Cricket Data Analytics

Submitted in the partial fulfillment of the requirements

for the degree of B.Tech in Computer Engineering

by

Devang Sandeep Raut (21CE1493)

Sandeep Sharma (21CE1534)

Rugved Thanekar (21CE1504)

Mohit Relekar (21CE1485)

Supervisor

Mr. GajendraSingh Rajput

Department of Computer Engineering

Ramrao Adik Institute of Technology

Sector 7, Nerul, Navi Mumbai

(Under the ambit of D. Y. Patil Deemed to be University)

October 2023

Ramrao Adik Institute of Technology

(Under the ambit of D. Y. Patil Deemed to be University)

Dr. D. Y. Patil Vidyanagar, Sector 7, Nerul, Navi Mumbai 400 706

CERTIFICATE

This is to certify that, the Mini Project-III report entitled

Cricket Data Analytics

is a bonafide work done by

Devang Sandeep Raut (21CE1493)

Sandeep Sharma (21CE1534)

Rugved Thanekar (21CE1504)

Mohit Relekar (21CE1485)

and is submitted in the partial fulfillment of the requirement for the degree of

B.Tech in Computer Engineering

to the

D. Y. Patil Deemed to be University

Supervisor	Project Co-ordinator
(Mr. GajendraSingh Rajput)	**(Mr. Tushar Ghorpade)**
Head of Department	Principal
(Dr. Amarsinh V. Vidhate)	**(Dr. Mukesh D. Patil)**

Mini Project Report - III Approval

This is to certify that the Mini Project - III entitled ***" Cricket Data analytics "*** is a bonafide work done by ***Devang Sandeep Raut (21CE1493)***, ***Sandeep Sharma (21CE1534)***, ***Rugved Thanekar (21CE1504)***, and ***Mohit Relekar (21CE1485)*** under the supervision of ***Mr. GajendraSingh Rajput***. This Mini Project is approved in the partial fulfillment of the requirement for the degree of ***B.tech in Computer Engineering***

Internal Examiner :

1. . . . . .

2. . . . . .

External Examiners :

1. . . . . .

2. . . . . .

Date : . . . /. . . /. . . . . .

Place : . . . . . .

DECLARATION

I declare that this written submission represents my ideas and does not invovle plagiarism. I have adequately cited and referenced the original sources wherever others' ideas or words have been included. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action against me by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Date: _____

Devang Sandeep Raut (21CE1493)

Sandeep Sharma (21CE1534)

Rugved Thanekar (21CE1504)

Mohit Relekar (21CE1485)

Abstract

The T20 Cricket World Cup 2022 witnessed an exhilarating display of talent, strategy, and sportsmanship. This data analytics project delves into the heart of the tournament, aiming to provide valuable insights for cricket enthusiasts, teams, and stakeholders. The primary objective is to analyze the wealth of data generated during the event and develop models that offer a deeper understanding of its dynamics.

Through a comprehensive analysis of player statistics, match outcomes, and team performance, this report seeks to identify the standout performers in the tournament. It focuses on determining the best batsman, bowler, all-rounder, and, ultimately, crafting the best 11-player team based on their specialization.The project employs advanced data analytics techniques, including machine learning and statistical modeling, to unravel hidden patterns and trends within the T20 Cricket World Cup data. By doing so, it not only celebrates the remarkable achievements of individual players but also offers strategic guidance to teams and stakeholders in their pursuit of success in the dynamic world of T20 cricket.In a time when data-driven decision-making is becoming increasingly vital in sports, this report serves as a valuable resource for anyone passionate about cricket, from fans and analysts to team managers and players. It paints a detailed portrait of the 2022 T20 Cricket World Cup, shedding light on the heroes of the tournament and the strategies that define victory in the fast-paced world of T20 cricket

Contents

Abstract **i**

List of Tables **iv**

List of Figures **v**

1 Introduction **1**

1.1 Overview 1

1.2 Motivation 1

1.3 Problem Statement and Objectives 2

1.4 Organization of the report 2

2 Literature Survey **3**

2.1 Survey of Existing System 3

2.2 Limitations of Existing System or Research Gap 4

3 Proposed System **5**

3.1 Problem Statement 5

3.2 Proposed Methodology/Techniques 5

3.3 System Design 7

4 Results and Discussion **10**

4.1 Implementation Details 10

4.2 Result Analysis 13

5 Conclusion and Further Work **18**

References **19**

A Weekly Progress Report **21**

B Plagiarism Report **22**

C Publication Details / Copyright / Project Competitions **23**

Acknowledgement **24**

List of Tables

4.1 Parameters and criteria for Openers 10
4.2 Parameters and criteria for Middle Order 11
4.3 Parameters and criteria for Finishers 11
4.4 Parameters and criteria for All Rounders 12
4.5 Parameters and criteria for Fast Bowler 12

