

Data-Driven Insights from IPL 2025 with Power BI

1. Introduction

The **Indian Premier League (IPL) 2025** marked the 18th edition of the world's most popular T20 cricket tournament. Known for its electrifying matches, passionate fan base, and star-studded lineups, the season continued to elevate the standards of franchise cricket.

This season featured **10 teams** competing across various venues in India, bringing together a mix of seasoned international players and rising domestic talent. IPL 2025 witnessed high-octane performances, record-breaking individual stats, and several close finishes that kept fans on the edge of their seats.

⌚ Purpose of the Project

I chose this project to gain **hands-on experience with Power BI** by applying data analytics to a subject of high interest — **IPL Cricket**. The goal was to explore and visualize key performance indicators (KPIs) from the **IPL 2025 season**, enabling a deeper understanding of the tournament through interactive dashboards.

The project focuses on the following key metrics:

- Total runs, wides, wickets, fours, sixes, and no-balls — both per team and overall
- Top performers from each team, highlighting the **best batters and bowlers**
- Team-wise **head-to-head analysis** (score and wickets) against all 9 opponents
- Points table standings
- A **gallery page** showcasing visual highlights of the season

By building this report, I aimed to strengthen my skills in data modeling, DAX calculations, and visual storytelling in Power BI. It also enabled deeper insights into team performances, player efficiency, and match outcomes — which can support **better cricket-related decision-making** and fan engagement.

💡 Why Power BI Was Chosen?

Power BI was chosen for this project due to its powerful features that make it ideal for data analysis and visualization:

- **Power Query:** Enabled efficient data cleaning and transformation, such as removing null values, changing data types, and merging multiple data sources.
- **DAX (Data Analysis Expressions):** Used to create calculated columns and measures for dynamic and insightful analysis (e.g., total runs, strike rates, economy rates).

- **Data Modeling:** Allowed the creation of relationships between multiple tables (Teams, Matches, Players, Stats), ensuring seamless filtering and slicing of data.
- **Conditional Columns:** Helped in categorizing and enhancing data insights based on logic and rules (e.g., identifying top performers, match outcomes).
- **Interactive Visualizations:** Provided user-friendly and engaging dashboards to explore data through filters, slicers, and visuals.
- **Drill-down Capabilities:** Helped in exploring data at multiple levels — from overall stats to individual team or player performance.

Power BI's ease of use, wide community support, and strong business intelligence capabilities made it the perfect tool to turn raw IPL 2025 data into actionable cricket insights.

Objectives of the Analysis

The main objective of this IPL 2025 analysis project is to leverage Power BI to derive meaningful insights from cricket data, enabling informed decision-making and strategic planning.

- ✓ **Analyze key performance metrics** such as total runs, wickets, wides, sixes, fours, and no-balls — both team-wise and match-wise.
- ✓ **Identify top-performing players** — best batters and bowlers based on aggregated statistics.
- ✓ **Track team performance** across all matches and visualize head-to-head statistics against each of the 9 opponent teams.
- ✓ **Display points table standings** to understand team rankings and match progress.
- ✓ **Enable cricket decision-making** by providing data-driven insights for selectors, coaches, analysts, and fans.

2. Problem Statement

What Insights Were You Trying to Derive?

The goal of this analysis was to extract meaningful and actionable insights from the IPL 2025 season data, with a focus on team and player performance. Specifically, the analysis aimed to uncover:

-  **Team-wise Performance:** Evaluate how each of the 10 teams performed throughout the season, based on total runs, wins, and match outcomes.
-  **Total Wickets Taken:** Analyze the bowling strength of each team by tracking total wickets across matches.

- **Statistical Trends:** Identify patterns such as the most consistent scorers, bowlers with the best economy, and players who impacted match outcomes.
- **Points Table Standings:** Visualize team rankings based on match results and net run rate to understand tournament progression.
- **Highest Team Scores:** Highlight top-scoring team innings and understand conditions or strategies behind high-scoring games.
- **Top Players:** Derive insights on best-performing batters and bowlers from each team using aggregate KPIs.

