EE 461L

Project Technical Report – Phase I

Basketball Sports Statistics Website

GitHub Repo: https://github.com/461L-morning-11/BasketballStats

Team Information

Morning-11 Canvas Group

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Motivation

 We decided upon this project topic after discussing about each team member's individual intake of entertainment, and found in common that sports, specifically basketball, was a common factor. Consequentially, we decided a website dedicated to the fetching, organization, and presentation of basketball related statistics, media, and news was an adequate choice for this project's requirements.

Users

 The users of this website will primarily people that are interested in basketball sports, related matches, teams, and individuals. Individuals include team members and their respective coaches. Users will be able to acquire detailed statistics on each team, their members and coaches, as well as any pertinent news, both recent and old.

User Stories

 We acquired user stories from another design group in our EE 461L class session. The user stories are as follows:

1. *The ability to view historical data of teams* – This user story is based on users that may desire to view past statistics of teams and compare them with more recent statistics in order to make decisions or estimate outcomes of matches, as well as gauge team improvement over time. The estimated time to implement is between 5 to 12 hours, depending on the level of detail that is to be added to the statistics portion of the project.
2. *Live updates on scores of games that are ongoing when a user accesses the website* – The ability to project live scores as a match is ongoing is paramount in any website regarding sports statistics, and would also attract more user traffic as people will come to the

website in order to find the match statistics if they are unable to access a method to watch the game itself. Estimated time to implement is 4 hours.

3. *Fantasy sports (Being able to bet and compete against other users, but without actual money involved)* – This feature was suggested as it would allow more user interaction on an otherwise static website which would normally have no direct user interaction. Fantasy sports would allow users to frequently visit the website in order to play, as well as generate additional user traffic on top of people that simply come to view statistics and information. Estimated time to implement is 25-30 hours.

4. *Google Authentication integration* – The integration of the Google Authentication API would allow users to login without providing their own credentials to the website, and use their existing Google accounts, which are ubiquitous enough that it is presumable that most users will have one. Estimated time to implement is 10-14 hours.

5. *A video feed that displays match highlights or other basketball sports-related videos in a reel fashion* – Being able to quickly access videos of highlights or matches. Estimated time to implement is 10 hours.

6. *Individual pages for teams, playoffs, and rankings* – Having separate pages for different teams, playoff information, and team rankings. Estimated time to implement is 12 hours (3 per page).

7. *Using React* – The React JavaScript library can be used to make the website more responsive and resource efficient. Time to implement is approximately 30-40 hours, as it would require a full overhaul of the website's frontend.

8. *Display Player stats and scores upon entering the website* – Allows a user to quickly view statistics of their choice upon arriving at the website, with predetermined settings. Time to implement is approximately 15 hours.

9. *Inactive player list* – Displays a list of players that are no longer active in basketball matches. Assume the data is provided by the API. Time to implement is approximately 15 hours.

10. *Visual representation of statistics (e.g. Graphs)* – Allows a user to quickly view statistics over a set time window in one glance, instead of sifting through large amounts of numbers. Estimated time to implement is 20 hours.

The actual time to implement these user stories will be determined later.