List of Figures

3.1 Player Analysis dashbaord idea 7

3.2 Best 11 team dashbaord idea 9

4.1 Opener's Dashboard 13

4.2 Middle Order's Dashboard 13

4.3 All Rounder's Dashboard 14

4.4 Finisher's Dashboard 14

4.5 Fast Bowler's Dashboard 15

4.6 Team11 part 1 16

4.7 Team11 part 2 16

4.8 Team11 part 3 17

A.1 Weekly Progress Report 21

C.1 ICC NIUM Next In 2.0 - Global Cricket Hackathon 23

Chapter 1

Introduction

1.1 Overview

This report delves into the T20 Cricket World Cup 2022, focusing on data analytics to provide insights for cricket enthusiasts, teams, and stakeholders. It begins with an introduction to the tournament's significance. The report outlines data collection and preprocessing, emphasizing data quality. Individual player and team performances are meticulously analyzed, highlighting strengths and weaknesses. The report identifies the best batsman, bowler, all-rounder, and crafts an ideal 11-player team, considering specialization. The report offers practical implications for stakeholders, promoting data-driven decision-making. It concludes by summarizing key findings and presents recommendations for future tournaments. Comprehensive references and appendices provide additional depth for those seeking a more detailed analysis. This report serves as a valuable resource, combining cricket passion with data-driven insights into the dynamic T20 Cricket World Cup 2022

1.2 Motivation

The motivation for analyzing the T20 Cricket World Cup 2022 data is driven by several factors. Data-driven decision-making is crucial for teams and stakeholders, offering insights for strategic planning, player selection, and performance enhancement. Cricket enthusiasts seek deeper statistics to enhance their understanding and enjoyment of the game. The analysis aids in evaluating player and team performances, identifying strengths, and addressing weaknesses for sustained competitiveness. [1] It supports talent identification and scouting, enabling more

effective recruitment strategies. Historical data provides context, allowing for comparisons across different years. In the entertainment industry, data analysis enhances content and broadcasts for a more engaging viewer experience. T20 cricket's global appeal makes data analysis relevant to a diverse international fan base. It provides a strategic advantage in the competitive field of T20 cricket and fuels academic and research interests. Additionally, it opens commercial opportunities, including sponsorship and merchandise sales, based on data-derived insights, making it a multifaceted and compelling area of exploration. [1]

1.3 Problem Statement and Objectives

This data analytics project is dedicated to analyzing data from the T20 Cricket World Cup 2022 to provide valuable insights. Its core objective is to help cricket enthusiasts, teams, and stakeholders gain a better understanding of the tournament's dynamics. The project aims to identify the top performers, including the best batsman, bowler, all-rounder, and formulate the ideal 11-player team based on their specializations. It goes beyond statistics, offering nuanced insights for a diverse audience. In essence, it bridges the gap between data and cricket enthusiasts, delivering a comprehensive view of the tournament and its standout players. Our main goal is to make cricket data analytics more accurate, help teams make better decisions, and make the game more exciting for fans.

1.4 Organization of the report

The report is organised as follows: The Chapter 2 reviews the literature. Chapter 3 focuses on defining the system's issue. That includes problem categorization, proposed technologies, device architecture, and hardware/software requirements. On the other hand, Chapter 5 describes the inference and future work on the technique to be utilized as a more improved model.

Chapter 2

Literature Survey

The literature survey for the T20 Cricket World Cup 2022 data analytics project investigates the rise of data analytics in cricket, highlighting its significance in decision-making. It delves into player and team performance metrics like strike rates, economy rates, and player efficiency. Specialization in cricket roles (batsmen, bowlers, all-rounders) is explored to identify top performers. The survey covers data sources, collection methods, fan engagement, and commercial applications. It also examines previous T20 Cricket World Cup studies and suggests future research areas while addressing challenges in cricket analytics.

2.1 Survey of Existing System

1. CricViz:

   CricViz is a leading provider of cricket data and analytics. CricViz offers a variety of products and services to professional cricket teams, broadcasters, and fans. CricViz's data analytics platform provides users with access to a wide range of cricket data, as well as powerful analytics tools to help them gain insights into player and team performance, predict match outcomes, and identify trends. CricViz also provides data and analytics services to broadcasters, helping them to provide viewers with more insights into the game. [2].

2. Criclytics:

   Criclytics is another popular cricket data analytics platform. Criclytics offers a variety of features, including player and team performance analysis, match outcome prediction,

and trend identification. [3] Criclytics also offers a number of unique features, such as the ability to compare players from different eras and the ability to analyze the impact of different weather conditions on player performance. Criclytics is particularly popular among fans, who use it to gain insights into their favorite players and teams.

3. CricketNext:

   Cricket-Next is a cricket data analytics platform that provides users with insights into player and team performance, match outcome prediction, and trend identification. Cricket-Next is known for its user-friendly interface and its ability to provide users with complex insights in a simple and easy-to-understand format.Cricket-Next is used by professional cricket teams, broadcasters, and fans around the world.

2.2 Limitations of Existing System or Research Gap

1. CricViz:

   CricViz's data analytics platform is expensive, and it is not affordable for all professional cricket teams and fans. CricViz's data analytics platform is complex to use, and it requires users to have a good understanding of cricket statistics and data analytics. [2] CricViz's data analytics platform is not always accurate, and its insights can be misleading if they are not interpreted correctly.

2. Criclytics:

   Criclytics' data analytics platform is not as comprehensive as CricViz's data analytics platform, and it does not offer as many features. Criclytics' data analytics platform is not as accurate as CricViz's data analytics platform, and its insights can be misleading if they are not interpreted correctly. [3]

3. CricketNext:

   CricketNext's data analytics platform is not as comprehensive as CricViz's data analytics platform, and it does not offer as many features. [3] CricketNext's data analytics platform is not as accurate as CricViz's data analytics platform, and its insights can be misleading if they are not interpreted correctly.

