DRONACHARYA
College of Engineering

POWER BI REPORT

TRAINING REPORT

SUBMITTED IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE AWARD OF

DEGREE OF BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE ENGINEERING

SUBMITTED BY

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SUBMITTED TO

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DRONACHARYA
College of Engineering

STUDENT DECLARATION

I hereby declare that the Practical Training Report entitled "POWER BI REPORT" is an authentic record of my own work as requirements during the period from 5 October 2023 to 19 November 2023 for the award of degree of B.Tech. (Computer Science & Engineering), Dronacharya College of Engineering.

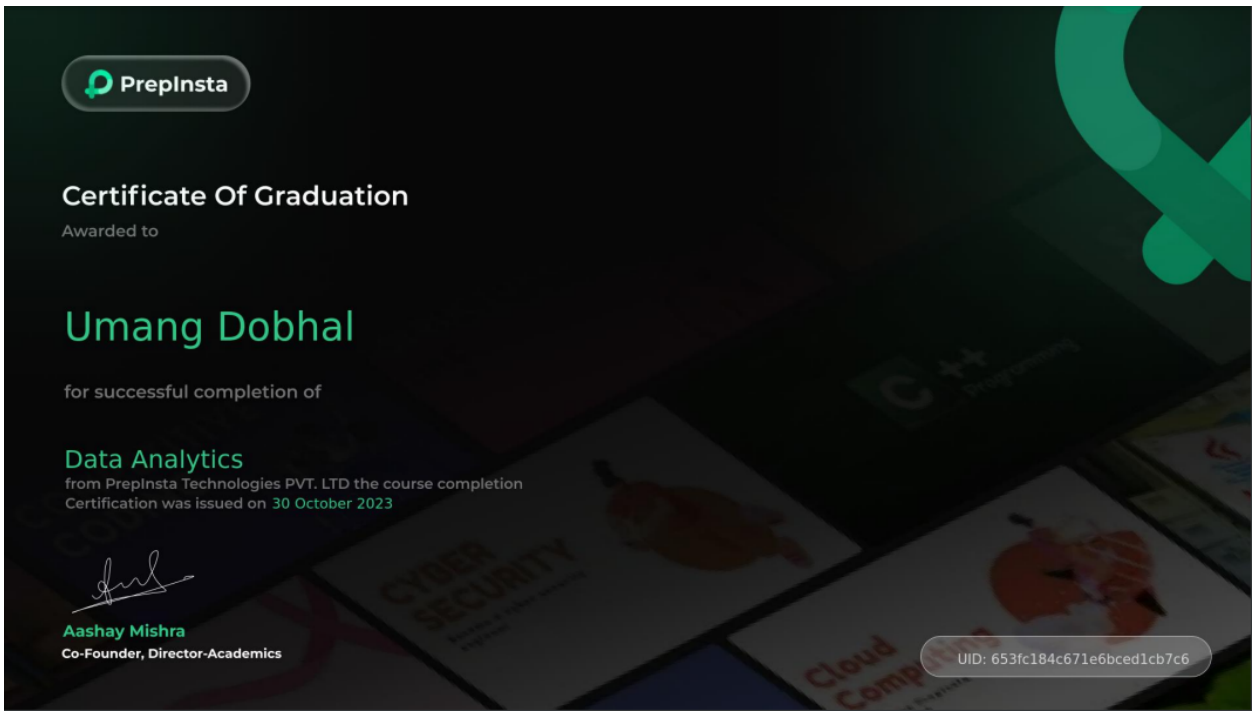
Date:

Umang Dobhal
23166

Certified that the above statement made by the student is correct to the best of our knowledge and belief.

Examined By: **Head of Department**

CERTIFICATE



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CHAPTER 1

INTRODUCTION TO PROJECT

1.1 About the Project

Welcome to the Cricket World Cup 2023 project, an in-depth exploration into the heart of cricketing excellence and data analytics. This project is a testament to my commitment to dissecting and understanding the nuances of each match, unraveling the performances of individual players, and capturing the pulse of one of the most significant sporting events globally.

In our endeavor, we've meticulously curated comprehensive datasets, meticulously entering data from scorecards to provide a detailed and accurate reflection of every aspect of the tournament. From player profiles to batting and bowling summaries, our datasets encapsulate the essence of each match, allowing us to uncover trends, patterns, and standout moments that defined the Cricket World Cup 2023.

1.2 Data Analytics and Power BI Dashboard

In an era where insights are drawn from data, this project is a testament to the power of data analytics. Our datasets serve as a treasure trove of information, and through the lens of Microsoft Power BI, we've transformed this raw data into a visually captivating dashboard. This interactive interface offers a dynamic exploration of the tournament's statistics, allowing users to dive into the performances of players, teams, and the overall tournament dynamics.

Embedded within this dashboard are meticulously crafted DAX measures. These measures distill complex statistics into meaningful metrics, enabling us to identify the top-performing players in categories such as batting, bowling, and overall match impact. Through the seamless integration

of data analytics and visualization, we invite you to embark on a journey that transcends traditional cricket analysis, offering a deeper understanding of the sport's dynamics.

1.3 Format of the Game

The format of the Cricket World Cup 2023 embraced the captivating round-robin structure. With 10 formidable teams in contention, each team faced every other team once in the league stage. This engendered a total of 45 league matches, providing an extensive canvas upon which the drama of the tournament unfolded. The round-robin format ensured that no team escaped the scrutiny of their rivals, setting the stage for intense rivalries, strategic maneuvers, and exceptional displays of skill.

The competitive spirit of the tournament escalated in the knockout stage, featuring two high-stakes semi-finals and culminating in a grand final. These matches were not merely contests; they were epic battles that showcased the pinnacle of cricketing prowess. The culmination of 48 games brought forth a champion, but the journey was marked by moments of brilliance, upsets, and the relentless pursuit of glory.

1.4 Significance of the Cricket World Cup

The Cricket World Cup holds unparalleled significance, particularly in the context of the post-COVID era. Beyond being a premier international cricketing event, the 2023 edition took on added importance, serving as a symbol of resilience and unity. In a world recovering from the challenges of the pandemic, the tournament provided a sense of normalcy and joy, akin to a festival, especially in cricket-crazed nations like India, where the tournament was hosted.

The Cricket World Cup 2023 became a beacon of hope, reconnecting fans with the sport they adore. The significance of the event extended beyond the boundaries of the field, acting as a unifying force for nations and a source of inspiration for millions. In India, in particular, where cricket is akin to a religion, the tournament became a national celebration, elevating the stature of cricketers to virtual deities worshiped by millions.

1.5 Technological Integration

In the Cricket World Cup 2023, the integration of technological advancements such as the Decision Review System (DRS) and enhanced broadcasting technologies wasn't entirely new to the game but marked a continued commitment to improving the sport.

DRS, with its ball-tracking and predictive algorithms, not only corrected on-field decisions but added a layer of strategic intrigue to the matches. The use of multiple camera angles, a longstanding feature but increasingly sophisticated, ensured a meticulous examination of critical moments, from boundary checks to contested catches. This advanced scrutiny not only improved the accuracy of umpiring decisions but also offered fans a more immersive and detailed viewing experience.

CHAPTER 2

TOOLS AND TECHNOLOGY USED

2.1 ESPNcricinfo Website Scraping

Founded in 1993, ESPNcricinfo has ascended to become the world's premier cricket website, standing proudly among the top five single-sport websites globally. Acclaimed for its unwavering commitment to cricketing excellence, ESPNcricinfo has evolved into a beacon for cricket enthusiasts, offering an extensive array of content and resources that transcend traditional sports coverage.

2.1.1 About ESPNcricinfo

- Established Legacy: Founded in 1993, ESPNcricinfo has nurtured an established legacy as the foremost cricket-centric platform, fostering an environment where cricket aficionados converge to celebrate the sport.
- Comprehensive Content: ESPNcricinfo's content spans a rich tapestry, encompassing news, live ball-by-ball coverage of all Test and one-day international matches, and features crafted by some of the globe's most esteemed cricketers and cricket writers. This commitment to quality ensures that fans are immersed in the latest developments, expert analyses, and captivating narratives.
- Statistical Prowess: Setting itself apart, ESPNcricinfo boasts in-depth statistics covering every facet of the game. With a meticulous database encapsulating details on all 3000 international and 50,000 first-class cricketers, the platform serves as an invaluable resource for statistical insights and historical perspectives.

2.1.2 ESPNcricinfo's Evolution

- Wholly Owned Subsidiary: As a testament to its global impact, ESPNcricinfo now stands as a wholly owned subsidiary of ESPN Inc., the preeminent multimedia sports entertainment company. This affiliation underscores ESPNcricinfo's commitment to delivering cricket content at the intersection of accuracy, innovation, and accessibility.

- Multi-Platform Accessibility: Embracing the digital era, ESPNcricinfo extends its reach to cricket fans across the globe through online media and a plethora of mobile platforms and handheld devices. This commitment to multi-platform accessibility ensures that cricket enthusiasts can engage with the sport seamlessly, irrespective of their preferred device or location.

2.2 Introduction to Power BI

Microsoft Power BI, a robust business analytics tool, stands as the cornerstone of our Cricket World Cup 2023 project. With its intuitive interface and powerful capabilities, Power BI empowers us to transform raw data into meaningful insights, providing a dynamic and interactive visualization of the tournament's dynamics.

2.2.1 Key Features:

1. Data Cleaning and Transformation:
   Power BI excels in data preparation and cleaning. In our project, this feature played a pivotal role in refining the extracted data from ESPNcricinfo. White spaces were eradicated, columns were formatted for consistency, and additional contextual columns were seamlessly integrated.
2. Model View:
   The model view in Power BI allows for a comprehensive understanding of the data relationships within our datasets. Leveraging this feature, we meticulously designed a robust data model that forms the backbone of our analytical framework. The relationships between tables were established, ensuring seamless interactions and accurate calculations.

