Flipit – Product Presentation Transcript

Presenter: Taylor Edgell

Slide 1 - I*ntroduction*

Hello and welcome to Group One's presentation on our interactive Android app we have created that we have decided to name FlipIt.

Slide 2 - Design Decisions

Flipit is a digital version of the card game "concentration" and follows the traditional video game architype of match two. Within the game a user would have to match an image to its corresponding answer on a variety of educational topics.

We designed Flip It based around the requirements we were given by our customer. Our customer included key requirements such as to have the game be educational, to be playable with a single hand and the game needed to be engaging for a child.
From these requests we decided to make some key design decisions. An example of this is that for it to be usable by a single hand, we decided to make it an Android game to fit this.
We wanted it to be engaging so we thought we'd use child friendly topics such as dinosaurs, country flags and even monuments.

Part of our primary focus was that we wanted a really good user experience, so we considered the emotion of the child at the design stage, as they travelled through the user interface.
Our key focus was to make sure that for all stakeholders, that of children and parents, the game was applicable to their needs in every single way.

Slide 3 - Overview - Status

I am now going to pass over towards Grace who is going to give us an update in regard to the current status of the project.

Presenter: Grace Clarke

Thank you Taylor. So you may ask where are we currently with FlipIt?
At present we have now successfully created a fully functional demo to give a representation copy of our game which you will see later in this presentation. There is a downloadable Android application, and we have implemented three levels including dinosaurs, flags and country landmarks.

Within the demo there is account management, and we have gender neutral topics so it's suitable for both boys and girls. We have implemented core mechanics and we have the game score at the end to give that sense that a child is able to progress, and they can do better each time. It's all locally stored within the downloaded app.

Slide 4 - Sprint Planning

Now to tell you how we went about planning this project and creating the demo I will now pass over to Andrey.

Presenter: Andrey Smirnov

Yes. So one of the first things that we had to decide on was what kind of project methodology framework are we going to be using for the duration of this project? And that framework was Scrum, which is an iterative and lightweight project management framework which encourages collaboration and constant re evaluation where you are in your process. So we split the whole timeframe that we had for the development of this demo into five Sprints, which is a basic unit of measurement in Scrum. And in our case each Sprint evaluated to one week. So we took five weeks for delivering this demo application.

In the first week we focused on the setting up the Android project with certain application structure which kind of was done according to the recommended pattern called mvbm and setting up the development environment and the Git repository, which was important because we've done this collaboratively. So there were two developers modifying the contents of the application at any given moment. So we use Git. We follow that by Sprint where we focus on creating the actual content that we showed in the app which were a set of images for the landmarks and dinosaurs and flags and designing the core data structure, and kind of getting that basic UI level working, then we followed up with game plan implementation for the core flip card mechanics and creating timers and creating a profile page where you can select the profile for the user, and then we focused on the UI part, kind of like finalising it, fleshing out the user interface and drafting a presentation for this review also implementing navigation throughout the game so connecting the screens together and kind of refining the colours, et cetera.

Finally, the last week was spent on creating a transcript for this presentation, some sort of a draft and then actually making it, recording it and testing the app from the user experience perspective. So from the perspective of a player.

Slide 5 - Project Plan Past and Future

Now while we have managed to create a playable demo, there are some things that went not exactly according to plan. So, for example, some of the things that we thought would take one Sprint, one week, took longer and in general, what we found while trying to create this prototype

is that creating that upfront planning for five sprints, five weeks in advance, it sort of like, it gave us a rough approximation of what we needed to do, but the details always differ and it almost seemed like a waste creating that upfront planning five weeks in advance.

We felt like creating some sort of sprint planning would make sense for one maybe two weeks upfront. We also have a lot of things that we still need to do in order to bring this app to a production level which we will touch upon pretty soon in this presentation. There's definitely some improvements that need to be made to the gameplay and to the game difficulty. There's definitely some concerns about scalability and storage of the card data and the assets and the user data. There is definitely some need in further user acceptance testing.
And finally of course the release itself.

