ICC Tournament Batting Strike Rate Analysis

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1. Project Overview

This project provides a detailed analysis of the **batting performance of international cricket teams and players** during **ICC tournaments**. The central metric of focus is the **Strike Rate (SR)**—a vital indicator of scoring pace in limited-overs formats like **ODIs and T20Is**. However, this analysis extends far beyond SR alone.

We explore a wide array of performance indicators, including:

- **Strike Rates** of both teams and players
- **Highest individual scores** by country
- **Total runs scored** by top players and countries
- **Six-hitting abilities** and **4s-hitting dominance**
- **Batting averages** across players and nations
- **Consistency and finishing ability** based on **not-out frequencies**
- **Players who faced the most balls**, highlighting endurance and anchoring roles

The key objectives of this project are to:

- Compare **strike rates** across teams and individual players
- Identify **top performers** across multiple metrics (runs, boundaries, averages, SRs)
- Analyze **boundary-hitting trends**—both 4s and 6s
- Observe player **consistency** and **finishing capacity** through not-out stats
- Evaluate **batting efficiency by country** in terms of average and SR
- Understand the distribution of **explosive vs. consistent** batters
- Compare players with **maximum deliveries faced** to reveal innings longevity and control

This analysis uses **Python (Pandas & Matplotlib)** to process and visualize data, combining **statistical insights** with **cricketing knowledge**. It aims to uncover strategic differences among teams and showcase how different countries shape their batting lineups in ICC tournaments.

2. Tools & Technologies Used

- Python : Core programming language
- Jupyter Notebook: Software
- Pandas: Data preprocessing and manipulation
- Matplotlib: Visualization through bar and line charts

3. Dataset Description

The dataset consists of **detailed batting performance data** for **2,006 players** who have represented **multiple international cricket teams** across **ICC tournaments**. It includes **both full-member and associate nations**, covering a wide range of performance metrics.

Each row in the dataset represents a single player's overall tournament performance, while the columns provide quantitative indicators across scoring, consistency, power-hitting, and participation.

Key Columns:

- **Player**: Full name, including team designation (e.g., "V Kohli (INDIA)")
- **Matches**, **Innings**, **Not Out**: Participation and finishing stats

Runs, **H.S (Highest Score)**, **Average**: Core scoring metrics

Balls Faced, **SR (Strike Rate)**: Scoring pace and efficiency

4s, **6s**: Boundary-specific stats

Centuries, **Half-Centuries**: Conversion of starts into milestone

Country: Nation code (e.g., INDIA, AUS, SCO, USA, etc.)

Highlights Based on the Dataset:

Over **2000 individual player records** analyzed

Covers both **explosive metrics** (SR, 6s) and **consistency indicators** (Average, Not Out)

Enables macro-level analysis (team averages) and micro-level insights (top individual)

4. Methodology

1. Load and preprocess the dataset using Pandas
2. Segment data by country and calculate average SRs
3. Identify top 5 players per country and compute their SR, average, and highest scores
4. Plot bar and line charts using Matplotlib to visually compare team and player performances
5. Derive actionable insights from plotted data

5. .head()

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Code JupyterLab Python 3 (ipykernel)

```
[63]: df.head()
```

[63]:

	Player	Span	Matches	Innings	Not Out	Runs	H.S	Average	Balls faced	SR	100	50	0	4s	6s	Country
1	V Kohli (INDIA)	2010-2019	75	70.0	20.0	2633.0	94	52.66	1907.0	138.07	0.0	24.0	2.0	247.0	71.0	(INDIA)
2	RG Sharma (INDIA)	2007-2019	104	96.0	14.0	2633.0	118	32.10	1905.0	138.21	4.0	19.0	6.0	234.0	120.0	(INDIA)
3	MJ Guptill (NZ)	2009-2019	83	80.0	7.0	2436.0	105	33.36	1810.0	134.58	2.0	15.0	2.0	215.0	113.0	(NZ)
4	Shoaib Malik (ICC/PAK)	2006-2019	111	104.0	30.0	2263.0	75	30.58	1824.0	124.06	0.0	7.0	1.0	186.0	61.0	(ICC/PAK)
5	BB McCullum (NZ)	2005-2015	71	70.0	10.0	2140.0	123	35.66	1571.0	136.21	2.0	13.0	3.0	199.0	91.0	(NZ)

Insight 1: Top 10 Countries Having Highest Score by a Player in an Inning

Goal:

Identify which countries have had players register the highest individual scores in a single inning and visualize the top 10.

Data Processing Steps (Code):

```
h = []
for i in df["Country"].unique():
    d = df[df["Country"] == i]
    h.append(d["H.S"].max())
roar = pd.Series(h, index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(roar.index, roar.values, color=["gold", "lightcyan", "cyan", "red", "aqua", "black", "maroon", "deepskyblue", "yellow",
"mediumseagreen"])
plt.grid(True)
plt.title("Top 10 Countries having highest score by a player in an inning".title())
```

Output Visualization:

```
h=[]
for i in df["Country"].unique():
    d=df[df["Country"]==i]
    h.append(d["H.S"].max())
roar=pd.Series(h,index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(roar.index,roar.values,color=["gold","lightcyan","cyan","red","aqua","black","maroon","deepskyblue","yellow","mediumseagreen"])
plt.grid(True)
plt.title("Top 10 Countries having highest score by a player in an inning".title())
```

