COSC345

**Assignment Report**

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**What we are going to build.**

Lang will be an app to teach 3 different languages to users using games and puzzles. Lang will teach Spanish, French and Maori. We are trying to gamify it a bit more than other learning apps to make the user experience more enjoyable while also learning something new. Other features in the app that we might include are milestones, leaderboards, minigames, currency, wager quizzes.

The games and puzzles that are confirmed to be in the app include having a tower as the main obstacle that the player has to climb in order to reach the top level (boss level) to get a final quiz including all the tasks from that tower. The puzzles include re-arranging certain objects to make the right sentence in that particular language.

Elaboration on other features:

* Milestones: We want to implement an xp system in the app so every time the user finishes a level or quiz, they earn xp and level up and/or get medals/rewards.
* Leaderboards: A leaderboard system would add the thrill of competition to the app as people would be learning more with the mindset of passing the player above them.
* Minigames: These would include small fun type games that would revise previously learned content. We would want to make it as appealing as possible with the art and mechanics to keep the user wanting more of it.
* Currency: Along with xp, we would also want the user to earn a type of currency that they could use to either access more levels, buy different skins for their pixelated character or use in Wager Quizzes.
* Wager Quizzes: This would be the main highlight of the features we want to add. Wager Quizzes would have the user bet an amount of money on a timed quiz and the more currency they would bet the more currency they would get in return. But the more currency they would bet, the shorter the time would be for them to complete the quiz, and if they were to fail they would lose the money they had bet.

**How we are going to build it.**

**Graphical user interface

Description automatically generated with low confidence**

**Chart

Description automatically generated**

We will be following the Agile Methodology for our project. This allows us to have an iterative approach to project management and software development. Requirements will not need to be set in stone at the beginning of the project and we can revisit steps in the process to fix problems that occur throughout the project development. The functional requirements of the project will be used to develop the tasks,  then tasks can be allocated to group members. Once completing each task the developer will then test what they have built. We have decided that we will be building an IOS app therefore we will be building our project using Swift. A Github repository will be used as the distributed version control system where developers can access and the most current versions of the project, tasks can be allocated and other developers can check and test the other code developed.

**What already exists that is similar to your app?**

There are multiple popular translation apps online on the app store; DuoLingo, Memrise, Mondly, Babbel, etc. But only some of them have been gamified such as DuoLingo and Mindsnacks. Mindsnacks mainly has a lot of features that would be ‘similar’ to ours but definitely not exactly the same.

* **How will you differ from it?**

We noticed that none of these language apps teach Te Reo Māori and we want to include that in Lang because we are making an app in New Zealand. Much like Mindsnacks we will be adding games and puzzles to make the user feel more involved in our app compared to a lot of other apps. The market for leaderboard based language learning is very untapped and we want to be one of the first ones to try and succeed at it. The competitive aspect of an app adds a lot of enjoyment and thrill to learning. Also if we succeed at adding wager quizzes, that would be a big difference to other language learning apps.

**Your target market**

Our target market would be young kids, teenagers and young adults since gaming has evolved and popularised significantly throughout the last decade and we want to attract that population the most. Lang will be interactive, fun and addicting in a non-harmful way as you are learning something that they might enjoy or is useful to them in their lives. We feel like if done right, Lang can quickly become popular amongst the age group of 10-25. We also believe it will also attract a lot of Kiwis or even foreigners who are looking to stay in New Zealand as we provide Te Reo Māori as one of our languages. We also provide French and Spanish which are languages amongst the most popular languages people are interested in learning.

* **Evidence that your target market is interested in your app**

In 2020 Duolingo had 42 million monthly active users on average. Of those new learners, 40.5% were part of Gen Z (kids born from about 1997 to 2012) -- and learning for 13 and 14-year-olds increased by 85%, compared to 2019. These statistics show that many people want to learn new languages; especially young people. This is why we have chosen to prioritise interactivity in our app. Young people love video games so with our app being more interactive and fun, this will entice them more. Once they use the app and they find it more fun than alternative language learning apps, they will tell their friends about it which will increase users as well.

