

INDIAN PREMIER LEAGUE 2022

SEASON OVERVIEW

Team Members:

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Github Repository: https://laharianegama.github.io/IPL_SeasonOverview-main/

Overview and Motivation

All three of us grew up in the Indian subcontinent, where cricket is considered a religion. Likewise, cricket is emotionally connected to us in many ways. However, there needs to be a website that shows the stats of the teams and players intuitively. We wanted to bridge that gap by choosing this project and helping the people who watch cricket. Additionally, we also wanted our visualization to be relatable and understandable to any user, even without technical experience. For instance, Cricbuzz is used more than espnricinfo for cricket information, be it live scores or archival information, because Cricbuzz is easier to use and understand than espnricinfo for naive users.

Instructions and Use:

There are several components to using our visualization. The loaded page will show the entire season. There are multiple methods of interactivity:

1. We show the overall team position at a high level. We have used multiple visualizations to display different data for example we use a bar chart to display the progress of a match. Scatter plots are used to display the player statistics.
2. We also have a fixed nav bar: we display all the teams in the nav bar for the user to select a particular team, which then displays the corresponding data in all the visualizations.
3. Using the drop down for scatter plot: in order to visualize data in 2 dimensions, we have the option to select different categories to be displayed in two axes.
4. Individual teams' progression throughout the season: In the line chart we have a dropdown, using which we have the option to view the progression of a particular team throughout the season.
5. Scorecard: we visualize the runs scored and wickets fallen in every over throughout the entire match using a bar chart, where each bar shows the runs scored and wickets fallen in a single over.
6. To view more data, we can always hover over all the visualizations.
7. Multiple visualizations are integrated, and they display different data every time we select a different team from the nav bar.

Related Work

The Premier League Season Explorer project by Brian Eisner, Kevin Wood, and Jakob Johnson from Hall of Fame Projects has inspired us in many ways. For instance, the bump chart has encouraged us to select a line chart to display the positions of the teams after every match.

Questions and Goals:

Our main goal is to interactively visualize a single Indian Premier League (IPL) season with a game-by-game breakdown for all IPL teams along with other data related to the players.

We show how each team performed versus other teams and as a function of time over the entire season. We also allow the user to select any individual games and see the significant events during each game, such as when the runs scored exceed a certain limit or when a wicket falls.

Also, we tell stories about a team in a particular season. We have shown data related to transfer of players between different seasons across the seasons. We also show the detailed statistics of a particular player like the number of wickets taken, dot balls bowled etc.

We intend to answer multiple questions, such as:

1. The position of every team after every match in the points table.
2. The statistics of several players compared with other players.
3. The scorecard of every game, which shows the runs scored by the team in every over
4. Using a scatter plot to display players' statistics where the user can select the X-axis, and the Y-axis enables the user to understand the statistics more clearly. For instance, the user can use the scatter plot to understand players who score low runs but play with a high strike rate.
5. Checking the match summary to check where the teams usually lost their matches and further improving their weaknesses can improve their performances in the future.

Data

We fetched Data from this kaggle link. We have five datasets to support our project.

1. BattingStatistics.csv : This file contains batting statistics of all players who batted in IPL 2022.
2. BowlingStatistics.csv : This file contains bowling statistics of all players who bowled in IPL 2022.
3. AuctionData.csv : This file contains auction data and the transfer history of players for each franchise that played in IPL 2022.
4. BallbyBall.csv : This file records every ball data for every match in IPL 2022.
5. TeamPosition.csv : This file has records of the positions of every team. This dataset is compiled by taking scorecards after every match.

The dataset we considered until this point for the project is

<https://www.kaggle.com/datasets/rajsengo/indian-premier-league-ipl-all-seasons>. Additionally, we need to scrape data from cricbuzz.com and espncricinfo.com for the league positions of the teams after every game week. The dataset has data from 2009 up to 2022. The dataset contains the league position of the teams for every year, the batting and bowling statistics of players of all years, and the summary of all matches of every year. Again, by scraping the data from the mentioned websites, we intend to get the league positions of every team after the game week. Alternatively, we could use an API for the same, and one such example is CricAPI.

We have collected more accurate data using these methods which also include the net runrate of a particular team after every match, Using which we were able to calculate the team positions after a match for all the teams. We have used this metric to make the positioning criteria very clear to the viewer, such that even when a naive user views our visualizations he/she would be able to understand it quickly and clearly.

