

T20 IPL Data Analysis

Project Title:

T20 Cricket Data Analysis Dashboard

User Story:

As a cricket analyst, I want to access a centralized dashboard that organizes and visualizes T20 match data, so that I can analyze team performances, player statistics, and match trends efficiently.

Problem Statement:

Cricket analysts and enthusiasts often struggle with fragmented and unstructured data from various sources, making it difficult to extract meaningful insights. A unified Power BI dashboard integrated with the Cricbuzz API can provide historical data visualization, allowing for in-depth T20 performance analysis.

Project Objectives:

- Create a centralized platform to store and visualize T20 cricket match data.
- Integrate Cricbuzz API for automatic data retrieval.
- Provide interactive visualizations and analytical insights for better decision-making.

Key Features:

- **Data Integration:** Fetch historical match data using the Cricbuzz API.
- **Match Insights:** Display key details such as match results, team performances, player statistics.
- **Player Performance Analysis:** Track batting and bowling statistics, including runs, strike rates, wickets, and economy rates.
- **Comparative Analysis:** Compare player and team performances across different tournaments and conditions.
- **Win Prediction Analytics:** Use historical data to forecast match outcomes and trends.
- **Interactive Dashboard:** Enable filtering by teams, players, tournaments, and timeframes. Provide visualizations such as pie charts, slicing, tables.

- Data Security:** Ensure API data integrity and implement role-based access controls for data usage.

Data Requirements:

- Match Details:** Date, teams, scores, and results.

- Player Stats:** Runs scored, balls faced, wickets taken, economy rate, and strike rate.

- Team Performance:** Win/loss ratio, highest/lowest scores, powerplay stats.

- Live Updates:** Fetch ongoing match data from the Cricbuzz API.

Technical Approach:

•Data Collection and Storage:

Use the Cricbuzz API to retrieve match data in real-time.

Store data in a structured database such as Excel workbook and CSV.

•Data Processing and Preprocessing:

Clean and format raw data for consistency.

Handle missing values and standardize performance metrics.

•Dashboard Development:

Develop an interactive Power BI dashboard with intuitive data visualizations.

Use DAX and Power Query to transform and analyze data.

•Security Measures:

Implement API key authentication and encryption.

Define user roles for controlled data access.

Expected Outcomes:

- A real-time, interactive Power BI dashboard offering comprehensive T20 cricket insights.
- Enhanced decision-making for analysts, coaches, and enthusiasts based on live and historical data.
- Improved team and player performance tracking with data-driven strategies.

Potential Extensions:

- AI-based Performance Prediction:** Use machine learning models to forecast player and team performances.
- Fantasy Cricket Insights:** Provide data-driven recommendations for fantasy league players.
- Social Media Sentiment Analysis:** Analyze fan reactions and trends using Twitter and other platforms.
- Automated Reports & Alerts:** Generate periodic reports and send notifications for significant match events.