

Title: T20 World Cup 2022 Cricket Data Analytics

Project Report

Introduction:

This report summarizes an analytics project involving cricket data from the T20 World Cup 2022 tournament. The goal is to analyze player and team performance and identify insights through interactive visualizations. Python and Power BI are used for data processing, analysis and dashboard creation.

Data Collection and Preprocessing (Python):

Match and player statistics data is scraped from the Cricbuzz website using web scraping techniques in Python. The raw HTML data is parsed and processed into structured JSON files. Key steps include:

- Identifying relevant HTML elements containing stats data.
- Extracting and cleaning data from HTML into lists/dictionaries.
- Transforming and structuring data into nested JSON records per match.
- Storing parsed JSON data in files grouped by team and player.

The JSON records are then loaded and converted into Pandas data frames for preprocessing including:

- Handling missing values.
- Fixing inconsistent/erroneous data.
- Converting data types as needed for analysis.
- Adding derived metrics like strike rate, averages etc.

The preprocessed cricket data is exported into CSV files for visualization and analysis in Power BI.

Interactive Visualization and Analysis (Power BI):

The CSV files are imported into Power BI for building insightful visualizations and dashboards. Key analysis steps include:

- Data modeling using star schema with fact and dimension tables.
- Developing measures for batting, bowling and overall performance KPIs.
- Interactive visualizations of top batting, bowling and all-round performers.

- Teamwise analytics for runs, wickets, boundary percentages etc.
- Filters and slicers for analyzing specific teams, players, matches or stages.
- Identification of player rankings for various positions and tournaments XI team.

The interactive Power BI dashboards provide deep insights into both individual and team performances based on the raw stats scraped from the web.

Results and Analysis:

The end results include reusable JSON/CSV pipelines for scraping and preprocessing cricket data. The Power BI dashboards showcase interactive analytics spanning:

- Player profiles with performance KPIs
- Rankings and comparisons across positions
- Team statistics and contributions
- Tournament XI team with top performers

This analytics solution can be extended to other tournaments as well by rebuilding the scraping and data processing pipelines. Enhancements like sentiment analysis of commentary and machine learning predictions can also be added.

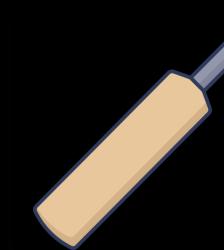
Conclusion:

In summary, this project demonstrated a workflow to build an interactive cricket analytics solution using Python and Power BI. A system was developed for scraping match and player statistics, processing and modeling data, and building insightful visualizations. The analysis provides a data-driven perspective into team and player performances for the T20 World Cup 2022.

A look at the dashboards below:

