MMA Fantasy League App

Functional Specification

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1. Overview

Our MMA Fantasy league is going to be a 24/7 cloud based web application. It is designed to give a platform to fans of the sport of Mixed Martial arts where they can compete against other users to try to predict the winners for each upcoming UFC event based on their knowledge of the sport. The app will take a number of different statistics into account that will be used to accumulate a point value for the UFC athletes as well as their likelihood of winning their upcoming fight.

Both myself and James are massive fans of multiple sports not exclusively including Mixed Martial Arts. We both are avid users of other typical "fantasy league" type apps but we discovered that there is no such application available for the sport of Mixed Martial Arts so we decided our project would be the perfect opportunity to try and develop a format for a fantasy league and implement it into an web based application.

2. General Description

2.1 Product / System Functions

The app will be accessed through the user's web browser. Users will start by registering an account. Once the account is created they will have the option to create or join leagues and select their lineup of fighters for the next UFC event. For the fighter selection system users will be given a certain number of points which they will have to budget and use to "purchase" fighters and add them to their roster. The fighter's value will be determined by a number of different criteria such as their professional record, total strikes landed against their opponents, career takedowns, ground control time in previous fights, betting odds etc. The league system will take the results from the relevant UFC event after it has concluded and assign points to each fighter based on their fight outcome and their performance during the fight. Points may also be deducted in certain cases for rule breaking situations. Once the scoring points have been generated, user's scores will be displayed in the league table where the users place from top to bottom based on their accumulated points. The system will also have the ability to predict which fighter is more likely to win based on their stats as well as suggest selections for the user to add to their roster based on their available points.

2.2 User Characteristics and Objectives

The user community of the app will be generally tech savvy as the majority of MMA fans are aged between 25-35 although we intend to design a simple user interface that can be operated by any computer literate person. We expect they will be generally familiar with the typical popular sports web applications such as the Premier League app, ESPN Fantasy or any app with the same general format.

The objective of the user is to accumulate as many points as possible by predicting and selecting the best performing winning fighters with their budget so they place in first position in their leagues. The requirements for the system are that all relevant actions are performed quickly and that the user is given sufficient feedback based on their inputs.

2.3 Operational Scenarios

Log in to account

When a user opens the website they will be faced with a page allowing them to sign into their account.

Create account

If the user does not already have an account they will be prompted to create one.

Fighter selection

When the user logs in to their account they will be prompted to select their fighters for the next fight night displayed on a nice UI containing each fight and fighter involved. There will be a display of each fighter's stats on show to influence the user's selection.They can pick whatever combination of fighters they like based on their budget.

Create a league

Users can then create a league to compete against their friends . They can name the league whatever they choose to name it. A unique code will be given for each league that allows other users to join.

Join a league

Users can join a league by entering the specific league code shared with them.

View other users fighter selection

Users in the same league will be able to see each other's fighter selections before the fight night but viewing is only allowed the day of the fight as fighter selection will be locked and no changes will be allowed to be made on the day.

View league

After fight night each user's score will be totaled and they will be ranked in order of the highest points based on the fighter performance. The league page will also display certain information based on each member's performance over a given period of time.

2.4 Constraints

The project timing could become an issue but the brief schedule layout we have will hopefully keep us on track and help us plan each part of the project.

We will also need to develop an algorithm that will be capable of taking the fighter's statistics, processing them and returning their likelihood of winning their bout as well as generating a value for them which is balanced for the roster selection. We need to ensure that this whole process is automated to ensure that there is no "hard coding" on our end and the fighter's profile generation is as close to automatic as possible.

We want to ensure that the website is aesthetic looking and interactive but at the same time light so that it can be easily loaded for users that may have slower connections so they won't have a long wait time when going from page to page.

3. Functional Requirements

3.1 Log in to account

Description - If an account has already been created by the user they can log in using their account credentials. This will be the first page that shows up on the application. It will be a form that will ask for the users email and password and the details will be retrieved from the cloud.

