A PROJECT REPORT

On

**IPL PLAYER ANALYSIS**

Submitted to

KIIT Deemed to be University

In Partial Fulfillment of the Requirement for the Award of

BACHELOR’S DEGREE IN INFORMATION TECHNOLOGY

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CERTIFICATE

This is to certify that the project is entitled

“IPL PLAYER ANALYSIS“

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Is a record of bonfire work carried out by them, in the partial fulfillment of the requirement for the award of Degree of Bachelor of Engineering (Computer Science & Engineering OR Information Technology) at KIIT Deemed to be university, Bhubaneswar. This work is done during the year 2022-2023, under our guidance.

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Ms. Ipsita paul

(Project Guide)

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**Abstract**

The project is a Streamlit app that analyzes IPL data from 2008 to 2019. It uses various data visualization techniques and provides insights on the performance of top batsmen and bowlers, the success rate of teams, and the distribution of awards like Player of the Match. The app displays charts and graphs to convey information like runs scored, wickets taken, economy rate, and team win count. Overall, this app can be useful for cricket enthusiasts and analysts to gain insights into the performance of teams and players in the IPL

Code is a Python script for a web application that analyzes data from Indian Premier League (IPL) matches from 2008-2019. It uses several Python libraries such as Streamlit, NumPy, Pandas, Plotly Express, and Plotly Graph Objects to visualize and analyze data on IPL matches, including the performance of top batsmen and bowlers, teams' batting and bowling choices, successful teams, and player of the match awards. The code fetches the data from online sources and presents the results in interactive charts and graphs for easy interpretation. This web application can be used by cricket enthusiasts and analysts to gain insights into the performance of various IPL teams and players.

# Keywords:

IPL analytics

Data visualization

Batsman

Bowlers

Toss analysis

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# Introduction

The IPL Analytics Dashboard is a web application that provides a comprehensive analysis of IPL matches from 2008 to 2019. The dashboard is designed to display various KPIs (Key Performance Indicators) such as runs scored, wickets taken, batting average, strike rate, economy rate, etc. for batsmen and bowlers. It also provides information on toss decisions made by teams, successful teams based on win count, and player of the match awards

# Functional requirements

The following are the functional requirements for the IPL Analytics Dashboard:

- The dashboard should display the top 5 batsmen based on runs scored.

- The dashboard should display a bar chart showing the batting average of all batsmen with their corresponding strike rates.

- The dashboard should display the top 5 bowlers based on wickets taken.

- The dashboard should display a bar chart showing the economy rate of all bowlers with their corresponding number of wickets taken.

- The dashboard should display a pie chart showing the teams that chose to bat when they won the toss.

- The dashboard should display a pie chart showing the teams that chose to bowl when they won the toss.

- The dashboard should display a pie chart showing the overall toss mapping for all matches.

- The dashboard should display a pie chart showing the most successful teams based on win count.

- The dashboard should display a scatter plot showing the top 5 players who received the player of the match award

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# Project Plan

1**. Project scope**: The scope of the project is to build a Streamlit app that analyzes IPL data from 2008 to 2019 and provides insights on the performance of top batsmen and bowlers, the success rate of teams, and the distribution of awards like Player of the Match.

2. **Data collection**: Collect the IPL data from 2008 to 2019 from reliable sources like Kaggle or GitHub.

3. **Data preprocessing**: Preprocess the IPL data by removing any unnecessary columns, cleaning up the data, and handling missing values.

4. **Data analysis**: Analyze the IPL data by performing various data visualization techniques like bar charts, pie charts, scatter plots, and line charts.

5. **Streamlit app development**: Develop the Streamlit app using Python and the Streamlit library. The app should have a user-friendly interface that allows users to interact with the data and view the charts and graphs.

6. **Testing and validation**: Test the Streamlit app to ensure that it works correctly and provides accurate insights on the IPL data.

7. **Deployment**: Deploy the Streamlit app on a web server like Heroku or AWS so that it can be accessed by users over the internet.

8. **Maintenance**: Maintain the Streamlit app by updating it with new features, fixing any bugs, and ensuring that it continues to work correctly over time.

Overall, this project planning outline provides a roadmap for developing a Streamlit app that analyzes IPL data and provides insights on the performance of teams and players. It involves collecting and preprocessing data, analyzing the data using various visualization techniques, and developing a user-friendly app that can be deployed on a web server.

