary. We used this as well to carry out our sprint review and sprint retrospective to go over our progress, discuss problems and invite suggestions as to what could be improved upon or indeed changed outright.

We experienced a slight scramble towards the end of the project where we fell behind on one or two of our objectives, but we rallied as a team to amend this. It did not hinder our overall progress and we managed to complete the project and all of the documents in a timely manner. Other than the slight final scramble, all of our scrums were completed as expected. Everyone in the team was happy with the project as a whole.

3.1. Scrum Sprints

Objective	Date	Sprint Planning Summary	Sprint review and retrospective

Simple and aesthetically pleasing home screen	15/02-19-02	- Task breakdown - Sprint backlog	- Achieved goal - Simple and easy to implement - Achieved by John, Aislinn Luke
Scrolling through main screen and selecting a match from the selection	22/02-26/02	- Task breakdown - Sprint backlog	- Achieved goal - Simple and easy to implement - Achieved by John, Aislinn, Luke
Bring up control screen when a match is selected from main screen	01/03-05/03	- Task breakdown - Sprint backlog	- Achieved goal - Not as easy to implement - Achieved by John, Aislinn, Luke
Toggle controls on the control screen of the application	08/03-19/03	- Task breakdown - Sprint backlog	- Achieved goal - Difficult to implement - Achieved by John, Aislinn, Luke
Sending match coordinates to the device	22/03-31/03	- Task breakdown - Sprint backlog	- Achieved goal - Simple and easy to implement - Achieved by Andy, Andrew, David
Control playback on the tablet via the application	05/04-09/04	- Task breakdown - Sprint backlog	- Achieved goal - Not as easy to implement - Achieved by Andy, Andrew, David
Accessing coordinates from Amazon Web Service	12/04-16/04	- Task breakdown - Sprint backlog	- Achieved goal - This proved quite difficult to implement - Achieved by Andy, Andrew, David
Navigating the UI via voice control	12/04-16/04	- Task breakdown - Sprint backlog	- Achieved goal - Difficult to implement - Achieved by Andy, Andrew, David

4. Project Organisation

4.1. Staff

Andrew Meehan – A 3rd Year ICS student, his first experience of a team-based project was the Programming Project module using the Java-based language processing. He has experience of the software engineering module from the previous year, having been tasked with designing a chrome extension for an IBM client based around the pangolin, the most trafficked animal in the world, and a landing page for it. This was done using HTML and Javascript, with the animation side of things

handled by a team member. Other prior technical skills include an understanding of languages such as C, Java, Assembly (ARM, X64, X86), Haskell, Prolog, essentially the things we learn through the TCD Integrated Computer Science curriculum. Skills acquired during this project include app development specifically with Flutter software and the Dart language. Andrew was on the back-end team and learned about Amazon Web Services and voice control.

Andrew McDonald, is a ICS student in 3rd year, and has much the same experience in the context of software engineering through the second year portion of this module and having taken the Programming Project module in first year. His project last year was The Turing Game, a mobile app from client Erwan Moreau of TCD ADAPT, with Andrew being one of the back-end developers on the project It was an educational game in which a player must determine whether they are interacting with a human or an artificial intelligence (AI) after engaging them in a short conversation. As he has completed the same curriculum through the integrated computer science course, they share the same technical skills taught through the curriculum. Andrew was on the back-end team and learned about Amazon Web Services and voice control.

Luke McGrath is also in his 3rd year of ICS. He also completed the 2nd year portion of this course and so has the same experience of collaborative teamwork from Software Engineering 1 and the Programming Project module from first year. He and Andrew McDonald worked on the same project last year, with Luke talking on front-end development. and thus have been able to develop a clear understanding workflow together. He also has the same prior qualifications of having completed the same technical elements of the course as the others have. Luke was on the front-end team and further developed his skills in app development, specifically in regards to the Flutter software and Dart language.

John Kommala, a 2nd Year Integrated Computer Science student, has the experience of working as a team from completing the Programming Project module in first year, but is largely new to this level of collaboration. He has a technical understanding of the computer science curriculum until this point, which includes Java, C, ARM Assembly, processing etc. John was on the front-end team and acquired new skills including app development, specifically in regards to the Flutter software and Dart language. John helped to develop a well-functioning and aesthetically pleasing user interface for our application.

