# Notes for reviewer

Charnes, Below are his comments for my LCOM submission. Honestly, I do not feel confident as to the relevance of this document. It appears to me the purpose of this doc is to summarise all our other documents.  
I have directly copied large chunks of some of those documents and summarised other parts but there is essentially no new information in this document.

I would like to add an introduction and put the document on the correct template, would you be able to tell me what you think of the information and does it address the questions/critiques from the LCOM submission?

**James’s comments from LCOM:**

Not quite on target. You should have addressed the goals of the Inception phase :

You know what you are intending to do and why.

You have some idea of how you are going to do it.

You have the skills and competence to achieve it.

A lot of information here, but it's not focussed on answering those questions. IE - the answers to those questions are :

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Yes, we know what we are doing: we are building a quiz game playable on a mobile device with multiplayer functionality and an in game updateable question list. This is because <<business case>>. Furthermore, we know the scope of the project: the most important use cases are: X, Y, Z (as shown in the use case model). Also, we know what system qualities we need to achieve: these are P, Q, R (as shown in the SWRS document).

Yes, we know how we are going to do that: with a Unity based frontend written in CSharp communicating with an FTP server connected to a MySQL database (as shown in the project architecture document). We know we can do this because we have mapped the steps we need to take to realistic iterations in the initial project plan (which you haven't done).

Finally, in general, yes, we have the skills necessary to complete the project: this is illustrated through completion of the TCD which demonstrates a Unity front end communicating through FTP to a MySQL database. However, there are some concerns with all team members having the necessary skillsets. Specifically, X needs to develop skills in Y, etc etc. These needs are being addressed through <<mitigation strategy 1>>, <<mitigation strategy 2>>, etc etc.

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In fact, you have not articulated the business case - I have no idea WHY you are doing this aside from some throw away line about 'existing need' and 'market need' (what need?) in the Vision.

Also - when you say "It is a concern that the scope of the project may reach beyond the skillset of the development team." You need to say what aspects of the scope, in what skillsets the team is deficient, and what mitigation strategies are being employed to fix that - this sort of generality is not useful.

The aims of the project are only relevant here if you report against them - do you have a game playable on a mobile device? etc?

You list the deliverables for LCOM - but you don't say that you actually delivered them. The only real reporting in this status assessment is in the final line:

"At this stage the development team is on track with regard to their overall progress goals. They have completed the deliverable outcome of Assessment 2: LCOM and each team member is working towards achieving the other deliverables".

# What is expected to be delivered?

We are developing a multiplayer mobile quiz game called Let’s Quiz. The game will be playable on both Apple and Android mobile devices, with single player and multiplayer modes.

The basic operation of the game will be for players to sign in, using either a bespoke Let’s Quiz account or a compatible social media account, then they will play a short quiz game where they are asked a series of multiple choice questions. The player will select the answer they think is correct and will be scored depending if they answered correctly, 10 points for correct answers and -5 points for incorrect answers.   
This process of question and answer will continue, with the player being asked new questions until the round timer has run out, at which point the round will end. Once the round has ended the player’s score will be recorded and if it is a personal best added to the global score board.   
At this point the game will be stored in the players ‘on going games’ list where they can return to take their turn after their opponent has finished their turn. The other player will then be notified it is their turn to play a round and they can log in and take their turn, this process will repeat until each player has played three rounds. A round winner is determined from the person who scored the highest that round and the game winner is determined from the person who won the most rounds out of three.

The application is designed to be compatible with 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 a fast paced, colourful, text based quiz game, designed and built using the Unity3d game engine. The back end will consist of a FTP sever communicating with a MYSQL database.

Some key features of Let’s Quiz are listed below as well as their planned implementation dates, the later items are goals that may or may not be part of the initial release depending if time allows.

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| --- | --- | --- |
| **Need** | **Features** | **Planned Release** |
| Playable Quiz Game | 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 | 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 | All users to use the application in a limited way without signing in. | June 2018 |
| Question pool that can be updated by users | 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 | 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 | 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 | 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 | 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 | Connect 2 users together so they can play against each other. | September 2018 |
| Allow user to have multiple games running simultaneously | 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 | Ongoing games management for each user, to be handled on the server. | September 2018 |
| Link Let’s Quiz with popular social media platforms | 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 | Push notifications to user’s phones to alert them when it is their turn. | September 2018 |
| Polished game, globally available | Publish Let’s Quiz to Apple’s App Store and Google’s Play Store | October 2018 |
| Picture based questions | Questions could be based off pictures as opposed to text only | TBA |
| Allow for user input as an answer | Ask open ended questions and have users provide an answer as opposed to selected from a multiple-choice list | TBA |

# Why we are developing this application

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.