Chapter 3

Proposed System

3.1 Problem Statement

In the ever-evolving world of cricket, data analytics plays a pivotal role in enhancing performance, strategy, and fan engagement. However, despite significant advancements in cricket data analytics, several challenges persist that need to be addressed to fully harness the potential of data-driven insights. The primary objective of this data analytics project is to analyze the data from the T20 Cricket World Cup 2022 and develop models and insights that can help cricket enthusiasts, teams, and stakeholders better understand the dynamics of the tournament. This project will also help in analyzing the best batsman, bowler, all rounder and the best 11 players team according to their specialization.

3.2 Proposed Methodology/Techniques

The methodologies involves web scraping data using BrightData and then performing data cleaning, transformation, and visualization using Python and Power BI. Here's a detailed explanation of each step:

1. Web Scraping with BrightData: BrightData (formerly known as Luminati) is a platform that provides data collection and web scraping services. You can use BrightData to extract data from websites and online sources [4]. Here's how the web scraping process works:

- Define your target websites or data sources: You specify the websites or online sources from which you want to extract data.
- Create BrightData proxies: BrightData provides a network of proxies that allow you to access

websites while masking your identity and location.

- Write JavaScript code: You can write JavaScript code to interact with the websites and extract the data you need. BrightData's platform provides tools and documentation for writing custom web scraping scripts in JavaScript.

- Execute the scraping: You run your scraping scripts on BrightData's platform, which routes the requests through its proxies, collects the data, and delivers it to you in a structured format, typically JSON or other data formats.

2. Data Cleaning with Python (Pandas):

- After you've collected the data using BrightData, you may receive it in a raw format. [5] Python, with the Pandas library, is a popular choice for data cleaning and preparation.

- In Python, you can load the extracted data into a Pandas DataFrame, which is a powerful data structure for data manipulation and analysis.

- Data cleaning tasks may include handling missing values, removing duplicates, correcting data types, and transforming the data into a structured format suitable for analysis. [5]

3. Data Transformation with Power Query (Power BI):

- Once your data is cleaned and structured, you can further transform and shape it using Power Query, a data transformation and preparation tool in Microsoft Power BI. [6]

- Power Query provides a user-friendly interface to perform various data transformation tasks, such as filtering, merging data from different sources, pivoting, and aggregating.

- It allows you to create custom queries to meet your specific data transformation requirements. [7]

- Power Query can also handle tasks like data enrichment by integrating data from various sources.

4. Data Visualization with Power BI:

- After transforming the data, you can create interactive and insightful data visualizations using Power BI. [7]

- Power BI offers a wide range of visualization options, including bar charts, line charts, pie charts, maps, and more, to present your data in a visually appealing and informative way.

- You can create dashboards and reports to showcase key insights and trends within your data.

- Power BI allows for real-time or scheduled data refresh, ensuring that your visualizations stay up-to-date with the latest data.

5. Creating Dashboards in Power BI:

- In Power BI, you can combine multiple visualizations, tables, and reports into interactive dashboards.
- Dashboards provide a consolidated view of your data, enabling users to explore the data and gain insights at a glance.
- You can add slicers, filters, and drill-through features to make the dashboards more interactive and user-friendly.

3.3 System Design

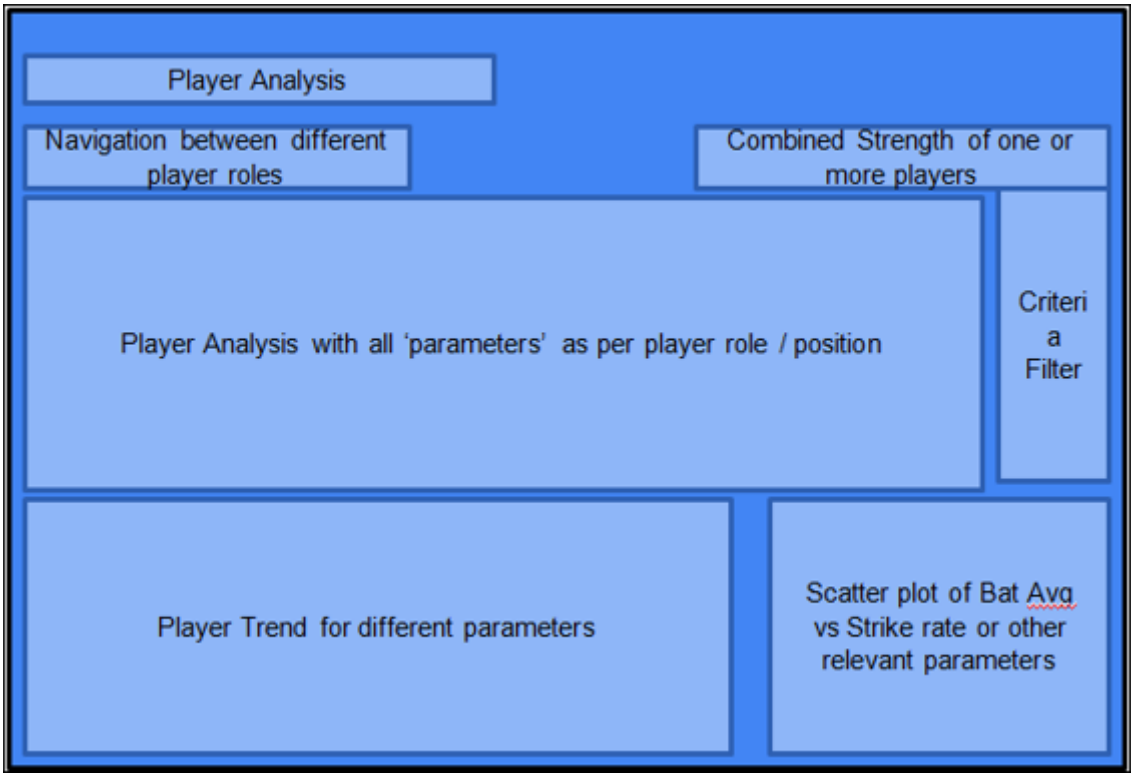

Figure 3.1: Player Analysis dashbaord idea

By referring Figure 3.1 we can see:

1. Navigation between different player roles: This section allows users to select a player role, such as batsman, bowler, all-rounder, or wicket-keeper. Once a role is selected, the dashboard will display the relevant data for that role. For example, if the user selects batsman, the dashboard could display the top batsmen by runs scored, the highest scores, and the average batting strike rate.

