Semester Project Proposal:
SHL Analytic Tool

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Background

The Simulation Hockey League (SHL) is an online forum that allows users to create a fictional hockey player, and have his career simulated in a video game called Franchise Hockey Manager. It uses a progression system where users upgrade their players with Total Points Earned (TPE), which is earned by making posts on the site and completing weekly tasks. This TPE is applied to certain attributes, with more TPE being required at the higher values of that stat.

The website streams the games, and after the livestream the game files are uploaded to the site index, at https://index.simulationhockey.com/shl. This index contains all statistics relevant to the league from the video games, examples being individual player statistics and attribute ratings for each player.

Overview

We intend to develop a web application that will allow a user to have a more visual representation of their player or team statistics over multiple seasons. Currently, the leagues index does not have any options to chart statistics over multiple seasons. For example, if one wanted to graph the total number of goals a player scored in the five previous seasons, one would have to manually input them into something like excel. We want to build a web application that allows for the users to select a player, a range for the season, and an attribute to graph. This could allow users on the site to easily generate graphs for articles they are writing, which could increase user interaction with the forum. In a fully complete application, we would also want to allow users to select teams and graph their statistics over multiple seasons, for example the amount of games the team won each season over 10 seasons.

Users

The users of the web application would be the users of the SHL, as well as potentially new users to the SHL. The current users of the SHL would be a subset of general managers for teams and the players themselves. Both would use the web application to see how their team or player has done over a period of time, as well as compare to other teams or players. New users to the SHL could potentially explore this site and see the possibility of what the league offers, and get interested in actually signing up and creating a player.

User Authentication System

The web application will allow users to create accounts and login. Users logged in will be able to claim a player, and manually update the player's attributes if they have enough TPE. These manual changes will be reflected in top 10 lists, which will show the top 10 players with the highest value in an attribute. As well as showing a top 10 list for players with the most TPE

spent on their player build. In addition, the logged in user account will have access to a page that will let them build and save the ideal build they want their player to have. This will allow them to determine how much TPE they will need to create this player, as well as serve as a reminder for what attributes they need to improve. This page will be private-per user data, meaning that only that account will be able to see it.

Database Design

Shown in Figure 1.1 is the relational schema for the database.