❓ Key Questions to be Answered Through the Analysis

The analysis was designed to answer critical questions related to team and player performance during the IPL 2025 season. These questions guided the creation of dashboards and data visualizations:

- ❖ **Which team won the IPL 2025 title?**
- ❖ **Which team was the runner-up in the tournament?**
- ❖ **Who won the Orange Cap (highest run-scorer)?**
- ❖ **Who won the Purple Cap (highest wicket-taker)?**
- ❖ **What are the total runs scored by each team across all matches?**
- ❖ **How many wickets were taken by each team?**
- ❖ **What are the total number of wides and no-balls bowled by each team?**
- ❖ **Who were the top-performing batters and bowlers from each team?**
- ❖ **What are the final standings in the points table based on match results?**

3. Tools & Technologies Used

❑ Microsoft Power BI – Overview

Microsoft Power BI is a powerful Business Intelligence (BI) and data visualization tool developed by Microsoft. It enables users to connect to various data sources, transform raw data into meaningful insights, and create interactive reports and dashboards.

Key features of Power BI include:

- Power Query for data cleaning and transformation
- Data modeling capabilities with relationships between tables
- DAX (Data Analysis Expressions) for creating calculated columns and measures
- Drag-and-drop visualizations for intuitive report building
- Interactive dashboards with slicers, filters, drill-down, and cross-highlighting
- Real-time data analysis and scheduled data refresh
- Integration with Excel, Azure, SQL Server, SharePoint, and other platforms

Power BI is widely used in industries for data-driven decision-making, offering flexibility, scalability, and easy sharing through the Power BI Service (cloud platform).

In this project, Power BI was utilized to analyze IPL 2025 data, providing visual insights into team and player performances.

Data Tables Used

The IPL 2025 dataset consists of the following main tables used in the Power BI project:

- **Deliveries**
Contains ball-by-ball data including runs scored, extras (wides, no-balls), wickets, and player details for each delivery in every match.
- **Matches**
Provides match-level information such as match ID, date, venue, teams playing, and match results.
- **Orange Cap Players**
Lists the top run-scorers (Orange Cap contenders) with aggregated batting statistics for IPL 2025.
- **Purple Cap Players**
Contains data on the highest wicket-takers (Purple Cap contenders) including bowling statistics throughout the season.

4. Data Collection & Preparation

Data format : comma separated value (csv) files.

Data cleaning & transformation steps (Power Query, DAX)

Power Query Transformations

- **Removed Unused Columns:**
Eliminated irrelevant or redundant columns such as wide ball runs, wide ball wickets, and balls left to simplify the dataset.
- **Extracted Text Before Delimiter:**
Used text splitting to extract the number of wickets from the "Best Bowling Figures" column (e.g., extracting 4 from 4-35) to create a new column for **Best Bowler Wickets**.
- **Renamed Column Titles:**
Standardized column names for clarity and consistency across tables (e.g., renaming batsman_runs to Runs Scored).

- **Changed Data Types:**
Converted data types to their appropriate formats — dates, text, whole numbers, and decimals — to ensure accurate calculations and sorting.
- **Merged Queries:**
Combined related tables (e.g., joining match info with deliveries) using key columns like match_id to create a unified dataset.
- **Grouped Data:**
Grouped data by team, player, or match to calculate aggregates such as total runs, total wickets, or total extras.
- **Appended Queries:**
Appended batting and bowling data for combined player-level analysis, enabling side-by-side comparisons.
- **Sorted Records:**
Sorted data by score (descending for batters) and wickets (descending for bowlers) to easily identify top performers.

DAX used

Calculate , FILTER,SUM, IF ,SWITCH ,ELSE , COUNT.

