

Play-by-Play app

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Business Requirements

BR1:

The app will utilize a low latency live feed of football games and allow users to make predictions on the football game playing.

This is required as it is the core objective of the app, to provide an extra service on top of the game to enhance the viewing experience. Low latency will provide fairness to the app and enhances the user experience.

BR2:

The app will have a gamified aspect, containing world leaderboards, local and world-level competition, powerups, and real life rewards, with an emphasis on fun.

The app needs to be "fun", as it has to be shown to investors who find the concept worth putting money into, so gamified aspects are key to its success. They must be intuitive to understand and add to the prediction making aspect of the game, allowing for users to feel they have a fair chance against others. Rewards given include real discounts on services to entice users to stay with the app.

Actors

1. Users - Interested in an easy way to amplify their football game watching experience.
2. Matt/Abeed - Looking for software in a good enough state to be able to sell to shareholders and acquire funding with.

Use Cases

UC1 - New User watching live game

Actors: New user or football fans wanting to elevate their watching experience.

- New user joining the app for the first time to watch a game and enhance his viewing experience.

Explanation:

- This use case is about the steps a new user takes to join the app, access a live game, and start making predictions. It is very important because it enables users to experience the core functionality of the app immediately upon signing up.

Steps/Flow

1. Agree to terms/NDA
2. Create a username, password, and email in database
3. Accept email verification
4. Enter the menu and select the game currently being played

Business Requirement:

- BR1 - Provides the core real time football prediction experience.

🔗 UC2 - Returning User watching an old game

Actors: Returning user

- A user who has previously used the app and wants to practice their prediction skills in legends mode.

Explanation:

- This use case is about the steps a returning user takes to play a legends game. Playing a legends game will allow users to practice and hone their skills to be able to earn points and rewards in a live game.

Steps/Flow

1. Log into account using email/username and password
2. Select game located under the legends mode tab
3. Make predictions based on plays occurring in the game

Business Requirement:

- BR1 - Accessing past games to make predictions is still about the users interaction with making predictions and the experience the user gets.

UC3 - User playing in a group

Actors:

- **User** - A user who wants to join a group to watch games and compete with friends
- **Group Admin** - A user who creates a group and manages its settings.

Explanation:

- This use case shows how users can join a group and be able to play with friends while also competing against each other. Users can create a group or join a group to watch the game together, answer predictions, and compete within the group or with other groups. This keeps users engaged while also having a friendly competition.

Steps/Flow:

1. Log into account
2. Select group mode
3. If the user is the first member of the group:
 - Set up a new group
 - Send group code to other people
4. Else
 - Enter a code in group mode to join group
5. Group admin selects the game to be watched
6. All group members watch along the selected game
7. Group members compete in a group leaderboard as well as a global group leaderboard

Business Requirement:

- BR2 - This supports a gamified experience through group competition and leaderboards, which enhances the fun aspect and keeps users on the app.