2. Combined Strength of one or more players: This section allows users to combine the strength of one or more players. This could be useful for comparing players or for identifying the best team lineup. For example, the user could select two batsmen and the dashboard could display the combined number of runs scored by the two batsmen, the highest combined score, and the average combined strike rate.

3. Player Analysis with all 'parameters' as per player role / position: This section provides a more detailed analysis of individual players. The user can select a player and the dashboard will display all of the relevant data for that player, such as runs scored, wickets taken, catches taken, and economy rate. The user can also filter the data to see how the player has performed in different formats of the game, such as Test cricket, ODI cricket, and T20 cricket.

4. Criteria Filter: This section allows users to filter the data by various criteria, such as team, opposition, ground, and match format. This can be useful for isolating specific trends or for comparing different teams or players.

5. Player Trend for different parameters: This section displays the trend of a player's performance over time. The user can select a player and a parameter, such as runs scored or wickets taken, and the dashboard will display a line chart showing the player's performance over time. This can be useful for identifying players who are improving or declining in form.

6. Scatter plot of Bat Ava vs Strike rate or other relevant parameters: This section displays a scatter plot of batting average against strike rate. This is a useful way to identify players who combine high batting averages with high strike rates. These players are typically the most dangerous batsmen in the game.

Now the another dashboard screen is of choosing best 11 team which is showed in Figure 3.2 as follows:

1. Final 11:This section shows the selected team's final 11 players, with their respective roles and key parameters. The user can select players from the player selection panel, which includes a search bar. The user can also filter the players by role and key parameters.

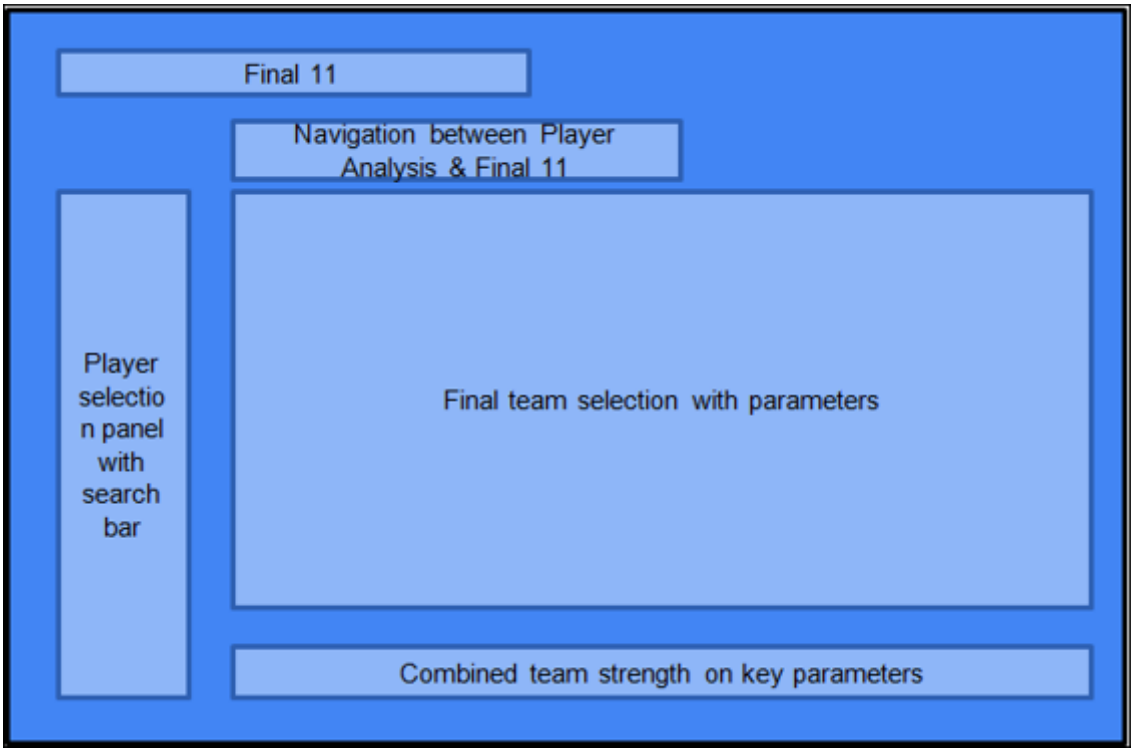

Figure 3.2: Best 11 team dashbaord idea

2. Navigation between Player Analysis amd Final 11:This section allows the user to navigate between the player analysis section and the final 11 section. The user can view the detailed analysis of any player from the final 11 section by clicking on the player's name.

3. Player Selection Panel:This section allows the user to select players from the pool of players. The user can search for players by name or by role. The user can also filter the players by key parameters.

