|  |
| --- |
| Software Development Team |
| Let’s Quiz |
| Vision |

|  |
| --- |
| Collin McKeahnie |

Contents

[1 Introduction 1](#_Toc527308878)

[1.1 What is expected to be delivered? 1](#_Toc527308879)

[1.2 What is Let’s Quiz 1](#_Toc527308880)

[2 Positioning 3](#_Toc527308881)

[2.1 Product Goal Statement 3](#_Toc527308882)

[2.2 Product Position Statement 3](#_Toc527308883)

[3 The Business Case 4](#_Toc527308884)

[3.1 The Business Need 4](#_Toc527308885)

[4 Stakeholder Descriptions 5](#_Toc527308886)

[4.1 Stakeholder Summary 5](#_Toc527308887)

[4.2 User Environment 5](#_Toc527308888)

[4.3 Design Choices 7](#_Toc527308889)

[4.3.1 Accounts and Login 7](#_Toc527308890)

[4.3.2 Game, Round and Turn Design 7](#_Toc527308891)

[4.3.3 Visual Design and Layout 8](#_Toc527308892)

[4.3.4 Sci-Fi & Fantasy Aficionados as a Target Market 8](#_Toc527308893)

[4.3.5 Global Leader Boards 8](#_Toc527308894)

[4.3.6 Community Driven Question Pool 8](#_Toc527308895)

[4.3.7 Multiplayer Capabilities 9](#_Toc527308896)

[4.3.8 Question Categories 9](#_Toc527308897)

[5 Product Overview 10](#_Toc527308898)

[5.1 Needs and Features 10](#_Toc527308899)

[5.2 Scope for Expansion 11](#_Toc527308900)

[6 Product Requirements 11](#_Toc527308901)

[6.1 Quality Characteristics 11](#_Toc527308902)

[6.2 Constraints 12](#_Toc527308903)

# Introduction

The client has identified an existing need in the market for an online, multiplayer, mobile quiz game. Specifically, the need that has been identified is to move away from the general, nonspecific quiz games that appeal to a broad market and aggressively target one specific target market, in this, case Sci-Fi and Fantasy enthusiasts.

Currently there are several quiz game apps available that have similar features to the proposed project, however the client believes that an app that specifically targets Sci-Fi fandom will have a large enough appeal while being specific enough to be unique to ensure the development of the project is viable.

The development team is proposing *Let’s Quiz*, an online mobile game where players can verse one another in a multiple-choice, turned based, trivia game. The app aims to be community driven with players being able to submit questions and given the chance to vote and rate questions at the end of every round, the intention is to give players a sense of ownership of the game as their own likes and dislikes are what shape the game.

The following needs have been identified as critical for the app to have any chance of commercial success. Easy to use, fast playing, multiplayer, and playable on iOS and Android mobile devices. Given that the idea of a trivia game, playable on a mobile device is not unique it is crucial that Let’s Quiz meets these needs, failure to do so will mean users will simply give up on the app and move on to a competitor.

The proposed product has several points of distinction from its competitor, however the primary reason users will want to play Let’s Quiz over the competition is because it is fun. Where other quiz games test a user on general knowledge, like naming capital cities or remembering obscure dates in history. Let’s Quiz focus is a trivia game about the things its users do in their spare time, movies they watch, comics they read, computer games they play. Let’s Quiz is designed to reward users for the time they spend immersed in their favourite fantasy world.

The client has commissioned the development team to design Let’s Quiz as outlined below, it is their intention that they will have a fully completed application before the end of the year.

## What is expected to be delivered?

The design of the application is for use on Android smart phones, the client has requested the application be sleek and simple in its design to allow for ease of use. The public facing front end of the application will be a simple interface with the primary interaction being the game asking users’ text-based questions and presenting them with 4 possible answers, the user then selects the answer they think is correct and is given 10 points for correct answers and -5 points for an incorrect answer. Users will be playing against another player, each player alternatively playing through a round, after each player has played three rounds the game will end, and a winner will be declared.

