



University of the Pacific

MSBA-285-01-32096 Capstone Project I (Spring 2024)

Group 10 Final Project Analysis

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Backstory

We are the Australian National Cricket Team, the “Baggy Greens” sports analysts, and our job is to maintain Australia’s success in the world of cricket. There is an upcoming T20 World Cup, and we want to win the trophy.

We're leveraging past World Cup data to identify trends and areas for improvement. By analysing historical data, we aim to understand our team's strengths and weaknesses, as well as those of our competitors, comprehensively.

Our goal is to uncover insights that inform strategic planning for the upcoming tournament. Through pattern identification and match dynamics analysis, we aim to enhance our team's performance and increase our chances of T20 World Cup victory.

Dataset:

We are using a 4000 rows large dataset, which has games between the best cricket nations. The dataset has 13 different columns. Each column furnishes vital information essential for detailed analysis, ranging from the initial power play phase to the average team scores, and identifying batting and bowling teams involved in the matchups.

Below are the columns along with their respective definitions:

1. **Power play:** Initial phase of the game with fielding restrictions.
2. **Average score:** Team's average score during the World Cup, indicating batting performance.
3. **Batting team:** Current batting team.
4. **Bowling team:** Current bowling team.
5. **City:** Location of the game, providing insights into weather conditions.
6. **Delivery left:** Number of deliveries remaining.
7. **Score:** Current score in the inning.
8. **Current run rate:** Dynamic measure of team's scoring rate.
9. **Wickets left:** Number of wickets in hand, influencing pressure on the batting team.
10. **Run in last 5 overs:** Total runs scored in the last 5 overs, reflecting late-inning performance.
11. **Wickets in last 5 overs:** No. of wickets fallen in the last 5 overs, indicating impact on final score.
12. **Final score:** Total runs scored by the team at the end of the inning.
13. **Innings:** Indicates first or second inning.

Data Cleaning :

While the dataset was generally clean, we took proactive measures to ensure data integrity. This included addressing duplicate rows and handling blank or empty cells. By conducting thorough cleansing procedures, we optimized the dataset for accurate analysis and interpretation.

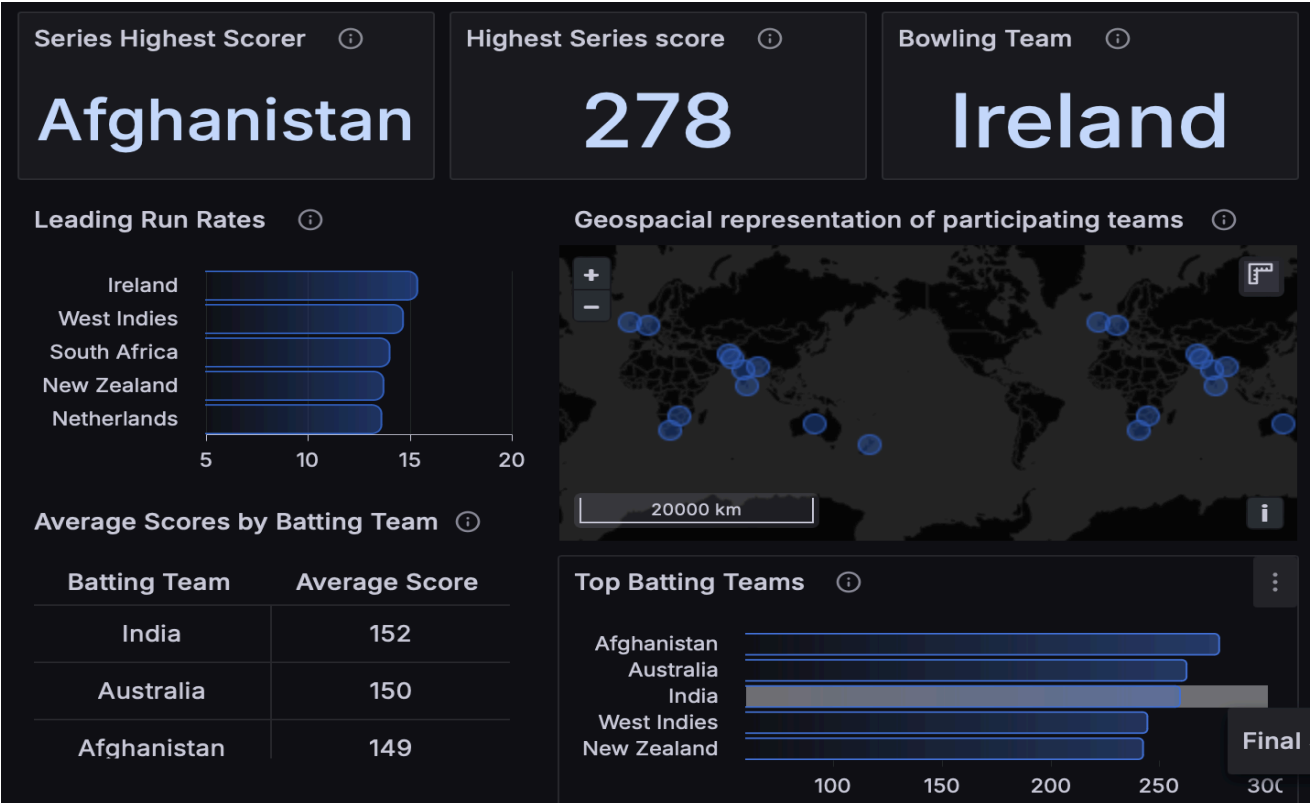
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General question set with respect to the data