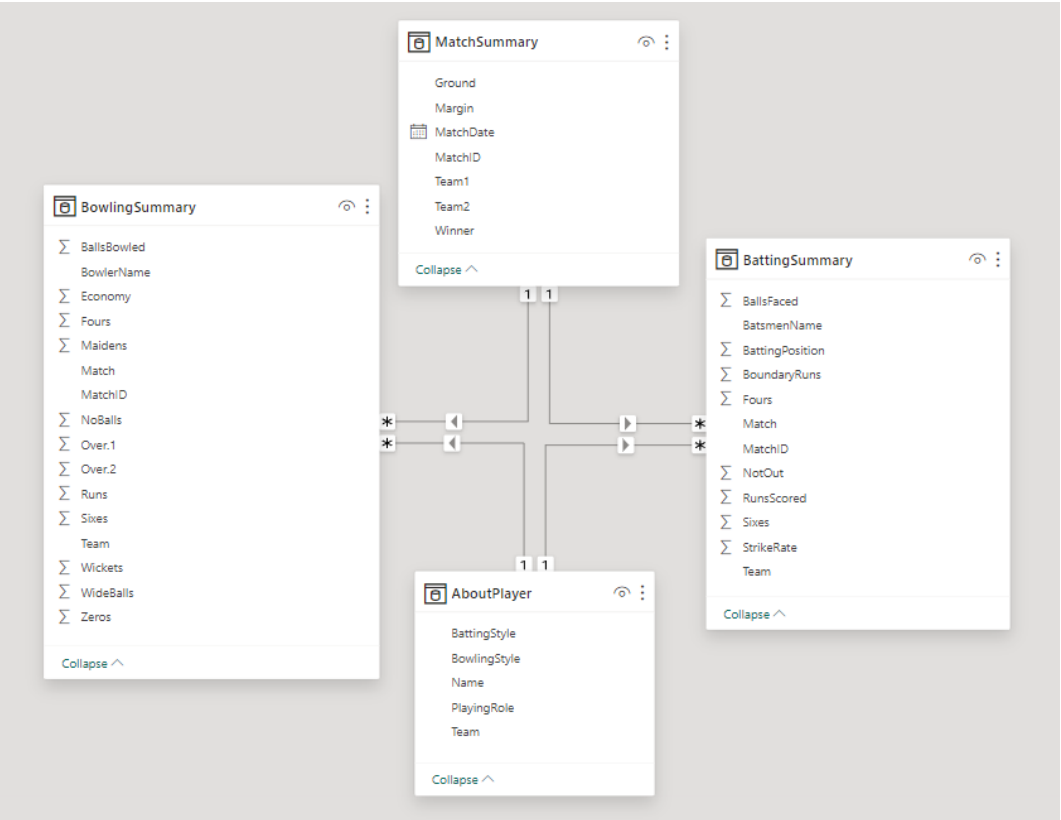

Fig 2.2.1 Model View

3. DAX Measures:

   The power of Data Analysis Expressions (DAX) measures in Power BI cannot be overstated. These measures serve as the analytical engine, allowing us to create calculated columns and derive intricate metrics from the datasets. In our project, DAX measures were crafted to compute batting averages, bowling economy rates, and other key performance indicators critical to cricket analysis.

4. Advanced Visualization:

   Power BI's visualization capabilities breathe life into our datasets. From dynamic charts illustrating player performance trends to engaging dashboards showcasing team statistics, the platform allows us to present insights in a visually compelling manner. This not only enhances user engagement but also facilitates a more profound understanding of the cricketing data.

5. Cross-Filtering and Highlighting:

   The ability to cross-filter and highlight specific data points within Power BI adds an interactive layer to our project. Users can delve into the details of individual matches,

players, or teams with just a click, fostering a dynamic exploration of the Cricket World Cup 2023 data.

6. Multi-Platform Accessibility:
   Just as ESPNcricinfo embraces multi-platform accessibility, Power BI aligns with this ethos. Our project's dashboards and visualizations are accessible across various devices, ensuring that cricket enthusiasts can engage with the data seamlessly on desktops, tablets, or mobile devices.
7. Real-time Analytics:
   Power BI's real-time analytics feature enhances the immediacy of our project. As we update data and make adjustments, users can witness real-time changes in visualizations, providing an up-to-the-minute perspective on cricketing statistics.

2.3 Data Cleaning and Formatting in Power BI

The raw data extracted from ESPNcricinfo underwent a meticulous transformation within the dynamic environment of Microsoft Power BI. This phase of the project was dedicated to enhancing the quality and readability of the datasets, ensuring that the information gleaned from the scorecards was presented in a structured and coherent manner.

- Clearing White Spaces: Addressing any residual white spaces or formatting discrepancies was a crucial step in data cleaning. This process not only improved the aesthetics of the datasets but also streamlined subsequent analytical operations.
- Formatting Data Columns: To facilitate better comprehension and analysis, data columns were formatted to adhere to consistent standards. This included ensuring uniform date formats, aligning text fields, and standardizing numerical representations.
- Addition of Supplementary Columns: Recognizing the need for additional insights, we introduced supplementary columns to the datasets. For instance, the calculation of total runs scored through boundaries and the determination of the total balls bowled by each bowler in every game involved the creation of new, contextually relevant columns.
- Overcoming Delimiter Challenges: The 'Over' column, indicating the number of overs bowled by a player, presented a unique challenge. Utilizing Power BI's capabilities, we

adeptly split this column using delimiters to derive insights into the precise number of balls bowled by each bowler in every match.

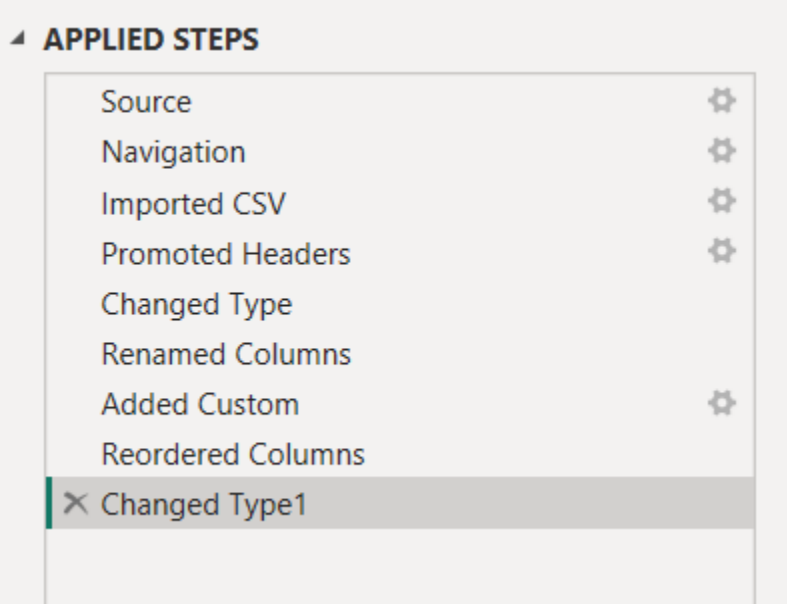

Fig 2.2 Data Cleaning and Formatting

CHAPTER 3

STEPS AND OUTPUT

3.1 Creating Datasets from ESPNcricinfo

- Web Scraping and Data Extraction

  The journey began with the meticulous extraction of data from the ESPNcricinfo website. Utilizing web scraping techniques, we systematically retrieved detailed scorecard information after each match. The raw data included essential details about players, teams, batting and bowling statistics, match outcomes, and much more. This data formed the foundation for our comprehensive datasets.
- Manual Data Entry and Excel Sheets

  To ensure accuracy and completeness, adopted a hands-on approach by manually copying and entering data from the ESPNcricinfo scorecards into designated Excel sheets. Each sheet was meticulously organized to represent specific aspects of the cricketing data, such as player information, batting summaries, bowling summaries, and match summaries.

3.1.1 DATASETS

3.1.1.1 AboutPlayer

The "AboutPlayer" Excel sheet serves as the repository for essential player information. It includes columns such as "Name," "Team," "BattingStyle," "BowlingStyle," and "PlayingRole." This dataset provides a comprehensive overview of the players participating in the Cricket World Cup 2023, facilitating insights into their playing styles and roles within their respective teams.

	A	B	C	D	E	F
1	Name	Team	BattingStyle	BowlingStyle	PlayingRole	
2	Rohit Sharma	India	Right Hand Bat	Right Arm Offbreak	Top Order Batter	
3	Ishan Kishan	India	Left Hand Bat		Wicketkeeper Batter	
4	Sheryas Iyer	India	Right Hand Bat	Right Arm Offbreak, Legbreak Googly	Top Order Batter	
5	Virat Kohli	India	Right Hand Bat	Right Arm Medium	Top Order Batter	
6	KL Rahul	India	Right Hand Bat		Wicketkeeper Batter	
7	Shubman Gill	India	Right Hand Bat	Right Arm Offbreak	Opening Batter	
8	Suryakumar Yadav	India	Right Hand Bat	Right Arm Medium, Right Arm Offbreak	Batter	
9	Hardik Pandya	India	Right Hand Bat	Right Arm Medium Fast	Allrounder	
10	Ravichandran Ashwin	India	Right Hand Bat	Right Arm Offbreak	Bowling Allrounder	
11	Ravindra Jadeja	India	Left Hand Bat	Slow Left Arm Orthodox	Allrounder	
12	Jasprit Bumrah	India	Right Hand Bat	Right Arm Fast	Bowler	
13	Kuldeep Yadav	India	Left Hand Bat	Left Arm Wrist Spin	Bowler	
14	Mohammed Shami	India	Right Hand Bat	Right Arm Fast	Bowler	
15	Mohammed Siraj	India	Right Hand Bat	Right Arm Fast	Bowler	
16	Shardul Thakur	India	Right Hand Bat	Right Arm Medium	Bowler	
17	Hashmatullah Shahidi	Afghanistan	Left Hand Bat	Right Arm Offbreak	Top Order Batter	
18	Ibrahim Zadran	Afghanistan	Right Hand Bat	Right Arm Medium Fast	Opening Batter	
19	Ikram Alikhil	Afghanistan	Left Hand Bat		Wicketkeeper Batter	
20	Najibullah Zadran	Afghanistan	Left Hand Bat	Right Arm Offbreak	Middle Order Batter	
21	Rahmanullah Gurbaz	Afghanistan	Right Hand Bat		Wicketkeeper Batter	
22	Riaz Hassan	Afghanistan	Right Hand Bat		Batter	
23	Azmatullah Omarzai	Afghanistan	Right Hand Bat	Right Arm Medium Fast	Allrounder	
24	Mohammed Nabi	Afghanistan	Right Hand Bat	Right Arm Medium Fast	Allrounder	
25	Rahmat Shah	Afghanistan	Right Hand Bat	Legbreak Googly	Allrounder	
26	Rashid Khan	Afghanistan	Right Hand Bat	Legbreak Googly	Bowling Allrounder	
27	Abdul Rahman	Afghanistan	Right Hand Bat	Right Arm Fast Medium	Bowler	
28	Fazalhaq Farooqi	Afghanistan	Right Hand Bat	Left Arm Fast Medium	Bowler	
29	Mujeeb Ur Rahman	Afghanistan	Right Hand Bat	Right Arm Offbreak	Bowler	