T20-Cricket-WC2022-Data-Analytics





Openers

11K
Total Runs

117.08
Strike Rate

20.16
Batting Avg

50.34%
Boundary %



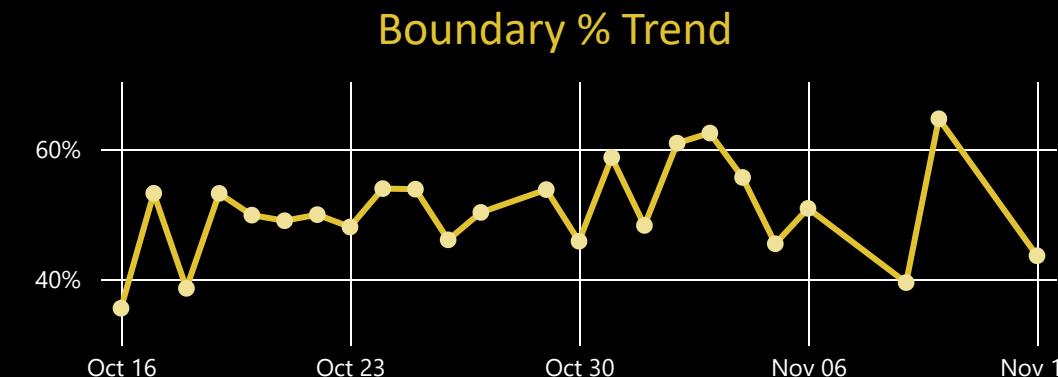
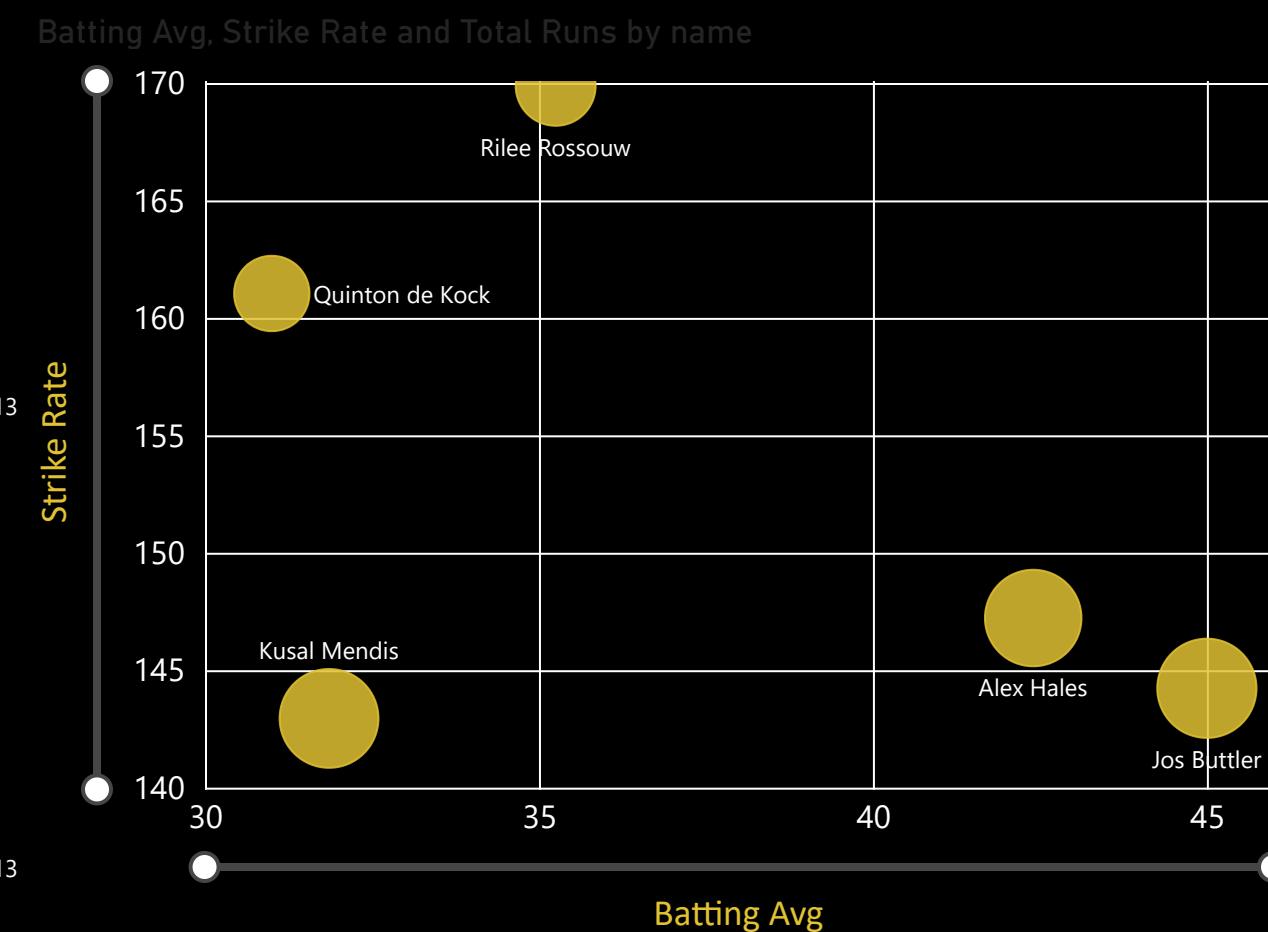
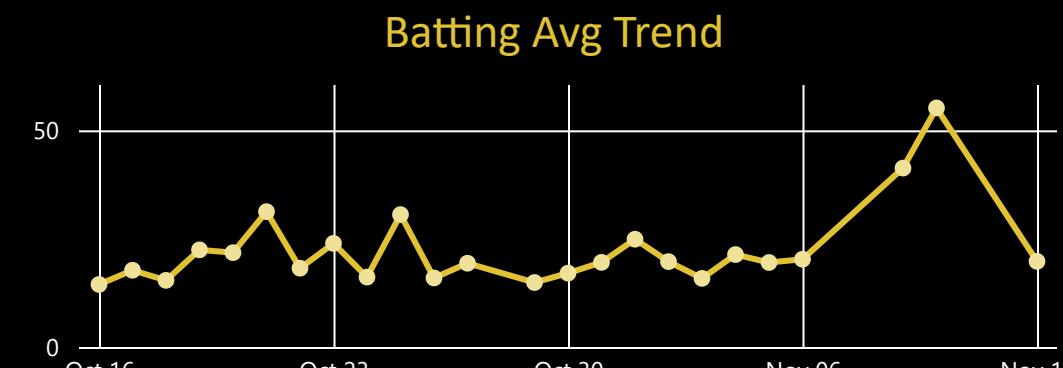
Qualifier