4. Final Team Selection with Parameters:This section shows the user's selected team of 11 players, with their respective roles and key parameters. The user can change the team lineup by dragging and dropping players from the player selection panel to the final team selection panel. The user can also filter the final team by key parameters.

5. Combined Team Strength on Key Parameters:This section shows the combined strength of the user's selected team on key parameters, such as runs scored, wickets taken, and economy rate. This can be useful for assessing the overall strength of the team and for identifying any areas of weakness.

Chapter 4

Results and Discussion

4.1 Implementation Details

To eliminate those limitations, we have to make five dashboards in PowerBI for Openers,Middle Order Batsmen,Finishers,All Rounders, and Fast Bowlers. Our aim is to have a team that can score at least 180 runs on average and can chase 150 targets easily. To create those dashboards, we need to set certain criteria for each of them, so let's see those parameters for each role. [8].

Openers Selection Criteria		
PARAMETERS	DESCRIPTION	CRITERIA
Batting Average	Average runs scored in an innings	Greater than 30
Strike Rate	No of runs scored per 100 balls	Greater than 140
Innings Batted	Total Innings batted	Greater than 3
Boundary Percentage	Percentage of runs scored in boundaries	Greater than 50
Batting Position	Order in which the batter played	Less than 4

Table 4.1: Parameters and criteria for Openers

Table 4.1 discusses the parameters that will filter the best openers from the whole data. This openers must have batting average of more than 30 in an innings, a strike rate of 140, which will be best for the openers,total innings batted must be greater than 3 so he will have some experience , a boundary scoring percentage of greater then 50 and a consistent in batting position less then 4

Middle Order Selection Criteria		
PARAMETERS	DESCRIPTION	CRITERIA
Batting Average	Average runs scored in an innings	Greater than 30
Strike Rate	No of runs scored per 100 balls	Greater than 140
Innings Batted	Total Innings batted	Greater than 3
Avg. Ball Faced	Average ball faced by the batsman in an inning	Greater than 20
Batting Position	Order in which the batter played	greater than 2

Table 4.2: Parameters and criteria for Middle Order

Table 4.2 refers to the parameters for selecting the best middle order for our team, and the criteria are that the batting average must be greater than 30, strike rate must be greater than 140, and the inning batted by the batsman must be more than 3 he must face an average of more than 20 balls and be consistent at batting position less than 4 [8].

Finishers Selection Criteria		
PARAMETERS	DESCRIPTION	CRITERIA
Batting Average	Average runs scored in an innings	Greater than 25
Strike Rate	No of runs scored per 100 balls	Greater than 130
Innings Batted	Total Innings batted	Greater than 3
Avg. Ball Faced	Average ball faced by the batsman in an inning	Greater than 12
Batting Position	Order in which the batter played	greater than 4
Innings Bowled	Total innings bowled by bowler	Greater than1

Table 4.3: Parameters and criteria for Finishers

Table 4.3 shows the parameters for the big hitters of the cricket also knows as finishers. to filter those player the criteria must be the player must have batting average of more than 25 , he must have a strike rate of greater than 130 ,the player must had batted total of more than 3 he must have faced an more than 12 average balls and have a consistent batting position of greater then 4 with some bowling experience of more than 1 inning.

All Rounders Selection Criteria		
PARAMETERS	DESCRIPTION	CRITERIA
Batting Average	Average runs scored in an innings	Greater than 25
Strike Rate	No of runs scored per 100 balls	Greater than 130
Innings Batted	Total Innings batted	Greater than 3
Batting Position	Order in which the batter played	greater than 4
Innings Bowled	Total innings bowled by bowler	Greater than 1
Bowling Economy	Average runs allowed per over	Less than 7
Bowling Strike Rate	Average no. of balls required to take a wicket	Greater than 20

Table 4.4: Parameters and criteria for All Rounders

Table 4.4 describes the criteria to be set to find the best all rounder who will be specialist in both batting as well as bowling which will handle the lower order of the team and increase the probability of scoring big totals by hitting big hits at the end of the innings.

Fast Bowler Selection Criteria		
PARAMETERS	DESCRIPTION	CRITERIA
Innings Bowled	Total innings bowled by bowler	Greater than 4
Bowling Economy	Average runs allowed per over	Less than 7
Bowling Strike Rate	Average no. of balls required to take a wicket	Less than 16
Bowling Style	Bowling style of the player	Fast
Bowling Average	No. of runs allowed per wicket	Less than 20
Dot Ball Percentage	Percentage of dot balls bowled	Greater than 40

Table 4.5: Parameters and criteria for Fast Bowler

Table 4.5 discuss about the parameter to be set to get the deadliest fast bowlers who can take more wickets with less runs which will increase the winning chance of the team. [8].