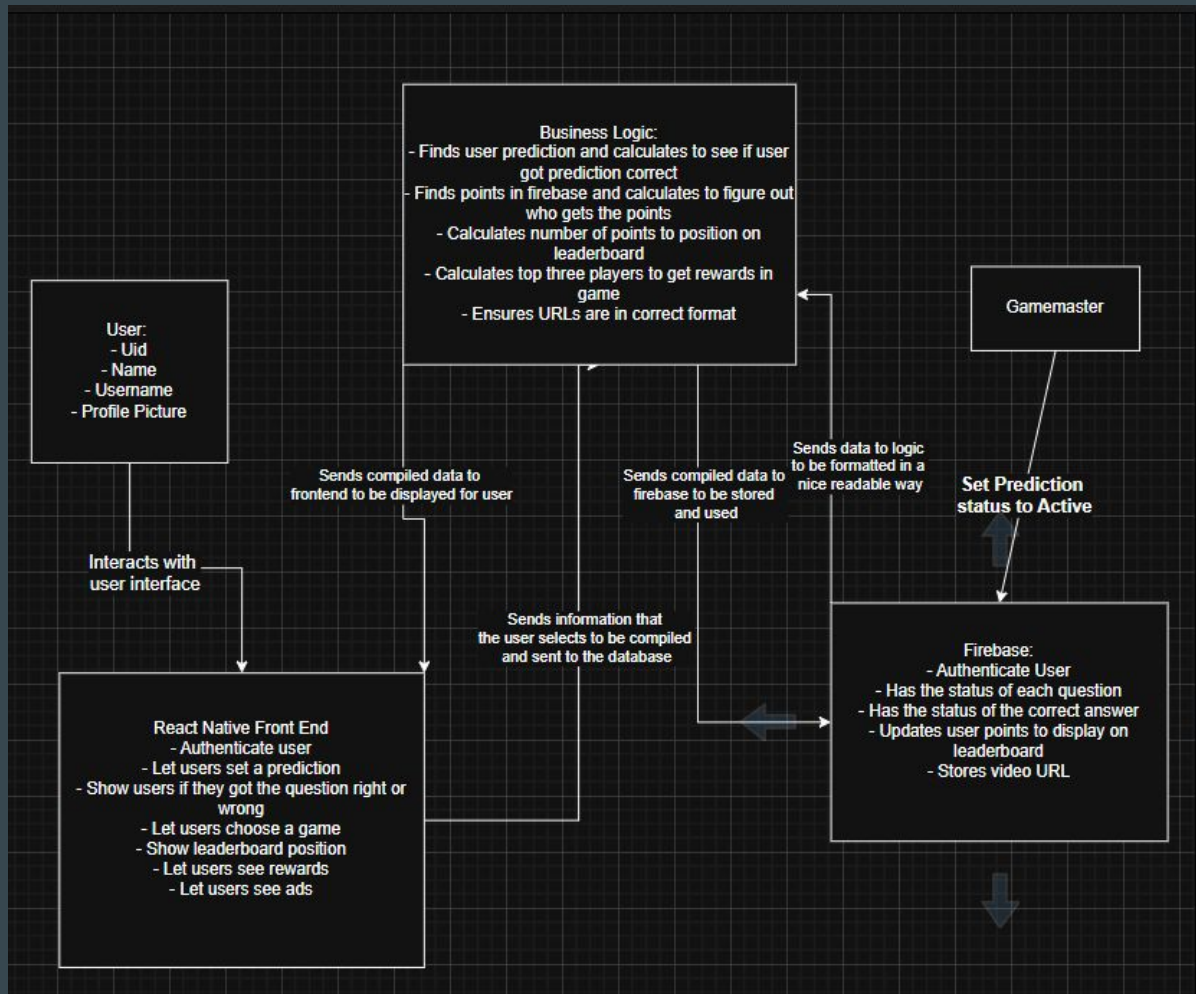
Functional Requirements

ID	Requirement Description	Priority	Use Cases
FR1	Usable on IOS and Android	High	UC1, UC2, UC3
FR2	Videos are fully synchronized with each other	High	UC1, UC2, UC3
FR3	Predictions go out at real time and can be answered without delay	High	UC1, UC2, UC3
FR4	Real time leaderboard updates	Medium	UC3
FR5	Legends mode allowing for practice of making predictions and watching old games	Medium	UC2
FR6	Allow users to create groups with friends and compete with other groups/group members	Medium	UC3
FR7	Two-Factor Authentication	Low	UC1, UC2, UC3
FR8	Global Group leaderboard	Low	UC3

