Collegiate Basketball Program Database for Prospective Athletes and Parents

Team 32

Team Members
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Christopher Douglas
Quang “Lance” Ngo
Sandro Sallenbach

Project Overview

Current market potential

By January and February of every year, high school students across the country receive college acceptance letters. Among these students are athletes who are looking for an environment to help them improve the skills they've spent their high school career developing. The decision of which school to commit to has implications on their athletic success following college as well as their success following their athletic career.

A search has revealed that there are many lists of schools, from sites such as ranker.com, bestcolleges.com and even Business Insider, that recommend what school to attend if a student wants to pursue a life in professional basketball but none of them provide the data to back up their claims. By not having the ability to see why one school would be better than another, the student is less than equipped to make an appropriate decision.

Proposed solution

Our goal is to create a website that displays the information a student can use to decide on a college or university. We plan to do this by showing students and parents what colleges produce the most NBA players, what their potential salaries will look like, and other details about the careers of successful athletes. Our tool will take into account the different positions that each student could end up playing and guide them towards the right school that has lead to the most success. Historical data about the athletes who come from each school will be provided. The data presented on the site will be nicely organized and presentable in an intuitive way. Comparisons between athletes should be easy to see and be meaningful to the user.

Our vision is to have visitors connect to our site and have that meaningful information presented to them into a neat manner that allows for them to draw their own conclusions about what school would best fit their needs. Additionally, it will serve as a way to compare the individual stats of athletes. Sorting and searching for athletes and schools will be available from the landing page.

Internal Stakeholders

Christopher Douglas
Quang "Lance" Ngo
Mike Wu
Sandro Sallenbach

Lance, Christopher, and Sandro are the internal stakeholders who could be most impacted by the success of this project. This is due to the fact that these three are putting in the most effort, and their course grades substantially rely on the quality of the project. Dr. Mike Wu will

probably be the least impacted but he definitely has an interest in the project because our contributions to it will create meaningful data for him.

External Stakeholders

- High school students
- Parents
- Community College Students

High school students are probably going to be the most impacted by this tool since the decision of what school to attend ultimately ends up in their hands. Parents can use the tool too when assisting their children. Community college students who haven't decided on a school to transfer to might also find the website useful.

System Environment

The Collegiate Basketball Program DB app will be a 3-tier client server architecture. As it is a web app, the presentation layer will be delivered through a client internet browser. We will implement the presentation layer using ReactJS/Redux. Along with the Express web app framework, ReactJS/Redux is currently the most used library to build dynamic web applications. The application layer of the app will be housed on an AWS web server implemented with NodeJS. This web server will contain the application logic that processes and delivers any requested data to the client side, while providing any updates to the data layer initiated by client side events. Lastly, the data layer will be hosted on a separate database server using MySQL server. The application and data layers will connect using a NodeJS-MySQL api. While we anticipate the bulk of our persistent data to be relational, some of the data calls will require translation into JSON objects.