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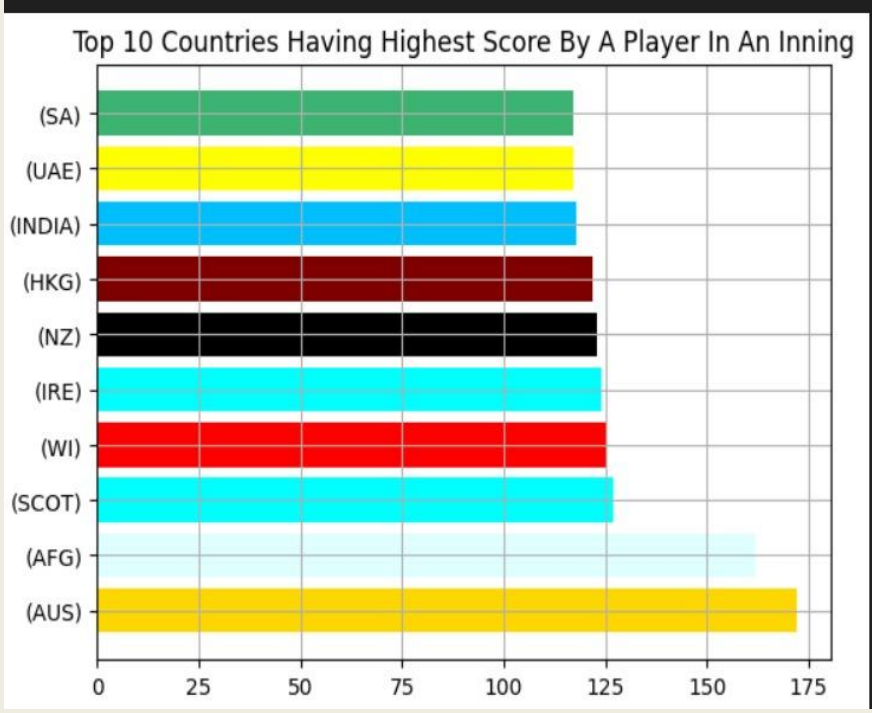
```
xt(0.5, 1.0, 'Top 10 Countries Having Highest Score By A Player In An Inning')
```



A horizontal bar chart showing countries with the highest individual scores in an inning.

Insight Observed:

Australia stands out with the highest individual score, followed by Afghanistan and Scotland. Associate nations like Scotland and Hong Kong also feature, indicating exceptional individual brilliance.

Conclusion:

This highlights not just dominant cricketing nations, but also breakout performances from lesser-known countries.

Insight 2: Top 10 Countries According to Total Runs Scored by Player

Goal:

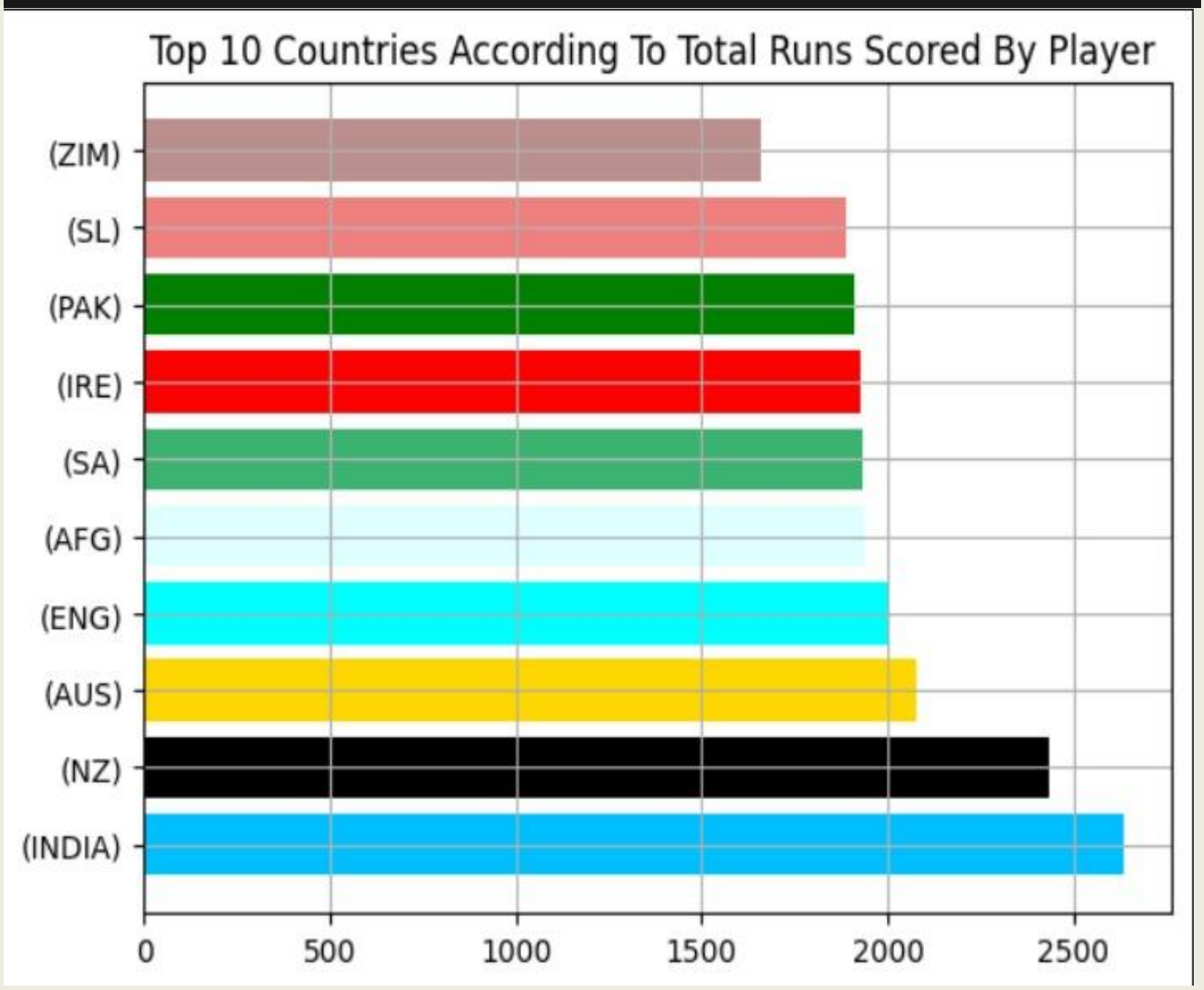
Display the countries where players have achieved the highest aggregate runs.