Fig 3.1.1 AboutPlayer.xlsx

3.1.1.2 BattingSummary

The "BattingSummary" Excel sheet captures the dynamic performances of batsmen in each match. It includes details such as "Match," "TeamInnings," "BattingPosition," "BatsmenName," "RunsScored," "BallsFaced," "4s," "6s," "StrikeRate," "NotOut," and "MatchID." This dataset offers a granular view of batting statistics, enabling the analysis of individual player contributions and team dynamics during each game.

	A	B	C	D	E	F	G	H	I	J	K	L
1	Match	TeamInnings	BattingPosition	BatsmenName	RunsScored	BallsFaced	4s	6s	StrikeRate	NotOut	MatchID	
2	England vs New Zealand	England	1	Jonny Bairstow	33	35	4	1	94.28	0	ODI # 4658	
3	England vs New Zealand	England	2	Dawid Malan	14	24	2	0	58.33	0	ODI # 4658	
4	England vs New Zealand	England	3	Joe Root	77	86	4	1	89.53	0	ODI # 4658	
5	England vs New Zealand	England	4	Harry Brook	25	16	4	1	156.25	0	ODI # 4658	
6	England vs New Zealand	England	5	Moeen Ali	11	17	1	0	64.70	0	ODI # 4658	
7	England vs New Zealand	England	6	Jos Buttler	43	42	2	2	102.38	0	ODI # 4658	
8	England vs New Zealand	England	7	Liam Livingstone	20	22	3	0	90.90	0	ODI # 4658	
9	England vs New Zealand	England	8	Sam Curran	14	19	0	0	73.68	0	ODI # 4658	
10	England vs New Zealand	England	9	Chris Woakes	11	12	1	0	91.66	0	ODI # 4658	
11	England vs New Zealand	England	10	Adil Rashid	15	13	0	1	115.38	1	ODI # 4658	
12	England vs New Zealand	England	11	Mark Wood	13	14	0	0	92.85	1	ODI # 4658	
13	England vs New Zealand	New Zealand	1	Devon Conway	152	121	19	3	125.61	1	ODI # 4658	
14	England vs New Zealand	New Zealand	2	Will Young	0	1	0	0	0.00	0	ODI # 4658	
15	England vs New Zealand	New Zealand	3	Rachin Ravindra	123	96	11	5	128.12	1	ODI # 4658	

Fig 3.1.2 BattingSummary.xlsx

3.1.1.3 BowlingSummary

The "BowlingSummary" Excel sheet encapsulates the bowling performances in the Cricket World Cup 2023. It includes columns like "Match," "Team," "BowlerName," "Over," "Maidens," "Runs," "Wickets," "Economy," "0s," "4s," "6s," "WideBalls," "NoBalls," and "MatchID." This dataset provides a detailed perspective on bowlers' contributions, their economy rates, and wicket-taking abilities throughout the tournament.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Match	Team	BowlerName	Over	Maidens	Runs	Wickets	Economy	0s	4s	6s	WideBalls	NoBalls	MatchID	
2	England vs New Zealand	New Zealand	Trent Boult	10	1	48	1	4.8	34	3	2	1	0	ODI # 4658	
3	England vs New Zealand	New Zealand	Matt Henry	10	1	48	3	4.8	31	6	0	0	0	ODI # 4658	
4	England vs New Zealand	New Zealand	Mitchell Santner	10	0	37	2	3.7	26	0	0	1	0	ODI # 4658	
5	England vs New Zealand	New Zealand	James Neesham	7	0	56	0	8	15	5	2	2	0	ODI # 4658	
6	England vs New Zealand	New Zealand	Rachin Ravindra	10	0	76	1	7.6	14	6	2	0	0	ODI # 4658	
7	England vs New Zealand	New Zealand	Glenn Phillips	3	0	17	2	5.66	5	1	0	0	0	ODI # 4658	
8	England vs New Zealand	England	Chris Woakes	6	0	45	0	7.5	18	7	1	0	0	ODI # 4658	
9	England vs New Zealand	England	Sam Curran	6	2	47	1	7.83	17	6	1	2	0	ODI # 4658	
10	England vs New Zealand	England	Mark Wood	5	0	55	0	11	9	7	2	1	0	ODI # 4658	
11	England vs New Zealand	England	Moeen Ali	9.2	0	60	0	6.42	20	2	3	0	0	ODI # 4658	
12	England vs New Zealand	England	Adil Rashid	7	0	47	0	6.71	15	4	1	0	0	ODI # 4658	
13	England vs New Zealand	England	Liam Livingstone	3	0	24	0	8	7	4	0	0	0	ODI # 4658	
14	Pakistan vs Netherlands	Netherlands	Aryan Dutt	10	0	48	1	4.8	37	7	0	2	0	ODI # 4659	
15	Pakistan vs Netherlands	Netherlands	Logan van Beek	6	0	30	1	5	20	4	0	1	0	ODI # 4659	
16	Pakistan vs Netherlands	Netherlands	Colin Ackermann	8	1	39	2	4.87	26	1	2	0	0	ODI # 4659	
17	Pakistan vs Netherlands	Netherlands	Paul van Meekeren	6	0	40	1	6.66	16	5	0	2	0	ODI # 4659	
18	Pakistan vs Netherlands	Netherlands	Bas de Leede	9	0	62	4	6.88	22	9	0	3	0	ODI # 4659	
19	Pakistan vs Netherlands	Netherlands	Roelof van der Merwe	6	0	36	0	6	14	2	1	0	1	ODI # 4659	
20	Pakistan vs Netherlands	Netherlands	Vikramjit Singh	2	0	16	0	8	5	3	0	0	0	ODI # 4659	
21	Pakistan vs Netherlands	Netherlands	Saqib Zulfiqar	2	0	15	0	7.5	3	2	0	0	0	ODI # 4659	
22	Pakistan vs Netherlands	Pakistan	Shaheen Shah Afridi	7	0	37	1	5.28	26	5	0	2	0	ODI # 4659	
23	Pakistan vs Netherlands	Pakistan	Hasan Ali	7	1	33	2	4.71	31	6	0	4	0	ODI # 4659	
24	Pakistan vs Netherlands	Pakistan	Haris Rauf	9	0	43	3	4.77	33	5	1	2	0	ODI # 4659	
25	Pakistan vs Netherlands	Pakistan	Iftikhar Ahmed	3	0	16	1	5.33	7	1	0	0	0	ODI # 4659	
26	Pakistan vs Netherlands	Pakistan	Mohammad Nawaz	7	0	31	1	4.42	23	2	1	0	0	ODI # 4659	
27	Pakistan vs Netherlands	Pakistan	Shadab Khan	8	0	45	1	5.62	23	1	2	1	0	ODI # 4659	

Fig 3.1.3 BowlingSummary.xlsx

3.1.1.4 MatchSummary

The "MatchSummary" Excel sheet is a comprehensive repository of match-level information. It includes columns such as "Team1," "Team2," "Winner," "Margin," "Ground," "MatchDate," and "MatchID." This dataset allows for an in-depth analysis of each match, including the participating teams, match outcomes, margins of victory, and venue details.