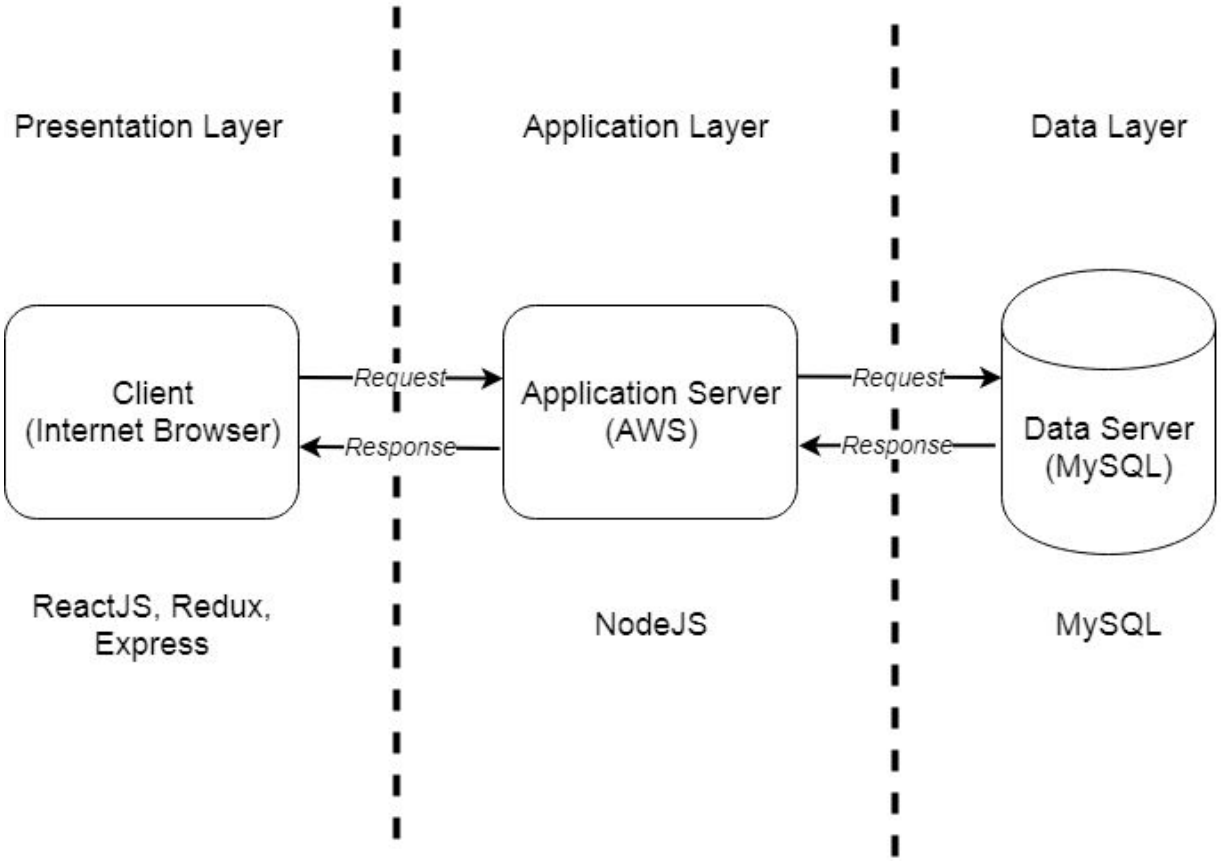

Figure 1: Three Tier Client-Server Architecture

Functional Requirements

Users

The target audience of the *Collegiate Basketball Program Database* web application will consist of parents of current high school basketball players as well as the players themselves. The application can also be used for informational purposes for all collegiate basketball fans. Users can access the application through any regular web browser and access the feature described below.

Features

The *Collegiate Basketball Program Database* web application will aid current highschool basketball players and their parents to decide on a good academic and athletic fit for college careers. The application will provide data on the chances of making it into the NBA. It will also provide data on the length of players' NBA careers, as well as the salary outlooks. As different positions in basketball require very different skill sets, it is our goal to differentiate NBA chances, career lengths and salary outlooks by position. All that information will be accessible through a search functionality that lets users find their preferred school.

After authentication, administrators will be able to update the database. Every year, a full draft class of college players enters the NBA and needs to be added to the database. In order to keep a historically accurate record, deletions of records is not recommended but will be possible. As players progress through their careers in the National Basketball Association, team affiliations, salaries, as well as achievements need frequent updates. Our application will provide means to update and modify the database.

The database can also provide interesting insights to fans of collegiate basketball. As a research tool, it provides various statistics about college basketball and its various teams. As no sign up will be required for the usage of the application, it will be accessible and available to everybody.

Non-functional Issues

Graphical User Interface

Interface - The *Collegiate Basketball Program Database's* interface shall be a web application, accessible through standard web browsers.

Implementation - The frontend of the web application shall be built with the React.js framework. This includes HTML, CSS, as well as Javascript.

Non-functional Requirements

Usability - The *Collegiate Basketball Program Database* web application must be intuitive to navigate. All buttons and links shall be uniform and easy to understand. The search functionality shall be intuitive, even to first time users.

Performance - Latency for user operations such as search shall be less than two seconds. The web application shall also support multiple hundred concurrent users.

Security & Access Control - Basic user operations such as search shall be accessible to everybody. Database manipulation such as deletion or manipulation shall only be accessible to authenticated administrators.

Supportability - The website shall be compatible with all contemporary browsers (like Chrome, Firefox, Safari). The web application is designed for usage on desktop computers or laptops.

Reliability - Errors or crashes on the backend shall not have any effect on previous user actions. It shall only affect the current action and not interfere with other users' experience.