Criticality - Log-in is an essential part of the app .

Technical Issues - Making sure the data is retrieved correctly for each user.

Dependencies - Without the log in function the user will not be able to operate the app.

3.2 Create account

Description - If the user does not already have an account they will be able to create a new account. A link displaying "Don't have an account ? Create one! Will be shown under the login form and clicking on this link sends you to the create an account page. This page will have a form with entries for 'username,' 'email address' and 'password.' This information will then be stored on the cloud.

Criticality - Essential part of our app .

Technical Issues - Making sure the data is stored correctly for each user.

Dependencies - Critically dependent as users will not be able to operate the site without it.

3.3 Fighter selection

Description - On the fighter selection page there will be a card displayed with 5 empty slots that are to be filled with the fighters the user selects based on their budget and the price of each fighter. Each fighter will also have statistics on show from previous fights that help evaluate the price of each fighter.

Criticality - Essential to be able to compete in leagues against other users.

Technical Issues - The technical issues will be the algorithm we make for fighter price from the data stored from previous fights.

Dependencies - To be able to compete and take part in the actual goal of the website this function needs to be completed.

3.4 Create a league

Description - A user can create a league and get a unique code for others users to join. The user who created the league will name it.

Criticality - Necessary function to adhere to the main goal of the application which is to compete against friends on the basis of mma knowledge.

Technical Issues - Generating a unique code for each league. Ensuring that the leagues are displayed for users to join

Dependencies - Each user wants to compete against friends so this is how you do it.

3.5 Join a league

Description - Once another user has created a league they can send another user the unique league code and submitting this code will automatically enter them into that league.

Criticality - Necessary to compete amongst other users.

Technical Issues - Making the league a public function for other users to join and generating random codes used for joining the league.

Dependencies - Main goal of the app won't be fulfilled without this function.

3.6 View other users fighter selection/past selections

Description - When in a league with other users you will be able to view other users fighter selections but only within a certain time before the event as changing fighter selection will be diasbled. Users will also be able to go back through past events and see which rosters the users have selected.

Criticality - Not a critical function but one that adds fun and competitiveness to the app.

Technical Issues - The only real difficulty with this will be to disable fighter selection changes when other users fighter selection is on show.

Dependencies - App will work without this function but it adds to the enjoyment for the users.

3.7 View league

Description - This function will provide a table with the format of the following headings, 'league position,' 'Username,' and 'total points.' There will also be an option to view each user's accumulated points in a monthly,quarterly and yearly form.

Criticality - Critical function in our app as it is shows the performing users in a league ranked first to last, the main goal of the app.

Technical Issues - Storing and updating the users data to the league.

Dependencies - The app's main goal won't be fulfilled without this.

3.8 View Suggested fighters

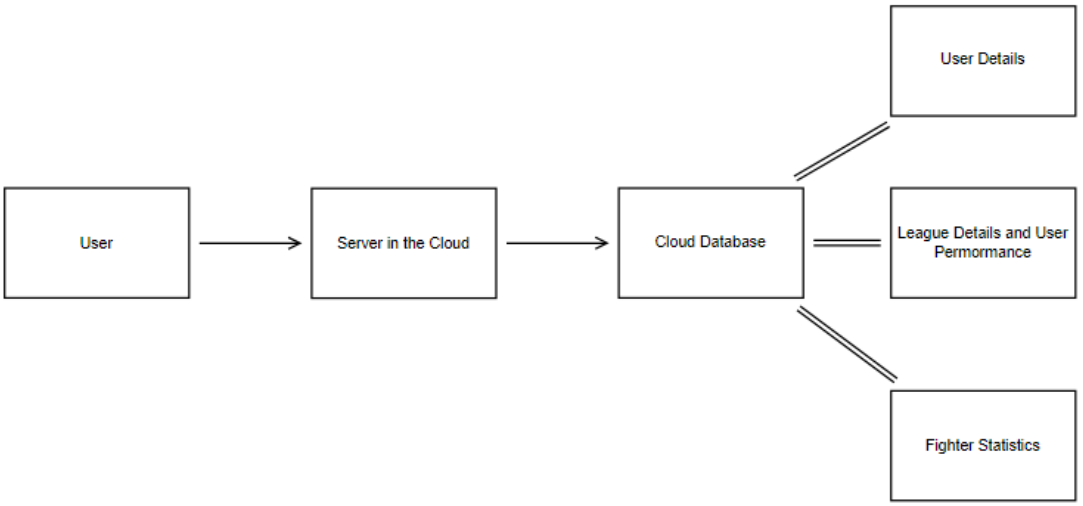
Description - Depending on our time constraints we plan to implement a system where the application will take the user's current selected roster into account and the amount of points they have left to spend and suggest the most likely to perform well fighters that they can afford to add to their roster.