## What is Let’s Quiz

In short Let’s Quiz is a trivia game, players are asked a question, presented with answers in a multiple-choice format and they select the best one. Games with this premise have been around for a very long time with the most popular board game variety being Trivia Pursuit. Let’s Quiz will give players 30 seconds to answer as many trivia questions as they can, with points being awarded for correct answers and points being deducted for incorrect answers.

When the timer runs out the round will end, and the player will be presented with a results page. At this point their opponent will be notified it is their turn and they will get a chance to play a round after the opponent has finished the round both players will be notified of the round winner. After each player has played three rounds the game is over, one of the players will be declared the overall winner and the players will have the option to play again.

The idea is that from starting the app to completing a round should take under one minute, the goal is that users will be able to fit multiple small games in each day as opposed to having to dedicate large chunks of their free time to grinding through the game.

# Positioning

## Product Goal Statement

|  |  |
| --- | --- |
| The goal of | Have a market ready multiplayer quiz game, playable on iOS and Android mobile devices, which is specifically tailored to appeal to Sci-Fi and Fantasy aficionados. |
| affects | The client, as the driving force behind Let’s Quiz they will be largely affected by the success or failure of the project.  All potential players of Let’s Quiz, as there is no current vendor meeting the market needs of the sci-fi and fantasy fandom the success or failure of Let’s Quiz will be keenly felt.  The development team and Unity3d |
| the result of which | Will give users an adaptable, multiplayer quiz game, playable on iOS and android mobile devices, uniquely suited to the needs of our target market. |
| a successful solution would be | A quiz game released on the App Store and Google Play Store |

## Product Position Statement

|  |  |
| --- | --- |
| For | Sci-Fi & Fantasy trivia buffs |
| Who | Would enjoy a competitive turn-based trivia game |
| Let’s Quiz | Is a turn based, multiplayer, trivia game specifically targeted to Sci-Fi and Fantasy genres |
| That | Allows for a community driven, competitive trivia quiz game, against people from all over the world |
| Unlike | QuizUp |
| Our product | Is targeted to appeal to a specific niche in the market. Our product also offers a more streamlined app with a user driven question pool. |

# The Business Case

## The Business Need

The client has identified a need in the market for a quiz game that is specifically tailored to a niche target market. The client has specified the need for the game to be fast, competitive and importantly community driven. The reason these things are product needs is because currently there are products on the market that are similar to the proposed project, so to compete against them, Let’s Quiz must be at least as good in all aspects.

**Uniquely Tailored to A Target Market**

The main type of person who enjoys trivia games is someone who is good at trivia. It is a simple fact that people like what they are good at. What Let’s Quiz aims to do is change the type of questions asked from ‘trivia’ to Sci-Fi & Fantasy fandom questions.

**Fast Play Through Time**The application must be easy to use and fast to play through. People do not necessarily have multiple hours to invest in a mobile app, the market need identified is for a game that can be played multiple times per day in the small and common down times people have, for example while waiting for a coffee. The goal is to have the time to from opening the app, to completion of a round to be about 60 seconds.

**Easy to Use**Ease of use is vital, users should not be expected to have to invest time into learning how to navigate and operate the application. In keeping with the need for a fast-paced application it is critical users are not tripped up on the interfaces.

**Competitive**Competition is the hook to entice players to want to play, get better and continue playing Let’s Quiz. By having players compete against each other and by having a global leader board, Let’s Quiz will be a competitive game, with winners and losers. Users will be able to see where they rank on a global score board and will see how after each game they compare to the world.

**Community Driven**Other mobile quiz games exist, one separating distinction between Let’s Quiz and the competition is the ability for players to submit questions to the question pool and to vote on questions at the end of each round. By allowing and encouraging players to add to and vote on questions in the question pool the question list will always be changing and if the questions being presented to the player are shown as a function of their popularity and their age in the database players should mostly be seeing new and interesting questions.