# What is the CCRD

The critical use case that has been identified is to have a user be able to create a Let’s Quiz account and log in to the game, to be able to play a game and then to have their score recorded on the global score board.

These use cases cover all the necessary architecture for the entire system to be realised. At this stage of development we have produced a working model to demonstrate the CCRD to the client, as well as supporting documentation.

These use cases are completely expanded in the Requirement Model document and outlined below:

### Register

Requires input fields for necessary information as well as buttons for submitting the data. The application must have a connection to the database in order to submit the information and register the new user. If not connection is available this will not be possible and time out. Registering will submit the given information into the relevant fields in the player table on the MySQL database. A unique identifier will also be created at this point for the new user. Once this is complete the user is given feedback that is was successful and is logged in.

### Login

Input fields are given to the user to authenticate themselves with a username/email and password. This will require a connection to the database. Once a connection is made the given information is compared to the fields in the player table and if a match is found the player is logged in a feedback given. If not the player is notified that their supplied information is incorrect.

Once a player has logged in before they will automatically be logged in each time they open the app as their username and password is stored locally inside the app for quicker log in.

### Answer Question

All gameplay takes place inside the Game Controller. In order for a player to answer questions, firstly questions must be available for the player to answer.

When the player performs log in a connection to the database is established and all questions currently on the database are downloaded in a single JSON string. This string is stored inside the PlayerController, once this has been completed at least once offline gameplay is available.

When the player launches the game the QuestionController is called and serializes the JSON into useable QuestionData objects containing a question, 4 answers and whether they are correct or incorrect.

Before questions are shown they are randomised inside the questionPool array to ensure the player does not receive the same set of questions each time they PlayGame. The order of answers is also randomised.

Inside the Game scene the player is presented with a UI containing the questionText and the four answers. When a user selects an answer the Game Controller determines if the selected answer is correct and changes the colour of the button, green or red, to reflect the response.

At this point the game score is also updated for correct and incorrect responses.

### Submit Score

Submit Score is required to update the players total accumulated score over all games as well as to compare between their opponent. When a round or game is finished the score is updated to the players accumulated score, a check is also made to see if this is a new high score for the player.

The game controller then establishes a connection to the database and updates the game table with the scores. Once the player and opponent’s data is received a winner is determined and the mobile clients display the result.

## System qualities

We have outlined the system qualities needed to achieve these use case also in the Requirement Model

## External interface requirements (Non-functional requirements) –

### Usability

* + - 1. The user interface should be easy to use
      2. Interface should be compatible with mobile device screens
      3. The game mechanisms should be easy to learn, and navigate around.
      4. The users should be able to compete tasks in a reasonable amount of time

### Reliability

#### Availability

* + - * 1. The game should be available to players on request at least 99% of the time
        2. The application should have no more than 1 hour down time in any 2 month period

#### Accessibility

* + - * 1. Once the game is installed the user should have 24/7 availability of use.

### Performance

#### Response Times

* + - * 1. The users should be able to see a response from their interactions instantly
        2. For game launch the game should be playable within 30 seconds of launching optimum 10 seconds

#### Capacity

* + - * 1. The system should be capable of handling 100 users at any one time

### Supportability

#### Compatibility

* + - * 1. The game will need to be compatible with both Android and IOS devices

#### Maintainability

* + - * 1. The Game may wish to be added to in future updates so it will be necessary to begin with refactorable, clean code and thorough documentation

#### Documentation Requirements

* + - * 1. All required documentation will follow version control. We will supply all documentation necessary for the project.

### Security

* + - 1. Security services are needed to authenticate users logins and will assist in these processes. These services will include a Lets Quiz account which will authenticate users. Facebook and Google logins will have their logins authenticated by their systems authentication processes.

## System Constraints

Constraints are the plus in FURPS+ and include

* 1. The game user interface will need to be designed to fit a mobile screen
  2. The application will need to be used within the limits of mobile phone power
  3. The application will be restrained by user’s phone data limits

## Assumptions and dependencies

1. That the mobile device the application is installed on will meet the minimum system requirements.
2. It is assumed the user will have the technical ability to operate a touch screen
3. That all developers have knowledge of the required IDE and other necessary aspects including Unity 3d, Facebook SKD, and Google Play SKD.

