This Project focuses on optimizing football lineup predictions and team formations, specifically for Chelsea FC during the English Premier League 2023/2024 season. The study employs binary optimization techniques and utilizes the Google OR-Tools library to determine the best possible formation and player positions. By analyzing statistics and opponent team stat, the study aims to enhance the accuracy of lineup predictions.

Data sets

1. Players basic and all-time statistics
2. Players season wise statistics
3. Players last 05 matches stats
4. Players stats against opponents’ teams
5. Players all time tactics performance
6. Premier league teams’ last 10 seasons league standing
7. Premier League teams’ strengths and weaknesses

* Data Collection and Preprocessing:

Web scraping with BeautifulSoup and Selenium to gather player and opponent team statistics from various football-related websites. Data cleaning, including removing unwanted characters, filling missing values, and standardizing data formats.

* Ranking premier league teams

Create a scoring system based on premier league teams last 10 seasons league standing. Sorting the teams by power and categorizing teams based on their power.

* Selecting the best formation

Develop a scoring system to evaluate each formation based on how well it exploits the opponent's weaknesses and counters their strengths

* Select the best starting line up

select the best lineup that maximizes each position’s performance against the specific opponent. Select 2 players to each position and apply player base one opponent team’s power. Run more than 50 times to get maximum performance team.