- What are the leading cricketing nations and their average scores?
- Which locations host the most frequent cricket matches?
- Are the top five consistently performing teams?
- Which team holds the record for the highest score?
- What is our team's highest recorded score?
- How effective is our power play strategy?

A Recap of the Series

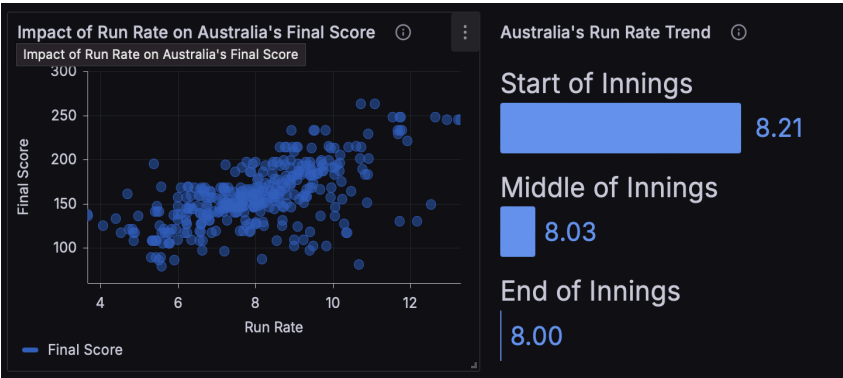
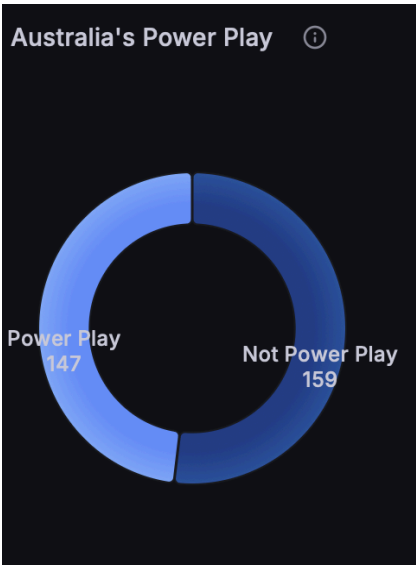
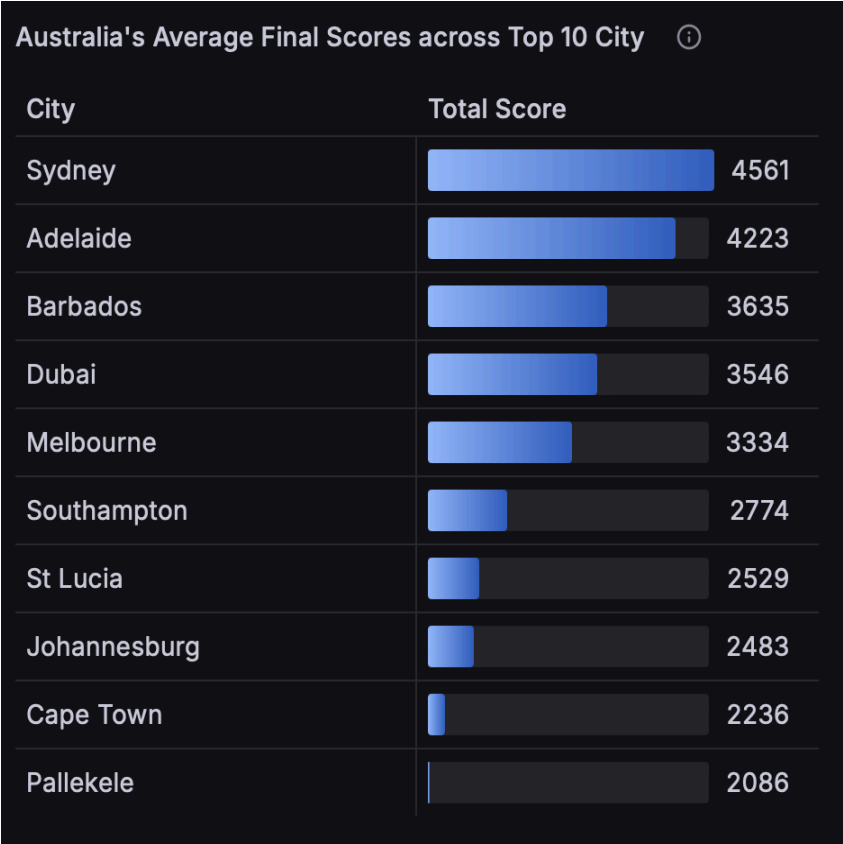