Super 12

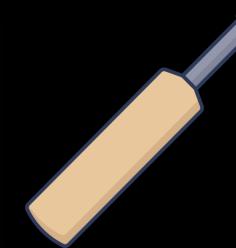
Select the Player(s) by clicking their names to see their individual or combined strength.

Home

	Name	Team	Batting Style	Batting Position	Innings Batted	Balls Faced	Runs	Strike Rate	Batting Avg	Boundary %
Openers	Jos Buttler	England	Right hand Bat	1	6	156	225	144.23	45.00	61.33%
	Kusal Mendis	Sri Lanka	Right hand Bat	2	8	156	223	142.95	31.86	57.40%
Middle-Order	Alex Hales	England	Right hand Bat	2	6	144	212	147.22	42.40	64.15%
	Rilee Rossouw	South Africa	Left hand Bat	3	4	83	141	169.88	35.25	63.83%
Finishers	Quinton de Kock	South Africa	Left hand Bat	2	5	77	124	161.04	31.00	75.81%



WC-11



Middle-Order

11K
Total Runs

117.08
Strike Rate

20.16
Batting Avg

50.34%
Boundary %



Qualifier

Super 12

Select the Player(s) by clicking their names to see their individual or combined strength.

Home

	Name	Team	Batting Style	Batting Position	Innings Batted	Balls Faced	Runs	Strike Rate	Batting Avg	Boundary %
Openers	Daryl Mitchell	New Zealand	Right hand Bat	6	4	85	109	128.24	54.50	23.85%
	Glenn Phillips	New Zealand	Right hand Bat	4	5	127	201	158.27	40.20	61.69%
Middle-Order	Lorcan Tucker	Ireland	Right hand Bat	3	7	163	204	125.15	40.80	49.02%
	Suryakumar Yadav	India	Right hand Bat	4	6	126	239	189.68	59.75	66.11%
	Virat Kohli	India	Right hand Bat	3	6	217	296	136.41	98.67	50.00%

Finishers

Batting Avg Trend





Finishers

11K
Total Runs

117.08
Strike Rate

515
Wickets

50.34%
Boundary %



Qualifier

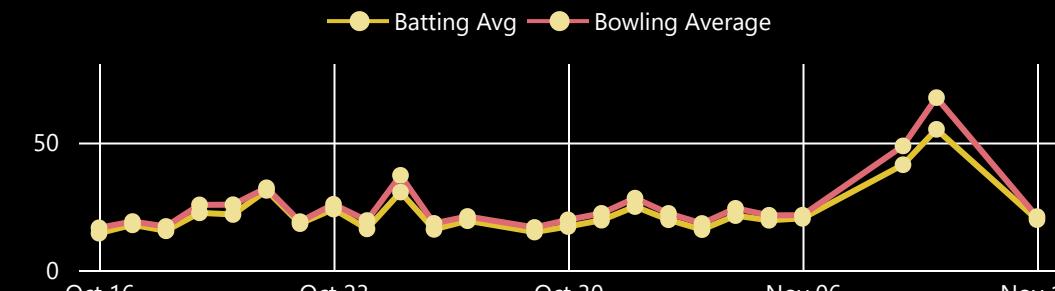
Super 12

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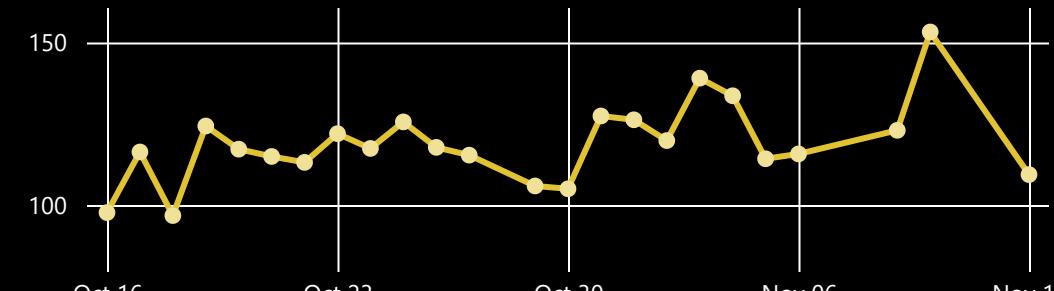
Home