# Stakeholder Descriptions

## Stakeholder Summary

|  |  |  |
| --- | --- | --- |
| Stakeholder | Description | Responsibilities |
| User | The user is the person playing the game.  They require the app to execute without errors, to record accurate data about their game and to generally behave as a mobile app is expected to. | The user is responsible for maintaining their phone to a standard that will run the Let’s Quiz application, this is not an arduous task and should not require any effort beyond normal phone maintenance.  Let’s Quiz requires several permissions, including but not limited to internet access, to send and receive push notifications and to read and write data. It is the responsibility of the user to grant the application those rights.  It is expected that the user plays the game in good faith, that they do not deliberately attempt to inject malicious code or otherwise break the system. |
| Game Opponent | Let’s Quiz is a multi-player game and the opponent player, whether they have joined the game or not, is a stake holder.  The users score, questions the user has been asked and what answers they gave will all effect the opponent’s game. | The opponent player is expected to be able to receive push notifications and to take their turn when notified to do so.  At the point when they take their turn, they become a user and have the responsibilities of the user. |
| The Client | The Client has engaged the Let’s Quiz Development Team to complete the project as outlined | To agree to the initial project outline, maintain oversight of the project and communicate any alterations or requirements the project may develop as the design is carried out. |
| Unity 3d | Unity 3D is the development platform the design team has elected to use. If Let’s Quiz makes over $100,000 USD per year Unity begins to take a percentage of the profits. | The Let’s Quiz development team will be relying on accurate and up to date documentation. It is the responsibility of Unity3D to provide documentation as well as some level of technical support and troubleshooting. |

## User Environment

#### General Layout

The development team proposes a visual design following a minimalist aesthetic, with a fun and colourful theme keeping with the Sci-Fi and Fantasy genre. This will meet business need for a fast and easy to use application that engages with our target market.

#### How will users interact with Let’s Quiz

Given the minimalist aesthetic, the application is designed to be simple yet intuitive. There are only three ways a user can interact with the app, touch buttons, drop-down menus, and on-screen keyboard input.

##### Touch buttons

Touch buttons are the simplest form of input and the go to choice for how users are expected to navigate the application. It is reasonable to expect users to have familiarity with how touch buttons work, as these elements are a staple among mobile applications there is no reason to instruct the user on how to interact with them. Having simple buttons eliminates any chance of incorrect usage, continuing with the design goal of simplicity.

##### Drop Down Menus

Where there are more options available to a user than a simple touch button can reasonably handle, like for example presenting the user with a question category selection, the design calls for use of a drop-down menu. The advantage of a drop-down menu is it presents the user with an array of options but limits their potential selections to those that are valid.

##### On-Screen Keyboard Input

Where the app asks the user for input that requires creativity or personalisation for example when submitting a question, an on-screen keyboard will present itself in a similar fashion to text messaging. This will meet the business need for an adaptable application.

#### How a game is played

A complete Let’s Quiz game is made up of three rounds, played against an online opponent.

When a user starts a game, a timer will begin, and they will be asked a series of random questions, for each question they will be presented four possible answers. The user will then select the answer they think is correct, the answer they selected will then change colour, green if it is correct and red if it is wrong. In the event of an incorrect selection the correct answer will also light up green, so the user can see what the correct answer was.

This will continue until the timer has expired. After the game has ended the user will be presented with a results screen where they can review each question, see their how their opponent did on each question and rate their favourite questions. Afterward the game will move into the users open game list and will be available for them to play their next round after their opponent has had their turn.

The client has identified the business need for a competition environment, by having players compete against one another Let’s Quiz goes from a simple single player quiz game to a battle of knowledge between two competitors.

#### Scoring

Users will receive 10 points for correct answers. To prevent users from rapidly guessing at the questions, a problem we found during testing, users will lose 5 points for wrong answers.