In the previous year's World Cup series, Afghanistan emerged as the standout performer, dominating the charts across various segments. Their exceptional performance was evident in nearly every aspect of the tournament, solidifying their position as the best-performing team. Meanwhile, other notable teams also showcased impressive performances, securing spots in the top five across multiple segments.



This comprehensive overview of the tournament provides valuable insights into the competitive landscape, highlighting the remarkable achievements of Afghanistan and other top-performing teams. It underscores the intensity and excitement of the World Cup series, where teams strive for excellence and compete at the highest level of cricket.

Australia's performance analytics



Australia emerged as one of the standout teams in the previous year's World Cup series, consistently leading various performance metrics. Their exceptional performance was evident across multiple facets of the tournament, establishing them as formidable contenders. Notably, Australia achieved their highest score of 263 in a match against Sri Lanka, coming close to Afghanistan's impressive total of 278, which topped the charts.

Throughout the series, Australia showcased exceptional performance on their home grounds, particularly in venues like Sydney, Adelaide, Barbados, and Melbourne. These venues witnessed some of Australia's highest total scores, highlighting their dominance on familiar turf.

While Australia maintained favourable innings positions throughout the tournament, they struggled to fully capitalise on power plays. Despite their overall strong performance, this aspect of their gameplay presented a challenge, indicating room for improvement in strategic execution.

Exploring Stakeholder Queries and Interests: A Comprehensive Examination of Inquiries and Concerns Across Management, Sponsors, Partners, and Supporters

Who are the top countries in the current cricket world, and what is their average score? We would like to know where we are in the world.



Competing Teams	
Afghanistan	Australia
bangladesh	england
India	Ireland
Netherlands	New zealand
Pakistan	South Africa
Sri Lanka	West Indies
Zimbabwe	

In the vibrant tapestry of contemporary cricket, there exist 13 major teams, each serving as a proud ambassador of its respective cricketing nation. These teams stand at the forefront of international cricket, epitomizing excellence and sporting prowess on the grandest stage. With their rich heritage and diverse playing styles, they captivate audiences worldwide, showcasing their remarkable skills and talent across a myriad of formats. From thrilling Test matches to electrifying T20 fixtures, these teams embody the spirit of competition and camaraderie that defines the essence of the sport on a global scale..

In the dynamic realm of cricket, the contemporary landscape is defined by 13 prominent teams, each proudly embodying the spirit of a distinct cricketing nation. These elite teams converge at the apex of international cricket, where they exhibit their remarkable skills and prowess on a global platform, across diverse formats of the game. With a fervent display of talent and dedication, they captivate audiences worldwide, symbolising the pinnacle of excellence in the sport.

As for the average score. The below listed average scores offer insights into the batting performance and consistency of each cricketing nation, reflecting their competitive standing on the global stage.