	Name	Team	Batting Style	Bowling Style	Innings Batted	Balls Faced	Runs	Strike Rate	Boundary %	Innings Bowled	Wickets	Economy	Bowling Strike Rate
Openers	Marcus Stoinis	Australia	Right hand Bat	Right arm Medium	4	78	126	161.54	65.08%	4	1	9.67	54.00
Middle-Order	Curtis Campher	Ireland	Right hand Bat	Right arm Medium fast	6	77	126	163.64	47.62%	4	2	9.25	24.00
Finishers	Sikandar Raza	Zimbabwe	Right hand Bat	Right arm Offbreak	8	148	219	147.97	59.36%	8	10	6.50	14.40
Lower Middle-Order	Hardik Pandya	India	Right hand Bat	Right arm	5	97	128	131.96	54.69%	6	8	8.11	13.50

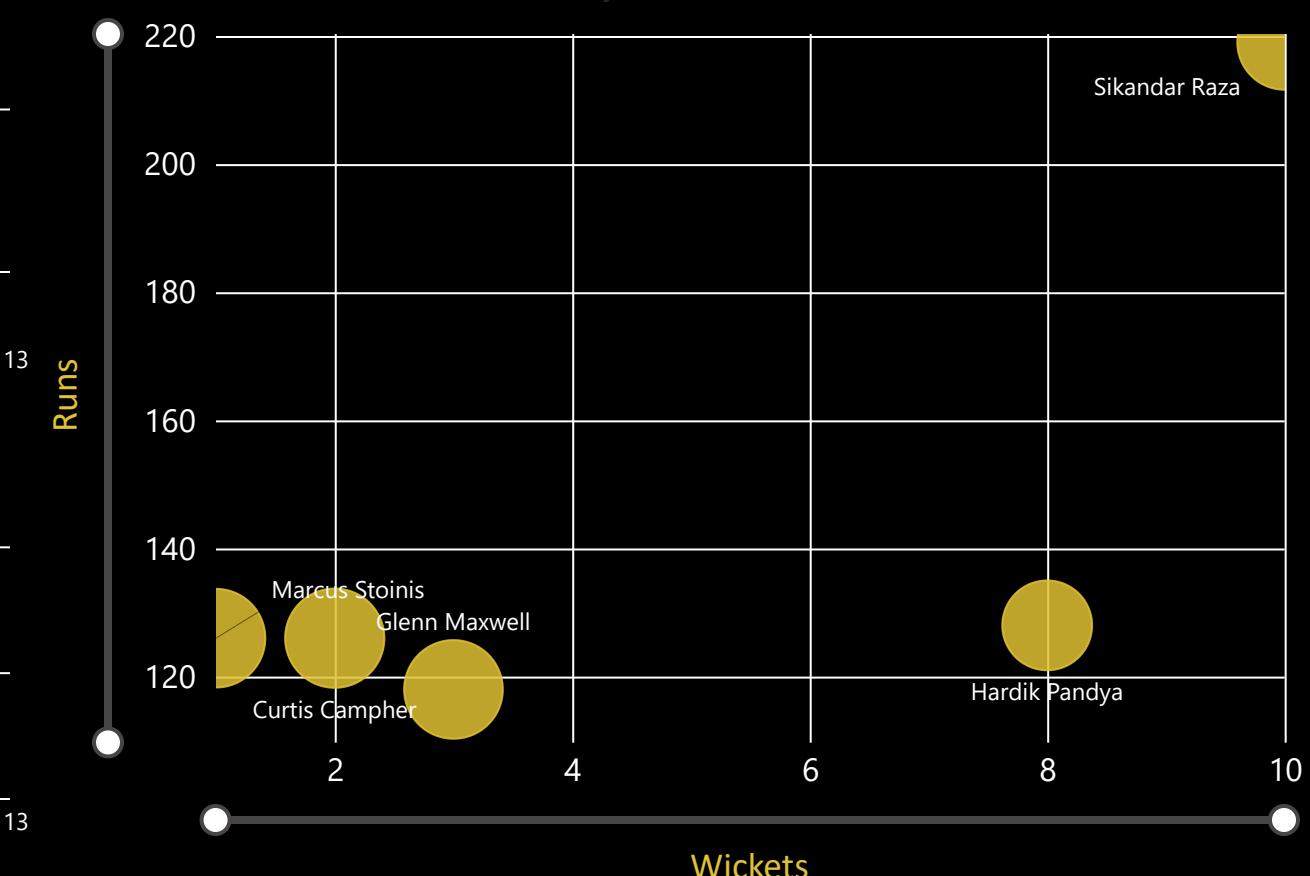
Batting Avg & Bowling Avg Trend



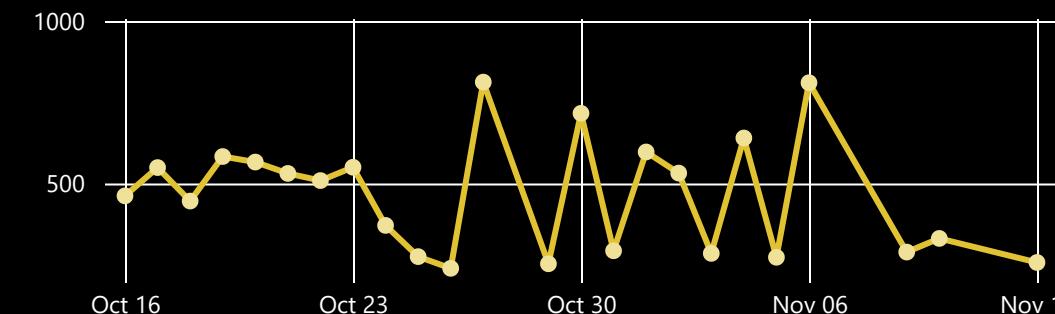
Strike Rate Trend



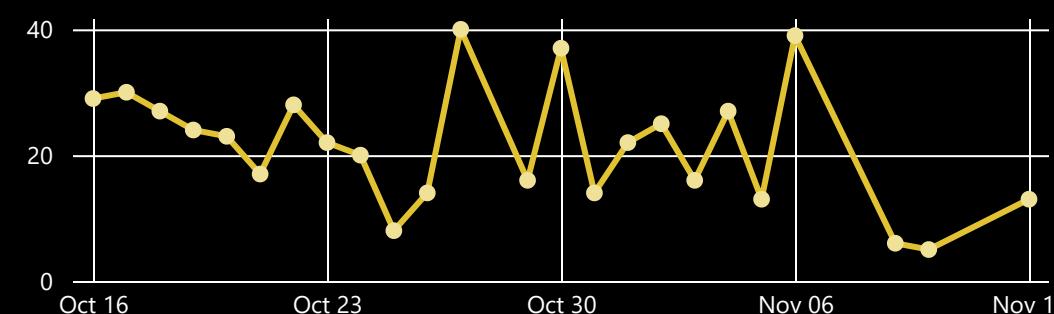
Wickets, Total Runs and Strike Rate by name



Runs Trend



Wickets Trend



Specialist-Bowlers

WC-11



Lower Middle-Order

11K
Total Runs

117.08
Strike Rate

515
Wickets

7.32
Economy



Qualifier

Super 12

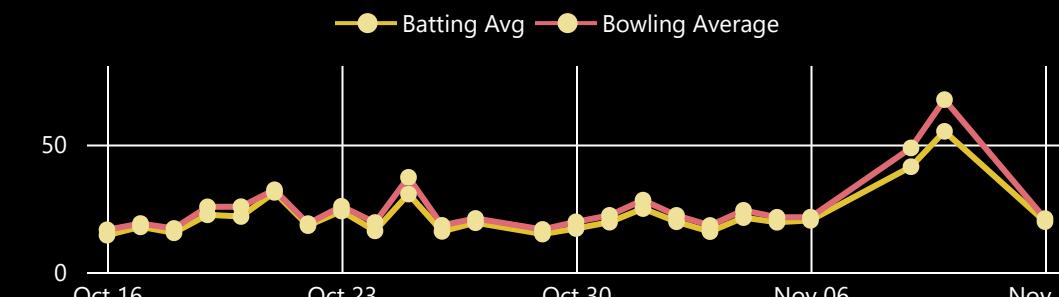
Select the Player(s) by clicking their names to see their individual or combined strength.