Criticality - We don't see this as typically critical to the app as the app can theoretically function completely without this option but it would be a nice function to add if time allows.

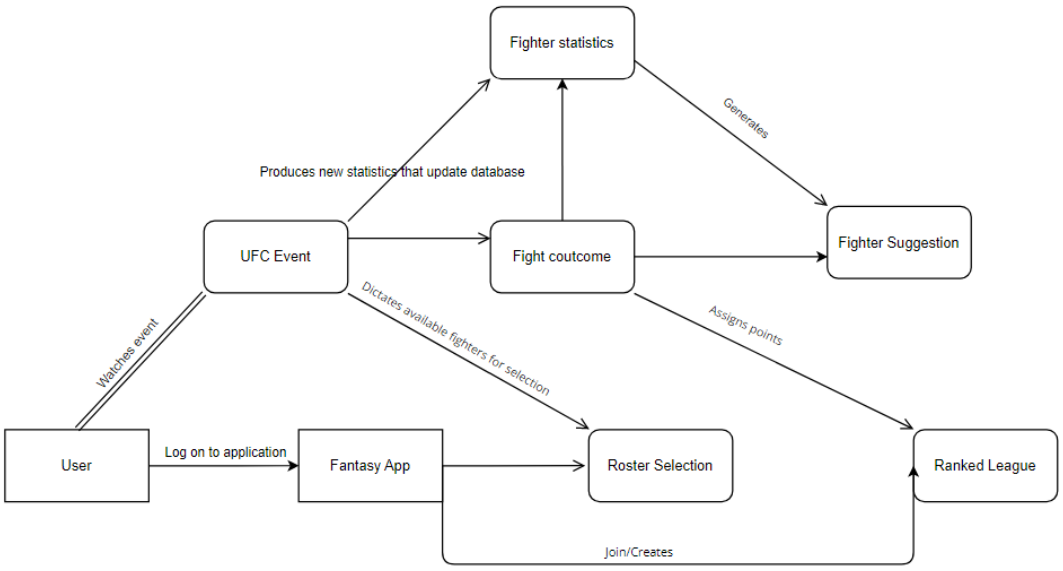
Technical Issues - Not a typically challenging aspect to implement but it would need to be able to balance the user's available points from their roster selection and select the best performing fighter(s) and give suggestions depending on how many slots they have available.

Dependencies - Would depend on how far along we have come with the other functionalities of the app, the remaining time before the deadline as well as if we feel that we have implemented an aesthetically pleasing and well functioning UI.

4. System Architecture



5. High Level Design



6. Preliminary Schedule

6.1 Schedule

Our main goal is to get all the main functionalities of the application working, allowing people to create accounts, log in, create/join leagues and also have the basic roster selection functions working.