Data Processing Steps (Code):

```
r = []
for i in df["Country"].unique():
    d = df[df["Country"] == i]
    r.append(d["Runs"].max())
rrr = pd.Series(r, index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(rrr.index, rrr.values, color=["deepskyblue", "black", "gold", "cyan", "lightcyan", "mediumseagreen", "red", "green",
"lightcoral", "rosybrown"])
plt.grid(True)
plt.title("Top 10 Countries according to total runs scored by player ".title())
```

Output Visualization:

```
r=[]
for i in df["Country"].unique():
    d=df[df["Country"]==i]
    r.append(d["Runs"].max())
rrr=pd.Series(r,index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(rrr.index,rrr.values,color=["deepskyblue","black","gold","cyan","lightcyan","mediumseagreen","red","green","lightcoral","rosybrown"])
plt.grid(True)
plt.title("Top 10 Countries according to total runs scored by player ".title())
```



Bar chart of countries ranked by the maximum total runs scored by an individual player.

Insight Observed:

India tops the list with the most runs by a player, followed closely by New Zealand and Australia. The presence of consistent top-order batters plays a key role.

Conclusion:

Countries with stable and experienced top-order players dominate in terms of total runs.

Insight 3: Top 10 Most Six-Hitting Countries

Goal:

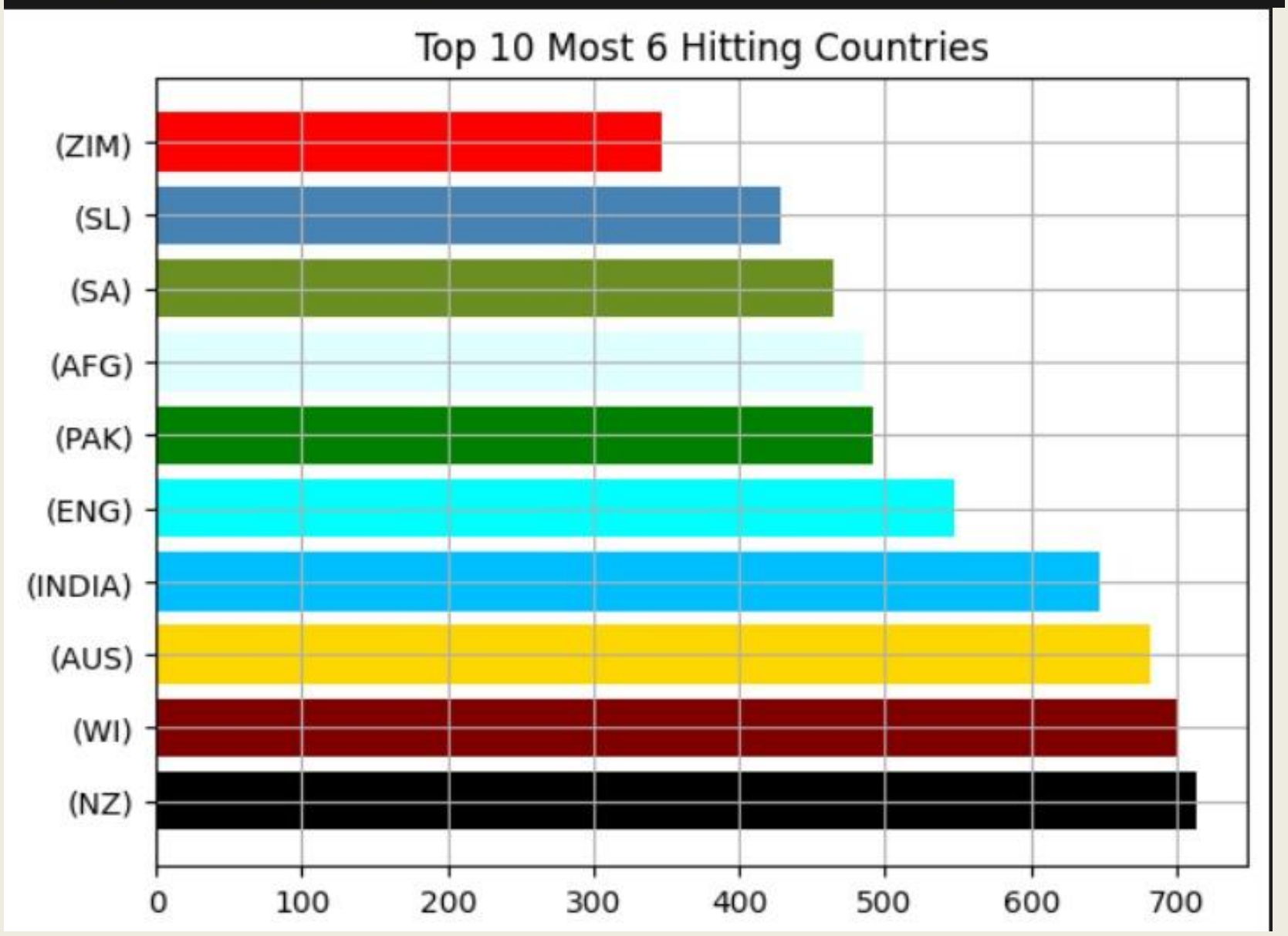
Analyze which countries have collectively hit the most sixes in ICC tournaments.