Exploratory Data Analysis

The visualizations on IPLT20.com helped us understand the data in a better way. For instance, the idea to use a scatter plot stems from the basic understanding that a specific player can have excellent or poor stats when using different metrics to view the player's statistics. Additionally, the visualizations on the Hall of Fame helped us understand the different ways the users can perceive the data. This enabled us to create better visualizations for native users.

Implementation

Navigation Bar

This Navigation bar is dynamic which enables the user to select any team and this further updates the visualizations based on the team selected.

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Franchise Overview

The visualization allows the user to see all the teams involved in the IPL 2022. Additionally, legend is provided for the user to understand the IPL teams more easily. Moreover, details are displayed about why the IPL 2022 season has been special.

IPL Franchises



- Chennai Super Kings
- Delhi Capitals
- Gujarat Titans
- Kolkata Knight Riders
- Lucknow Super Giants
- Mumbai Indians
- Punjab Kings
- Royal Challengers Bangalore
- Rajasthan Royals
- Sunrisers Hyderabad

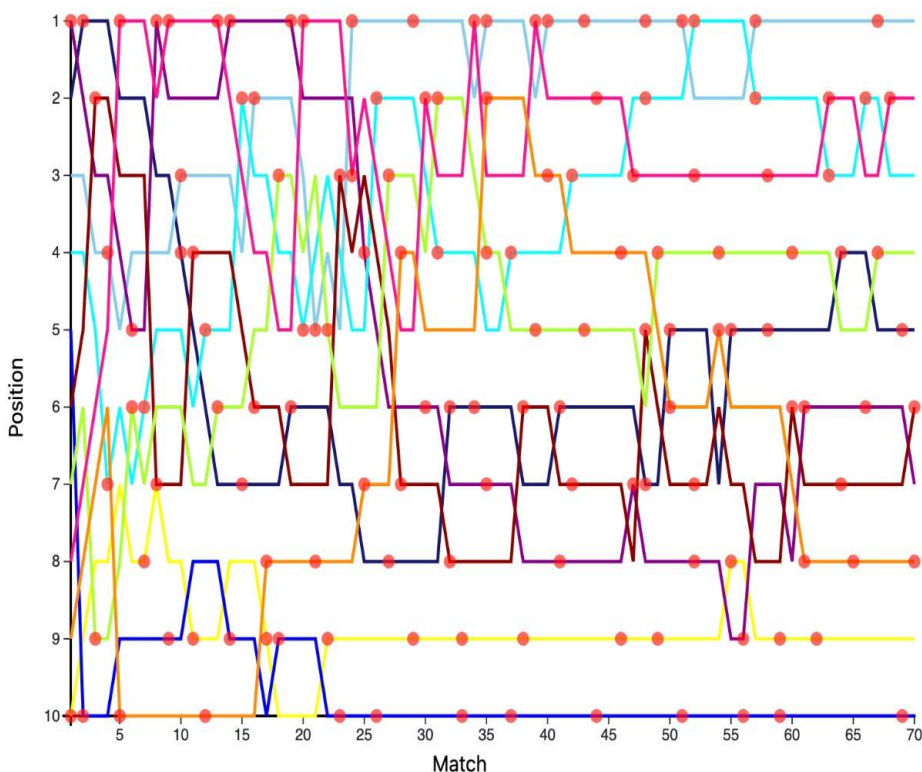
The IPL 2022 Season has been different from the previous season. Firstly, two teams, namely, Gujarat Titans and Lucknow Super Giants, have been added this year. Additionally, the league format has changed from the previous years, i.e., the teams are split into two groups, and every team in the group plays against the other team in the group twice and against teams in the other group once. Furthermore, the two most successful, namely Mumbai Indians and Chennai Super Kings, finished at the bottom of the points table for the first ever time. Since the start of IPL, only two teams have won it on the first try, i.e., Rajasthan Royals in 2008 and Gujarat Titans in 2022. Moreover, Gujarat Titans were never considered a contender; however, they defied all odds to win the trophy, like Leicester City in the 2016 Premier League Season.

Points Progression

The visualization intends to display the position of every team in the season after every match. Additionally, the user can select wins, losses and NRR for comparison purposes as well. Hovering over any line displays the team name using tooltips and clicking on any node displays the match summary in the next visualization. Furthermore, summary is provided for the IPL season and when any team is selected in the navigation bar, the summary for the team is displayed for the 2022 season.