Home

	Name	Team	Batting Style	Bowling Style	Innings Batted	Runs	Strike Rate	Innings Bowled	Balls Bowled	Wickets	Economy	Bowling Strike Rate
Openers	Sikandar Raza	Zimbabwe	Right hand Bat	Right arm Offbreak	8	219	147.97	8	144	10	6.50	14.40
Middle-Order	Shadab Khan	Pakistan	Right hand Bat	Legbreak	6	98	168.97	7	156	11	6.35	14.18
	Rashid Khan	Afghanistan	Right hand Bat	Legbreak Googly	3	57	178.13	3	72	4	6.42	18.00
	Mitchell Santner	New Zealand	Left hand Bat	Slow Left arm Orthodox	3	27	168.75	5	120	9	6.45	13.33

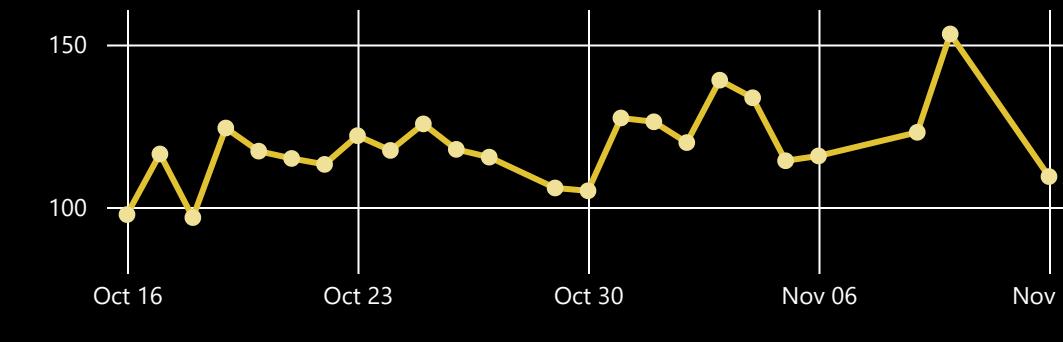
Finishers

Batting Avg & Bowling Avg Trend