Data Processing Steps (Code):

```
o = []
for i in df["Country"].unique():
    d = df[df["Country"] == i]
    o.append(d["6s"].sum())
sor = pd.Series(o, index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(sor.index, sor.values, color=["black", "maroon", "gold", "deepskyblue", "cyan", "green", "lightcyan", "olivedrab",
"steelblue", "red"])
plt.grid(True)
plt.title("Top 10 Most 6 Hitting Countries")
```

Output Visualization:

```
o=[]
for i in df["Country"].unique():
    d=df[df["Country"]==i]
    o.append(d["6s"].sum())
sor=pd.Series(o,index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(sor.index,sor.values,color=["black","maroon","gold","deepskyblue","cyan","green","lightcyan","olivedrab","steelblue","red"])
plt.grid(True)
plt.title("Top 10 Most 6 Hitting Countries")
```



Bar graph of countries with the highest six count.

Insight Observed:

New Zealand leads, followed by West Indies and Australia. Power-hitters and aggressive middle orders impact these numbers.

Conclusion:

Explosive batting styles in teams like WI and NZ contribute significantly to their six-hitting dominance.

Insight 4: Top 10 Highest Strike Rate Countries

Goal:

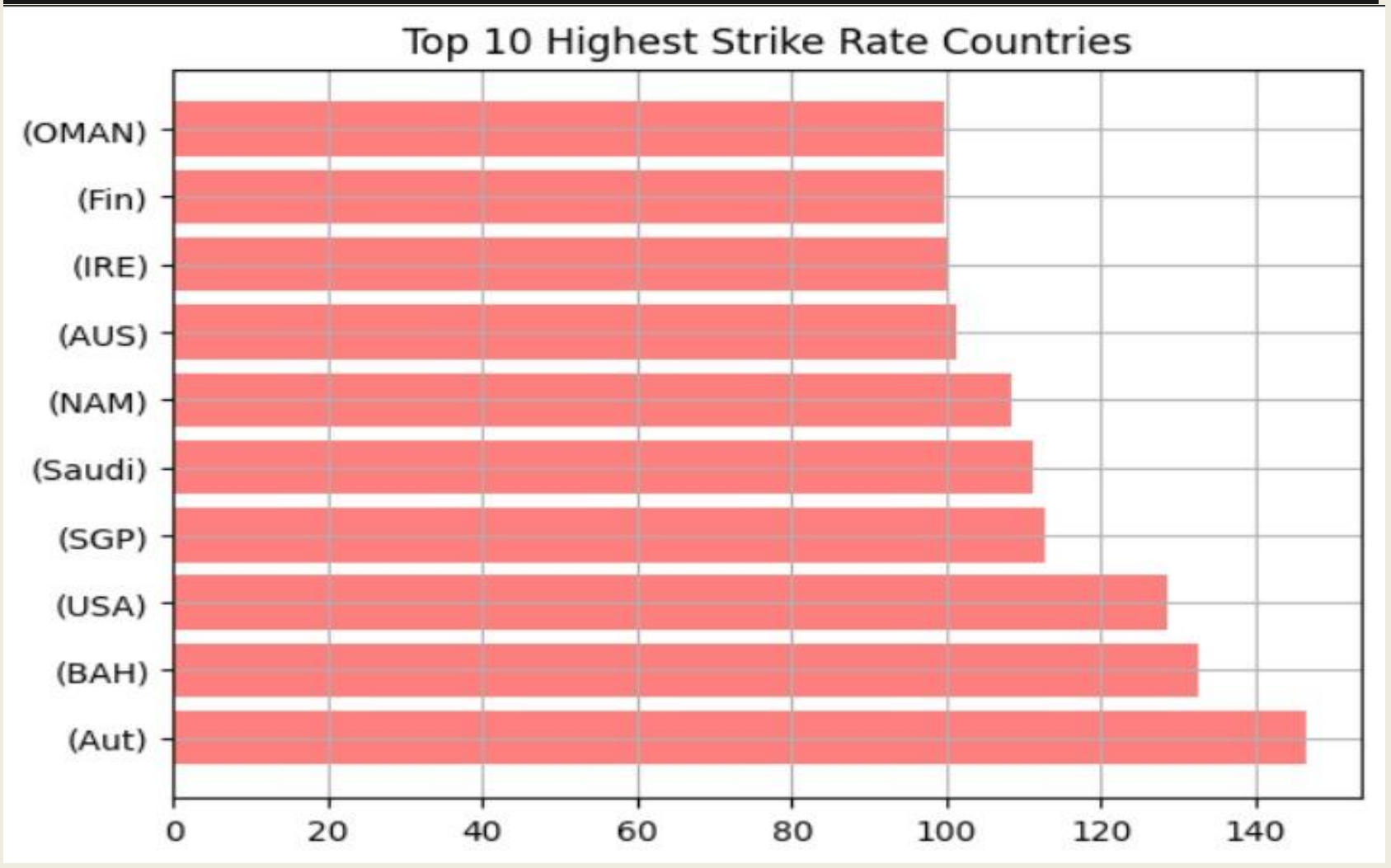
Determine which countries have the highest average strike rates across all their players.

Data Processing Steps (Code):

```
s = []
for i in df["Country"].unique():
    d = df[df["Country"] == i]
    s.append(d["SR"].mean())
srr = pd.Series(s, index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(srr.index, srr.values, color="red", alpha=0.5)
plt.grid(True)
plt.title("Top 10 Highest Strike Rate Countries")
```

Output Visualization:

```
s=[]
for i in df["Country"].unique():
    d=df[df["Country"]==i]
    s.append(d["SR"].mean())
srr=pd.Series(s,index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(srr.index,srr.values,color="red",alpha=0.5)
plt.grid(True)
plt.title("Top 10 Highest Strike Rate Countries")
```



Bar chart showing the average strike rate per country.

