Team

Fantasy Sports App

Technical Design Document (Draft)

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Preface

This is a quick draft for our Technical Design Document. This draft does not include milestones past the Alpha Demo stage as we wanted to get feedback on Thursday on our current milestone layout before we put the time to come up with our later stages. This draft also does not contain any use case diagrams nor any mockups, as we want to meet up this weekend to come up with those so that we all get to provide input with regards to the design in order to exchange critism/suggestions in-person. We believe that this will ensure we are all on the same page for the entirety of the project.

Part 1

Target platform: *Desktop application with mobile application (iOS-exclusive) support as well*

Development platform: *C# for desktop application, Swift for mobile application, SQL for our back-end*

Source code hosting: *Source code will be hosted via git located at* https://github.com/Tolton/Fantasy-Sports-Application

Third-party APIs: *Player stats will be pulled from* https://www.mysportsfeeds.com *(free registration is required for use of the API)*

Other assets required: *Player mugshot pictures will be pulled via TSN's image gallery API using the following format:*

```
http://tsnimages.tsn.ca/ImageProvider/PlayerHeadshot?seoId=[name]
```

Other images used for this project will be composed by our group using the Scalable Vector Graphics format to ensure quality is consistent.

Hosting: *We will need a SQL Server in order to host a database for storing our user/team/league information and allow it to be accessed in real-time. If SoCS is unable to provide this, then Amazon RDS (free version) will be used.*

Part 2

Project Description

For our project, we are going to be designing a fantasy sports application. Our fantasy sports application is essentially an online game where competing participants will be able to assemble their own imaginary teams from one of the 4 major North American sports leagues (NFL, NHL, NBA, MLB) using their selected players' actual statistics from real games as a means of scoring points.

The core application revolves around 3 key features that are essential to any fantasy sports application: the draft, the team and the league. Detailed explanations are given below:

The Draft

The draft is an event that takes place where all competing participants in a league select their players (in either a pre-determined or a randomized order) to their fantasy team. The event happens in real-time, and aside from league/team configuration, it's the starting for every fantasy league. Once a player has been drafted to a participant's team, that player is no longer eligible to be drafted to any other participant's team.

The Team

Each participant owns and operates their own team, consisting of a roster of their selected players from the draft. The way you play fantasy sports is by managing your team to make it as good as possible, by either adding players, dropping players or trading with other teams in the league to better your own team. Participants are only allowed a certain number of players on their team, so these player acquisitions and roster modifications are very important to a team's success.

The League

The league acts as a set of rules and guidelines that dictates how the game is played. League configuration dictates how players score points, how many players they are allowed to have on their team, have often they are allowed to add/drop/trade players. The league also keeps track of either weekly or seasonly team stats which in turn dictates the standings within the league. All teams within a league play by the same rules dictated by the league commissioner (the participant who creates the league and defines the rules of the league).

Requirements

Must Have	Should Have	Nice To Have
The ability to register an account and login to it	The ability to change your team name freely after it has been decided	A method to reset your password if it is forgotten
The ability to create a new league from your account and determine rules and scoring settings, as well as making the league private or public	The ability to set up a real-time live draft involving all participants in the league	Restricted offline play (be able to save information locally and view cached team/player information)
The ability to join a pre-existing league openly if public, or enter the league name and provide a password for joining a private league	The ability to have the league auto-select players if participants are not present for the draft	Determine a league treasurer and provide PayPal access so that participants can buy-in to the league if it's a cash league
The ability to create a team within a league and customize the team name & team picture	The ability to change league settings after a league has already been created	The ability to send other participants within your league messages
The ability to initially draft players for your team	The ability to trade players with other teams in your league	Provide player injury status (if the API provides this information)
The ability to add and drop players to a team	Optional notifications when your team gets points, or when another team requests a trade with you	The ability to veto trades between other teams in your league.
An easy-to-navigate GUI that allows simple switching between the different sports and leagues	Player status updated at the end of the day after all games have concluded (11:59pm PDT or 2:59am EDT the following day)	The ability to add or remove teams after the draft has already taken place.

Milestones

Week 4 (Sept. 29 – Oct. 5) – Registration and Login (front and back)

➢ Week 4 will be dedicated to creating our registration and login functionality. Jon and Katie will ensure that the front-end presents a clear and easily accessible method for both registering and logging in. They will also ensure that user information is passed to the server in the same manner to ensure consistency across both desktop and mobile platforms. Jack will ensure that user information passed to the server is handled in a secure manner, including the storing, hashing and salting of the user information on the server. He will also be responsible for protecting against collisions and potential SQL-injections.

➢ ****TIME PERMITTED**:** We will also include the ability to reset your password either by email or by answering security questions

Week 5 (Oct. 6 – Oct. 12) – Graphics and Base GUI (front), Database Structuring (back)

➢ For the front-end, Week 5 will be dedicated to the visual design of our application. Jon and Katie will work on look of the application and agree upon how navigation around the app will take place. At the end of this week, all of our custom graphics should be complete, and navigation within the app should be for the near-fully functional (a lot of actual content will be missing, however).

➢ For the back-end, Week 5 will be dedicated to designing data structures and tables within our database to store league information as well as team information. Player stats will not be stored on our back-end (as that would be redundant to pull from our API and upload to our server), however, information regarding the teams and leagues (such as team names, rosters and associated user, as well as league settings and standings) will need to be stored

Week 6 (Oct. 13 – Oct. 19) – Team & League Structure (front and back)

➢ Week 6 will be dedicated to creating an interface for users to create and manage their leagues, as well as creating (but not yet managing) teams. After this week, users should be able to log in to their account, enter one of the 4 sports and either create or join a league. On top of that, players should be able to create a team with basic information (name and picture). Jon and Katie will be providing the interface to do such tasks, and Jack will ensure that information regarding leagues and teams is stored properly and protect against duplicate team names, invalid names and invalid setting choices. Jack will also ensure that the date is kept track of properly to ensure that player stats are updated at the correct time.

➢ ****TIME PERMITTED**:** We will also include the ability for teams to send messages to one-another within the leagu

Week 7 (Oct. 20 – Oct. 26) – Team Manipulation (front and back)

➢ Week 7 will be dedicated to ensuring that rosters are near-fully functional. Both front and back-end will work together to ensure that users are able to seamlessly alter their roster including both adding and dropping players (player trades will not yet be functional). Team rosters will be visible to all participants, and league standings should be visible to all participants as well. Live draft will not yet be included, and when a team is created, they will be able to pick up available players all at once that have not yet been selected by other teams.

ALPHA DEMO