	A	B	C	D	E	F	G	H
1	Team1	Team2	Winner	Margin	Ground	MatchDate	MatchID	
2	England	New Zealand	New Zealand	9 Wickets	Ahmedabad	05 October 2023	ODI # 4658	
3	Pakistan	Netherlands	Pakistan	81 Runs	Hyderabad	06 October 2023	ODI # 4659	
4	Afghanistan	Bangladesh	Bangladesh	6 Wickets	Dharamsala	07 October 2023	ODI # 4660	
5	South Africa	Sri Lanka	South Africa	102 Runs	Delhi	07 October 2023	ODI # 4661	
6	India	Australia	India	6 Wickets	Chennai	08 October 2023	ODI # 4662	
7	New Zealand	Netherlands	New Zealand	99 Runs	Hyderabad	09 October 2023	ODI # 4663	
8	England	Bangladesh	England	137 Runs	Dharamsala	10 October 2023	ODI # 4664	
9	Pakistan	Sri Lanka	Pakistan	6 Wickets	Hyderabad	10 October 2023	ODI # 4665	
10	India	Afghanistan	India	8 Wickets	Delhi	11 October 2023	ODI # 4666	
11	Australia	South Africa	South Africa	134 Runs	Lucknow	12 October 2023	ODI # 4667	
12	Bangladesh	New Zealand	New Zealand	8 Wickets	Chennai	13 October 2023	ODI # 4668	
13	India	Pakistan	India	7 Wickets	Ahmedabad	14 October 2023	ODI # 4669	
14	Afghanistan	England	Afghanistan	69 Runs	Delhi	15 October 2023	ODI # 4670	
15	Australia	Sri Lanka	Australia	5 Wickets	Lucknow	16 October 2023	ODI # 4671	
16	Netherlands	South Africa	Netherlands	38 Runs	Dharamsala	17 October 2023	ODI # 4672	
17	Afghanistan	New Zealand	New Zealand	149 Runs	Chennai	18 October 2023	ODI # 4673	
18	India	Bangladesh	India	7 Wickets	Pune	19 October 2023	ODI # 4674	
19	Australia	Pakistan	Australia	62 Runs	Bengaluru	20 October 2023	ODI # 4675	
20	Netherlands	Sri Lanka	Sri Lanka	5 Wickets	Lucknow	21 October 2023	ODI # 4676	
21	England	South Africa	South Africa	229 Runs	Mumbai	21 October 2023	ODI # 4677	
22	India	New Zealand	India	4 Wickets	Dharamsala	22 October 2023	ODI # 4678	
23	Afghanistan	Pakistan	Afghanistan	8 Wickets	Chennai	23 October 2023	ODI # 4679	
24	Bangladesh	South Africa	South Africa	129 Runs	Mumbai	24 October 2023	ODI # 4680	
25	Australia	Netherlands	Australia	309 Runs	Delhi	25 October 2023	ODI # 4681	
26	England	Sri Lanka	Sri Lanka	8 Wickets	Bengaluru	26 October 2023	ODI # 4682	
27	Pakistan	South Africa	South Africa	1 Wickets	Chennai	27 October 2023	ODI # 4683	
28	Australia	New Zealand	Australia	5 Runs	Dharamsala	28 October 2023	ODI # 4684	
29	Bangladesh	Netherlands	Netherlands	87 Runs	Kolkata	28 October 2023	ODI # 4685	
30	India	England	India	100 Runs	Lucknow	29 October 2023	ODI # 4686	

Fig 3.1.4 MatchSummary.xlsx

3.2 Transforming Data Sets in Power BI

- Data Cleaning and Standardization

  Power BI became our canvas for refining and shaping the raw data. The initial step involved data cleaning and standardization. White spaces were eliminated, and data columns were formatted for consistency, ensuring a clean and organized foundation for subsequent analyses.

- Advanced Transformations

  To enhance the analytical capabilities of the datasets, advanced transformations were employed within Power BI. Techniques such as splitting the 'Over' column into individual components, calculating new metrics like total runs scored through boundaries, and refining existing columns ensured that the data was optimized for in-depth analysis.

3.2.1 Changes in AboutPlayer.xlsx

1. Promoted the actual column names which were intended to be used.

	Column1	Column2	Column3	Column4	Column5
1	Name	Team	BattingStyle	BowlingStyle	PlayingRole
2	Rohit Sharma	India	Right Hand Bat	Right Arm Offbreak	Top Order Batter
3	Ishan Kishan	India	Left Hand Bat		Wicketkeeper Batter

Fig 3.2.1 Before promoting the headers

	Name	Team	BattingStyle	BowlingStyle	PlayingRole
1	Rohit Sharma	India	Right Hand Bat	Right Arm Offbreak	Top Order Batter
2	Ishan Kishan	India	Left Hand Bat		Wicketkeeper Batter

Fig 3.2.2 After promoting the headers

2. Trimmed the text to remove white spaces.
3. All the applied steps as follows:

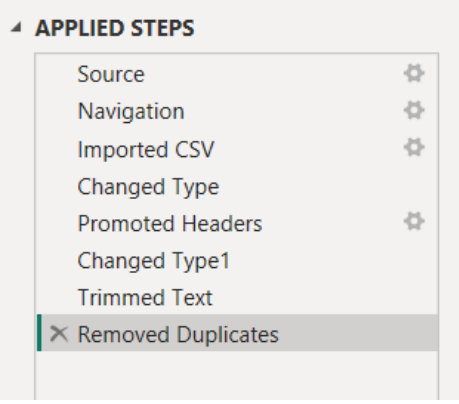

Fig 3.2.3 All applied changes in AboutPlayer.xlsx

3.2.2 Changes in BattingSummary.xlsx

1. Promoted the actual column which was intended to use.

	Column1	Column2	Column3	Column4	Column5	Column6
1	Match	TeamInnings	BattingPosition	BatsmenName	RunsScored	BallsFaced
2	England vs New Zealand	England	1	Jonny Bairstow	33	35
3	England vs New Zealand	England	2	Dawid Malan	14	24
4	England vs New Zealand	England	3	Joe Root	77	86
5	England vs New Zealand	England	4	Harry Brook	25	16

Fig 3.2.4 Before promoting the headers

	Match	Team	BattingPosition	BatsmenName	RunsScored	BallsFaced
1	England vs New Zealand	England	1	Jonny Bairstow	33	35
2	England vs New Zealand	England	2	Dawid Malan	14	24
3	England vs New Zealand	England	3	Joe Root	77	86
4	England vs New Zealand	England	4	Harry Brook	25	16

Fig 3.2.5 After promoting the headers

2. Renamed several columns.

```
= Table.RenameColumns(#"Changed Type",{{"TeamInnings", "Team"}, {"4s", "Fours"}, {"6s", "Sixes"}})
```

Fig 3.2.6 Formula for renaming column

3. Added a custom column.

```
= Table.AddColumn(#"Renamed Columns", "BoundaryRuns", each [Fours]*4 + [Sixes]*6)
```

Fig 3.2.7 Formula for adding a column

4. All applied changes as follows:

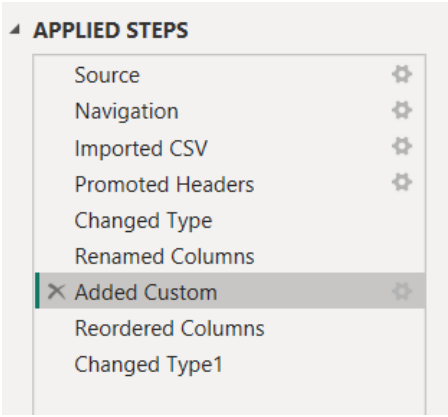

Fig 3.2.8 All applied changes in BattingSummary.xlsx

3.2.3 Changes in BowlingSummary.xlsx

1. Splitted the column of 'Over' by delimiter to create a new column named 'BallsBowled' for total balls bowled by the particular bowler.

```
Table.SplitColumn(Table.TransformColumnTypes(#"Renamed Columns", {{"Over", type text}}, "en-IN"), "Over", Splitter.SplitTextByDelimiter
    (".", QuoteStyle.Csv), {"Over.1", "Over.2"})
```

Fig 3.2.9 Splitting of column

2. Creating a new column

```
= Table.AddColumn(#"Replaced Value", "BallsBowled", each [Over.1]*6 + [Over.2])
```

Fig 3.2.10 Creating BallsBowled

3. All applied changes as follows:

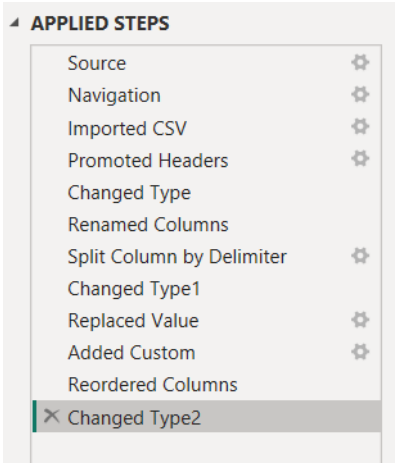

Fig 3.2.11 All applied changes in BowlingSummary.xlsx

3.2.4 Changes in MatchSummary.xlsx

1. Changed the data types of several columns.

```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Team1", type text}, {"Team2", type text}, {"Winner", type text}, {"Margin", type text},
    {"Ground", type text}, {"MatchDate", type date}, {"MatchID", type text}})
```

Fig 3.2.12 Change of Data Types

3.3 Creating a Model View

- Establishing Relationships

  The heart of our analytical framework lies in the model view of Power BI. Here, we meticulously crafted relationships between different tables, creating a cohesive structure that allowed for seamless interactions between data points. Relationships were established based on common identifiers, ensuring the accuracy and integrity of the model.

- Defining Hierarchies

  To facilitate intuitive exploration, hierarchies were defined within the model view. This step enabled users to navigate effortlessly through levels of information, from overarching tournament insights to granular player statistics.

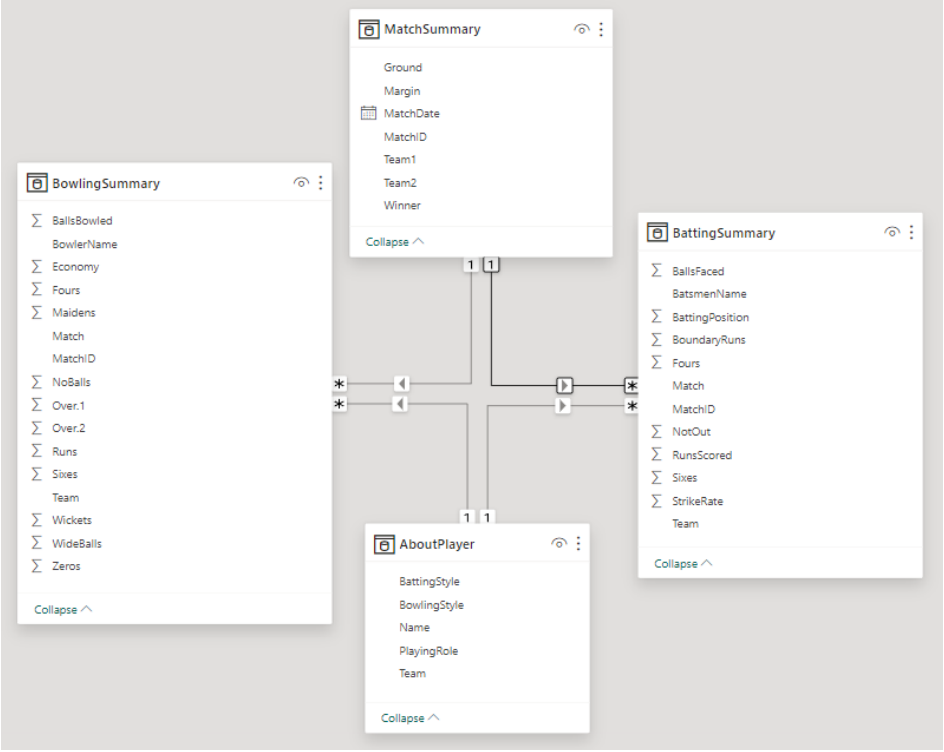

Fig 3.3.1 Model View

1. MatchSummary and BattingSummary:

   The "MatchSummary" and "BattingSummary" datasets were seamlessly linked through a shared identifier, the 'MatchID.' This connection allows for a comprehensive exploration of match-level details alongside individual batting performances.