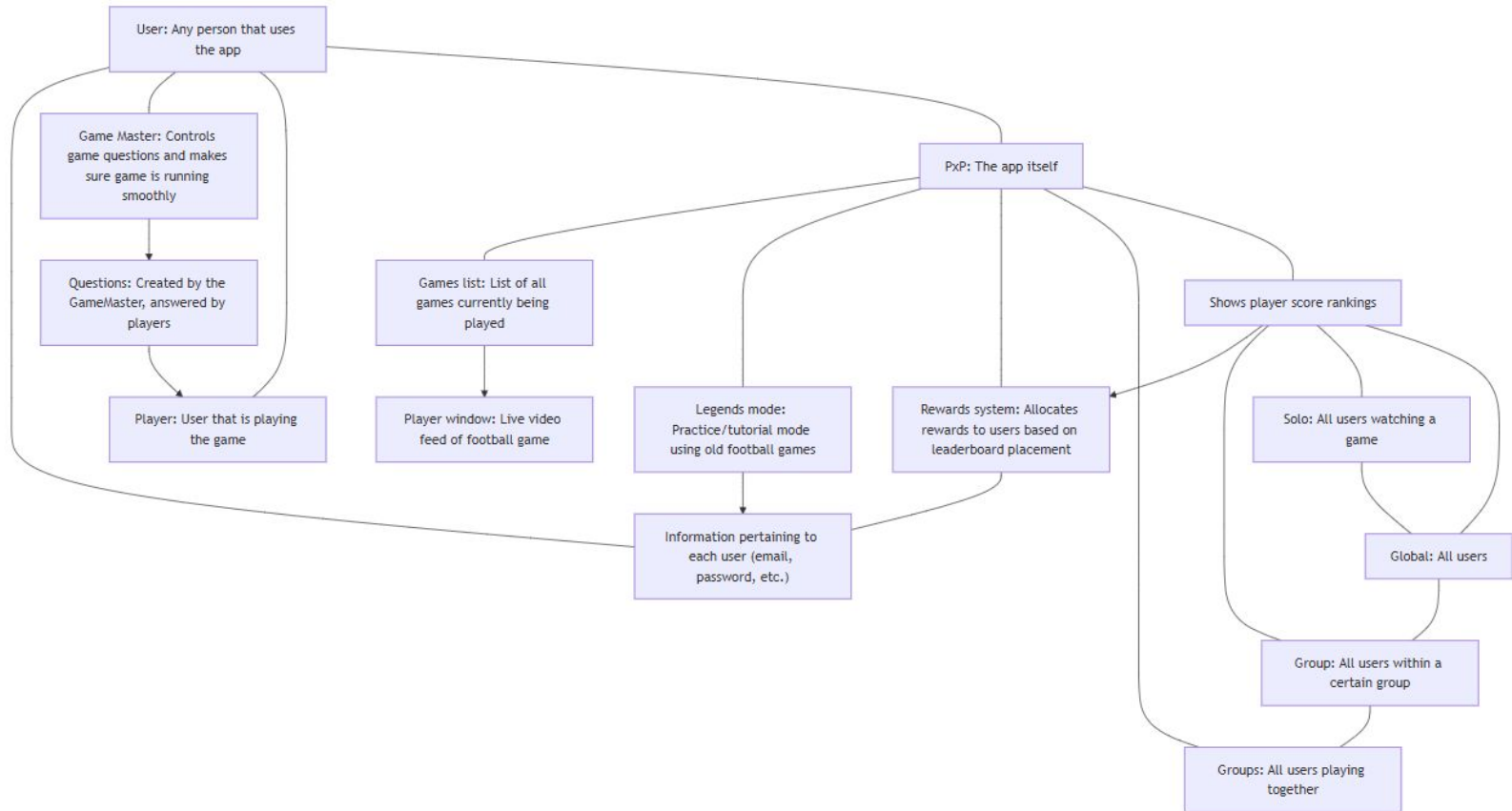
Non-functional Requirements

ID	Requirement Description	Priority	Use Cases
NR1	The system must support thousands of predictions during a given play without delay	High	UC1, UC3
NR2	Videos should be completely synchronized with no more than 1.5 seconds of delay	Medium	UC1, UC2, UC3
NR3	App should be smooth and have reduced lag	Medium	UC1, UC2, UC3
NR4	Code should be modular to allow for reuse of components and easy to update	Medium	UC1, UC2, UC3
NR5	Needs to have a profile page	Low	UC1, UC2
NR6	Powerups for lower performing users	Low	UC3

Architecture



Domain Model



Tech Stack

Frontend

React Native

<https://reactnative.dev/>

- Using React Native allows us to write code once and be able to have our app display on both Android and IOS.
- React native provides a near native performace by compiling to native components, which allows for s smooth interactive experience.
- React Native has a lot of support and is continuing to grow and improve.
- We will also be using expo framework for the use of its components since it makes things easier like expo-video instead of using react-native-video

Backend

Firebase

<https://firebase.google.com/>

- Firebase is a Backend-as-a-Service which will handle user authentication, database, and analytics which is great for our app.