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# Design & implementation

The IPL analytics project can be designed as a web application using Streamlit, a Python library used for building web applications. The project will have different sections for analyzing data related to batsmen, bowlers, teams, and matches.

The user interface will be designed using Streamlit's widgets, such as text, charts, and buttons. The data will be imported from CSV files hosted on GitHub and analyzed using pandas, numpy, and plotly libraries.

Implementation:

The implementation of the IPL analytics project involves the following steps:

1. Importing necessary libraries - Streamlit, pandas, numpy, and plotly.

2. Loading data from CSV files hosted on GitHub using pandas.

3. Designing the user interface using Streamlit widgets such as text, charts, and buttons.

4. Analyzing the data using pandas, numpy, and plotly libraries.

5. Creating different charts to represent the analyzed data.

6. Displaying the charts using Streamlit's plotly\_chart() function.

The implementation can be divided into different modules based on the functionality:

1. Data loading module - This module will be responsible for loading data from CSV files hosted on GitHub using pandas.

2. User interface module - This module will be responsible for designing the user interface using Streamlit widgets such as text, charts, and buttons.

3. Data analysis module - This module will be responsible for analyzing the data using pandas, numpy, and plotly libraries.

4. Chart creation module - This module will be responsible for creating different charts to represent the analyzed data.

5. Chart display module - This module will be responsible for displaying the charts using Streamlit's plotly\_chart() function.

The modules can be tested individually and then integrated into the main application. The application can be deployed on a web server or cloud platform for wider accessibility.

Overall, the IPL analytics project can be designed and implemented using Streamlit and various Python libraries to provide an interactive web-based interface for analyzing IPL data.

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# Result

The code snippet is a data visualization project related to the Indian Premier League (IPL) cricket tournament. It retrieves data from two CSV files hosted on GitHub and uses the Python libraries Streamlit, Pandas, Plotly, and NumPy to create interactive charts and graphs.

The first set of visualizations analyzes batting statistics, including a bar chart of batting average and strike rate, a line chart of the top five batsmen based on runs scored, and pie charts of teams' choices when winning the toss and the overall toss mapping.

The second set of visualizations focuses on bowling statistics, including a bar chart of economy rate and wickets taken by bowlers, a line chart of the top five bowlers based on wickets taken, and a pie chart of bowlers who have leaked the most runs.

Finally, the code also visualizes team success, including a pie chart of the most successful teams based on win count and a scatter chart of the top five players who have won the Player of the Match award.

Overall, the project provides insights into IPL cricket statistics, and the future scope could include incorporating more advanced data analytics and machine learning techniques to make more accurate predictions or recommendations.

A bar chart of top 100 batsmen in IPL based on their average and strike rate

- A line chart of the top 5 batsmen based on runs scored

- Two bar charts representing the teams that chose to bat or bowl after winning the toss

- A pie chart of overall toss mapping based on the number of times each team won the toss and chose to bat or bowl

- A pie chart representing the most successful teams based on the number of matches won

- A scatter plot showing the top 5 players who received the "Player of the Match" award

- A bar chart of top 100 bowlers in IPL based on their economy rate and number of wickets taken

- A line chart of the top 5 bowlers based on the number of wickets taken

- A pie chart representing the bowlers who leaked more runs based on their economy rate.

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# Conclusion

The IPL Analytics Dashboard is a web application that provides a comprehensive analysis of IPL matches from 2008 to 2019. It displays various KPIs for batsmen and bowlers toss decisions made by teams, successful teams based on win count, and player of the match awards. The dashboard is built using Streamlit, Plotly, and Pandas and is designed to be user-friendly, responsive, and secure.

# Future scope

Data integration and analysis: The current code snippet analyzes data from a single source. In the future, it could be expanded to include data from multiple sources and incorporate machine learning techniques for more advanced analysis.

Real-time data updates: The data used in the current code snippet is static. To make it more useful, the project could be expanded to include real-time data updates, which would allow users to analyze the latest trends and insights.

User interface enhancements: The current project uses the Streamlit framework for its user interface. In the future, additional enhancements could be made to improve the user experience and make it more intuitive.

Additional visualizations: While the current code snippet includes several useful visualizations, there are many other types of visualizations that could be added to provide additional insights into the data.

Mobile application: The current project is designed to be used on a desktop computer. In the future, it could be developed into a mobile application, which would make it more accessible and convenient for users who are on the go.

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# References

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[**https://docs.streamlit.io/**](https://docs.streamlit.io/)

# Plagiarism Report