**What is going to be different ?**

We plan on gamifying the language learning process and making it similar to a pixel art based platformer with role playing elements. Players will ascend a tower with each floor representing milestones and enemy “quizes”. Every question that the player gets right, will damage the enemy until their health bar is depleted. Every enemy will represent a topic in that language (Nouns, Verbs etc). Players will earn experience points and in game currency and will be able to level up when they have accumulated enough. Damage the player does will scale based on level. In order to progress to a higher floor players must face the floor boss which will be a comprehensive quiz on all topics learned on that floor. They would have to reach the required level and defeat enough “Quizzes” before challenging the floor boss. If Players get the question wrong they lose health points. Health points can be replenished through items (bought with in-game currency) or time.PLayers can also use in-game currency or complete challenges to earn weapons to increase damage or armour to reduce damage taken.  We plan on making each avatar and the enemies based on the folklore associated with that language (Maori Gods for the Maori Language etc). All this will be designed with pixel art to keep it simple and attract a retro audience.

Figure 1

Fate Roulette Art of Jean

Qr code

Description automatically generated

Example of pixel art of Jean for the French Language

Figure 2

Guilty Gear Ranked Tower System

A screenshot of a video game

Description automatically generated with medium confidence

Levels will be designed in a tower like fashion where players climb as they progress

Figure 3

Castlevania Symphony of the NIght

A screenshot of a video game

Description automatically generated

Actual floor designed would be similar but a simplified version of a floor in the game Castlevania

**Who is our team?**

Ben was brought into the team through Liam. Ben has experience with the Agile project management methodology and how to implement it into a project. Ben has been programming for the past 4 years and although he hasn’t had experience coding in swift, he has developed multiple larger projects that involved teams and knows how to deliver a project on time that satisfies the requirements outlined.

Liam is a fourth year student that is majoring in Computer Science, and minoring in Software Engineering and Information Science. Over the years at uni he has worked on multiple group projects, most containing elements of planning, coding, bug-fixing, and testing. One of those projects was a game. This is why he would be a good fit for this team. He has experience working in group projects and has worked on a game before which this app has elements of.

Amaan did COSC360 in summer school with Liam and that is how he was introduced to the team. Amaan has experience with designing and working with different art styles which can be used to produce the visuals of our app. Amaan has been doing art and graphic designing for the past 6 years, he also worked freelance as a social media art designer for a few games back in 2019. As a graphic designer, Amaan is a great fit for the team to lead the designing aspect of this project.

Mahfuz aspires to go into the game development field with his career path.  He has set his sights on joining japan based companies to further his career and has planed ahead to specialise in learning the principles of game development and programming. Although unfamiliar with SWIFT, he is fast and adaptable and hopes to contribute significantly to the team.

**Resources:**

* [**https://www.businessofapps.com/data/duolingo-statistics/**](https://www.businessofapps.com/data/duolingo-statistics/)
* [**https://www.travelandleisure.com/travel-tips/mobile-apps/duolingo-most-popular-languages**](https://www.travelandleisure.com/travel-tips/mobile-apps/duolingo-most-popular-languages)

**References:**

* **Figure 1 :** [**https://fateroulette.tumblr.com/post/168218048303/s4-059-106-jeanne-darc-alter**](https://fateroulette.tumblr.com/post/168218048303/s4-059-106-jeanne-darc-alter)
* **Figure 2 : (Guilty Gear Strive)** [**https://www.sasa.blog/2022/02/07/ggst-ranked-tower-is-bad/**](https://www.sasa.blog/2022/02/07/ggst-ranked-tower-is-bad/)
* **Figure 3 : (Castlevania Symphony of the Night) https://www.usgamer.net/articles/design-in-action-symphony-of-the-nights-sublime-structure**