2. MatchSummary and BowlingSummary:

   Similarly, the "MatchSummary" and "BowlingSummary" datasets were integrated using the 'MatchID' as the common link. This connection enables a holistic examination of match outcomes alongside detailed insights into bowling performances.

3. AboutPlayer and BattingSummary:

The "AboutPlayer" and "BattingSummary" datasets were intelligently connected using the 'Name' and 'BatsmenName' columns. This association allows for a unified view, linking player profiles with their respective batting statistics.

4. AboutPlayer and BowlingSummary:
   The synergy continued with the connection between "AboutPlayer" and "BowlingSummary," where the 'Name' and 'BowlerName' columns served as the binding factors. This linkage facilitates a comprehensive understanding of player profiles alongside their bowling contributions.

3.4 Creating several DAX Measures

- Calculating Performance Metrics
  Data Analysis Expressions (DAX) measures played a pivotal role in distilling complex statistics into meaningful metrics. Performance indicators such as batting averages, bowling economy rates, and strike rates were calculated to provide a comprehensive understanding of player and team performances throughout the tournament.

3.4.1 Created DAX Measures with appropriate formulas

3.4.1.1 Batting

1. Average Balls Faced:
   1.1. Calculates the average number of balls faced by batsmen across all innings.
   1.2. Formula: AVERAGE(BattingSummary[BallsFaced])
2. Batting Average:
   2.1. Derives the batting average, which is the total runs scored divided by the total number of innings batted, handling cases where the denominator is zero.
   2.2. Formula: DIVIDE([TotalRuns], [TotalInningsBatted], 0)
3. Batting Position:
   3.1. Rounds up the average batting position of the batsmen to the nearest whole number.
   3.2. Formula: ROUNDUP(AVERAGE(BattingSummary[BattingPosition]), 0)

4. Boundary Percentage:
    4.1. Calculates the percentage of total runs scored through boundaries (4s and 6s) in relation to the overall runs scored.
    4.2. Formula: DIVIDE(SUM(BattingSummary[BoundaryRuns]), [TotalRuns], 0) * 100
5. Dismissals:
    5.1. Counts the number of times a batsman got dismissed (not out excluded).
    5.2. Formula: CALCULATE(COUNTROWS('BattingSummary'), BattingSummary[NotOut] = 0)
6. Strike Rate:
    6.1. Computes the strike rate, representing the number of runs scored per 100 balls faced.
    6.2. Formula: DIVIDE([TotalRuns], [TotalBallsFaced], 0) * 100
7. Total Balls Faced:
    7.1. Sum of the total number of balls faced by all batsmen.
    7.2. Formula: SUM(BattingSummary[BallsFaced])
8. Total Innings Batted:
    8.1. Counts the total number of innings batted by all batsmen.
    8.2. Formula: COUNT(BattingSummary[MatchID])
9. Total Runs:
    9.1. Sum of the total runs scored by all batsmen.
    9.2. Formula: SUM(BattingSummary[RunsScored])

3.4.1.2 Bowling

1. Bowling Average:
    1.1. Calculates the bowling average, representing the average number of runs conceded per wicket taken, handling cases where the denominator is zero.
    1.2. Formula: DIVIDE([TotalRunsConceded], [Wickets], 0)
2. Bowling Strike Rate:
    2.1. Computes the bowling strike rate, which represents the average number of balls bowled per wicket taken, handling cases where the denominator is zero.

2.2. Formula: DIVIDE([TotalBallsBowled], [Wickets], 0)

3. Dot Ball Percentage:
    3.1. Calculates the percentage of dot balls (no runs conceded) in relation to the total number of balls bowled.
    3.2. Formula: DIVIDE(SUM(BowlingSummary[Zeros]), SUM(BowlingSummary[BallsBowled]), 0) * 100
4. Economy:
    4.1. Computes the economy rate, representing the average number of runs conceded per over bowled.
    4.2. Formula: DIVIDE([TotalRunsConceded], ([TotalBallsBowled]/6), 0)
5. Total Balls Bowled:
    5.1. Sum of the total number of balls bowled by all bowlers.
    5.2. Formula: SUM(BowlingSummary[BallsBowled])
6. Total Innings Bowled:
    6.1. Calculates the total number of unique innings bowled by all bowlers.
    6.2. Formula: DISTINCTCOUNT(BowlingSummary[MatchID])
7. Total Runs Conceded:
    7.1. Sum of the total runs conceded by all bowlers.
    7.2. Formula: SUM(BowlingSummary[Runs])
8. Wickets:
    8.1. Sum of the total number of wickets taken by all bowlers.
    8.2. SUM(BowlingSummary[Wickets])

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Name	TotalRuns	TotalInningsBatted	Dismissals	BattingAverage	TotalBallsFaced	StrikeRate	BattingPosition	BoundaryPercentage	AverageBallsFaced	Wickets	TotalBallsBowled	TotalRunsConceded	Economy	BowlingStrikeRate	BowlingAverage	TotalInningsBowled	DotBallPercentage
2		1389.00	53.00	47.00	26.21	1588.00	87.47	5.00	51.40	29.96	12.00	483.00	397.00	4.93	40.25	33.08	14.00	51.55
3	Abdullah Shafique	336.00	8.00	8.00	42.00	360.00	93.33	1.00	58.93	45.00								
4	Adam Zampa	48.00	6.00	3.00	8.00	60.00	80.00	11.00	41.67	10.00	23.00	576.00	515.00	5.36	25.04	22.39	11.00	45.31
5	Adil Rashid	92.00	9.00	6.00	10.22	91.00	101.10	10.00	43.48	10.11	15.00	478.00	413.00	5.18	31.87	27.53	9.00	46.23
6	Agha Salman	51.00	1.00	1.00	51.00	45.00	113.33	6.00	58.82	45.00	0.00	30.00	46.00	9.20	0.00	0.00	2.00	33.33
7	Aiden Markram	406.00	10.00	9.00	40.60	366.00	110.93	5.00	56.65	36.60	1.00	111.00	85.00	4.59	111.00	85.00	4.00	56.76
8	Alex Carey	0.00	1.00	1.00	0.00	2.00	0.00	6.00	0.00	2.00								
9	Andile Phehlukwayo	39.00	1.00		39.00	37.00	105.41	7.00	56.41	37.00	1.00	42.00	36.00	5.14	42.00	36.00	1.00	47.62
10	Angelo Mathews	51.00	4.00	4.00	12.75	78.00	65.38	7.00	43.14	19.50	6.00	133.00	107.00	4.83	22.17	17.83	5.00	51.88
11	Aryan Dutt	70.00	9.00	6.00	7.78	87.00	80.46	10.00	48.57	9.67	10.00	465.00	426.00	5.50	46.50	42.60	9.00	57.20
12	Azmatullah Omarzai	353.00	8.00	5.00	44.13	361.00	97.78	6.00	51.56	45.13	7.00	228.00	270.00	7.11	32.57	38.57	9.00	48.25
13	Babar Azam	320.00	9.00	8.00	35.56	386.00	82.90	3.00	47.50	42.89								
14	Bas de Leede	139.00	9.00	9.00	15.44	199.00	69.85	5.00	51.80	22.11	16.00	402.00	487.00	7.27	25.13	30.44	8.00	45.52

Fig 3.4.1 Data through DAX measures

3.5 Creating Dashboards

3.5.1 Team India Cumulative Result

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Name	TotalRuns	TotalInningsBatted	Dismissals	BattingAverage	TotalBallsFaced	StrikeRate	BattingPosition	BoundaryPercentage	AverageBallsFaced	Wickets	TotalBallsBowled	TotalRunsConceded	Economy	BowlingStrikeRate	BowlingAverage	TotalInningsBowled	DotBallPercentage
2	Ravichandran Ashwin										1.00	60.00	34.00	3.40	60.00	34.00	1.00	53.33
3	Shardul Thakur										2.00	102.00	102.00	6.00	51.00	51.00	3.00	49.02
4	Rohit Sharma	597.00	11.00	11.00	54.27	474.00	125.95	1.00	75.38	43.09	1.00	5.00	7.00	8.40	5.00	7.00	1.00	60.00
5	Ishan Kishan	47.00	2.00	2.00	23.50	48.00	97.92	2.00	68.09	24.00								
6	Shubman Gill	354.00	9.00	8.00	39.33	331.00	106.95	2.00	66.67	36.78	0.00	12.00	11.00	5.50	0.00	0.00	1.00	33.33
7	Virat Kohli	765.00	11.00	8.00	69.55	847.00	90.32	3.00	42.61	77.00	1.00	21.00	15.00	4.29	21.00	15.00	2.00	52.38
8	KL Rahul	452.00	10.00	6.00	45.20	498.00	90.76	5.00	45.58	49.80								
9	Hardik Pandya	11.00	1.00		11.00	8.00	137.50	6.00	54.55	8.00	5.00	99.00	113.00	6.85	19.80	22.60	4.00	52.53
10	Ravindra Jadeja	120.00	5.00	3.00	24.00	118.00	101.69	7.00	38.33	23.60	16.00	561.00	398.00	4.26	35.06	24.88	11.00	56.15
11	Suryakumar Yadav	106.00	7.00	6.00	15.14	105.00	100.95	7.00	50.94	15.00	0.00	12.00	17.00	8.50	0.00	0.00	1.00	41.67
12	Mohammed Shami	10.00	4.00	3.00	2.50	20.00	50.00	8.00	40.00	5.00	24.00	293.00	257.00	5.26	12.21	10.71	7.00	62.46
13	Jasprit Bumrah	18.00	3.00	2.00	6.00	29.00	62.07	9.00	22.22	9.67	20.00	551.00	373.00	4.06	27.55	18.65	11.00	67.51
14	Kuldeep Yadav	19.00	2.00	1.00	9.50	31.00	61.29	10.00	21.05	15.50	15.00	571.00	424.00	4.46	38.07	28.27	11.00	53.42
15	Mohammed Siraj	9.00	1.00	1.00	9.00	8.00	112.50	11.00	44.44	8.00	14.00	495.00	469.00	5.68	35.36	33.50	11.00	56.36