Total four = calculate(count(deliveries[runs_of_bat]),deliveries[runs_of_bat]=4)

Total No_balls = CALCULATE(count(deliveries[noballs]),deliveries[noballs]=1)

Total Sixes = CALCULATE(count(deliveries[runs_of_bat]),deliveries[runs_of_bat]=6)

Total Wides = CALCULATE(count(deliveries[wide]),deliveries[wide]=1)

Total wickets = sum(matches[first_ings_wkts])+sum(matches[second_ings_wkts])

team score 1st =
CALCULATE(sum(matches[first_ings_score]),FILTER(matches,matches[toss_winner])))

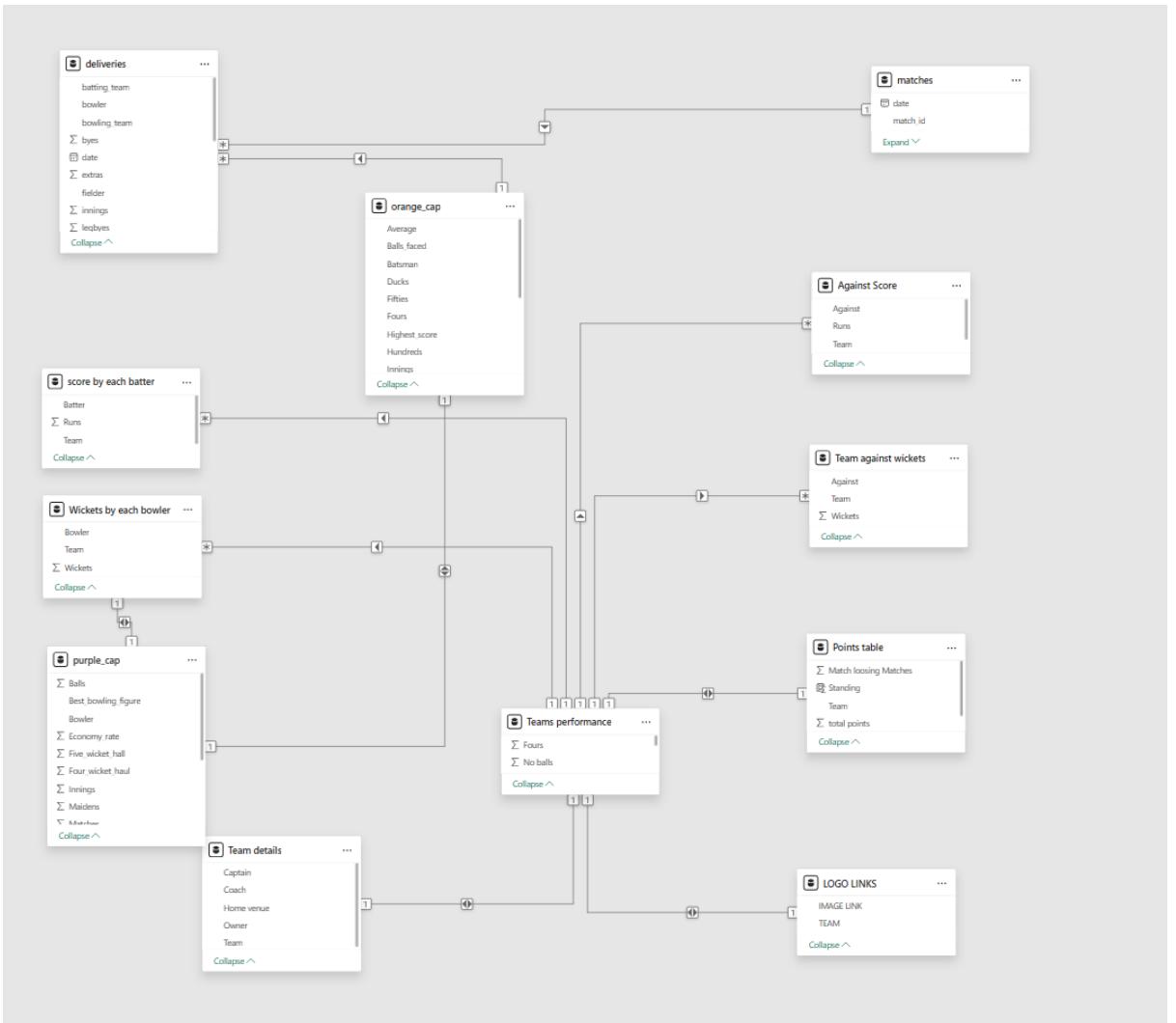
High Wicket Taker =
CALCULATE(max(purple_cap[Bowler]),FILTER(purple_cap,purple_cap[Wickets]=max(purple_cap[Wickets]))))