Use Case Diagram

The Use Case Diagram is as follows, based on the User stories added above:
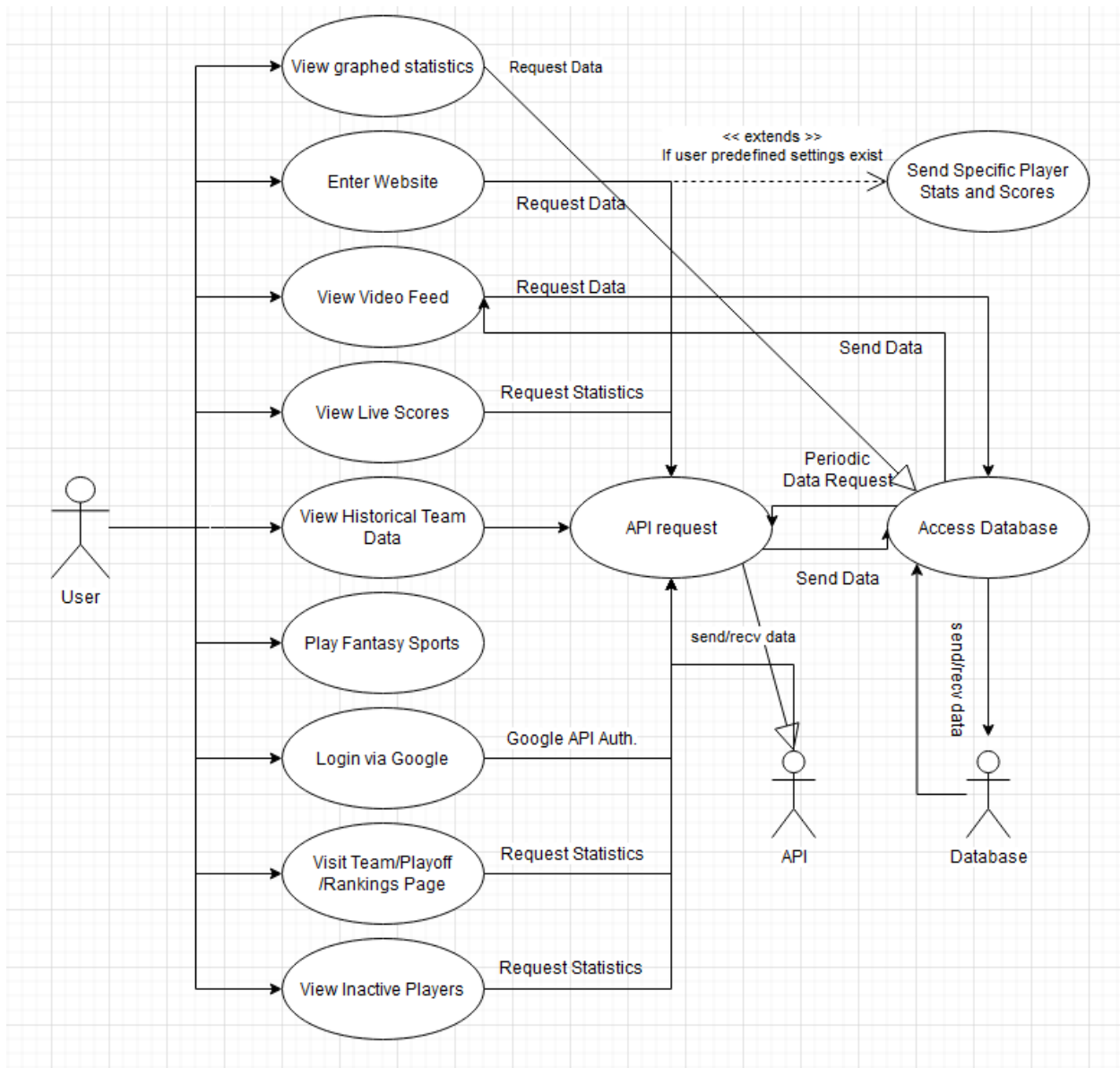
Design

Currently, the design of the website uses Bootstrap, with pages created using JSP (JavaScript Pages) and the backend being Java 8. At this stage, the design does not use a database, but instead fetches data as-is from the API itself. The website is hosted on Google Cloud, using the GC Platform as a basis.

Testing

Phase 1 – We tested our design on our own machines using the local Google Cloud server, accessible via the Google Cloud SDK and Eclipse. For frontend testing, we viewed the website on the browser, and for the backend, verified API calls by reading their serialized JSON output, then compared it with desired results.

Reflection

Phase 1 – We were able to organize and create the project efficiently as all team members were dedicated to the project. Everyone gathered at meetings and worked diligently to fulfill the requirements for this phase and was able to complete the work.