Insight Observed:

Austria leads with the highest average SR, followed by Bahrain and the USA. Associate teams are adapting aggressive formats quickly.

Conclusion:

T20 influence is visible in these countries with fast-scoring players.

Insight 5: Top 10 Highest Average Countries

Goal:

Evaluate the countries with the highest average scores across all their batters.

Data Processing Steps (Code):

```
av = []
for i in df["Country"].unique():
    d = df[df["Country"] == i]
    av.append(d["Average"].mean())
rearr = pd.Series(av, index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(rearr.index, rearr.values, color=["deepskyblue", "black", "gold", "cyan", "lightcyan", "mediumseagreen", "red", "green",
"lightcoral", "rosybrown"])
plt.grid(True)
plt.title("Top 10 Highest Average Countries".title())
```

Output Visualization:

```
av=[]
for i in df["Country"].unique():
    d=df[df["Country"]==i]
    av.append(d["Average"].mean())
rearr=pd.Series(av,index=df["Country"].unique()).sort_values(ascending=False).head(10)
plt.barh(rearr.index,rearr.values,color=["deepskyblue","black","gold","cyan","lightcyan","mediumseagreen","red","green","lightcoral","rosybrown"])
plt.grid(True)
plt.title("Top 10 Highest Average Countries".title())
```

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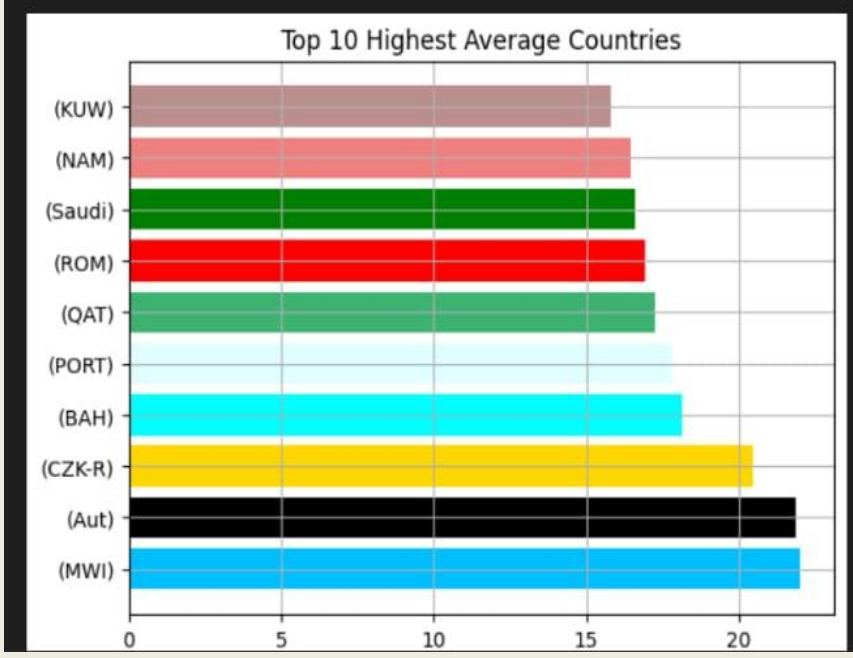
```
Text(0.5, 1.0, 'Top 10 Highest Average Countries')
```



Horizontal bar plot representing average runs per player per country.

Insight Observed:

Kuwait and Namibia lead the list, showcasing stable batters. High averages suggest consistency more than aggression.

Conclusion:

Teams like KUW and NAM build their strength around consistent batting performances.

Insight 6: Players Who Have Faced the Most Balls

Goal:

Identify the top 5 players who have faced the maximum number of balls, indicating patience and time spent at the crease.

Data Processing Steps (Code):

```
o = df.sort_values(by="Balls faced", ascending=False).head().reset_index()
for i in range(5):
    plt.plot(["Average", "Innings", "SR"], o.loc[i, ["Average", "Innings", "SR"]], label=o.loc[i, "Player"])
plt.grid(True)
plt.legend()
plt.title("Comparison of top 5 players who have faced maximum balls".title())
```

Output Visualization:

A line chart comparing players across average, innings, and strike rate.

Insight Observed:

Virat Kohli and Rohit Sharma lead in balls faced, emphasizing their role as anchors. High SRs with high balls faced imply dominance over long periods.

Conclusion:

These players are not only aggressive but also stay long at the crease — crucial for building big totals.

Insight 7: Strike Rate of ICC Tournament Teams

Goal

To compare the average batting strike rate (SR) of different international teams in ICC tournaments, offering insight into each team's scoring approach — whether aggressive or conservative.

Data Processing Steps

List of Teams:

```
list_Country = ["(INDIA)", "(PAK)", "(AUS)", "(ENG)", "(SA)", "(NZ)", "(WI)", "(AFG)", "(SL)", "(BDESH)"]
```

Calculation of Average SR:
For each team, SR values were filtered and their mean computed:

```
Average_SR = []
for i in list_Country:
    Average_SR.append(df[df["Country"]==i]["SR"].mean())
```

Data Conversion:
Created a pandas.Series for visualization:

```
sr = pd.Series(Average_SR, index=list_Country)
```

Bar Plot Visualization

```
plt.bar(sr.index, sr.values, color="g")
plt.title("Strike Rate of ICC Tournament Teams")
```

Output Visualization

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Code JupyterLab Python 3 (ipykernel)

```
[25]: (INDIA)     81.110741
      (PAK)      94.175366
      (AUS)     101.394944
      (ENG)      96.537791
      (SA)       91.734810
      (NZ)       98.013333
      (WI)       88.316923
      (AFG)      94.786410
      (SL)       90.677711
      (BDESH)    95.347576
      dtype: float64

[26]: plt.bar(sr.index,sr.values,color="g")
      plt.title("Strike Rate of ICC Tournament Teams")

[26]: Text(0.5, 1.0, 'Strike Rate of ICC Tournament Teams')
```