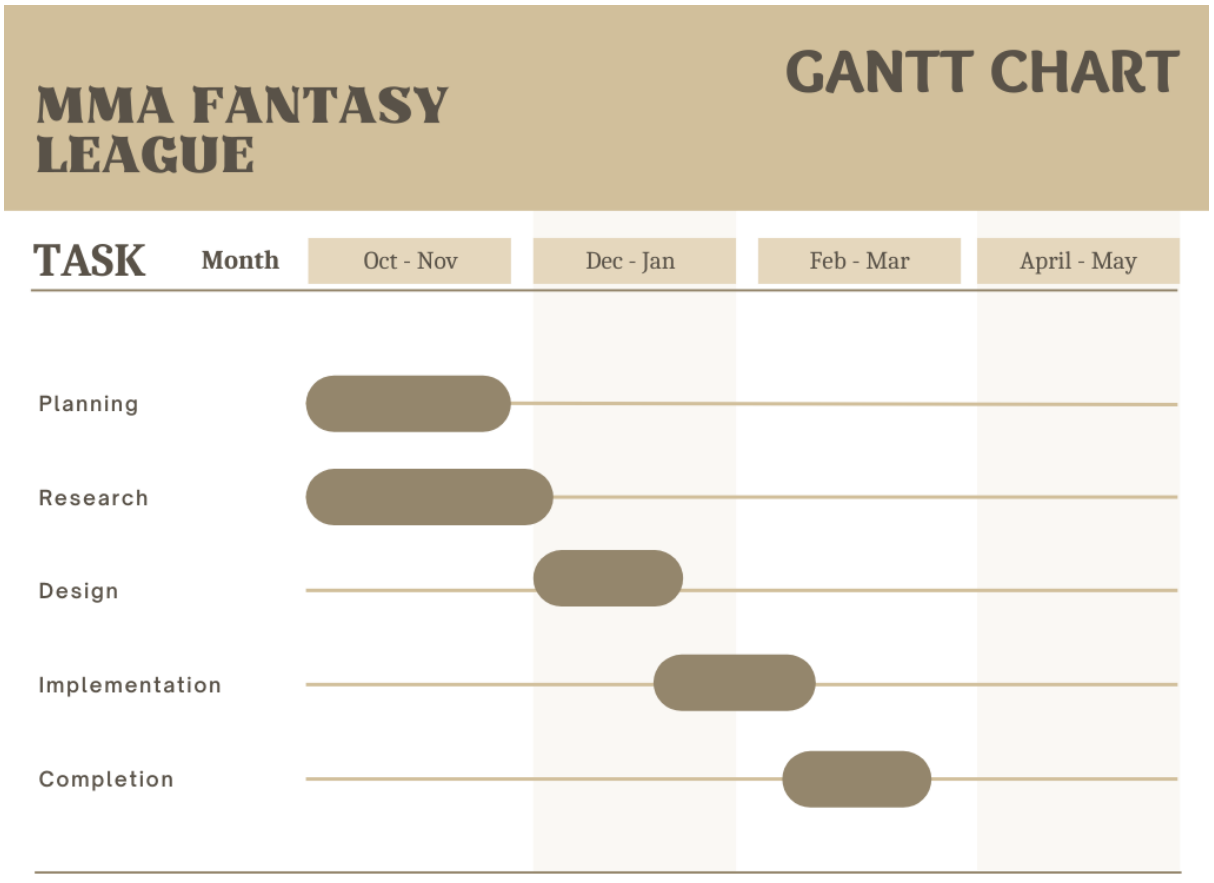
Following that we plan to create the algorithms that will take provided statistics for the fighters and generate the most likely to win fighter and also generate a value for these fighters that will work with the rostering system.

Once we have the foundations finished we will start working on the UI design.

Following that we hope to implement the system for users being able to view certain statistics about their long term performance, view other user's performance/rosters and also a system that will suggest fighters for the gaps in user's roster.

Finally if time allows we plan to make the app mobile friendly and ensure that it can be easily accessed by users that may be on slower connections such as 3G/4G networks.

6.2 Schedule Gantt Chart



7. Appendices