4.2 Result Analysis

Figure 4.1: Opener's Dashboard

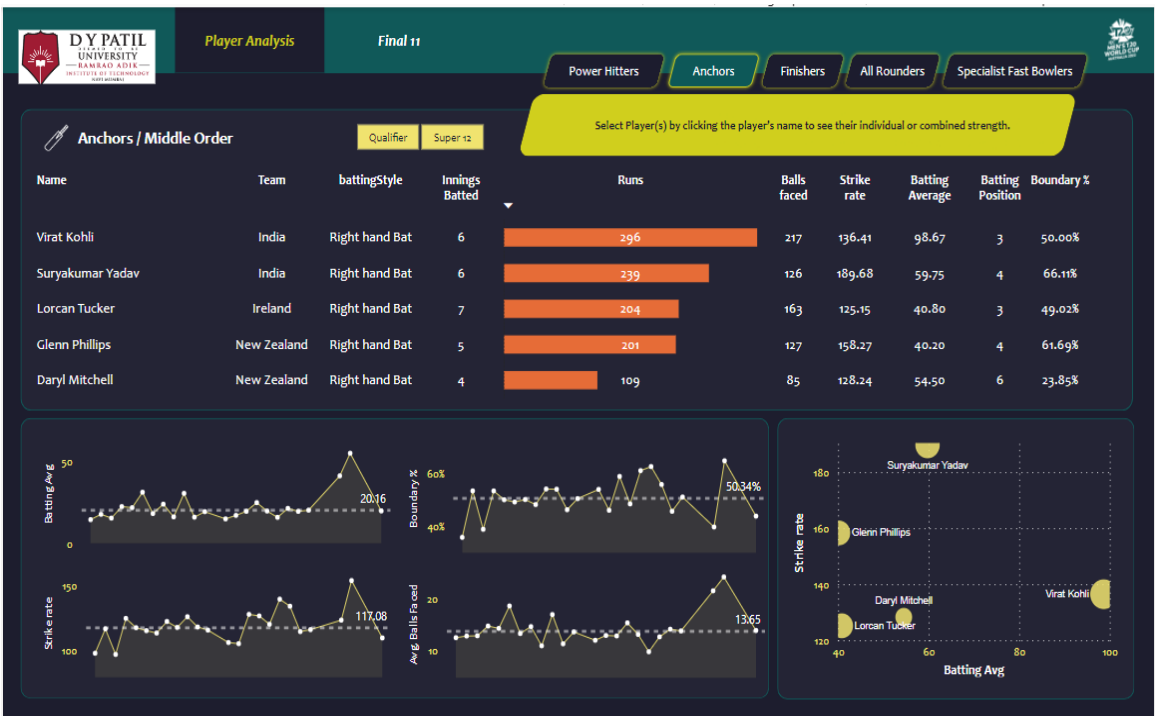

Figure 4.2: Middle Order's Dashboard

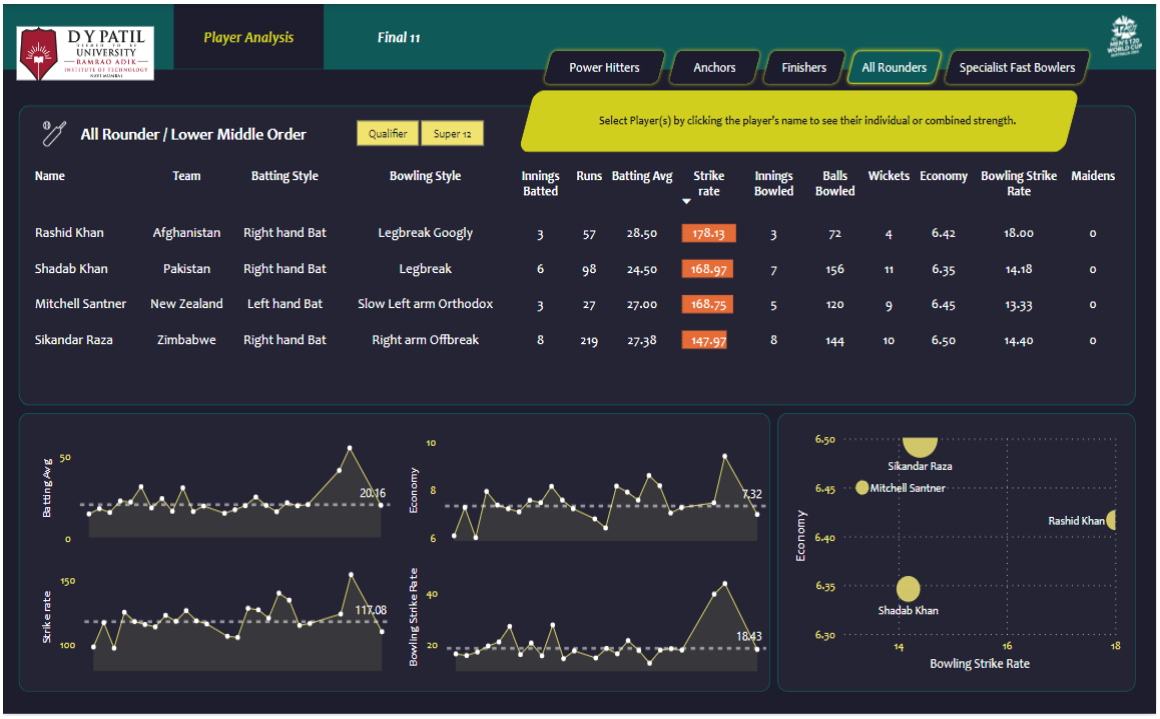

Figure 4.3: All Rounder's Dashboard

Figure 4.4: Finisher's Dashboard

Figure 4.5: Fast Bowler's Dashboard

As we have already seen the criteria to be set for each and every role so by applying that criteria we had made PowerBI Dashbaord. Figure 4.1 shows the Top 5 openers from T20 world cup 2022 the players are Kushal Mendis, Quinton de Kock, Rilee Rossouw, Alex Hales and Jos Buttler [8].Figure 4.2 shows the top 5 middle order batsmen after applying the parameters those batsmen are Virat Kohli, SuryaKumar Yadav, Lorcan Tucker, Glenn Phillips, Daryl Mitchell. Figure 4.3 shows the best all rounders who was consistent throughout the tournament those are Rashid Khan, Shadab Khan, Mitchell Santner, Shikandar Raza. [2]. Figure 4.4 describes the tournament's best finishers who will the superhitters for the team those are Curtis Camper, Glenn Maxwell, Marcus Stoinis, Shikandar Raza, Hardik Pandya. Figure 4.5 depicts the fast bowlers of the tournament which are filter by the parameters with the best economy and wicket taking ability those are Sam Curran, Anrich Nortje, Shaheen Shah Afridi, Tim Southee.