Slide 6 - Demo

And now, Shan is going to show us the prototype that we have created and talk a bit about the core game mechanics and the game features.

Presenter: Shan Swanlow

To keep in line with the original requirements of developing an educational game, I've come up with the approach of using matching cards. The intent of this is to exercise a child's memory and help them build visual connections between topics such as flags and the countries they represent, dinosaurs and their names and monuments and their names. Intent is to help them build this visual connection or for them to memorise and learn interesting facts about the world. Beginning, we will now start the demo, and as the demo plays I will introduce the game rules.

You can see user profiles are present and as the application opens up for the first time you can select user's profile and for this demo we will start a new game. As you can see, there are three possible categories and now the game starts. Cards can be selected at any given time. The pair must match and if the pair matches they stay faced up. As seen here, if the pair does not match, they flip back over. The goal is to memorise all the locations so that all cards can be flipped. This case the level is completed now because all cards have been flipped over and the correct connections have been made between the cards.

Now I introduced the same process but for a different topic and different profile, select different users profile. Now we choose landmarks. Key thing to note as well is that faster a player completes the level, the more score they will generate. At the end of each round we take the amount of time that they have left over and multiply that with some multiplier to give an indication just of how well they performed in that level. This encourages the sense of progression and also encourages the child to actually memorise these different topics so that they can achieve a higher score.

Slide 7 - Test Methodology

The previous slide demonstration of all core game features has been shown. However, additional development work is needed to get the game into a production ready state. A problem we have identified is slower development speed due to specific practices and to mitigate the impact of this, we introduce a suite of tests to allow us to develop faster in the future. Testing is based on more commonly known as the testing pyramid where lower levels achieve more granularity of verifying the behaviour of the game features higher levels, we are able to verify more complex work done on the UI and so on.

Beginning with we started by writing unit tests which cover the core game rules such as is okay for a card to flip over not and from there we have moved on to higher level tests which are closer to UI level. For instance, do card flip over when they are supposed to, along with do all our features work together in an integrated way. This includes accessing user profiles from the database along with tapping on the screen and so on. As you can see in the test summary below, we've got 100% success rate across all our tests and these are not pictured here are our UI test, integration tests which run on our code editor which is Android studio.

Slide 8 - Resource Estimation and Budgeting

To cover the current state of the game Taylor will now introduce out budgeting and estimation plans along with some additional ideas for our roadmap.

Presenter: Taylor Edgell

Thank you. Now, as with any Project Manager agent process, two of the most important factors are estimations and budgeting. Now to estimate how long it would take us to create this demo and the further game, we use two methods. We use a quantitative method and a qualitative method. The qualitative method was Planning Poker where we each gave our own thoughts to each certain functioned section what we needed to go through. The other quantitative method was use case points what are based upon function points, but still use a form of professional experience.

To create use case points you have to evaluate the technical factors. You have to evaluate the environmental factors as well as understand the different use cases. This is based upon creating a use case diagram to first understand the use cases and understand the potential users and the difficulty of each use case. From these estimation techniques we came out with, for the complete project, 42.6 use case points. What, using an estimation of 15 hours per use case point, turned out to be 639 man hours. What using the average pay for Software Engineer of £15.50 comes out for total cost of £9904.50 in labour costs.
So we estimate at the moment we have currently spent 462.45 hours on the demo, meaning there's a remaining 176.55 man hours in order to complete the rest of the functionality what I'm going to talk about later.

In all we'd estimate the total cost at this stage would be £11,429.50. This is made up of the mentioned labour costs, a publishing fee to the Google Play Store as well as costs associated with user acceptance testing such as Alpha and Beta testing, as well as feedback from focus groups.