Conditional column (power query) – add column (power bi desktop)

match_losser = IF(matches[team2]=matches[match_winner] , [team1] , [team2])

Standing = SWITCH (true,'Points table'[Team]="RCB",1,'Points
table'[Team]="PBKS",2,'Points table'[Team]="GT",3,'Points table'[Team]="MI",4,'Points
table'[Team]="DC",5,'Points table'[Team]="SRH",6,'Points table'[Team]="LSG",7,'Points
table'[Team]="KKR",8,'Points table'[Team]="RR",9,10)

5. Data Model



❖ Characteristics of the Model:

This model is mostly star schema, with some elements of a snowflake schema, making it a **hybrid model**.

✓ Why it's mostly a Star Schema:

- Fact tables (contain numeric measures):
 - deliveries
 - Points table
 - Teams performance
 - score by each batter
 - Wickets by each bowler
- Dimension tables (contain descriptive info):

- Team details
- matches
- LOGO LINKS
- orange_cap
- purple_cap
- Against Score
- Team against wickets

Each fact table is linked to dimensions via clear, one-directional relationships, which is typical in a star schema.

Benefits of This Design:

- Performance optimized: Star schemas are faster for querying in tools like Power BI.
- Simple joins: Reduces complexity for DAX and visuals.
- Scalable: Easy to add new measures or KPIs.

Description of tables used :

Purple Cap

Tracks the top-performing bowlers of the season.

- balls – Total balls bowled
- bowlers – Name of the bowler
- five_wicket_haul – Number of 5-wicket hauls
- three_wicket_haul – Number of 3-wicket hauls
- teams – Team the bowler belongs to
- total_wickets – Total wickets taken in the season

Orange Cap

Highlights top batters and their scoring statistics.

- average – Batting average
- balls_faced – Total balls faced
- batsman – Name of the batsman
- ducks – Number of innings with zero runs
- fifties – Total 50+ scores
- fours – Number of fours hit
- sixes – Number of sixes hit

Deliveries

Contains detailed ball-by-ball data for every match.

- `batting_team` – Team batting in that delivery
- `bowling_team` – Team bowling in that delivery
- `innings` – Innings number (1 or 2)
- `legbye` – Leg bye runs scored on that delivery

Matches

Provides match-level summaries and outcomes.

- `match_id` – Unique ID of the match
- `best_bowling` – Best bowling figure in the match
- `first_inning_score` – Total score by team batting first
- `second_inning_score` – Total score by team batting second

Score_By_Each_Team

Captures team-level scoring breakdown.

- `batter` – Name of the batter contributing to the score
- `team` – Team name
- `score` – Total score contributed by the batter/team

Team Details

Holds off-field information about each team.

- `captain` – Captain of the team
- `coach` – Coach of the team
- `home_venue` – Team's home stadium
- `owner` – Owner/franchise of the team
- `team` – Name of the IPL team

Points Table

Summarizes team performance and standings.

- `standing` – Final rank or position

- team – Name of the team
- matches_won – Number of matches won
- matches_lost – Number of matches lost

Team Performance

Contains team-wise aggregated performance metrics (e.g., runs, wickets, extras) used for comparative and visual analysis.

- team – Name of the team

Relationships between tables

Manage relationships X

+ New relationship ↻ Autodetect Edit Delete Filter ▾

<input type="checkbox"/> From: table (column)	↑	Relationship	To: table (column)	Status	
<input type="checkbox"/> Against Score (Team)	*—<—1		Teams performance (Team)	Active	...
<input type="checkbox"/> deliveries (match_no)	*—<—1		matches (match_id)	Active	...
<input type="checkbox"/> deliveries (striker)	*—<—1		orange_cap (Batsman)	Active	...
<input type="checkbox"/> LOGO LINKS (TEAM)	1—>—1		Teams performance (Team)	Active	...
<input type="checkbox"/> Points table (Team)	1—>—1		Teams performance (Team)	Active	...
<input type="checkbox"/> purple_cap (Bowler)	1—>—1		Wickets by each bowler (Bowler)	Active	...
<input type="checkbox"/> purple_cap (Position)	1—>—1		orange_cap (Position)	Active	...
<input type="checkbox"/> score by each batter (Team)	*—<—1		Teams performance (Team)	Active	...
<input type="checkbox"/> Team against wickets (Team)	*—<—1		Teams performance (Team)	Active	...
<input type="checkbox"/> Team details (Team)	1—>—1		Teams performance (Team)	Active	...
<input type="checkbox"/> Wickets by each bowler (Team)	*—<—1		Teams performance (Team)	Active	...