Fig 3.5.1 Team India

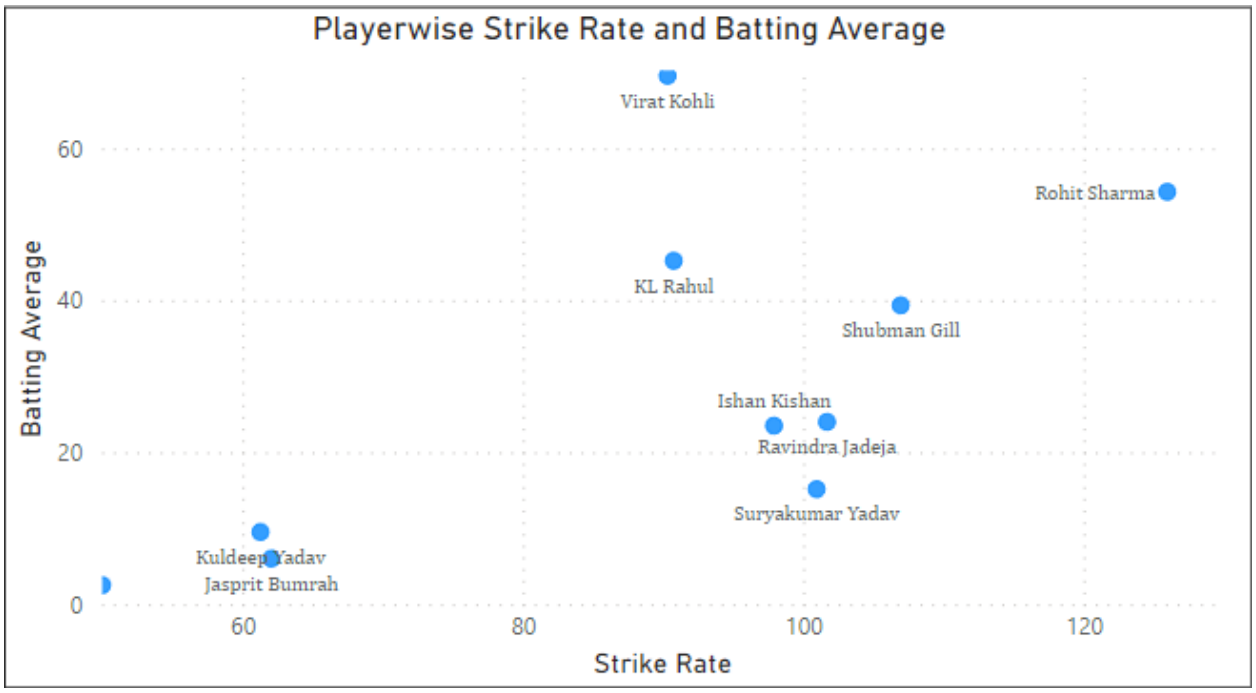

Fig 3.5.2 Scatter Plot between Batting Average and Strike Rate

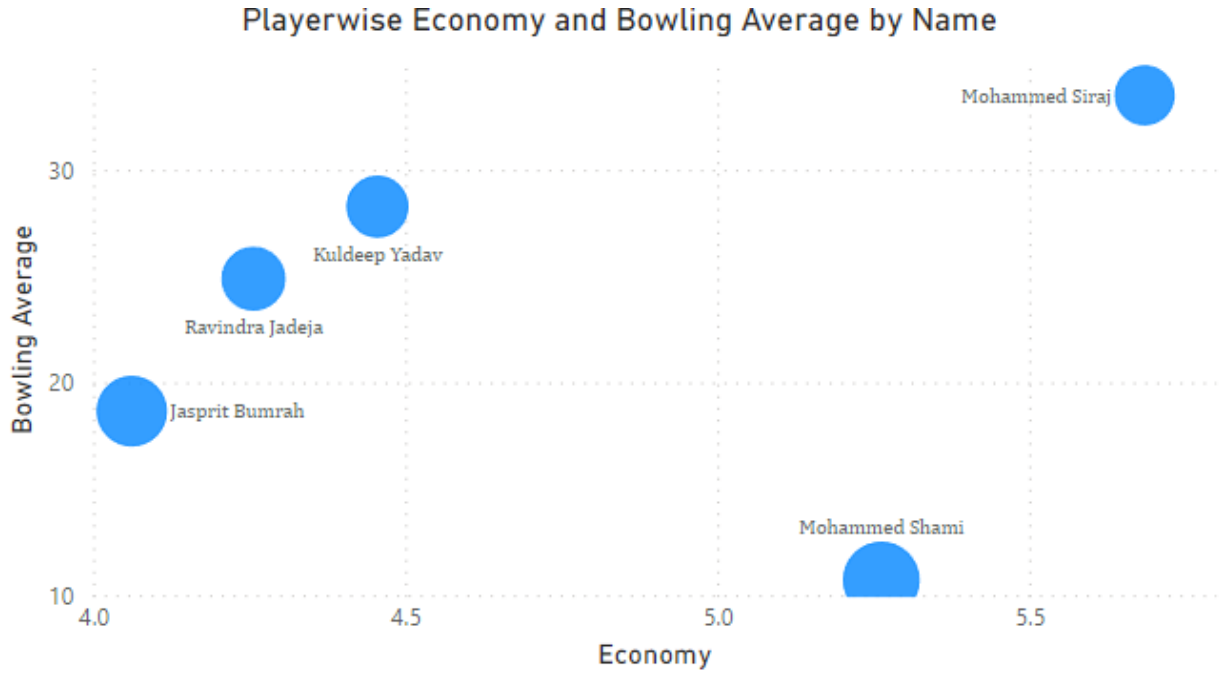

Fig 3.5.3 Scatter Plot between Bowling Average and Economy

3.5.2 Top Order Batsmen

Name	Team	BattingStyle	TotalInningsBatted	TotalRuns	TotalBallsFaced	BattingAverage	StrikeRate	BoundaryPercentage	BattingPosition
Rohit Sharma	India	Right Hand Bat	11	597	474	54.27	125.95	75.38	1.00
Quinton de Kock	South Africa	Left Hand Bat	10	594	555	59.40	107.03	59.60	2.00
Rachin Ravindra	New Zealand	Left Hand Bat	10	578	543	57.80	106.45	55.71	3.00
Travis Head	Australia	Left Hand Bat	6	329	258	54.83	127.52	68.69	2.00
Total			**37**	**2098**	**1830**	**56.70**	**114.64**	**64.44**	**2.00**

Fig 3.5.4 Top Order Batsmen

1. Batting Position Less Than or Equal to 3: This condition ensures that the batsmen being considered occupy one of the top three positions in the batting order, typically associated with the top-order batsmen.
2. Boundary Percentage Greater Than 50: Batsmen with a boundary percentage exceeding 50% are included. This criterion identifies players who frequently score runs through boundaries, showcasing an aggressive and impactful style of batting.
3. Strike Rate Greater Than 100: Batsmen with a strike rate surpassing 100 are selected. This condition highlights players who maintain an above-average scoring rate, contributing to the team's run accumulation.
4. Total Innings Batted Greater Than 4: Batsmen who have participated in more than four innings are considered. This filter ensures a sufficient sample size, allowing for a meaningful assessment of a player's consistency and performance.

5. Batting Average Greater Than 50: Batsmen with a batting average exceeding 50 are included. This criterion identifies players with a consistently high average, signifying their effectiveness in scoring runs.

