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Let’s Quiz

# Introduction

The client has identified an existing need in the market for an online multiplayer mobile quiz game. The client believes the current applications available do not adequately meet the market needs and have engaged the Let’s Quiz development team to produce a better application. As a result, the development team is proposing Let’s Quiz, an online mobile game where players can verse one another in a multiple-choice trivia quiz, player involvement is encouraged further with question submission and player polling of questions.

The specific business need for Let’s Quiz is for an easy to use, fast playing, multiplayer quiz game, playable on iOS and Android mobile devices. The reason the client feels this is needed is because currently there is not a product meeting these needs and

The proposed product differs from its competitors by allowing users to participate in a quiz game made up of three rounds, in each round the user will play their turn and then the app will notify their opponent to take their turn. 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 Apple and 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 able to compete against another person, this will be managed primarily through the back end and will be presented to users as seamlessly as possible.

## Who has a use for this app?

Let’s Quiz’s target audience is very broad, essentially anyone with an interest in trivia, competition and who has a smart phone can enjoy this app. One particularly nice feature of the user-maintained question list is the app itself should begin to have questions that the audience likes as the people who are playing it will be the ones add questions and voting on them.

Having a large target audience is of particular benefit to the business as it allows a larger audience and market appeal. This may later translate into higher ad revenue should the client wish to include ads in the application or a higher profit should the client choose to sell the application.

# Positioning

## Goal Statement

|  |  |
| --- | --- |
| The goal of | Have a market ready multiplayer quiz game, playable on iOS and Android mobile devices. |
| affects | The client |
| the result of which | Will fill the clients perceived gap in the market |
| a successful solution would be | A quiz game released on the App Store and Google Play Store |

## 

|  |  |
| --- | --- |
| The goal of | Releasing a multiplayer mobile quiz app to market |
| affects | All Let’s Quiz stakeholders |
| the result of which | Will give users an adaptable, multiplayer quiz game, playable on iOS and android mobile devices |
| a successful solution would be | A quiz game released in the App Store and Google Play Store |

## Product Position Statement

Let’s Quiz will offer an online, multiplayer, quiz game which

|  |  |
| --- | --- |
| For | Noncommercial mobile phone users |
| Who | Would enjoy a competitive turn based trivia game |
| Let’s Quiz | Is a turn based, multi-player, trivia game |
| That | Allows for a customizable competitive trivia quiz game against people from all over the world |
| Unlike | Quiz Up |
| Our product | 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 fast, competitive and most importantly adaptable. The reason these three things are needs is currently there are no products on the market that addresses this criteria.

**Fast**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.

**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 score board Let’s Quiz will be

**Adaptable**Other mobile quiz game 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

| **Name** | **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 permission, 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 play 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 yet or not, is a stake holder.  The user’s 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

#### Let’s Quiz Team

There are four members of the Let’s Quiz development team, plus one member of the Charles Sturt University IT teaching faculty acting as oversight. This team is not expected to change.

#### General Layout

The development team proposes a visual design following a minimalist aesthetic, with a fun and colorful theme. This will meet business need for a fast and easy to use application.

#### 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.

#### Game Structure

After the user selects start new game they will be asked a series of questions and provide with four answers. They will select the answer they think most correct. Once the user has made the selection they think is correct the answer button they selected will change color, green if it is right and red if it is wrong. In the event of an incorrect selection the correct answer will light up green so the user can immediately see what answer was correct.

This will continue until the round timer has expired. After the round has ended the user will be presented with a debrief scene where they can review each question, see their how their opponent did on each question and rate their favorite 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 score 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 has internet connectivity. 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.

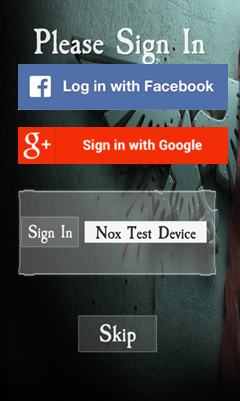
#### Required integration

In testing it became apparent that Let’s Quiz needs to interact with the android OS in a nontraditional 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.

## Visual Design

The following outlines the planned flow of scenes from app start up to completion and while the theme may change the functional design and feel of each scene should not alter much.



### Login Scene

This is an example of the indented layout of the sign in page. The user has 4 options, they can sign in using their social media account of choice, they can elect to create username specific to Let’s Quiz or they can skip the whole sign in process.

Should a user elect to skip the sign in process their username will automatically be assigned as ‘Guest’ and their ongoing score will not be recorded in the global high scoreboard. Furthermore, every time they open the Let’s Quiz app they will be asked to sign in again. The selection of any other form of sign in will be a permeant choice, only changeable through the settings page.

### C:\Users\Collin.Mckeahnie\Pictures\screen shots of quiz game\main menu.PNGMain Menu Scene

The main menu page is fairly self-explanatory. Users who have signed in for the first time will then arrive at this page, returning users who previously signed in will immediately arrive at this scene upon opening the app.

Should the app encounter any errors the user will be returned to the Main Menu. If the user presses the back button on an android device from the Main Menu they will be asked if they wish to quit.



### Pregame Scene

The Pregame Scene is designed to be the launch pad for users to start new games, return to old games and check on progress and scores of existing games. Visible from this screen shot it is possible to see the user has four games open concurrently, the top two are waiting for the user to take his turn. The two games in red are awaiting the other player to take their turn. To enter a game the user need only press anywhere on a green banner. The final option presented to the user is at the bottom of the page where they can begin a new game. In the top right corner is a refresh button so user can force a refresh of the page.