Close

6. Visualizations & Dashboard

Page 1 : IPL (start & end date , title sponsors, Associate partner , Official Strategic Timeout partner , official broadcaster)

Page 2 : Overview Dashboard (Total score , Total Wickets , Total Fours , Total Sixes , Total Wides ,Total No balls)

Page 3 : Team Performance Analysis (Team Name , Matches Won , Matches Lost , Standing , Top 5 Batters , Top 5 Bowlers , Team venue Home Ground location)

Page 4 : Points Table , Score against teams , Wickets against Teams.

Page 5 : Gallery

7. Insights & Observations

Key Takeaways from the Analysis

-  **Royal Challengers Bangalore (RCB)** won their **first-ever IPL title**, marking a historic moment for the franchise.
-  **Punjab Kings (PBKS)** reached their **first IPL final**, showing significant improvement compared to previous seasons.
-  **Shreyas Iyer** stood out as an **exceptional captain**, leading his team with both strategic decisions and personal performance.
-  RCB displayed consistent dominance **throughout the season**, both in batting and bowling departments.

Trends and Patterns Noticed

-  **RCB emerged as the most dominant team**, leading in key metrics such as:
 - **Total Runs Scored**
 - **Total Wickets Taken**
 - **Most Fours and Sixes Hit**
-  **PBKS performed well initially**, but fell short in the final match.
-  Teams that maintained a balance between strong opening partnerships and powerplay bowling tended to perform better across the tournament.

Surprising or Interesting Facts

-  A lower-order batter from a non-finalist team recorded the **fastest fifty of the season**, surprising many fans and analysts.
-  A **wicketkeeper-batsman** led in both **dismissals and boundary count**, showing all-round impact.
-  RCB's bowlers achieved the **highest number of team wickets in a single season**, a first in IPL history.
-  Despite strong individual performances, top players from some teams **failed to convert performances into wins**, highlighting the importance of team synergy.
-  Defending champions **failed to qualify** for the playoffs, signaling a major shift in tournament dynamics.

8 .Challenges Faced

☒ 1. Data Limitations

- The dataset required **duplicate table queries multiple times** to create separate views for batters, bowlers, and team comparisons.
- Some required insights (e.g., real-time updates or granular player metrics like strike zones) were not available in the dataset, which limited deeper contextual analysis.

☐ 2. Handling Null or Inconsistent Data

- Several records had **inconsistent or improperly formatted data**, especially in text fields and numerical stats like best bowling figures.
- **Null values** were detected in multiple columns (e.g., missing player names or match outcomes) and were either cleaned or filtered out during the Power Query transformation stage to maintain data accuracy.

⊗ 3. Performance Optimization in Power BI

- As this was a static dataset, there was **no real-time data refresh** capability, which restricted the ability to show live match updates.
- Some visualizations with large datasets caused **slight delays** in loading, particularly when using multiple slicers or filters simultaneously.

9. Conclusion

✓ Summary of What Was Achieved

This project successfully leveraged Microsoft Power BI to analyze the IPL 2025 season from multiple perspectives — teams, players, and matches. Using a combination of Power Query, DAX, and interactive visualizations, the project delivered:

- A comprehensive dashboard summarizing team-wise and player-wise performance
- Key metrics like total runs, wickets, sixes, no-balls, wides, and match scores
- Top player highlights such as Orange Cap and Purple Cap winners
- Team standings, head-to-head comparisons, and performance trends
- Cleaned and transformed data models ready for analysis and storytelling

⌚ How This Project Adds Value

This project demonstrates the power of data analytics in the world of sports. The interactive dashboards and insights generated through Power BI provide significant value to:

- ⚡ Cricket Analysts: Enables deep performance tracking and match insights to support strategic decision-making.

