

## Project Title: Rooster Fantasy Tracker

### *Project Summary:*

For our project we want to have a web app that contains data for fantasy football. Ideally the web app will allow the user to input their requirements or constraints and will give the user players that fit those requirements. Our goal is for our web app to be a reference for fantasy football players who want to do research on players for their teams.

### *Description of the Application:*

Fantasy Football is a game where managers can draft a team before the NFL season starts and set lineups before the games begin for each week. Managers typically draft a roster with enough spots for a starting lineup and a bench and compete with other managers in the league on a weekly basis. Fantasy points are generated per player and are awarded for scoring plays as well as individual player stats throughout each game. We will have a website where you can get raw fantasy data for every player in the NFL. We will get the data from a website called [pro-football-reference.com](http://pro-football-reference.com). On the website, there will be an area where you can filter out by attributes like average fantasy points, team, position, etc. There will also be an option to create your own player watchlist, where you add players to your own table and you can keep track of how their stats change throughout the season.

**Usefulness.** *Explain as clearly as possible why your chosen application is useful. Make sure to answer the following questions: Are there any similar websites/applications out there? If so, what are they, and how is yours different?*

The usefulness of our project is based on the demand for fantasy football, especially in the world of American sports. According to ESPN, their app alone has a user-base of over 10 million players, and this is only for one of the many fantasy football applications that are on the market. However, though you can track your team's performance on a week-to-week basis on these apps, it is difficult to see your players' stats in comparison to those of others at their respective position. In fact, most apps do not have any way to show your players' scores in comparison to others at the same position. For this reason, our application provides the users a clear and easy way to not only track their favorite players, but also analyze the variation in certain trends between players (such as performances versus certain opponents, scores in games that are home or away, and performances when certain teammates play and don't play), allowing the users to better understand the players on their team and the changes they can make to their fantasy football roster.

**Realness.** *Describe what your data is and where you will get it.*

Our data is fantasy football data from the website called [pro-football-reference.com](http://pro-football-reference.com). We can use an existing API or most likely we will use the library called Pandas to scrape the data from the

tables. One of our main tables would be Player data for each individual player. It would contain the fantasy points per game and a more specific breakdown of each individual stat. We would also have data per game which we could get from ESPN.com.

*Description of the **functionality** that your website offers. This is where you talk about what the website delivers. Talk about how a user would interact with the application (i.e. things that one could create, delete, update, or search for). Read the requirements for stages 4 and 5 to see what other functionalities you want to provide to the users. You should include:*

- 1. Describe what data is stored in the database. (Where is the data from, what attributes and information would be stored?)*
- 2. What are the basic functions of your web application? (What can users of this website do? Which simple and complex features are there?)*
- 3. What would be a good creative component (function) that can improve the functionality of your application? (What is something cool that you want to include? How are you planning to achieve it?)*

There will be multiple tables in the database, including Players, Games, Teams, Years of experience. With these multiple tables, the data will be organized efficiently and easy to query. The data would be from pro-football-reference.com and ESPN.com.

The main functionality of the website is to provide users with the ability to filter through various stats and categories to analyze the best players. We will also provide users with the ability to create a personalized watch list, in which they can perform the CRUD operations. Additionally, depending on the users' preferences, we will recommend certain players depending on which stats/categories the user perceives to be most important. We will also add creative visualizations on a "Fantasy View" dashboard which would allow users to quickly understand stats and trends.

**A low fidelity UI mockup:** What do you imagine your final application's interface might look like? A PowerPoint slide or a pencil sketch on a piece of paper works!

Rooster Fantasy Tracker

Position: ☐ QB ☐ WR ☐ TE ☐ FLEX ☐ DST ☐ RB

Filter By:  or

Player ID	Position	Team ID	Points	Rank	Avg
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**Project work distribution:** Who would be responsible for each of the tasks or subtasks?

List of the person responsible for which exact functionalities in section 6. Explain how backend systems will be distributed across members. Be as specific as possible as this could be part of the final peer evaluation metrics.

For our project we have three main components. The first component is the backend design and data collection which will drive our displays and will be used as part of the “Player Watchlist” to track player’s stats and their trends across weeks and the season as a whole. The second component of the project involves web scraping the pro-football-reference.com website and extracting relevant fields of info for our “Player Watchlist” and “Fantasy View” features. The final component of the project is creating an appealing UI view for the web app which will feature different tabs for our API’s features as a Player Watchlist, Fantasy View, and options to search and select players who you would like to track on your watchlist. Based on the work across the different components we will be splitting up the work as follows:

1. Shouri and Chirag will be working on creating the design and structure of the backend database. They will also be working on generating any additional metrics which can help the user (using the web scraped data).
2. Raj and Dhruv will be working on web scraping the relevant fantasy stats across all players and will be in charge of making sure that the data is being stored properly within the existing backend structure.
3. Dhruv and Shouri will be working on creating the Fantasy View dashboard where different visualizations can be accessed using the Fantasy data and will also be working on a weekly “Projected Totals” value which we will try to estimate based on past weeks/seasons worth of data.

4. Chirag and Raj will be working on the Player Watchlist feature and making sure that user adds/deletes are successfully reflected in the UI. They will also be responsible for the UI view of the overall web application.