The deduction of points for an incorrect answer is to mitigate a risk factor identified in the early stages of testing. Players could essentially cheat by rapidly selecting any answer, giving them a 25% chance to score 10 points with no risk.

#### Question submission

To engage users to the highest degree the client has requested that users be able to submit their own questions that are then added to the general question pool. Users will be able to select ‘Submit Question’ from the main menu and then be able to enter the question, correct answer and incorrect answers.

This feature relates to the identified business needs by addressing the need for an adaptable game. The ability for users to be able to submit questions that are then included in the question pool means the questions the game is asking its users will be continually changing. This will also mitigate the risk of the game becoming boring.

#### Question Ranking

After each round, users will be able to rate questions with a thumbs up or thumbs down. This will help Let’s Quiz automatically remove poor performing questions, an identified risk of allowing users to enter their own questions. Users will be able to see on a global leader board which questions are highest rated and how well their submitted questions are being received, this appeals to the business need of a competitive game, even though the comparisons of questions is not the primary mechanic it will still appeal to the users competitive nature.

#### Environmental constraints

Let’s Quiz is designed to run on iOS and Android mobile devices. It is a requirement of the application that the device be connected to the internet. This means that the individual device must be configured to allow the application to access the internet and that the device is in a physical location that has internet.

#### Required integration

In testing it became apparent that Let’s Quiz needs to interact with the Android OS in a non-traditional way. Normally when an app is not being displayed but has not been closed it is paused. For example, normally if the user presses the home key, the app that they were in is paused and minimized, they then have the option to go back to their game at the spot they left it in.

Let’s Quiz is a trivia game where the rounds are timed, as such it is a requirement that the game not pause the countdown timer if, for example, the user was to open up a web browser and search for the answer.

## Design Choices

In conjunction with the client the Let’s Quiz design team have made numerous design choices, the following outlines the some of the decision process and justifications for those choices.

### Accounts and Login

The decision to allow users to log in was made for several reasons, firstly from a business point of view having a registered list of users is a much more valuable to show the popularity and success of the application.

Having users log into the application with an account allows Let’s Quiz to save their progress and record their achievements. This is very useful as it adds value to the application.

### Game, Round and Turn Design

A player’s turn lasts until the timer runs out, a round is made up of a player and an opponent’s turns and a game is made up of three rounds.

The timer to end each player’s turn will be set to 30 seconds. The choice to limit each turn to only thirty seconds is to fit Let’s Quiz in with user’s busy lives. The aim of Let’s Quiz is to be a short game, that users can play anytime of the day during small breaks and periods of down time, for example when waiting for a coffee.

The choice to have a game be made up of multiple rounds was to create a degree of suspense and heighten the competitive nature of the game. Using a best of three approach a player can have a bad round and still win the game, similarly just because a player wins one round they have not won the game.

A future feature of Let’s Quiz is to have question categories, this release will also affect the structure of the game so that players would get to pick the question category for one round each and the third round would be random. The intention is to ensure each game appeals to the player’s preferred topic while maintaining balance

### Visual Design and Layout

In keeping with the theme of being fast playing, easy to learn with a low barrier of entry, the Let’s Quiz design team have elected to keep the user interface as simple as possible. Complexity for the sake of complexity adds nothing to a design, Let’s Quiz have as much clutter and complexity from the user interface without sacrificing features, this should appeal to every type of user.

### Sci-Fi & Fantasy Aficionados as a Target Market

The decision to specifically target Sci-Fi and Fantasy as a niche genre was made for multiple reasons.

1. It is very popular, if anything can be taken from the enormous success of the Marvel, Star Wars and DC movies it is that there is a huge demand for nerdy, sci-fi comic book adaptations.
2. Broadly speaking the people who like sci-fi movies, comic and video games are also reasonably tech competent, so a mobile app will not be a new and daunting prospect as it might be to knitting enthusiasts.
3. There is an almost never-ending supply of new content to create questions from.
4. Finally, there is no other application on the market that specifically targets this niche.