Teams Progression

What to display on Y-Axis:



IPL Teams Summary

First Place: Gujarat Titans

Last Place: Mumbai Indians

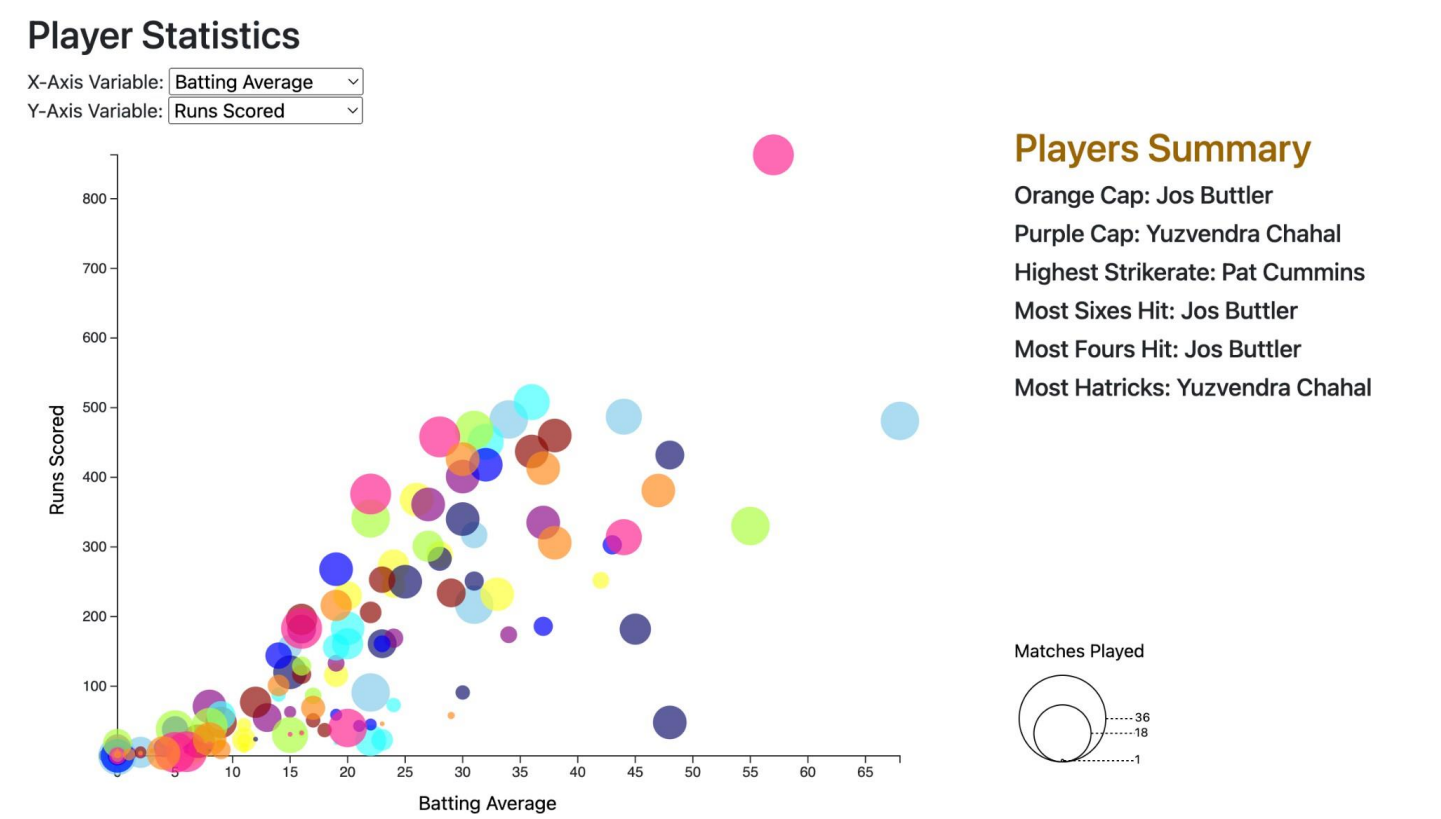
Highest NNR: Rajasthan Royals

Longest Winstreak: 6 | Sunrisers Hyderabad

Longest Lossstreak: 8 | Mumbai Indians

Player Statistics

The visualization intends to display every player’s statistics in the IPL 2022. The user is provided with an option to select both the X-Axis and the Y-Axis variables to understand the statistics in an unbiased manner. Hovering over any circle displays the required data about the player, and clicking on any circle further displays the player details on the side. The radius of the circles in the visualizations denote the number of matches played by the player. To better understand the radius, a legend is provided.