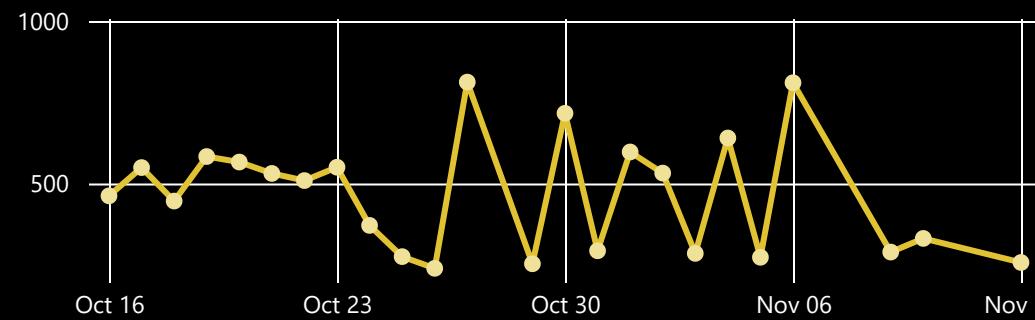
Lower Middle-Order

Strike Rate Trend



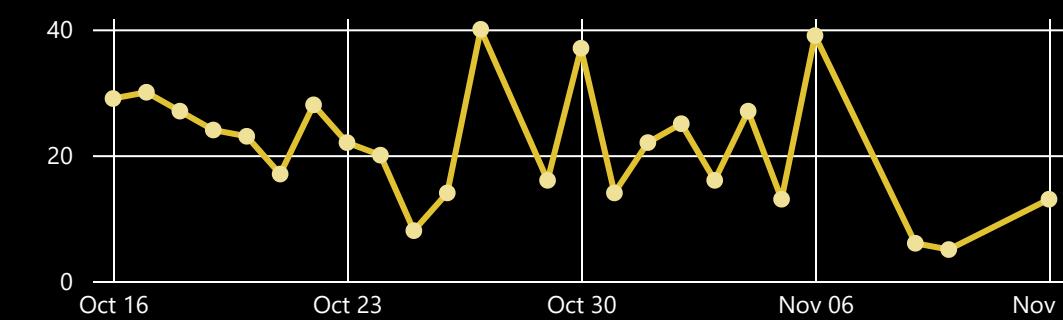
Specialist-Bowlers

Runs Trend

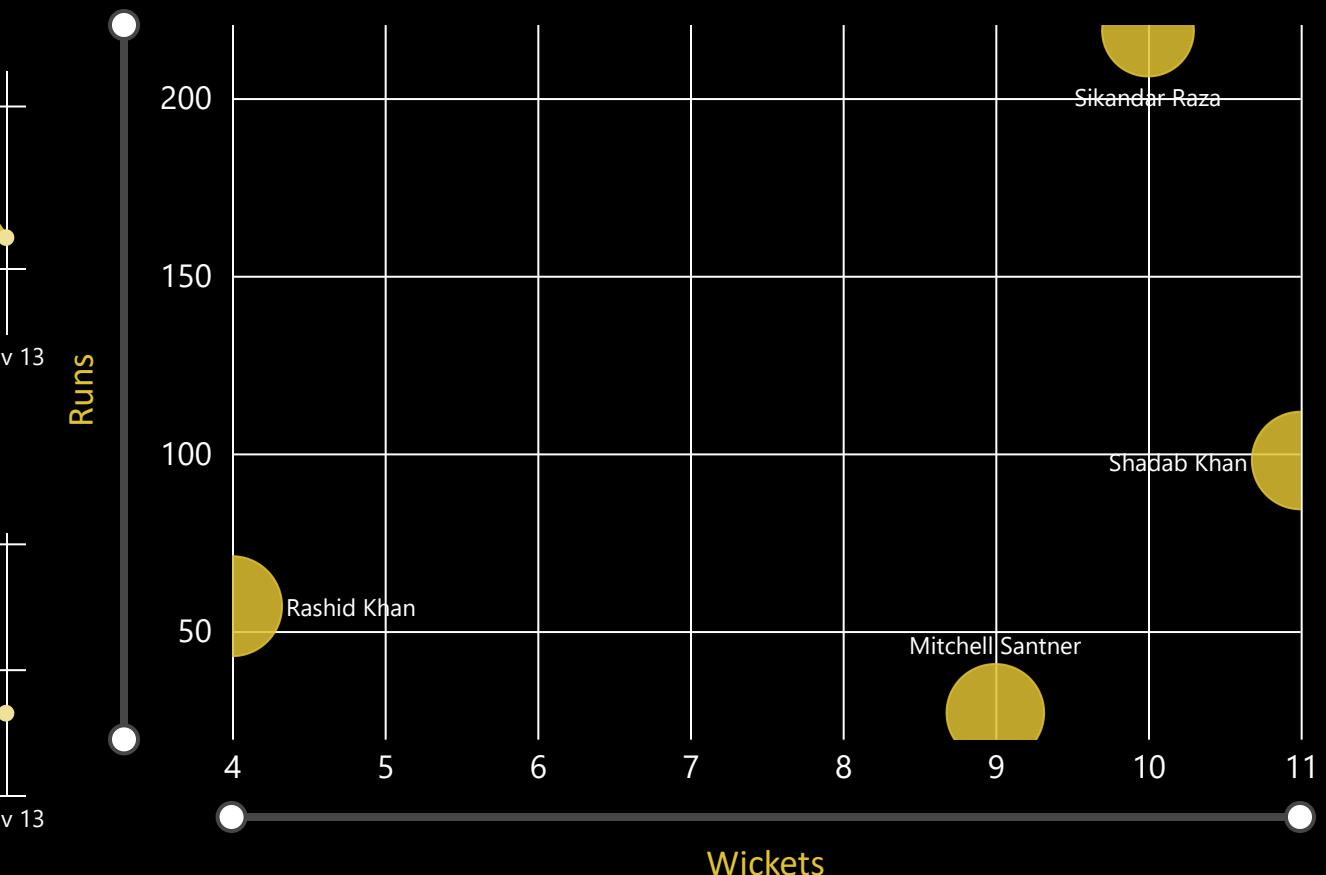


WC-11

Wickets Trend



Wickets, Total Runs and Strike Rate by name





Specialist-Bowlers

515
Wickets

7.32
Economy

22.50
Bowling Average

40.26%
Dot balls %



Qualifier

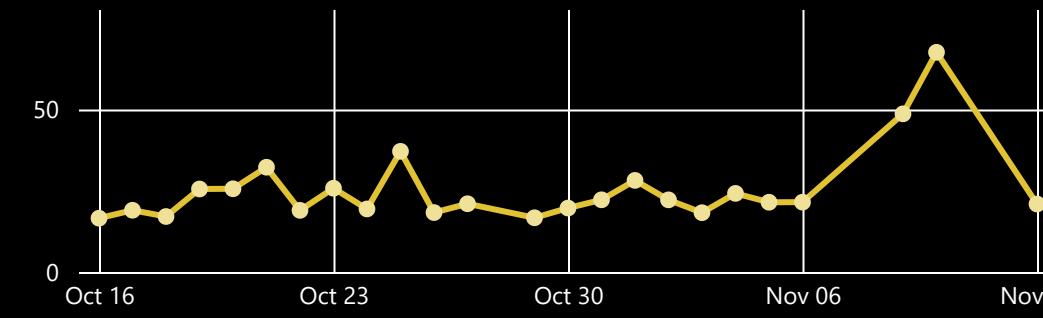
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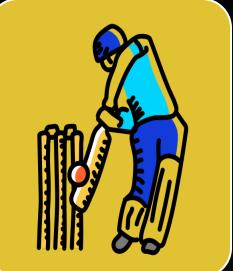
Select the Player(s) by clicking their names to see their individual or combined strength.