Average Scores by Batting Team ⓘ	
Batting Team	Average Score
India	152
Australia	150
Afghanistan	149
New Zealand	154
Netherlands	146

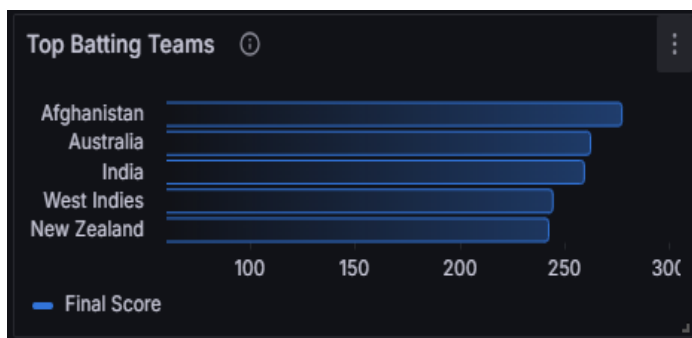
- The best is India with an average score of 161.
- The second best is Australia with an average score of 158.
- The third in a draw between South Africa and New Zealand with an average score of 154.
- Afghanistan and Pakistan are the fourth with an average score of 151.
- Sri Lanka is the fifth with an average score of 147.
- Ireland is the sixth with an average score of 144.
- Bangladesh and Zimbabwe are the seventh with an average score of 143.
- The Netherlands is the worst among the best with an average score of 142.

Which locations have the highest match frequency? Once we know we could benchmark some ideas from the stadium to increase profit by playing more games in Australia.

Match Hotspot ⓘ				
Colombo	Harare	Johannesburg		
Dubai	Mirpur	London		
		Abu Dhabi	Auckland	

Colombo emerges as the top venue for cricket matches, hosting a staggering 247 games, indicating its significance as a cricketing hub. Following closely behind is Dubai, with 232 games, establishing itself as another prominent location for cricket events. Harare secures the third spot with 162 games, highlighting its importance as a cricket destination. Additionally, Johannesburg, London, Mirpur, Abu Dhabi, and Cape Town collectively account for 17% of all games, further solidifying their status as key hotspots for cricketing action on the global stage.

Which teams were the best scorers throughout the last World Cup? We should look into those team's batting strategies to figure out a way to increase our scoring ability and become number one.



The best scorers in terms of their final score are

- Afghanistan with 278 as their Final score
- Australia with 263
- India scored 260
- West Indies scored 245
- New Zealand scored 243.



The best-attacking teams in terms of highest run rates at different moments of a given game are :

- Ireland with a run rate of 15.4
- West Indies with a run rate of 14.7
- South Africa with 14.1
- New Zealand with 13.8
- Netherlands with a run rate of 13.7.

In the previous series, Afghanistan led the scoring charts with a standout final score, closely pursued by Australia, India, West Indies, and New Zealand, showcasing their prowess on the field. Meanwhile, Ireland's aggressive gameplay set the tone with an impressive run rate, followed by West Indies, South Africa, New Zealand, and Netherlands, adding an exciting dimension to the matches. These performances epitomized the intense competition and captivating spectacle of cricket, captivating audiences worldwide with their displays of skill and determination.

So again, which team scored the most points and what team did they play? Also, what is the average run rate of this team at the end of the game? Are they better than us?

Highest Scorer ⓘ	Afghan's Highest Score ⓘ	Bowling team ⓘ
Afghanistan	278	Ireland

While Afghanistan may have secured the highest score in a single game, their overall average runs at the end of matches fall short compared to ours. While they maintain an average of 35.7 runs, our team boasts a higher average of 40.2 runs, showcasing our consistency in scoring throughout matches. Additionally, Afghanistan's encounters with top-tier bowling teams like Ireland highlight their challenging matchups, while Ireland's formidable reputation positively reflects on our league. Moreover, our team's impressive batting performance, ranking second in average scores, further solidifies our position as a formidable force in international cricket.

Average Scores by Batting Team ⓘ	
Batting Team	Average Score
India	152
Australia	150
Afghanistan	149

What was our highest score in one game again? Also, tell us about our team's fitness. We would like to know if the coaching and training staff are doing good enough work to win the World Cup.

Representing Team ⓘ
Australia
Aus's Highest Score ⓘ
263
Bowling Team ⓘ
Sri Lanka

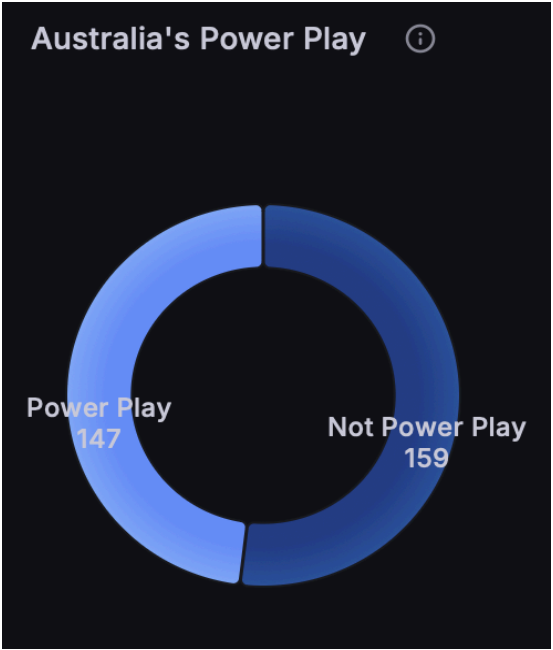
Our highest score of 263, the second-highest in the prior World Cup, was achieved in a game against Sri Lanka. This remarkable feat underscores our team's exceptional batting prowess and ability to achieve formidable scores on the field.