3.5.3 Middle Order Batsmen

Name	Team	BattingStyle	TotalRuns	BattingAverage	StrikeRate	BoundaryPercentage	BattingPosition
Kane Williamson	New Zealand	Right Hand Bat	256	64.00	93.43	53.13	3.00
Rachin Ravindra	New Zealand	Left Hand Bat	578	57.80	106.45	55.71	3.00
Virat Kohli	India	Right Hand Bat	765	69.55	90.32	42.61	3.00
Daryl Mitchell	New Zealand	Right Hand Bat	552	61.33	111.07	58.70	4.00
Mohammad Rizwan	Pakistan	Right Hand Bat	395	49.38	95.41	46.08	4.00
KL Rahul	India	Right Hand Bat	452	45.20	90.76	45.58	5.00
Total			**2998**	**57.65**	**97.56**	**49.90**	**4.00**

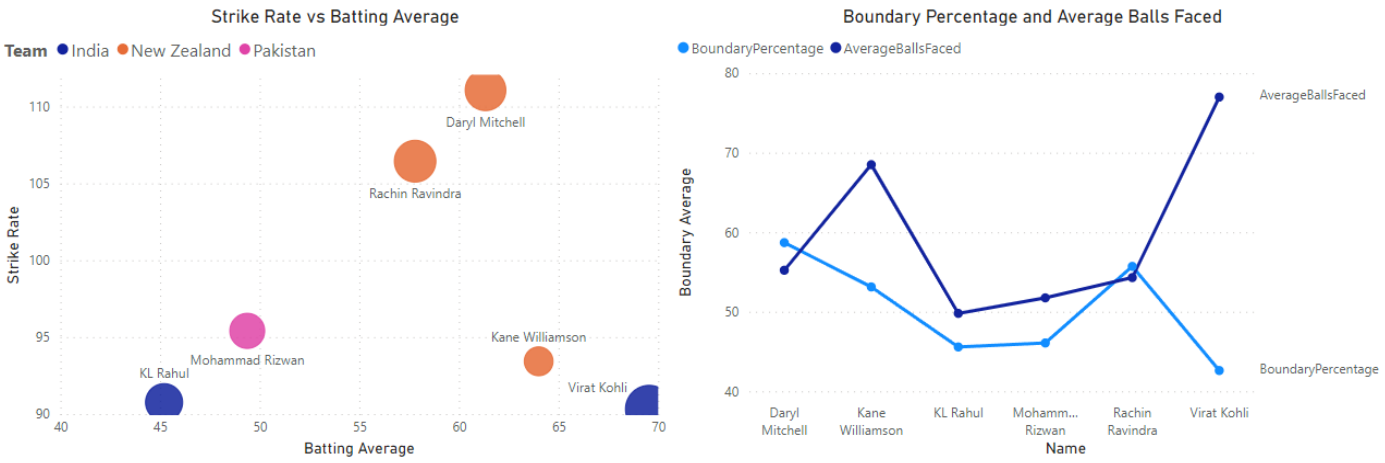

Fig 3.5.5 Middle Order Batsmen

1. Batting Position Between 3 and 6 (inclusive): This condition ensures that the batsmen being considered occupy positions between 3 and 6 in the batting order, characteristic of the middle-order batting lineup.
2. Strike Rate Greater Than 90: Middle-order batsmen with a strike rate exceeding 90 are selected. This criterion identifies players who maintain an above-average scoring rate, contributing to the team's run accumulation from the middle order.
3. Total Innings Batted Greater Than 3: Batsmen who have participated in more than three innings are considered. This filter ensures a sufficient sample size for a meaningful assessment of a player's consistency and performance in the middle order.

4. Batting Average Greater Than or Equal to 45: Middle-order batsmen with a batting average greater than or equal to 45 are included. This criterion identifies players with a consistently high average, highlighting their effectiveness in scoring runs from the middle order.
5. Average Balls Faced Greater Than or Equal to 40: Batsmen who, on average, face more than 40 balls per inning are considered. This condition emphasizes the ability of middle-order batsmen to stay at the crease and build innings.

3.5.4 Lower Order Batsmen

Name	Team	BattingStyle	BowlingStyle	TotalRuns	BattingAverage	StrikeRate	Wickets	Economy	DotBallPercentage	BattingPosition
Aiden Markram	South Africa	Right Hand Bat	Right Arm Offbreak	406	40.60	110.93	1	4.59	56.76	5.00
Glenn Maxwell	Australia	Right Hand Bat	Right Arm Offbreak	400	44.44	150.38	6	4.82	47.69	6.00
Glenn Phillips	New Zealand	Right Hand Bat	Right Arm Offbreak	285	31.67	111.76	6	5.83	40.42	6.00
Total				**1091**	**38.96**	**123.00**	**13**	**5.10**	**46.72**	**6.00**

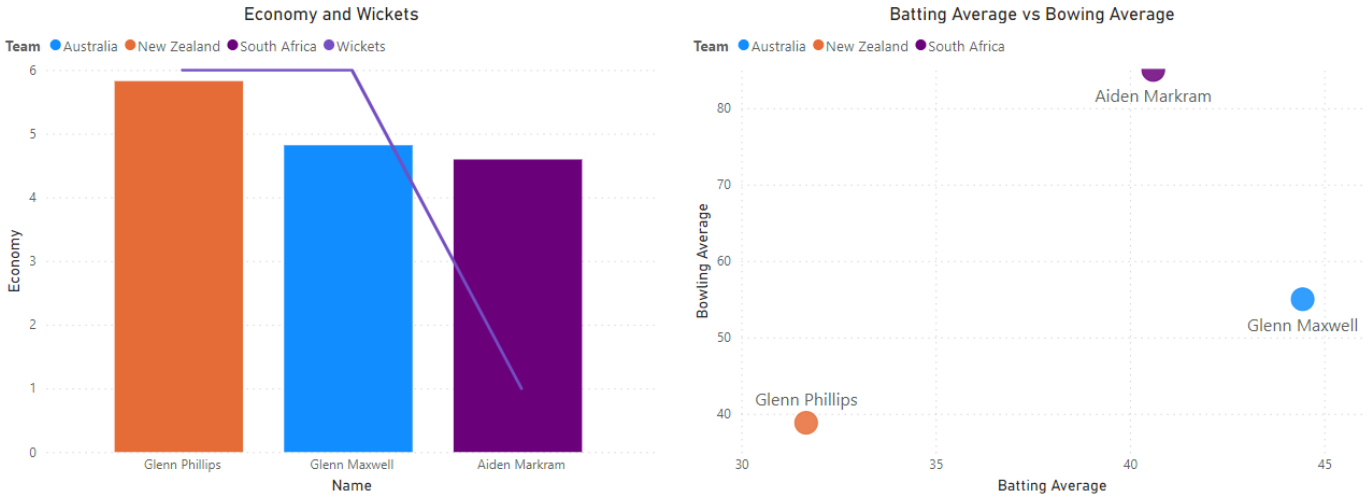

Fig 3.5.6 Lower Order Batsmen

1. Batting Average Greater Than or Equal to 30: Lower-order batsmen with a batting average greater than or equal to 30 are considered. This criterion identifies players who, despite batting lower in the order, have demonstrated proficiency in scoring runs.

2. Batting Position Greater Than 4: This condition ensures that the batsmen being considered occupy a batting position greater than 4, typically associated with the lower-order lineup.
3. Strike Rate Greater Than 110: Lower-order batsmen with a strike rate exceeding 110 are selected. This criterion emphasizes the ability of these players to score quickly and make impactful contributions to the team's total.
4. Total Innings Batted Greater Than or Equal to 3: Batsmen who have participated in three or more innings are considered. This filter ensures a sufficient sample size for a meaningful assessment of a player's performance in the lower order.
5. Total Innings Bowled Greater Than or Equal to 3: Additionally, lower-order batsmen are expected to contribute as bowlers. This condition ensures that players have bowled in three or more innings, showcasing their versatility as all-rounders.

3.5.5 All-Rounders

Name	Team	BattingStyle	BowlingStyle	TotalRuns	BattingAverage	StrikeRate	Wickets	Economy	TotalRunsConceded	DotBallPercentage	BattingPosition
Glenn Maxwell	Australia	Right Hand Bat	Right Arm Offbreak	400	44.44	150.38	6	4.82	330	47.69	6.00
Glenn Phillips	New Zealand	Right Hand Bat	Right Arm Offbreak	285	31.67	111.76	6	5.83	233	40.42	6.00
Ravindra Jadeja	India	Left Hand Bat	Slow Left Arm Orthodox	120	24.00	101.69	16	4.26	398	56.15	7.00
Shadab Khan	Pakistan	Right Hand Bat	Legbreak	121	24.20	100.83	2	6.24	237	43.86	8.00
Total				**926**	**33.07**	**122.00**	**30**	**4.99**	**1198**	**49.17**	**7.00**

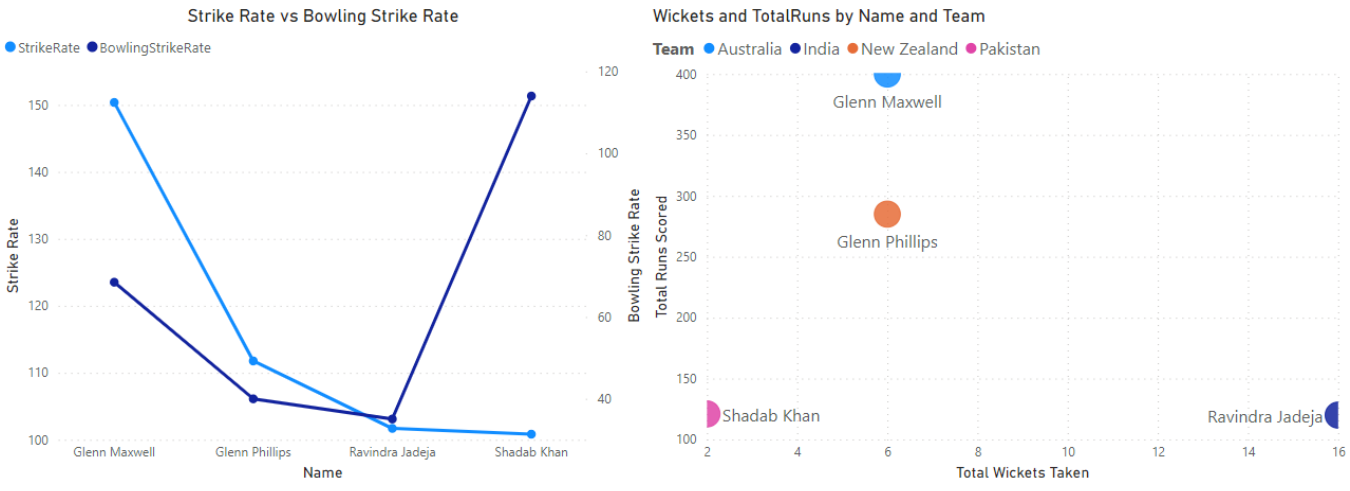

Fig 3.5.7 All-rounders

1. Batting Average Greater Than or Equal to 20: All-rounders with a batting average greater than or equal to 20 are considered. This criterion identifies players who can make meaningful contributions with the bat.
2. Batting Position Greater Than 5: This condition ensures that the players being considered occupy a batting position greater than 5, indicating their ability to contribute lower in the batting order.
3. Economy Less Than or Equal to 8: All-rounders are expected to contribute as bowlers with efficiency. This criterion ensures that players maintain an economy rate of 8 or lower, showcasing their effectiveness in restricting opposition runs.
4. Strike Rate Greater Than or Equal to 100: All-rounders with a strike rate exceeding 100 are selected. This criterion emphasizes their ability to score quickly and make impactful contributions to the team's total.
5. Total Innings Batted Greater Than or Equal to 4: All-rounders are expected to be consistent contributors with the bat. This filter ensures a sufficient sample size for a meaningful assessment of a player's batting performances.
6. Total Innings Bowled Greater Than or Equal to 4: Additionally, all-rounders are expected to contribute as bowlers. This condition ensures that players have bowled in four or more innings, showcasing their versatility and reliability in both batting and bowling roles.

