SMARTSCORE DESIGN DOCUMENT

AN AI POWERED FANTASY FOOTBALL APPLICATION

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Introduction

SmartScore is a web-based machine learning powered fantasy football application that aims to help fantasy football manager players with their team selection and management decisions throughout every game week. The app aims to do this by creating machine learning models that can take in the data from previous game weeks and analyse these to provide advice and recommendations for the managers so that they don't have to dedicate a lot of time to researching their team.

Document Purpose

The purpose of this document is to develop and outline the internal structure of SmartScore. This will include descriptions of the internal architecture and structure of the site and how it's going to function as a finished product.

This will be outlined through the use of sequence diagrams, details on each of the technologies I plan to use, UI/UX examples of the site and the database structure that I plan to use.

Technologies

Laravel

Laravel is a PHP web framework that focuses on building full stack web applications, I chose to use Laravel for the main bulk of my website as I have had experience using it in the past and with their blade components it makes it very easy to design front end aspects for the site alongside their routes to make linking the back end easy as well. Laravel is also great for scalability and integration which was another reason why I chose it as it links very well with other frameworks that I will mention further on.

Tailwind CSS

I have chosen Tailwind to handle my CSS as it simplifies regular CSS massively allowing for easier and quicker development on the front end alongside their catalogue of open source components to build upon, it also links with Laravel extremely well so it was an easy choice.

Python

I will be using python to create my machine learning algorithms as it is the best language by far for building models due to its extensive amount of libraries that can be used for the algorithms. Another reason why I am using Python is because it is fantastic for dealing with data when using these libraries. I will discuss some of these libraries in upcoming headings.

Pandas

Pandas is a Python framework that is used for reading in datasets to your project, it is great for pre-processing data in a dataset to ensure that everything runs smoothly by the time it reaches your database and model. It is also great at integrating with other libraries that I will discuss further down this list. These factors made it an easy choice for my project.

Sci-Kit Learn

Sci-Kit Learn is another Python framework that provides different types of machine learning models such as decision trees and linear regression that can be used to create the models for this application. It also provides features such as being able to split your data into test and training sets to ensure the model gets the best training possible. All of the features that I listed above made this an easy choice to include for my project as it makes the process of making the models way easier.