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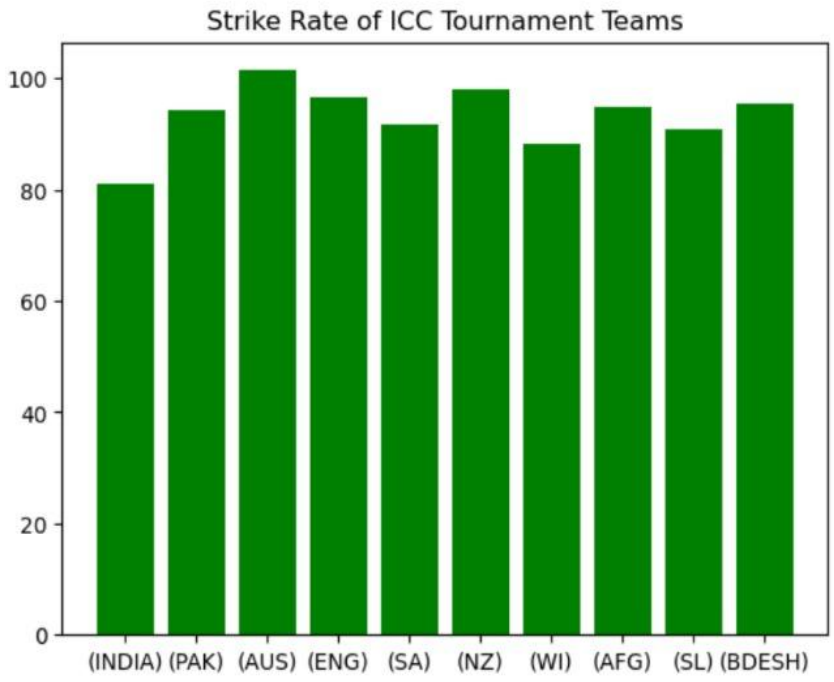
Code JupyterLab Python 3 (ipyke



Highest: **Australia** — 101.39

Lowest: **India** — 81.11

Others:

Pakistan: 94.17

New Zealand: 98.01

England: 96.53

South Africa: 91.73

Bangladesh: 95.35

Insight Observed

Australia has the most aggressive batting style.

India, though filled with top-tier talent, shows the lowest SR — indicating a deeper inconsistency.

New Zealand, **Pakistan**, and **England** combine power-hitting with consistency.

Conclusion

Strike rate trends illustrate a team's batting intent. While Australia exhibits sheer aggression across the order, India's lower SR suggests a more measured or inconsistent approach. Understanding these differences can help teams tailor strategies and select balanced playing XIs.

Insight 8: Number of Sixes by Country

Goal

To evaluate the total sixes hit by players from each team — a secondary measure that reflects power-hitting capability and complements SR analysis.

Data Processing

```
six = []
for i in list_Country:
    six.append(df[df["Country"]==i]["6s"].sum())
sr1 = pd.Series(six, index=list_Country)
```

Bar Plot Visualization

```
plt.bar(sr1.index, sr1.values)
plt.title("Number of Sixes Hit by Country in ICC Tournament")
```

Output Visualization

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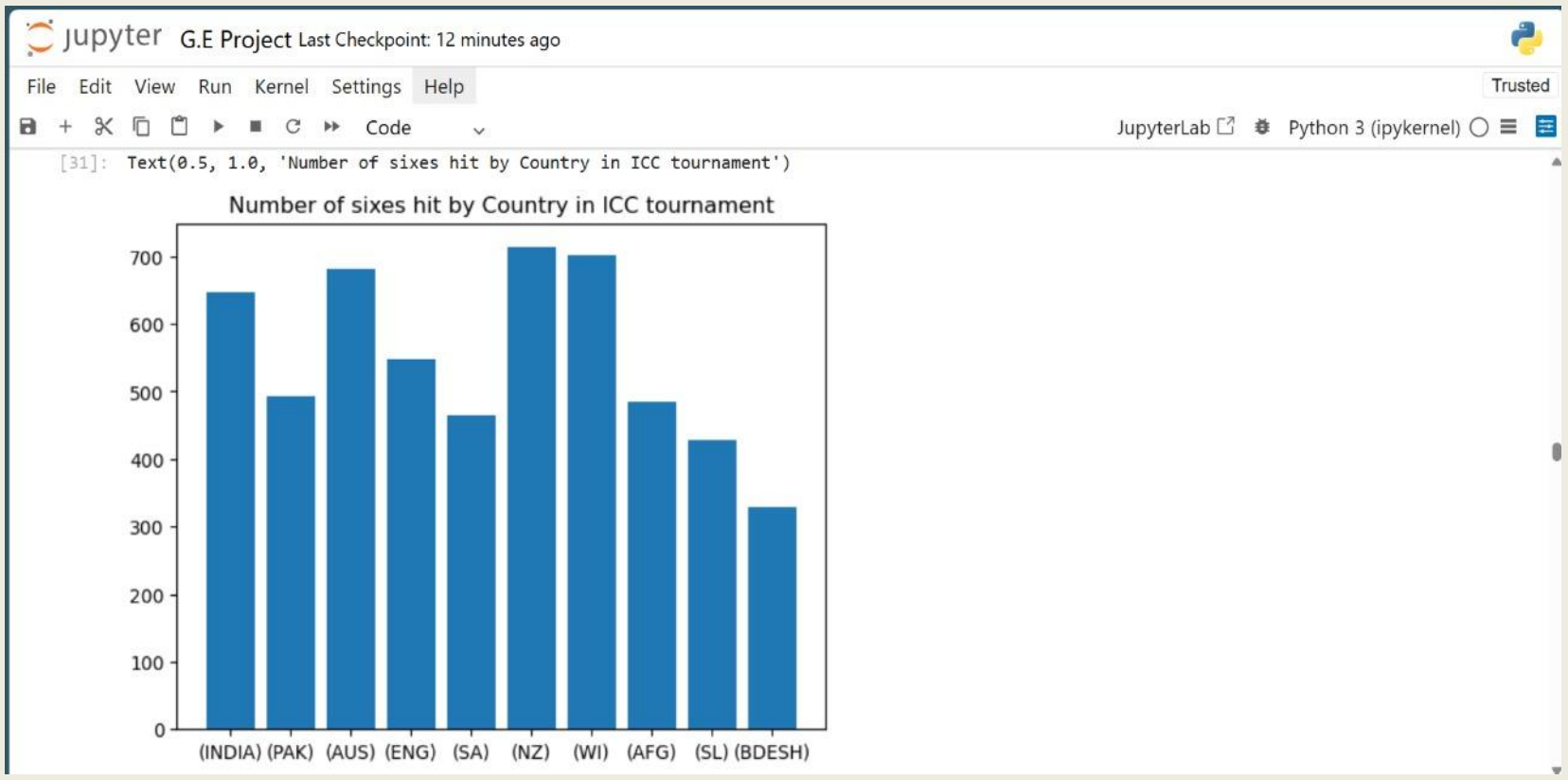
Code — JupyterLab — Python 3 (ipykernel)

```
[27]: six=[]
      for i in list_Country:
          six.append(df[df["Country"]==i]["6s"].sum())

[28]: six

[28]: [647.0, 492.0, 682.0, 548.0, 464.0, 713.0, 702.0, 485.0, 428.0, 329.0]

[29]: sr1= pd.Series(six,index=list_Country)

[30]: sr1

[30]: (INDIA)    647.0
      (PAK)      492.0
      (AUS)      682.0
      (ENG)      548.0
      (SA)       464.0
      (NZ)       713.0
      (WI)       702.0
      (AFG)      485.0
      (SL)       428.0
      (BDESH)    329.0
      dtype: float64

[31]: plt.bar(sr1.index,sr1.values)
      plt.title("Number of sixes hit by Country in ICC tournament")

[31]: Text(0.5, 1.0, 'Number of sixes hit by Country in ICC tournament')
```