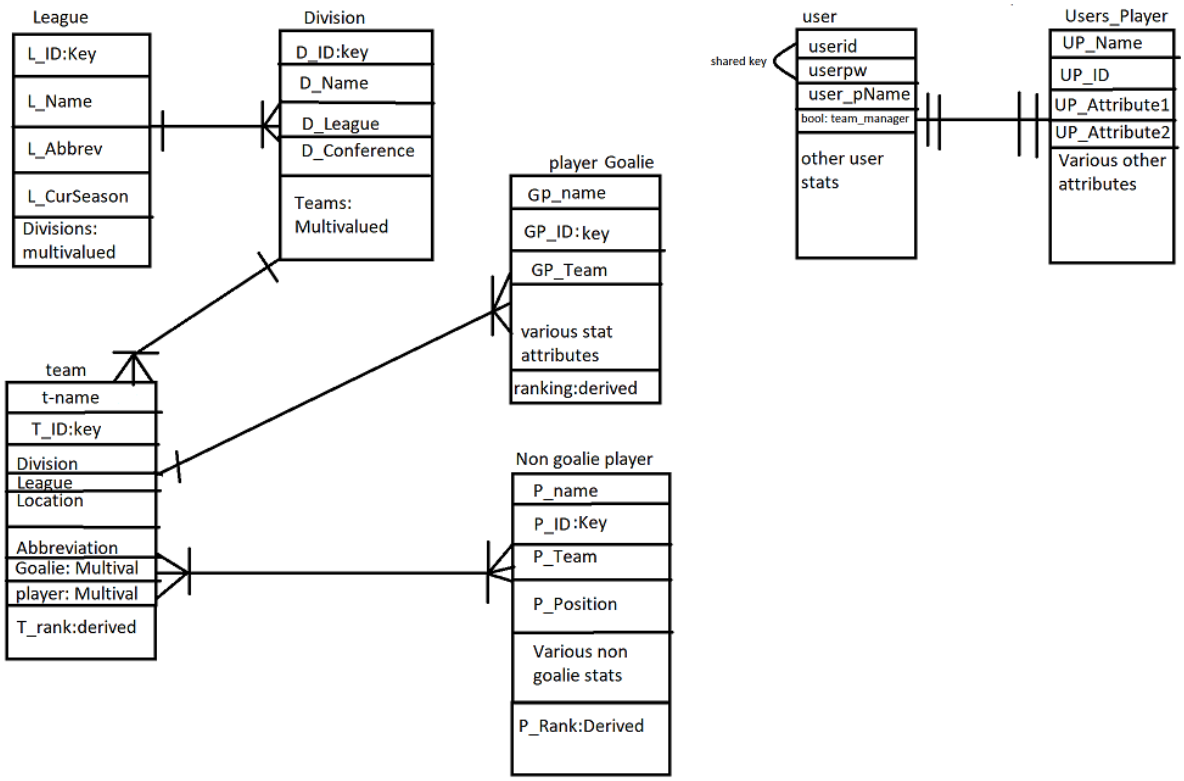

Figure 1.1: Database Relational Schema

The user aspect part of the database will only be able to be accessed when someone is logged into an account, while the rest of the database will be open to the public with a search feature to sort through and chart data. The public data is very layered and gets more specific as it goes lower, League is the highest Layer and that contains multiple divisions, and each division will contain multiple teams, etc.

The API we are using uses ID's to grab information for each specific table so those will be the primary key in most cases. The user table requires knowing both a user's password and username to gain access to since usernames may or may not be unique.

UI Sketches

When first accessing the application, the first thing you will see is the welcome page, shown in Figure 2.1. It will serve as a homepage that will explain what you can do using this web application. From here they can then use the sidebar to select where they want to go. Clicking on the SHL shield logo will take them to the forum for the league.

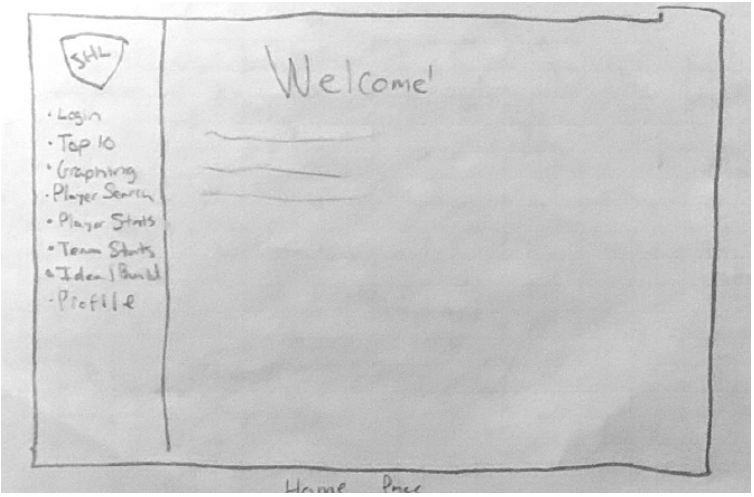

Figure 2.1: Web Application Home Page

The login page will be a simple system that will allow for users to login in, shown below in Figure 2.2. They will input their email/username, and then their password. Not shown on the figure would be an additional option to register an account for the web application.