### Global Leader Boards

To encourage users to want to keep playing and keep getting better the decision was made to include a high score leader board with where every Let’s Quiz user can see how they compare to the best users in the world. Every point the user has ever scored is totalled and then compared to every other user, the reason total points ever scored was chosen as the thing measure users against is because it rewards long term users. If it is a user’s goal to be the best in the world they would have to put the time in to accumulate an enormous score.

### Community Driven Question Pool

A big feature of Let’s Quiz is for users to be able to submit their own questions to the game. There are a few reasons the client has made the decision to have the question pool be community driven, firstly it is to give players a sense of ownership and control over the game. Allowing players to submit their own questions is designed to make players feel like they are a part of the design team, shaping and altering the game itself. It is also a way of outsourcing what would otherwise be a huge job, to stay current in the ever changing world of Sci-Fi and Fantasy fandoms would be nearly a full time job for a single individual, by having the community itself maintain the question pool this job is neatly taken care of by the unpaid players.

### Multiplayer Capabilities

The client’s decision to have Let’s Quiz as a multiplayer game is one of the key design choices. Having players competing against one another turns Let’s Quiz from an exercise in pointless memory training to a competition, where players can achieve a sense of accomplishment through victory and the desire to improve after losses.

It is well recognized for a game to be successful it must have a hook of some sort, competition is Let’s Quiz’s hook. Being able to boast that you’re the most knowledgeable person in the world about Star Wars is the sort of achievement we want our players to strive towards.

### Question Categories

Users have the ability to choose what category of question they will be playing.

# Product Overview

## Needs and Features

|  |  |  |  |
| --- | --- | --- | --- |
| Need | Priority | Feature | Planned Release |
| Playable Quiz Game | 1 | Basic single player quiz game that asks a user questions and scores correct answers. This should be playable on an IOS and android mobile device. | April 2018 |
| User Accounts | 1 | Users can create an account using the Let’s Quiz app. Users can then sign into the app using that account | April 2018 |
| Guest Accounts | 1 | All users to use the application in a limited way without signing in. |  |
| Question pool that can be updated by users | 2 | Allow users to submit questions to the online question pool via an in-app submit question scene where user’s trivia questions are entered and uploaded to the server. | May 2018 |
| Global Score board containing all users | 2 | Have a high scores page that syncs with a high scores table on the Let’s Quiz server | May 2018 |
| Ability for users to vote on questions they like or do not | 2 | Optional button available to the user at the end of the quiz that increments a rating held against each question on the server | July 2018 |
| Offline redundancy | 3 | Should the application not be able to connect to the internet it should pull locally stored data to allow for game play with some reduced functionality | July 2018 |
| Multiple categories of questions | 3 | User option to select a specific category of questions before the game, so the quiz is on a topic of interest to the user | September 2018 |
| Multiplayer Quiz Game | 3 | Connect 2 users together so they can play against each other. | September 2018 |
| Allow user to have multiple games running simultaneously | 3 | Have game management page where users can see and join all their outstanding games | September 2018 |
| Have users play multiple rounds against each other making up a complete game | 3 | Ongoing games management for each user, to be handled on the server. | September 2018 |
| Link Let’s Quiz with popular social media platforms | 4 | Integrate Let’s Quiz with Facebook and Google Play’s APIs | September 2018 |
| Notify users when it is their turn to ensure faster game play | 4 | Push notifications to user’s phones to alert them when it is their turn. | September 2018 |
| Polished game, globally available | 5 | Publish Let’s Quiz to Google’s Play Store | October 2018 |
| Picture based questions | 6 | Questions could be based off pictures as opposed to text only | TBA |
| Allow for user input as an answer | 6 | Ask open ended questions and have users provide an answer as opposed to selected from a multiple-choice list | TBA |

## Scope for Expansion

The application can be expanded in a variety of ways;

* Image based question, this would allow for users to be asked questions based on the image they are seeing, for example showing a picture of an animal and asking the user which animal it is.
* Input based questions, this would allow for users to submit questions with a variety of answers presented in a list format, for example asking a user to enter in all the countries that start with C.