3.5.6 Bowlers

Name	Team	BowlingStyle	Wickets	Economy	BowlingStrikeRate	BowlingAverage	DotBallPercentage	TotalRunsConceded
Mohammed Shami	India	Right Arm Fast	24	5.26	12.21	10.71	62.46	257
Adam Zampa	Australia	Legbreak Googly	23	5.36	25.04	22.39	45.31	515
Gerald Coetzee	South Africa	Right Arm Fast	20	6.24	19.05	19.80	56.17	396
Jasprit Bumrah	India	Right Arm Fast	20	4.06	27.55	18.65	67.51	373
Keshav Maharaj	South Africa	Slow Left Arm Orthodox	15	4.16	35.60	24.67	60.11	370
Total			**102**	**4.91**	**22.89**	**18.74**	**57.86**	**1911**

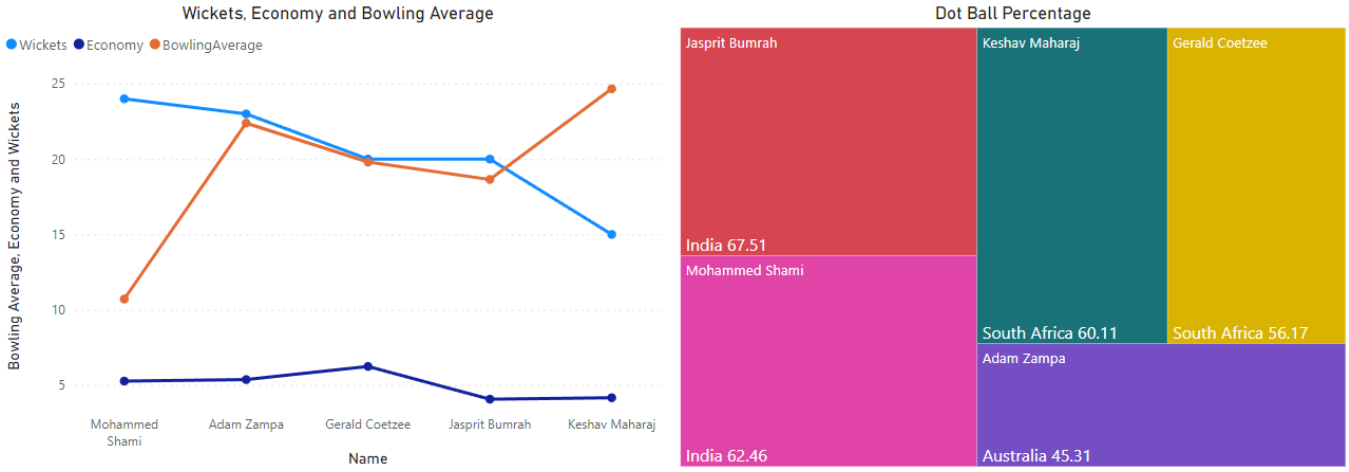

Fig 3.5.8 Bowlers

1. Bowling Average Less Than 25: Bowlers with a bowling average less than 25 are considered. This criterion identifies players who are effective in taking wickets while minimizing runs conceded per wicket.
2. Economy Less Than 7: Bowlers with an economy rate less than 7 are selected. This condition ensures that players maintain an efficient economy, indicating their ability to restrict opposition runs.
3. Wickets Greater Than or Equal to 15: Bowlers with a total of 15 or more wickets are included. This criterion emphasizes the wicket-taking prowess of the bowlers, showcasing their impact on opposing batting line-ups.
4. Playing Role Equals Bowler: This condition ensures that the players identified have a designated playing role as bowlers. It narrows down the selection to those primarily recognized for their bowling abilities.

CHAPTER 4

RESULT AND DISCUSSION

4.1 Result

The comprehensive analysis of the Cricket World Cup 2023 dataset has yielded intriguing insights into player performances, team dynamics, and overall tournament trends. The application of diverse filters for top-order batsmen, middle-order batsmen, lower-order batsmen, all-rounders, and bowlers has facilitated a nuanced examination of player contributions across various roles. The derived metrics and visualizations have provided a detailed understanding of the tournament's dynamics.

- Top-Order Batsmen

  Top-order batsmen meeting the specified criteria showcased exceptional performance, with a focus on high averages, strike rates, and boundary percentages. This group emerged as pivotal run-scorers, consistently making substantial contributions to their teams' totals. Notable players within this category demonstrated a balanced blend of aggression and consistency, influencing match outcomes significantly.
- Middle-Order Batsmen

  Middle-order batsmen meeting the defined filters displayed versatility in stabilizing innings, exhibiting commendable strike rates, and maintaining high batting averages. Their role in consolidating the innings after early dismissals proved crucial. The analysis revealed key players whose adaptability and skill in pressure situations contributed significantly to their team's success.
- Lower-Order Batsmen

  Lower-order batsmen meeting the set criteria demonstrated an ability to score effectively with a higher strike rate, contributing valuable runs. Their dual role as batsmen and bowlers highlighted their versatility, showcasing their impact on both ends of the game. This group of players proved instrumental in steering their teams to competitive totals.

- All-Rounders

  All-rounders meeting the specified conditions emerged as crucial assets, making substantial contributions with both bat and ball. Their ability to maintain a balance between batting average, strike rate, and economy rate showcased their multidimensional impact on the game. Noteworthy players within this category significantly influenced the outcomes of matches through their all-around performances.
- Bowlers

  The analysis of bowlers meeting the predefined criteria identified key performers with impressive bowling averages, economy rates, and wicket-taking abilities. These bowlers played pivotal roles in restricting opposition runs and taking crucial wickets, significantly impacting the outcomes of matches.

4.2 Discussion

- Player Consistency and Versatility

  The findings underscore the importance of player consistency and versatility in different roles. Batsmen consistently meeting the specified filters demonstrated their ability to perform under diverse match situations, contributing to their teams' success.
- Impact of All-Rounders

  The influence of all-rounders was particularly noteworthy. Players meeting the criteria for all-rounders proved to be game-changers, contributing significantly in both batting and bowling departments. Their multidimensional contributions were pivotal in determining match outcomes.
- Bowling Prowess

  The analysis of bowlers meeting the set criteria highlighted the impact of effective bowling strategies. Bowlers with impressive averages and economy rates showcased their ability to control the game's pace and secure crucial wickets.
- Team Strategies and Success

  The results shed light on the correlation between individual player performances and team success. Teams with a balance of top-order batsmen, middle-order stability, impactful all-rounders, and effective bowlers emerged as formidable contenders in the Cricket World Cup 2023.

CHAPTER 5

CONCLUSION AND FUTURE SCOPES

5.1 Conclusion

- Culmination of Insights

  The exploration and analysis of the Cricket World Cup 2023 dataset have unveiled a trove of insights into player performances and team dynamics. The strategic application of filters to identify top-order, middle-order, and lower-order batsmen, all-rounders, and bowlers has allowed for a granular examination of player contributions. The results showcase the multifaceted nature of cricket, where individual performances intricately contribute to the overall success of the team.
- Significance of Individual Roles

  The project highlights the significance of players embracing specific roles within the team framework. Top-order batsmen, middle-order stabilizers, lower-order contributors, all-rounders, and impactful bowlers each play a pivotal role in shaping match outcomes. The identified metrics provide a quantitative measure of success and impact, offering teams valuable insights for strategic decision-making.
- Tactical Implications

  The tactical implications derived from the project findings emphasize the importance of a well-balanced team composition. Teams with a judicious mix of players excelling in different roles have demonstrated a higher likelihood of success. Understanding the strengths and weaknesses of individual players contributes to informed decision-making in team selection, game strategy, and player management.

5.2 Future Scope

- Refinement of Metrics

  The project lays the groundwork for future endeavors in cricket analytics. Refinement and expansion of metrics can provide even deeper insights into player performances. Incorporating situational analyses, such as performance in high-pressure situations or against specific oppositions, could enhance the project's analytical capabilities.
- Integration of External Factors

  Incorporating external factors such as weather conditions, pitch behavior, and player fitness could contribute to a more holistic understanding of match dynamics. The project's future iterations could explore the impact of these factors on player and team performances, providing a more nuanced perspective.
- Predictive Analytics

  The dataset's historical nature allows for the exploration of predictive analytics in future iterations. Machine learning models could be employed to forecast player and team performances, aiding teams in strategic planning and decision-making for upcoming tournaments.
- Enhanced Visualization and User Interface

  The future scope of the project also involves enhancing the visualization capabilities and user interface. Interactive dashboards and user-friendly tools could make the insights more accessible to a wider audience, including cricket enthusiasts, analysts, and team management.