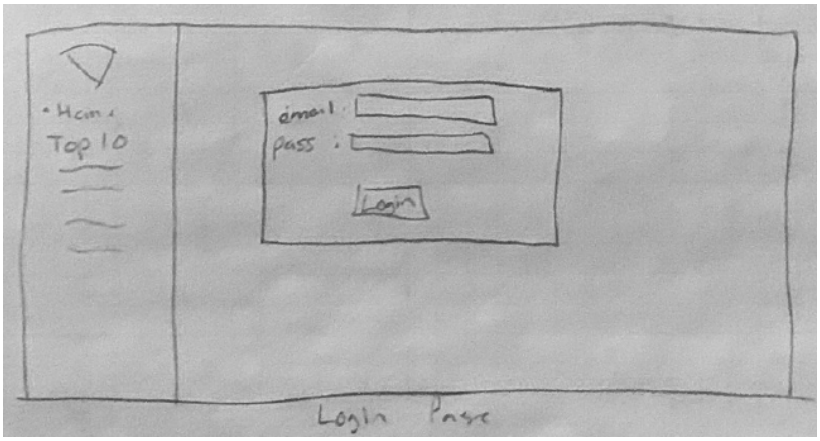

Figure 2.2: Login Page

The Top 10 page will show the top 10 players in on ice statistics, such as goals, assists, points, ect. It will also show the top 10 players in player attributes, which will be updated in real time as players manually update their players. The Top 10 page is down below in Figure 2.3.

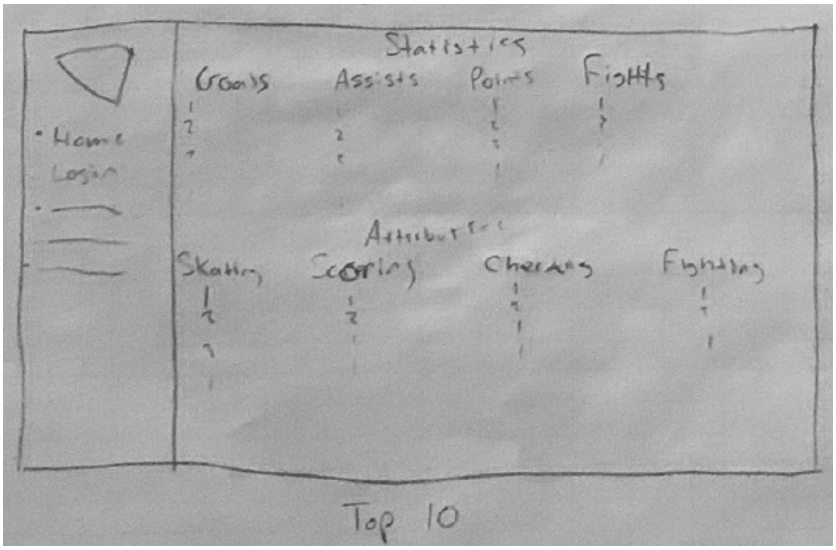

Figure 2.3: Top 10 Page

We intended to have player and team statistic graphing be two different pages. Shown below in Figure 2.4 is the player statistic graphic page, which will allow users to graph different stats across the seasons. The format of the page will be similar for the teams, but for teams we will allow a drop-down menu of the possible teams to choose from. We will likely not have a drop-down menu for players, due to the large number of players available in the database to select from.

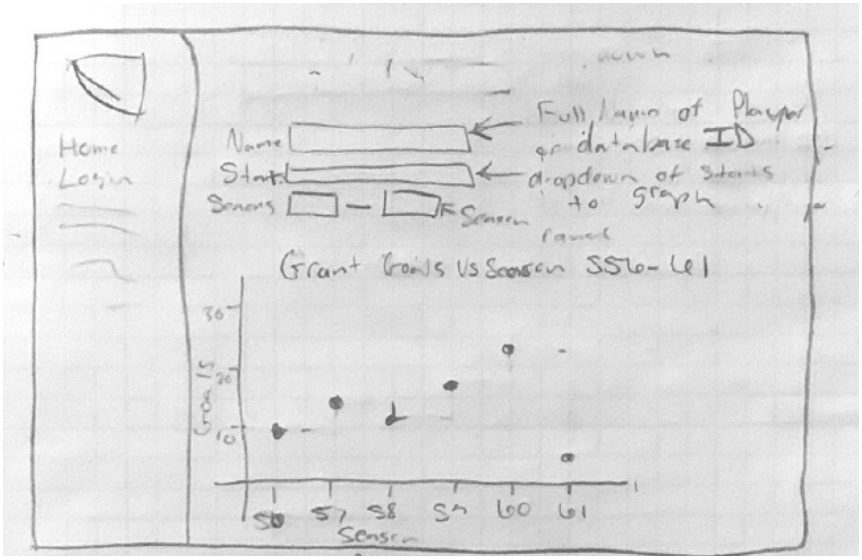

Figure 2.4: Player Statistic Graphing Page

Shown in Figure 2.5 is the Ideal Build page. This page will allow logged in users to create the ideal build for their player. This will allow them to see how much TPE is required to make this build, as well as play around with increasing and decreasing the attribute values and seeing how it affects the total TPE required to get this desired build.