New Zealand: 713

Australia: 682

India: 647

Bangladesh: 329 (lowest)

Insight Observed

High six count aligns with high team SR — e.g., Australia, New Zealand.

India, despite low SR, hits a large number of sixes — suggesting **explosive top-order** but slower middle/lower order.

Bangladesh and Sri Lanka show both low SR and low six counts — suggesting conservative batting.

Conclusion

Six-hitting ability helps decode the **batting dynamics** behind SR values. Teams with frequent sixes typically maintain high scoring momentum. It also highlights role players such as finishers or top-order sluggers.

Insight 9: Top Scorers by Country

Goal

To find the highest run-scorer from each country and compare their performance.

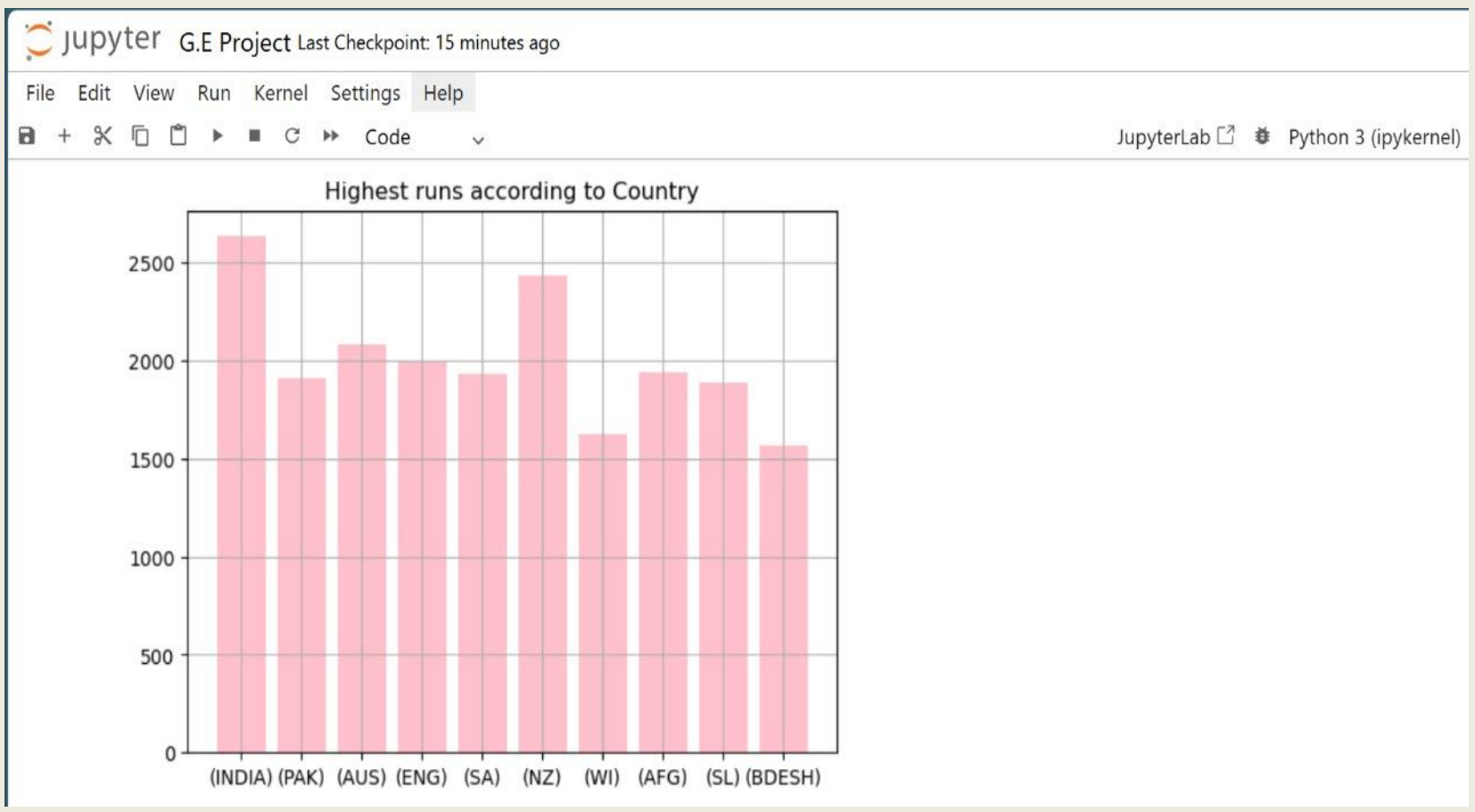
Data Processing

```
run = []
for i in list_Country:
    run.append(df[df["Country"]==i]["Runs"].max())
```