-  Team Management & Coaches: Identifies top-performing players and areas of improvement.
-  Media & Commentators: Provides rich, visual narratives and data-backed commentary material.
-  Fans & Fantasy League Players: Offers engaging insights into favorite teams and players, enhancing their viewing experience.
-  Learners & Professionals: Serves as a portfolio-worthy project demonstrating end-to-end data analysis using Power BI.

10. Future Enhancements

While the current project provides a strong foundation for analyzing IPL 2025 data, several enhancements can be made to improve its functionality, scalability, and impact:

1. Real-Time Data Integration

- Connect the Power BI dashboard to **live match feeds or databases** using APIs or web scraping.
- Enable **automatic data refresh** to update metrics like live scores, player stats, and points table during the tournament.

2. Predictive Analytics with Machine Learning

- Use **machine learning models** (via Python or Azure ML integration) to:
 - Predict match outcomes based on historical data
 - Forecast player performance trends
 - Simulate playoff or final match scenarios
- Integrate prediction results into Power BI for real-time decision support.

3. Integration with External APIs

- Connect with external sources such as **CricAPI, ESPN Cricinfo, or RapidAPI** to pull enriched match data, weather conditions, or player profiles.
- Enable dynamic data enrichment for more detailed and accurate insights.

4. User Personalization and Interactivity

- Add user-level filters like **favorite team, player, or venue** for personalized dashboards.

- Allow users to **customize views** or download summaries for their own analysis or reports.

5. Mobile and Web Embedding

- Optimize the dashboard for **mobile view** to allow access from smartphones and tablets.
- Embed dashboards into a **website or blog** for wider public access.