Home

	Name	Team	Bowling Style	Innings Bowled	Balls Bowled	Wickets	Economy	Runs Conceded	Bowling Strike Rate	Bowling Average	Dot balls %
Openers	Tim Southee	New Zealand	Right arm Medium fast	5	104	7	6.58	114	14.86	16.29	50.00%
Middle-Order	Shaheen Shah Afridi	Pakistan	Left arm Fast	7	151	11	6.16	155	13.73	14.09	46.36%
Finishers	Sam Curran	England	Left arm Medium fast	6	136	13	6.53	148	10.46	11.38	48.53%
Lower Middle-Order	Anrich Nortje	South Africa	Right arm Fast	5	105	11	5.37	94	9.55	8.55	55.24%

Bowling Avg Trend



**WC-11****11K**
Total Runs**117.08**
Strike Rate**515**
Wickets**7.32**
Economy

Name

All

Select the Player(s) by clicking their names to see their individual or combined strength.

Home

Openers

Middle-Order

Finishers

Lower Middle-Order

Specialist-Bowlers

WC-11

Name	Image	Team	Batting Style	Playing Role	Bowling Style	Batting Avg	Batting S/R	Runs	Wickets	Economy	Bowling S/R	Custom Batting Order
Virat Kohli		India	Right hand Bat	Top order Batter	Right arm Medium	98.67	136.41	296				3
Max O'Dowd		Netherlands	Right hand Bat	Opening Batter	Right arm Offbreak	34.57	112.56	242				
Suryakumar Yadav		India	Right hand Bat	Batter	Right arm Medium, Right arm Offbreak	59.75	189.68	239				4
Jos Buttler		England	Right hand Bat	Wicketkeeper Batter		45.00	144.23	225				1

Allrounder

Aaron Finch

Afghanistan

11K

Total Runs

117.08

Strike Rate

20.16

Batting Avg

50.34%

Boundary %

Batting
Strike
Rate

AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
90.75	116.81	135.98	127.39	135.87	125.57	14

Batting
Average

AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
13	15	13	13	14	17	

Average
Balls
Faced

AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
90.75	116.81	135.98	127.39	135.87	125.57	14

Bounda
ry %

AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
38.83%	47.97%	59.08%	58.70%	57.43%	53.82%	63.

Allrounder

Aaron Finch

Afghanistan

515

Wickets

7.32

Economy

22.50

Bowling Avg

40.26%

Dot balls %

Econom
y

AFG vs ENG AFG vs SL AUS vs AFG AUS vs IRE AUS vs NZ AUS vs SL BAN vs
5.84 7.45 8.25 8.15 8.34 8.14

Bowling
Average

AFG vs ENG AFG vs SL AUS vs AFG AUS vs IRE AUS vs NZ AUS vs SL BAN vs
14.73 26.09 27.50 22.21 23.85 37.13 3

Runs
Conced
ed

AFG vs ENG AFG vs SL AUS vs AFG AUS vs IRE AUS vs NZ AUS vs SL BAN vs
221 287 330 311 310 297

Dot Ball
%

AFG vs ENG AFG vs SL AUS vs AFG AUS vs IRE AUS vs NZ AUS vs SL BAN vs
47.58% 38.53% 39.17% 41.92% 34.98% 41.10% 37.

Allrounder

Aaron Finch

Afghanistan

11K

Total Runs

117.08

Strike Rate

515

Wickets

7.32

Economy

Runs

	AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
	206	271	325	293	303	275	

Batting
Strike
Rate

	AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
	90.75	116.81	135.98	127.39	135.87	125.57	14

Wickets

	AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
	15	11	12	14	13	8	

Econom
y

	AFG vs ENG	AFG vs SL	AUS vs AFG	AUS vs IRE	AUS vs NZ	AUS vs SL	BAN vs
	5.84	7.45	8.25	8.15	8.34	8.14	