### C:\Users\Collin.Mckeahnie\Pictures\screen shots of quiz game\game.PNGGame Scene

The main game of Let’s Quiz will present as a series of questions and answers like this. Once the user has made the selection they think is correct the button will light up, green if it is right and red if it is wrong. In the event of an incorrect selection the right answer will light up green.

In the top right is the user score for the round and on the left is the remaining time for the round.

### C:\Users\Collin.Mckeahnie\Pictures\screen shots of quiz game\Post Game Scene.PNGPost Game Scene

The final scene is displayed after the round has ended, the Post Game Scene. Here the user can review the questions that were asked, red means they got the answer wrong and green for correct. A user can press a question and the text will change from the question text to

# Product Overview

## Scope for expansion

The application can be expanded in a variety of ways;

* Category specific questions, this would allow users to choose if they wish to participate in a game only specific to a certain category or if they wish to participate in a general game. This expansion could also allow for an extended leaderboard to show the users their rank in a category.
* 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. Needs and Features

|  |  |  |  |
| --- | --- | --- | --- |
| **Need** | **Priority** | **Features** | **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 |
| 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. | July 2018 |
| Multiplayer Quiz Game | 2 | Connect 2 users together so they can play against each other. | July 2018 |
| Allow user to have multiple games running simultaneously | 2 | Have game management page where users can see and join all their outstanding games | July 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. | July 2018 |
| Link Let’s Quiz with popular social media platforms | 3 | 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 | 3 | Push notifications to user’s phones to alert them when it is their turn. | September 2018 |
| Ability for users to vote on questions they like or do not | 4 | Optional button available to the user at the end of the quiz that increments a rating held against each question on the server | September 2018 |
| Global Score board containing all users | 4 | Have a high scores page that syncs with a high scores table on the Let’s Quiz server | September 2018 |
| Polished game, globally available | 5 | Publish Let’s Quiz to Apple’s App Store and Google’s Play Store | September 2018 |
| Multiple categories of questions | 6 | User option to select a specific category of questions before the game, so the quiz is on a particular topic of interest to the user | TBA |
| 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 |

# Other Product Requirements

## Quality Characteristics

#### Security

There is a business requirement for security as Let’s Quiz will be running on users personal phones and in the current market people are rightfully very security conscious. The client feels it is very important to present Let’s Quiz as a secure application to put user’s minds at ease.

User accounts will be maintained via social media SKDs which have their own internal security setting which a user would have already set, alternatively should a user not wish to link Let’s Quiz with their social media or does not have any supported social media accounts they can sign in with a Let’s Quiz account they can create using the app. This account would be password protected. This is sufficient to meet the business needs due to the trivial nature of the game itself and minimal personal information we have of each user.

#### 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.

#### 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.

## 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.

|  |  |  |
| --- | --- | --- |
| **Staged Roll Out Release Schedule** | **Priority** | **Planned Release** |
| Single player quiz game | 1 | April 2018 |
| Guest login and Let’s Quiz account creation and login | 2 | June 2018 |
| Multiplayer quiz game | 2 | July 2018 |
| Ongoing games lobby for users, to allow for multiple ongoing games | 3 | August 2018 |
| User ability to submit question | 3 | August 2018 |
| Global Score board | 4 | September 2018 |
| Question rating system for users | 4 | September 2018 |
| Login with social media accounts | 4 | September 2018 |
| Push notifications | 4 | September 2018 |
| Multiple categories of questions | 6 | TBA |
| Picture based questions | 6 | TBA |
| Allow for user input as an answer | 6 | TBA |

# Change Log

## Specific changes to the Vision Document

|  |  |  |
| --- | --- | --- |
| **Location** | **Description of Change** | **Date** |
| Contents | Contents page added | 20/4/18 |
| 1. Introduction – para 2 | Added paragraph specifically introducing the business need for Let’s Quiz | 20/4/18 |
| 1.1 | Spelled out in simple terms what the Let’s Quiz design team are intending to deliver | 20/4/18 |
| 1.2 para 2 | Added paragraph specifically stating why a broad target audience is a benefit to the business | 20/4/18 |
| 2.1 | Changed Goal Statement table | 20/4/18 |
| 3. The Business Case | Added a section to the vision document explaining the business needs are why Let’s Quiz must fulfil them. | 20/4/18 |
| 4.2.1.2 | Added specific statement why the layout choice meets the business needs | 20/4/18 |
| 4.2.1.3.3 | Added specific statement why the layout choice meets the business needs | 20/4/18 |
| 4.2.1.4 – para 1 | Clarified how the color of the answer buttons will occur | 20/4/18 |
| 4.2.1.4 – para 3 | Added paragraph specifically stating why a multiplayer game meets business needs | 20/4/18 |
| 4.2.1.4 – para 4 | Explained the design choice for points deduction on incorrect answers | 20/4/18 |
| 4.2.1.6 | Added paragraph specifically stating why a question submission meets business needs | 20/4/18 |
| 4.2.1.7 | Added statement explaining why the question ranking feature will help fix an identified risk and why it is a business requirement | 20/4/18 |
| 7 change log | Added change log | 20/4/18 |