Slide 9 - Product Future Roadmap

Now as mentioned during the estimation and budgeting slide, we do have some future functionality we do want to add to our game. Currently, as mentioned, we have made a successful demo, but we have ideas where we can refine this and make it a better game towards a user. So following on we've decided we want to expand the gameplay. This includes making additional categories further than just dinosaurs, flags and monuments. We want a whole range to keep a child interested in a longer period of time. Ideally, we also want to rework the user profile. We want to make sure it's fully comprehensive and from a UX perspective, we want to make sure that a users emotions are happy and they find the game an easy to use game. We want to make it beneficial towards them.

We also want to make sure game achievements are fully implemented. We want to further go ahead and to make it more robust and scalable solution. We would then want to migrate the game over towards the cloud. This does have GDPR considerations, but we will find and take these into account at that step. Further on from this one, the most important parts of our future roadmap would be game balancing and user testing. At the moment, it could be that the game is too difficult. So from Alpha and Beta tests and focus studies, we feel we could refine the game into a better state meaning its more accessible by a wide range of child users. It has also been seen from past video games, such as Minecraft, that Alpha and Beta tests are a good way of marketing the game, meaning that it would be more successful when it's released from getting that free way that users can test and help us improve it during the early development stages.

Now, moving on from our initial estimations, we have again used professional experience with the remaining requirements we wanted to add in to roughly work out how many man-hours we think we have remaining and the estimated cost from this.
So from adding the man-hours for every category what is left, we come out with 240 man-hours. When it comes to labour cost, again using the previous £15.50, a figure of £3,720. Now, these new estimates are predominantly in line with our previous estimates, but again you may notice that slightly they are slightly off, but this is due to feature creep. As with any project, the further you go along, the more variations and in-depth certain categories requirements can go. But as mentioned, these are roughly in line, so we feel we are successful in our estimating techniques.

Slide 10 - Release Version – Future sprints

Now I'm going to pass over to Michael to tell you how we would move this additional future road map onto actually Sprints.

Presenter: Michael Justus

Thank you. Looking forward to future events and future feature proposals based on our product feature Roadmap previously described, we consider all the features on the table with regard to the cost benefit that we believe we can deliver to customers, as well as their ability to support global growth of their required products. Acting as the development house, we consider all customer feature proposals based on any feedback they may give us, given the initial demonstration of the product.
However, we will always be mindful to consider the impact of scope creep on any future development costs, risks and efforts. In order to schedule the potential future roadmap we have split the proposals into five Sprints as shown on this slide, and we consider the most important Sprint to be Sprint 9 that addresses scalability. Here we're proposing the use of cloud technologies to support the global scale out of the customer's product. However, this Sprint, within this Sprint, we're very mindful to consider any and all privacy data policies such as GDPR, to ensure that any data held by the application is handled safely, privately and within legislation.

Slide 11 - Project Summary

Lastly, moving on to the next slide, the team reflected on the entire design journey and implementation of the project that we undertook, as well as our customer engagements during the project. Overall, we consider the project delivery a success based on the evidence that the demo shows we have delivered on all customer requirements. However, several limitations have impacted on successful delivery, two of which we will raise. For instance, our customer interaction was not as good as we had hoped for, leaving the team to deliver according to our limited understanding of what the customer truly required.

We also thought that some of us sprints overran and initially planning in advance gave us rough estimations of what we wanted to deliver, however, the implementation deviated slightly from that plan. The question is what could we have done differently going forward? Certainly, critically analysing our working efforts we believe that customer discussions are not a strong point in the previous demo project would be a huge improvement going forward with massive focus to improve the interactions. We also consider that we have better integrated Git and Clickup products to improve our development workflow as well as leveraging continuous integration to automatically run our Android tests after every commit.

In summary, as a team, we do believe that we were successful. We believe that we came under budget, and we delivered the requirements requested of us. We also considered that our design and implementation processes operated really well given our initial introduction into the entire software project engineering management process and while there are many things we would have done differently in real world environments we believe that ultimately we achieved the goal set before us.