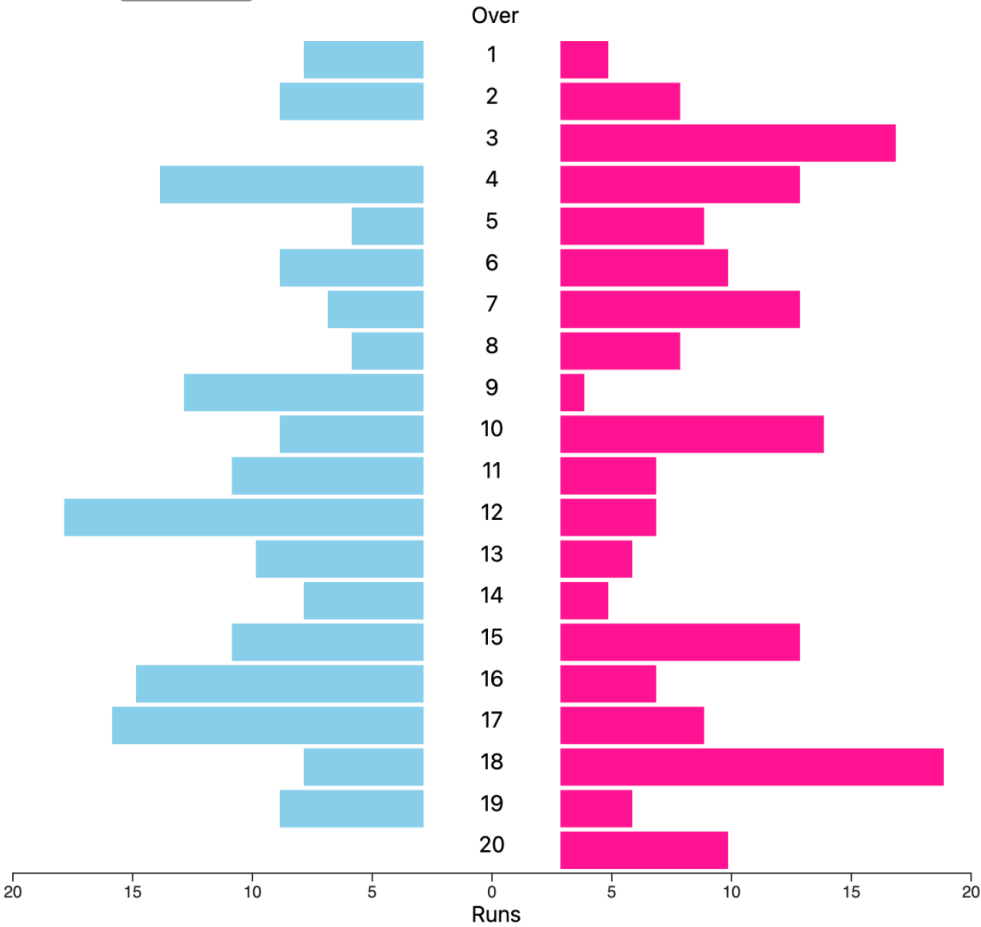


Individual Match Overview

The visualization displays the runs scored in every single over by both teams. Hovering over any over displays the runs scored by every batsman in the over along with the number of extras and wickets. The option to select the matches until the finals are provided either in the points chart or through the dropdown list. The specific information about the match, i.e., the match summary is displayed for the user to better understand the match.

Match Overview

Select Match: Default ▼



Match Summary

Venue: Sawai Mansingh Stadium
Attendance: 34963
Total Runs Scored: 263
Total Wickets: 12
Total Extras: 18

Evaluation

We believe that we have answered most of the questions we had at the start of this project, the user can understand the data in a much better way. For instance, upon selecting a team, the points history and the players' statistics are highlighted along with the team's transfer activity. This enables the user to distinguish the players profusely and understand the data intuitively.

It is possible to see how teams performed over an entire season, and over any desired section of the season. It is possible to highlight any number of teams to specifically compare their performances, and to zoom in on any individual game to see just how the teams performed in that game. Using the story features, it is possible to see how certain teams performed relative to important events. In addition to answering our content-related questions, we also accomplished our goal of learning how to innovatively and efficiently use JavaScript and D3 to create interactive web-based visualizations, a skill that will benefit us significantly when applying for jobs later in our lives.

Overall, we believe our project can be considered an overall success and believe that our visualization works well in terms of accomplishing our goal.