It will be assumed that the Facebook and Google Play Services servers are available

# ../ITC303%20-%20Dev%201/Deployment%20Diagram4.pngHow we intend to achieve this project

Essentially the plan moving forward so to expand the application submitted to the point where it is the final product.

We plan to continue using iterations where specific project goals and critical software infrastructure will be implemented. Each iteration will be a minimum of two-week blocks but can be longer depending on the tasks assigned. Each iteration will have its own unique plan, where the requirements are outlined, and tasks are assigned to team members. Each member is responsible for updating the iteration plan documenting their progress on their assigned task, however during each iteration meeting their progress will be updated if not done so already.

As outlined in the project plan we are on track with our iteration goals and provided we continue to remain so shouldn’t have a problem delivering the project on time.

An abbreviated copy of the project plan is as follows with everything up to an including E-4 having being achieved.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Subject | Phase | Iteration | Dates | Objectives |
| ITC303 – Software Development Project 1 | Inception Phase | I-1 | 13/03 – 26/03 | Documentation |
| I-2 | 27/03 – 09/04 | Complete Full Description for Critical Core Risky Difficult (CCRD) Use Case  Documentation  **Deliver Life Cycle Objectives Milestone (LCOM)** |
| Elaboration Phase | E-1 | 10/04 – 23/04  (Session Break) | **Database Creation and UI draft**  **Downloadable Question Pool** |
| E-2 | 24/04 – 07/05 | **User registration and login**  **Leader board** |
| E-3 | 08/05 – 21/05 | **Single player playthrough** |
| E-4 | 22/05 – 02/06 | **Submit Question**  **Deliver Life Cycle Architecture Milestone (LCAM)** |
|  | | | | |
| Subject | *Phase* | *Iteration* | *Dates* | *Objectives* |
| ITC309 – Software Development Project 2 | Construction Phase | C-1 | 10-07 – 23/07 | **Multiplayer Playthrough** |
| C-2 | 24/07 – 06/08 | **Social Media Integration** |
| C-3 | 07/08 – 20/08 | **Push Notifications** |
| C-4 | 21/08 – 03/09  (Session Break) | **Contingency for;**   * **Uncompleted development tasks** * **Unresolved bugs**   **Determine test environment**  **Establish play test**  **Deliver Initial Operation Capability Milestone (IOCM)** |
| Transition Phase | T-1 | 04/09 – 17/09 | Deploy Let’s Quiz in Trial Environment |
| T-2 | 18/09 – 01/10 | Complete second round play test with participants |
| T-3 | 02/10 – 13/10 | **Contingency for;**   * **Uncompleted development tasks** * **Unresolved bugs**   **Deliver Product Release Milestone (PRM)** |

## Evidence of competency

The purpose of submitting this technical competency demonstration is to show that as a development team we are capable of executing all aspects of the architecture.

The application as submitted is designed to give a realistic feel for how the final product will look and feel. At this point the look and layout of each scene in the game is essentially finished. The application allows for users to create an account and then sign in to the application using that account or skip the process all together and play as a guest. What we feel we have shown here is that we are capable of creating user tables, maintaining a user state after they exit the application and that the application is able to run with varying degrees of permissions depending on the manner the user has signed in. The final product requires merely an extension of this sign in process by adding two new methods of verification, Facebook and Google Play.

The quiz game itself functions identically to how the final product’s single player quiz game will operate, including the round timer and scoring, question tracking and score submission. This is a large part of the architecture that has now been completed.

Submit Question and the global high score board are also fully functional parts of the demonstration application. For all intent and purpose these scenes are also finalised and ready for the finished product. There are of course small things that may need to be changed or updated as the application grows, for example currently all new questions are submitted with a default category, however functionally they are now complete.

## Risks

At this stage we do not have any overbearing concerns. While initially it is true there were some technical aspects of project we were unsure if we possessed the skills to complete those concerns have all been address and we are now completely confident in our ability to deliver the project as outlined.

## Overall Progress

At this stage the development team is on track with regard to their overall progress goals. They have completed the deliverable outcome of Assessment 3: LCAM and each team member is working towards achieving the other deliverables.

We have a clear business goal as outlined in the Vision document.

We have a good outline of the use cases required and the system qualities we need to achieve, these are outlined in the Requirements Document

We feel confident in our ability to achieve the goals required for the final product by setting realistic iteration goals as outlined in the project plan