College Sports +

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Project Goals

1. **Develop a Fantasy-style web application** centered around NCAA athletes.

2. **Implement AI model for score prediction** to predict a player's expected points based on factors such as height, weight, position, team, and opponent.

3. **Utilize historical game data** to train the model for accurate point predictions.

4. **Create a multi-sport league** with support for football, basketball, baseball, and soccer

5. **Ensure a user-friendly interface** that allows fans to engage with the game easily.

6. **Get player statistics from real-life games** to determine games every week.

Intellectual Merits

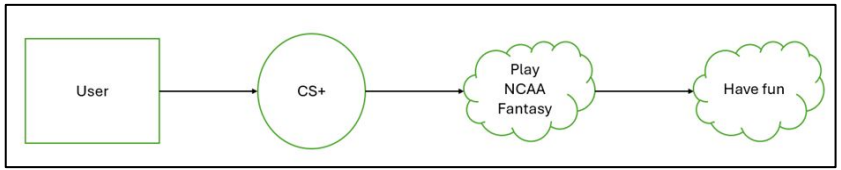
- Design of UI/UX for web application (Angular)
- Implementation of client-server relationship
- Web-scraping of player data for 4 different sports, including player info, team info, and game statistics
- Creation of AI model for score prediction via statistics
- Implementation of auth. System, real-time draft system

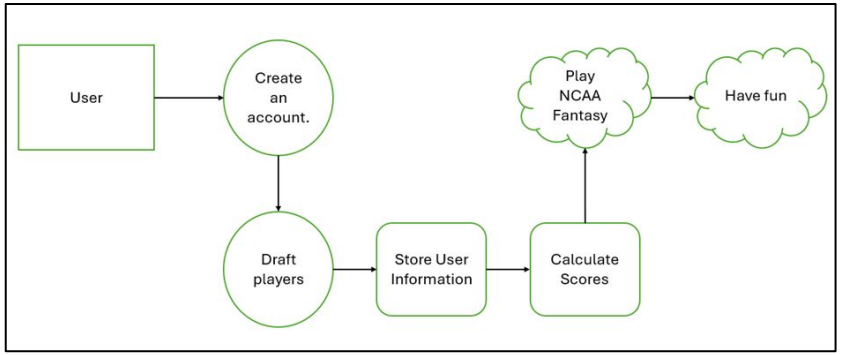
Broader Impacts

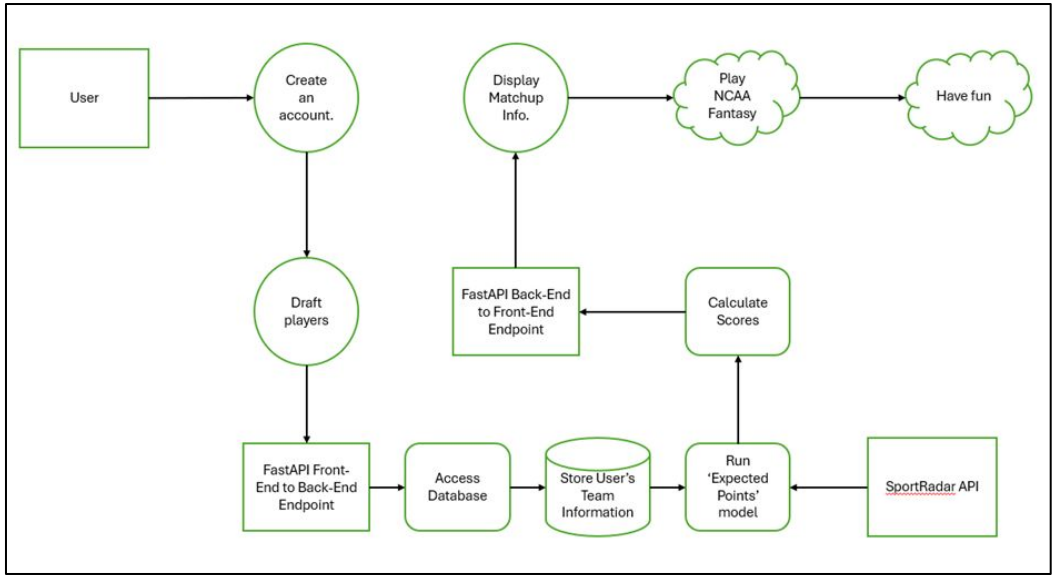
- Application can lead to increase in school spirit, interest in sports
- By spotlighting often-forgotten college sports like soccer and baseball, CS+ can lead to more opportunities for student athletes
- Noteriarty for lesser-known athletes can lead to potential NIL opportunities

Design Specifications - System Overview

- Front-End application where users interact, create leagues, draft athletes, join other players, trade athletes, etc.
- Back-End hosted in python, OpenAPI interface through FastAPI connects to Front-End
- Back-End scrapes data for athletes, sends data to Front-End
- Front-End also connected to Firebase for authentication system.







Design Specifications - Design Diagrams

Technologies

- Front-End:
  - Angular
  - Google Firebase
  - HTML/CSS
- Back-End:
  - FastAPI
  - Relevant Libraries (cbbpy, cfbd)
  - BeautifulSoup
  - SciKit-Learn

Milestones

Date	9/11/2024	10/2/2024	12/13/2024	12/26/2024	12/29/2024	1/6/2025	1/17/2025	2/3/2024
Milestone	Alpha Version	Initial client build	Draft APIs added for RL-feed back	Full football backend support	First AI Model	Full basketball endpoint support	Full soccer and baseball API support	Authorization system working

Results

- Advanced versions of client designed and developed
- Models designed for Firestore implementation
- Login pages designed for Firebase Authentication Implementation
- Web-scraping developed for statistics with NCAA page
- Implementation with libraries for ease of use for Football/Basketball
- First AI model built for football prediction

Challenges

- Dependency on 3rd party APIs and libraries
- Legal use of data and rules/laws regarding the NCAA and student athletes
- Social constraints with new experience and potential involvement of gambling/betting
- Diversity and cultural impact based on availability of the application and accessibility within the UI