Aislinn Smyth, also an ICS student in 2nd Year, also has the Programming Project experience from the first year of the course and has the technical skills learned from the first two years of the course, which includes Java, C, ARM Assembly, processing etc. Aislinn was on the front-end team and acquired new skills including app development, specifically in regards to the Flutter software and Dart language. Aislinn helped to develop a well-functioning and aesthetically pleasing user interface for our application.

David Deneher is a Computer Science & Business student who has much the same experience as the other two students. While not having quite the same technical knowledge as the others due to module differences in the two courses, he is a member of the TES Incubator project so has an understanding of the commercial aspects of computer science. David was on the back-end team and learned about Amazon Web Services and voice control.

4.2. Staff Chart

This year, as requested by the lecturers, every member of the team took a turn as Scrum Master to get a feel for the position so there was no single person in the role.

Team Member Name	Role
Andrew Mc Donald **[Product Owner]**	Backend Manager
Andrew Meehan	Frontend Manager
Luke McGrath	UX/I Manager
Aislinn Smyth	UX/I Developer
John Kommala	Frontend Developer
David Deneher	Backend Developer

5. Risk Analysis

5.1. Risk Analysis

Risk	Risk Analysis
Not Complying with GDPR	Our app did not need a sign-in function, so we did not need to keep any data relating to the user. No personal information was stored on the app so this risk did not come into play at all.
Miscommunication with the client	We maintained a good level of communication with the client throughout the whole project and regularly scheduled meetings helped us to mitigate this risk completely.
Conflict within the team	We met regularly as a team and discussed our progress and overall feelings about the project and this helped us to mitigate the risk of conflict within the team completely.
Failure to complete the functional requirements	We implemented the functional requirements as a priority, which helped to mitigate the risk of failing to complete any of them.
Not Making the App Accessible	We avoided this risk by ensuring integration with both the Android and iOS built-in accessibility functionality and making sure we continually ensure the focus of the front-end development is on this aspect of the design

Project Controls

Factor	Control Method
Quality	The quality will be ensured by our pair system. Managers work closely with their paired developer to ensure the code produced is clear, concise and most importantly, functional. Where the code fails to meet these objectives the manager can step in and offer help where needed.
Communication	To ensure clear and constant communication with the client, we arranged to meet every Sunday to discuss progress and make sure everything was to the client's wishes. In terms of internal communication we set up a Discord server for general discussion as well as separate servers for specific topics such as important information and deadlines. As well whenever we were pair programming, Discord served as our platform for voice chat, allowing users to jump in and out without needing passwords or links that are a feature of some services.
Schedule	We have set up weekly group meetings and outline our goals for the following week there. This guarantees the timing of the project is constant and well managed. Another benefit to this schedule is the constant public accountability of each person, making sure everyone pulls their weight in the team. Additionally the group meets with a demonstrator who is very helpful not least because of his experience in the field. Keeping strict to the schedule has been invaluable to the overall efficiency of the team.
Deliverables	When writing these documents we would first discuss the topics and break them up into parts to share the workload without stepping on anyone's toes. The team member who happened to be scrum master assigned the sections and we worked from there. With everyone responsible for a section, there was constant accountability and everyone pulled their weight.

Communication

5.2. Client Communication

We maintained a clear and consistent communication throughout most of the development of the application. We had several weekly meetings with the client which were organised through email. In these meetings, the team gained a great understanding of what the client had in mind for the application, where we were at and what needs to be done to make progress.

5.3.   Project Team Meetings

Team meetings took place every week where we discussed things like our progress and our goals. Setting goals for the following week and reviewing our goals from the previous week allowed us to keep track of where we stood in terms of our overall progress with the project. Outside of meetings we communicated via Discord. As we were unable to meet in person, the constant communication was of utmost importance, and the weekly meetings were absolutely invaluable.

5.4. Demonstrator and Team Meetings

Team meetings with the demonstrator took place every week where we discussed what we have done, our progress, goals and any problems that we are facing. Goals were set and recorded which helped the team and the demonstrator to keep track of our overall progress with the project. Outside of meetings we communicated via email. The demonstrator also has access to the GitHub repository where they can see the progress of the project and the contribution of the group members.