For minor tweaks and usability improvements our plan is to roll out an app in the best state possible and then listen to our users requests as to what they feel is important and beneficial and priorities from there.

# Product Requirements

## Quality Characteristics

#### Security

There is a business requirement for security as Let’s Quiz will be running on user’s personal phones and in the current market people are rightfully very security conscious. The client has identified security as a business need primarily as a reaction to the public perception around security and privacy. The information Let’s Quiz has on each of its users is not of a sensitive nature but due to the recent media attention certain companies have received around data sharing, privacy and security it is important to present Let’s Quiz as a secure and safe application to put user’s minds at ease.

There are three types of user accounts, for accounts linked to Let’s Quiz via social media the social media company will maintain security via their SKD. A user who sets up a Let’s Quiz account will have their information stored on a protected server, a user’s password will be encrypted before it is stored so even the Let’s Quiz team cannot see user passwords.

#### Reliability

The business requirement for a reliable app is critical. If the application is not available for user to use when they want they simply will not use the application, it is an unreasonable request to expect users to tolerate anything less than an application that works every time.

Let’s Quiz relies on two systems to operate, the user’s phone and the online database. The burden placed on the user’s phone is minimal, so long as they meet the minimum system requirements there should not be no problems. The online data base relies on a third party and we can only take them at their word that they will maintain 99.9% uptime, given that this is a paid service the likelihood that they will meet this promise is quite high.

To ensure reliability there will be an offline single player mode embedded into the game. If at start up the application cannot connect to the database it will skip the sign in process and retrieve locally stored data, this will provide the user with a trivia game they can play, albeit without any online functionality.

#### Usability

An easy to learn, easy to navigate game is a primary design goal and business requirement of the client and the Let’s Quiz design team. Users should feel confident with all aspects of the game from the first time they use it, by design there are no tricks or traps that a new user will not know or fall into.

Having an application that is easy to use lowers the barrier of entry to the game and will encourage new users.

#### Fault Tolerance

The most common fault predicted is user submitted questions with incorrect answers, the user ratings and report system should help to isolate problematic questions which can then be removed automatically. To be ‘community driven’ Let’s Quiz needs to allow the community to submit questions, to mitigate the risk of users submitting poor questions the decision has been made to automatically remove questions that have more down votes then up votes. Should this prove in effective the Let’s Quiz management team may have to resort to manually checking each question before submission.

## Constraints

#### Legal constraints

Let’s Quiz is a unique and independent development, we have no reason to be concerned with any breaches of copyright law or impinging on anyone’s intellectual property. The game itself will have a rating within the App Store and Play Store of 13+ just in case there is someone who may take offense at the content.

#### User requirements

A final constraint of Let’s Quiz that is placed on the user and is not explicitly stated. It is the need for the user to be able to read English. At this point there is no features to assist someone who may be struggling with this part of the game and it is a barrier of entry that the user be able to read the questions and answers.

#### Environmental Constraints

The user must have an internet connection to be able to play Let’s Quiz as a multiplayer game, furthermore they must be able to connect to the server.

#### Market Constraints

The intention is to release Let’s Quiz using the mobile apps for each mobile platform, The Play Store and The App Store, for android and iOS respectively. These online market stores have terms and conditions that the development team and the application Let’s Quiz must heed to.

#### Hardware

The hardware requirements of Let’s Quiz are very minimal, only requiring a touch screen and the most basic graphics card, almost all phones should be able to run Let’s Quiz.

#### Operating System

Due to the low system requirements of Let’s Quiz it will be compatible with Android devices running Lollipop 5.0 or newer and IOS 8 or better, these versions have been around since 2014 as such we are not expecting any compatibility issues.