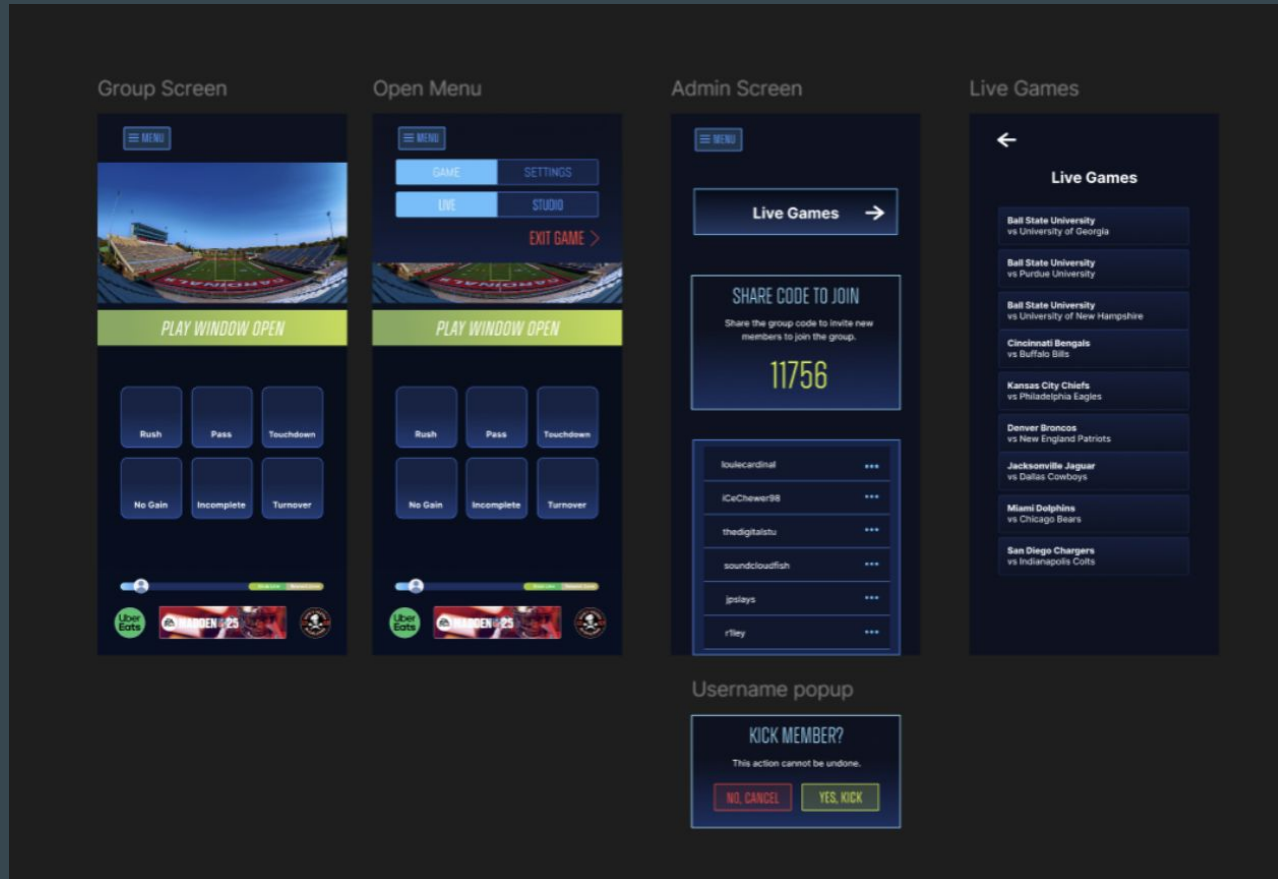
Database

Firestore

<https://firebase.google.com/docs/firestore>

- Firestore is apart of firebase but the main reason for using this is the instant update to the database. This will allow questions to show up instantly and games to show up as well.

Prototype



<https://www.youtube.com/watch?v=THU0sItNJbM>

🔗 First Iteration Features

Focus on Group Mode

- Users will be able to create multiple groups (high)
- There will be a code that restricts access to the group (high)
- Group admin selects which game the group will watch (high)
- There is a separate group leaderboard (medium)
- Each group needs to have at least one co-admin (medium)
- Group admin can kick players (low)

Explanation

We decided to start with Group Mode because it's one of the features users have been asking for the most. While a very basic version of Group Mode exists in the app, it's outdated and limited with only being able to create a group at this point.

With this first iteration, users will finally be able to:

- Create groups with friends
- Join games and watch them together
- Answer questions in real time
- Compete against each other and other groups.

This is also a great feature since we have limited time to complete iteration 1 and allows us to focus on the feature while just fixing minimal things from previous updates.

Client feedback

- Emphasis on group mode
- Each group needs to have at least one co-admin
- Group-vs.-group competition capability using average points of each group
- Main app page needs to have a different background
- Client likes the direction the team is heading in

Interesting slide

