CSE 385 Final Project Documentation

Contents

Installation Instructions

Files in the Folder:

1. setPremData.sql
2. createFK.sql
3. scraper.py
4. Prem Data GUI Folder
5. FInalProjectDetails.pdf
6. README.md (For the github repository)

Installation Steps

1. The first step is to create the layout of the database. This is done by running the setPremData.sql file in mySQL workbench. This file creates all the necessary tables and columns to store the data.
2. Next, since the database must be locally hosted, you must run the scraper.py file to load the data into the database. This file is a web scraper that takes data from fbref.com and loads it into the database.
3. After the data has been loaded, run the createFK.sql file. This file fills in the foreign keys in the table as well as cleaning the data to remove unnecessary/duplicate data.
4. Once the database has been created, the data has been added, and the foreign keys have been created, the project is ready to run. Although I have not included an executable for the application, I have included an exact copy of the source folder containing the java files for the GUI. This should make running the program easier.

Usage Instructions

Home Page

Upon opening the application, you are greeting by the home page, containing a table and three buttons to the left. The table contains the current standings for the current Premier League season. The buttons on the left allow the user to navigate to the different functionalities.

View Matches

The matches page shows every match played in every Premier League season since 1992/1993. However, there are dropdown boxes that allow the user to filter these matches based on the teams that played, or the season played. To view matches that meet the selected filters, press the “Confirm” button. If only one team is selected, it will show every match for that team. If there have not been any matches played that match the filters, the table will simply show up blank. The user can also easily reset the filters with the “Clear Filters” button. The user can also easily navigate back to the home page with the “Home” button.

Season Stats

The season stats menu displays a table with the stats of each team at the end of each season since 1992/1993. The functionality is the same as the matches menu, with dropdown boxes to filter by team and season. As with the matches section, if the selected team did not play in the selected season, the table will show up blank. The buttons on the season stats section work the same as the buttons on the matches section.

Upcoming Matches

Upon pressing the “View Upcoming Matches” button on the home page, the user is greeted with two table, he upcoming matches for the current season on the left, and the current season standings on the right. This table allows a user to test different scores for games and see how it affects the season standings. To test a score, type the home goals into the “Home Goals” column, and the away goals in the “Away Goals” column. After each entry into a column, the user MUST press the enter key to save the entry into the box. Otherwise, the program will not recognize it when the user presses the “Save Changes” button. It is also possible to test scores for multiple games at one time. To save changes, simply press the “Save Changes” button. This updates the upcoming matches table in the database with the tested scores, as well as updating the table on the right and in the database. Therefore, the user can test scores, close the application, and the scores and how they affect the table will still be saved in the database. To reset the tables on the GUI and the tables in the database, the user can press the “Reset” button. It is important to note that if the user has saved changes, they must reset before testing new scores. It is not possible to type a score, save it, type another score, and save that new score. As with the previous 2 pages, the home button navigates the user back to the home page.

Additional Comments

It is important to note that at the time of grading, the Premier League season might have ended. If this is the case, there will not be any matches in the upcoming matches section, because there are none in the current season. However, at the time of

recording the demonstration video, the upcoming matches section does work, so refer to the video if the upcoming matches section is empty.

Also, some of the data in the season stats table is set to 0. I mention this in the video, but this is because the website that I got the data from does not have that information for most of the seasons.

References

Data

The data for this project was gathered from

https://fbref.com/en/comps/9/history/Premier-League-Seasons

External Libraries

Web Scraper

1. urllib - https://docs.python.org/3/library/urllib.html
2. io - https://docs.python.org/3/library/io.html
3. time - https://docs.python.org/3/library/time.html
4. bs4 - https://pypi.org/project/beautifulsoup4/
5. pandas - https://pandas.pydata.org/docs/
6. pip._vendor – requests library
7. sqlalchemy - https://www.sqlalchemy.org/
8. mysql connector - https://www.mysql.com/products/connector/

Graphics

1. Java Swing - https://docs.oracle.com/javase%2F7%2Fdocs%2Fapi%2F%2F/javax/swing/package-summary.html
2. Java awt - https://docs.oracle.com/javase%2F7%2Fdocs%2Fapi%2F%2F/java/awt/package-summary.html
3. Java sql - https://docs.oracle.com/javase/8/docs/api/java/sql/package-summary.html