INDIAN PREMIER LEAGUE - 2025

March , 22 - June , 03

IPL

Home

Team Performance

Points Table

Gallery



Title sponsor



Associate partner



Official Strategic
Timeout partner



official
broadcaster





INDIAN PREMIER LEAGUE - 2025

Team

RCB

IPL

Home

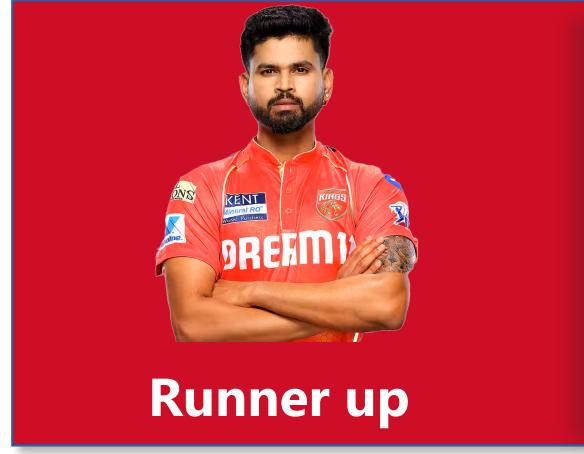
Team Performance

Points Table

Gallery



Title Winner



Runner up



Total Runs
3K



Total wickets
94



Total Fours
236



Total Sixes
125



Total Wides
39



Total No balls
5



Sai Sudharsan

759
Runs

15
Matches

Prasidh Krishna

15
Matches

25
Wickets



Team Performance



IPL

Home

Team Performance

Points Table

Gallery

CSK

Team

71

Matches Won

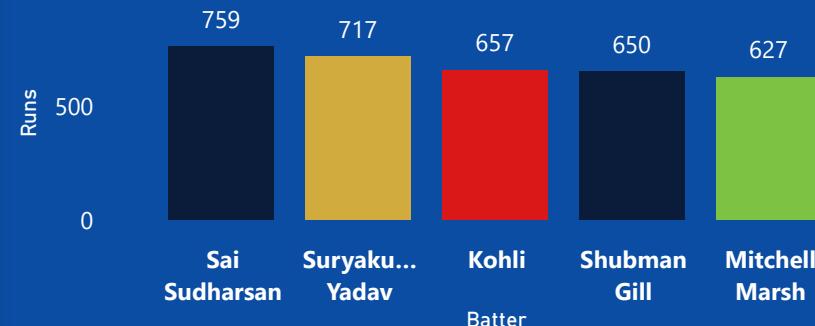
71

Matches lost

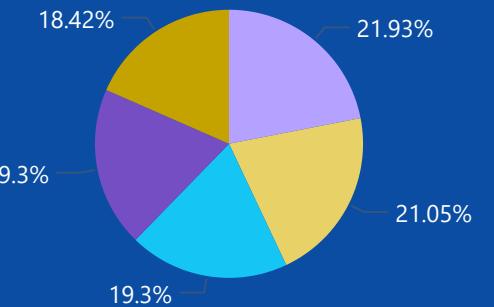
55

Standing

TOP 5 Batters



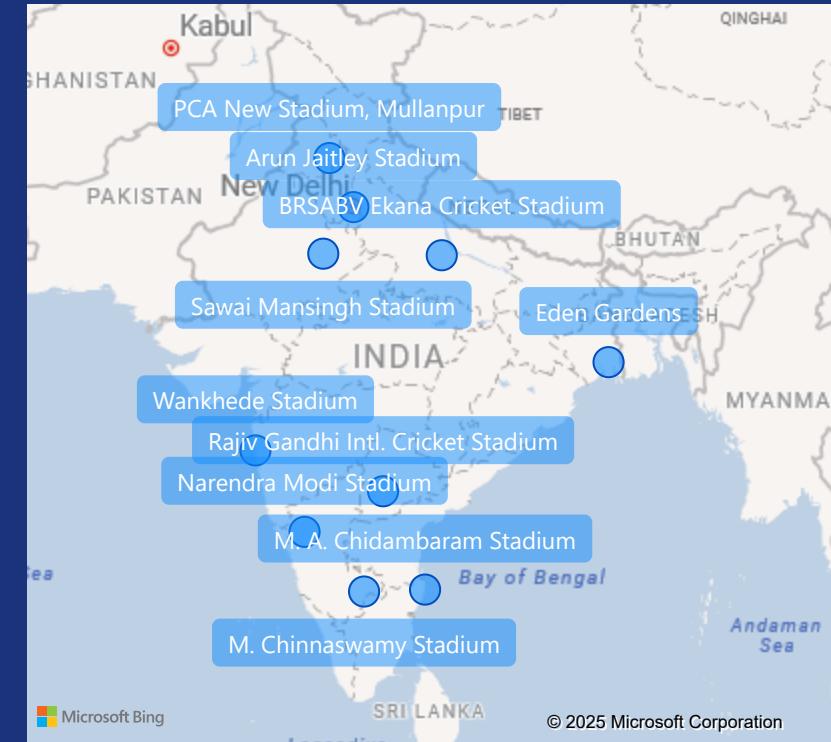
TOP 5 Bowlers



Bowler

- Prasidh
- Noor Ahmad
- Boult
- Hazlewood
- Arshdeep Singh

Home Ground



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IMAGE LINK



IPL

Home

Team Performance

Points Table

Gallery

Points Table

Standing

	Team	Standing	Points	Won	Lost
	RCB	1	20	10	5
	PBKS	2	22	11	5
	GT	3	18	9	6
	MI	4	16	8	8
	DC	5	16	8	5
	SRH	6	12	6	7
	LSG	7	12	6	8
	KKR	8	10	5	7
	RR	9	8	4	10
	CSK	10	8	4	10

Runs Against Team

Team	Against	Runs
KKR	PBKS	102
KKR	MI	116
RR	MI	117
MI	KKR	121
GT	CSK	147
CSK	SRH	154
SRH	CSK	155
CSK	DC	158
KKR	GT	159

Wickets Against Team

Team	Against	Wickets
RCB	PBKS	28
PBKS	RCB	23
MI	GT	21
MI	DC	20
GT	MI	19
MI	LSG	18
KKR	CSK	17
KKR	RR	17
SRH	KKR	16
CSK	GT	15



Gallery