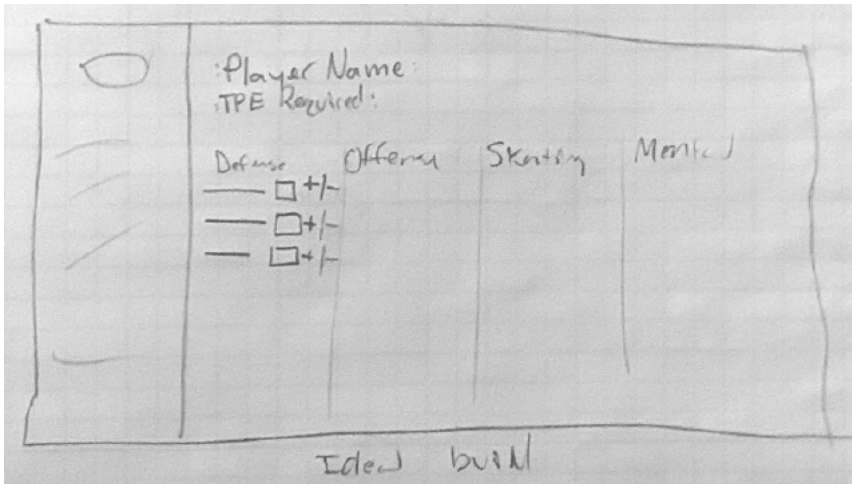

Figure 2.5: Ideal Build Page

Shown below in Figure 2.6 is the Profile page. Shown on the profile page will be the user information, as well as the player they have connected to their account. If no player is connected, there will be an option to claim a player. Accounts can only claim one player, and two accounts can't claim the same player. The page will also show the career stats of the player.

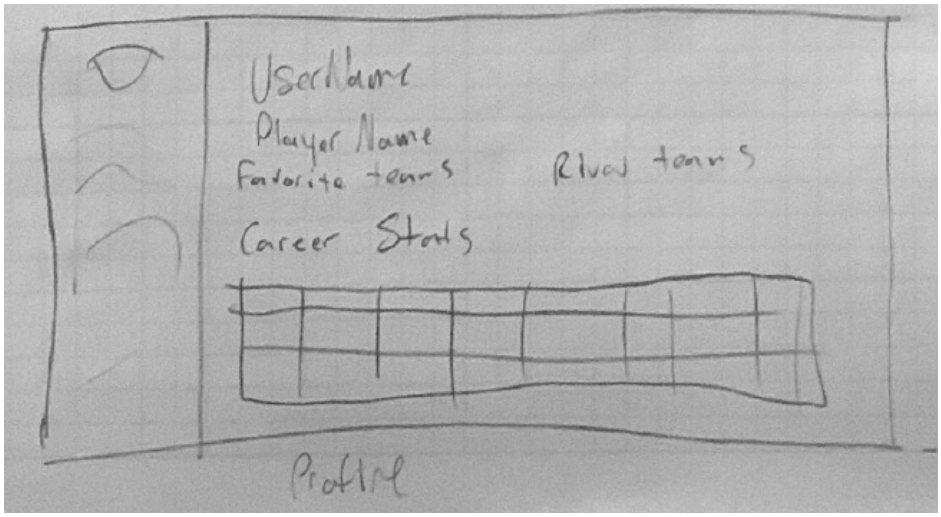

Figure 2.6: Profile Page

Pages not shown would be the update page, which would only be shown if a player is logged in. This page would allow players to manually update the attributes of their player, which could be reflected in the Top 10 page. In addition, the player stats page isn't shown, which would show all the player stats for a specified season. A player search would also be included, which would allow the user to search for a player and see their career history.

Third Party Web-Services

The SHL index for all its statistics offers an API, to allow for easy pulling of the information from the website. We would make use of this API to more easily access the information for the league and create my database of information we intend to track.