Figure 4.6: Team11 part 1

Figure 4.7: Team11 part 2

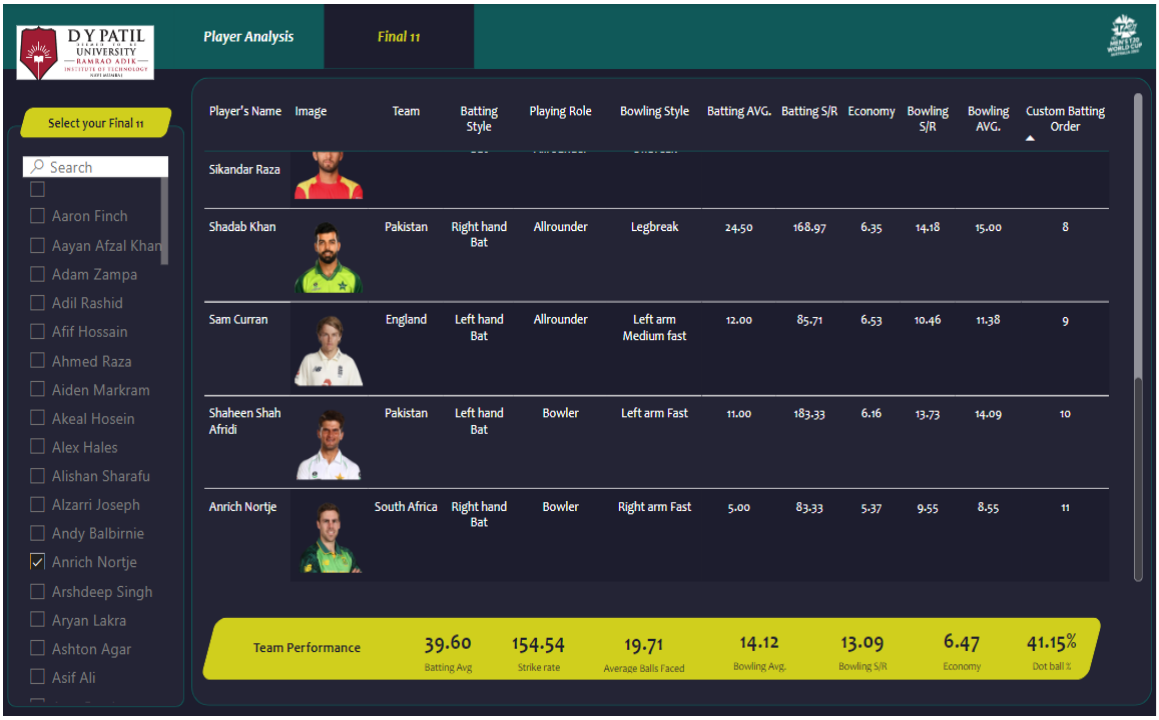

Figure 4.8: Team11 part 3

Since our target is to build a team of 11 players with high winning rate. The team must score atleast an average runs of 180 ,and must have the capacity to defend 150 runs on an average. This shows that all the fields of the teams must contains the best players, Figure 4.6, Figure 4.7, Figure 4.8 shows the team 11 selected by thus the blue print of team was the team must have 2 Openers who is consistent throughout the tournament with partnership batting average of 40 runs and strike rate of 150+, 3 Middle Order Batsmen who will be highest run scorers and have batting average of more than 50, 2 All rounders must have highest strike rate but they must be the best spinners with less economy and bowling average, 1 Finisher this player must have a high strike rate as well as can anchor the inning if needed he must have high boundary percentage to score more boundaries at end overs he must also be a fast bowler or a spinners as per the pitch requirement and 3 Fast Bowlers the fast bowlers must have less economy and less bowling average so that they can take more wickets and can maintain the pressure throughout the inning on batsmen.

Chapter 5

Conclusion and Further Work

In the realm of sports, where precision, strategy, and performance are paramount, the T20 Cricket World Cup 2022 data analytics project stands as a beacon of insight and innovation. Our primary objective, from the outset, was to harness the wealth of data generated by this thrilling tournament to provide invaluable models and insights that transcend mere statistics.

As we conclude this journey through the data, it is evident that the dynamic world of T20 cricket is ripe for a data-driven transformation. The comprehensive analysis undertaken has unveiled trends, patterns, and nuances that not only celebrate the brilliance of individual players but also serve as a guiding light for teams and stakeholders.

Identifying the best batsman, bowler, all-rounder, and crafting the ideal 11-player team based on specialization has been a pursuit of both art and science. The project has combined the power of data analytics with a deep understanding of cricket to arrive at these conclusions, recognizing that a player's impact extends far beyond the raw numbers.

This report is not merely an assembly of statistics; it is a testament to the fusion of passion and precision. It provides a bridge between the passion of cricket enthusiasts, the aspirations of teams, and the needs of stakeholders. Through this work, we have strived to give them a common ground where data insights enrich the experience of the sport. In the rapidly evolving landscape of modern cricket, this project reaffirms the importance of data-driven decision-making.