Furthermore, our team demonstrates unparalleled stamina, ranking as the best in the current competition. While Afghanistan may have a slightly higher average run rate of 8.93 runs at the beginning of the game, our team excels in maintaining consistency and strength throughout. In both the middle and end stages of the game, we outperform India, with an average run rate of 7.8 and 7.82 respectively. These statistics affirm our team's resilience and endurance, positioning us as formidable contenders in the cricketing arena.

How is our power play efficiency? Are we using those opportunities well enough to win this world cup?

Regrettably, our team's efficiency in utilising power plays falls short of optimal. Despite being an opportune stage for scoring, we demonstrate caution, prioritising wicket preservation over aggressive scoring during power plays. This conservative approach hinders our ability to capitalise on this crucial phase of the game, ultimately affecting our overall scoring potential. Moving forward, striking a balance between prudent wicket management and assertive scoring strategies during power plays will be essential to maximising our team's performance on the field.

Wickets in Hand ⓘ	
Batting Team	Wickets Left
India	7.25
South Africa	7.04
England	6.84
Pakistan	6.84
Australia	6.78



Also, a weakness in our batting is that we are losing wickets more often than 4 other teams. Since this part is crucial in the game, I think we should try to focus on India’s batting strategies, because they managed to keep the most amount of wickets at the end of the game.

Let's check out our defence. Can you talk about our defence in general?

Our bowling prowess shines brightly on the international stage, solidifying our position as the premier defensive unit in the cricketing world.

Total Wickets Taken by Bowling Team ⓘ	
Bowling Team	Total Wickets Taken
Australia	1572
Pakistan	1444
South Africa	1431
Sri Lanka	1284

With an impressive tally of 1572 wickets taken from opposing batting teams, we stand head and shoulders above our closest competitors. Pakistan, the nearest contender, trails behind with a significant gap, having taken only 1444 wickets. This stark contrast underscores the world-class calibre of our defensive strategy and execution. However, while our defence remains unparalleled, there's an opportunity to shift our focus towards strengthening our offensive capabilities in the upcoming weeks. By striking a balance between our formidable defence and an enhanced offensive approach, we can further solidify our dominance in the cricketing arena.

How does the correlation between higher run rates and greater final scores in Australia's matches influence our strategic approach and preparations for upcoming tournaments?



The trend indicating that higher run rates lead to greater final scores in Australia's matches presents an invaluable insight into the dynamics of our team's performance. Understanding this relationship allows us to tailor our strategic approach accordingly, emphasising aggressive batting strategies to capitalise on run rate momentum and optimise final scores. By leveraging this understanding in our preparation, we can enhance our team's competitive edge and increase our chances of success in future tournaments."

Additional insights and summary

We think it would be nice to have a little bit more detailed data about the games, so we would know the weather, number of fans, and dates of the games. This would be crucial to determine whether a game is interesting to us or not since we would only be interested in the past 5 years of games, and in the weather conditions, which gives us a better understanding of the game. Also, from a marketing point of view, the number of fans visiting these games would also be interesting, so we could increase the revenue, and have a bigger budget for better offensive training equipment, such as the newest model of the PitchingMachine1000.

Through an extensive examination of cricket data and stakeholder perspectives, we've explored various aspects of the sport, including team performance, strategic planning, and data analysis. Throughout our analysis, the primary focus remained on the performance and strategic considerations of the Australian National Cricket Team. We examined various aspects, including batting and bowling statistics, run rates, final scores, and the impact of game dynamics on team performance. Insights gleaned from data analysis and stakeholder perspectives have provided valuable insights into Australia's strengths, weaknesses, and areas for improvement.

Also, we need more data about the bowling teams and the individual players, so we could do a better defensive analysis. With the given data, we can tell that our defence is the best currently, but we do not have data about which tactics we used for each game, so we cannot tell whether defensive tactic A or B is better.