As we conclude, we recognize that the T20 Cricket World Cup is not just a tournament; it is an amalgamation of talent, dedication, and excitement. We hope that this report serves as a guide for all those who cherish the game, empowering them with knowledge that fosters a deeper appreciation of the sport and leads to even greater achievements in the future.

References

[1] A. Monnappa, "How big data is helping teams win big at the t20 world cup," Feb 2023.

[2] A. DAVIS, "T20 world cup: A data-driven analysis of the most exciting format of cricket," *Information*, Nov 2022.

[3] S. Ravindra, "Making decisions in cricket," *Information*, July 2017.

[4] H. Vadivel, "Data analytics web scrapping," Dec 2022.

[5] D. Mertz, *Cleaning Data for Effective Data Science*. Mar 2021.

[6] M. P. Devin Knight, Erin Ostrowsky, *Microsoft Power BI Quick Start Guide - Third Edition*. Nov 2022.

[7] "Query editor in power bi for data transformation," *Information*, Sep 2023.

[8] D. Patel, "T20 world cup data analysics," *Information*, Jan 2023.

Appendices

Appendix A

Weekly Progress Report

D Y PATIL UNIVERSITY

RAMRAO ADIK INSTITUTE OF TECHNOLOGY, NAVI MUMBAI

Department of Computer Engineering

TE Mini-Project-III Weekly Project Performance Report Odd Sem 2023-2024

Project Title: _____ **Group No:** _____

Name of Students 1: **Name of Students 2:**

Name of Students 3: **Name of Students 4:**

Week No.	Expected Topics to be Covered	Progress Status	Student 1 Sign	Progress Status	Student 2 Sign	Progress Status	Student 3 Sign	Progress Status	Student 4 Sign	Suggestions if any
1.	Clear and Precise Objective									
2.	Abstract and Introduction									
3.	Literature Survey									
4.	Limitations of Existing System									
5.	Problem Definition / Statement									
6.	Proposed Methodology									
7.	System Design									
8.	Details of hardware & Software									
9.	Implementation details									
10.	Result Analysis									
11.	Conclusion and Future Work									
12.	Participation in Competition or Paper Publication									

A: Satisfactory **B: Average** **C: Needs Improvement**

Project Guide Name and Sign

Figure A.1: Weekly Progress Report

Appendix B

Plagiarism Report

Appendix C

Publication Details / Copyright / Project Competitions

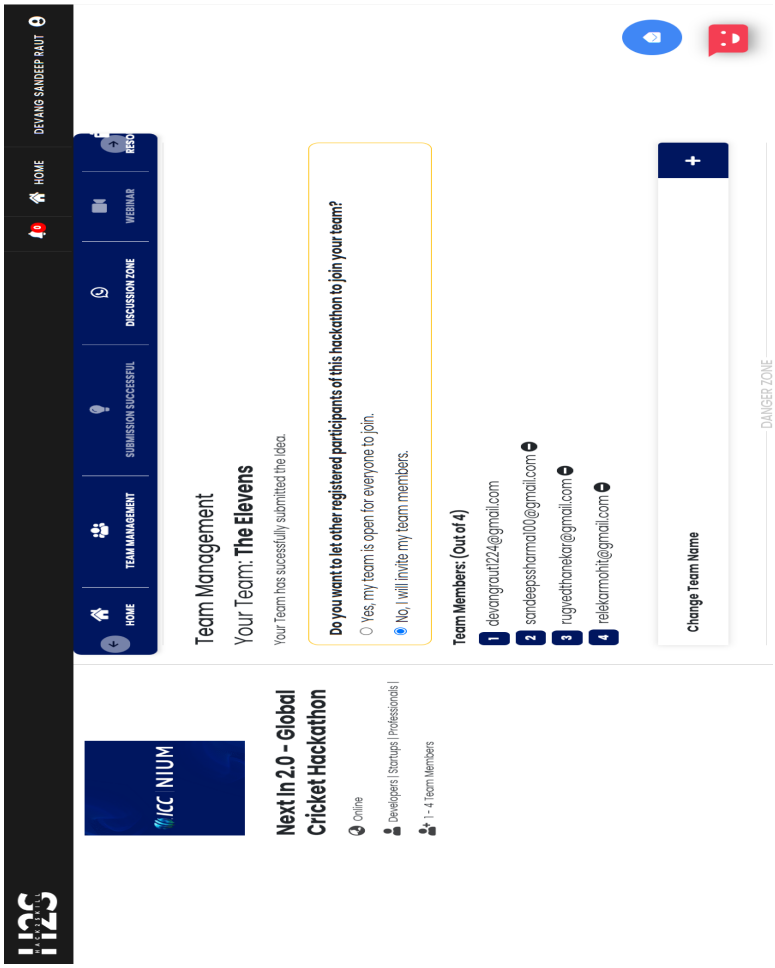

Figure C.1: ICC NIUM Next In 2.0 - Global Cricket Hackathon

Acknowledgments

We would like to thank our Mini-Project supervisor Mr.GajendraSingh Rajput and our Mini-Project Coordinator Mr.Tushar Ghorpade who have provided us with utmost ernest guidance to help us achieve a outcome worthy enough to be valued as IEEE level paper. Our group consisting of Devang Sandeep Raut, Sandeep Sharma, Rugved Thanekar and Mohit Relekar have succesfully completed this project with bright ideas and sheer hard work.

Date: _____