Bar Plot Visualization

```
plt.bar(list_Country, run, color="pink")
plt.title("Highest Runs According to Country")
```

Output Visualization



Kohli & Rohit: 2633 runs

Guptill: 2436

Warner: 2079

Insight Observed

Indian batsmen dominate the run chart.

However, team SR is not aligned — highlighting a **top-heavy performance**.

Australia and New Zealand have distributed run contributions that align with team-wide high SRs.

Conclusion

Run totals help contextualize SR values. High SR and high runs together suggest **consistent aggression**, whereas high runs but low SR (India) highlight **inconsistencies beyond star players**.

Insight 10: Performance Analysis of Top 5 Indian Players

Goal

To evaluate the top 5 Indian batsmen in ICC tournaments using three key metrics — **Strike Rate (SR)**, **Batting Average**, and **Highest Score (H.S.)** — to understand India's batting approach and role clarity among key players

Data Processing Steps

Sort the Indian player dataset (ind) by runs scored.

Extract top 5 run-scorers.

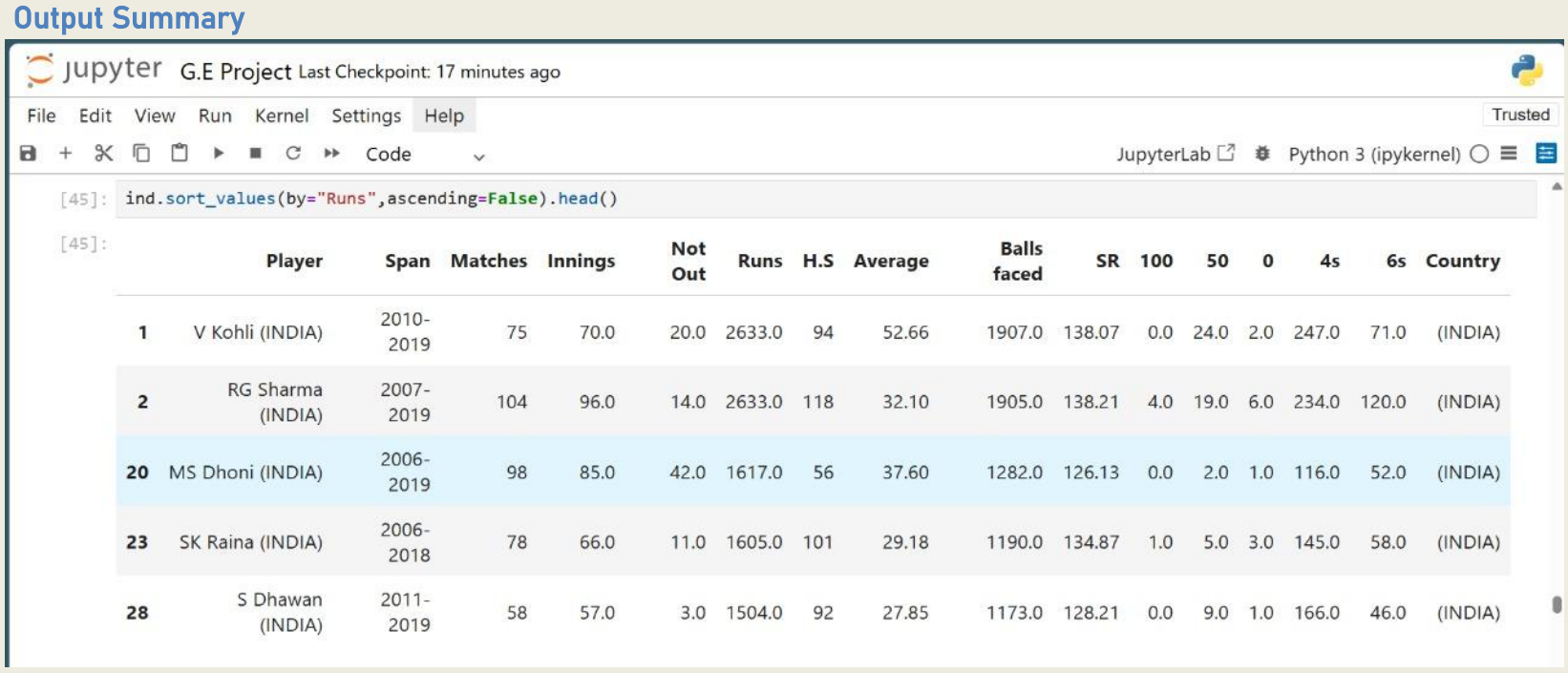
Plot their SR, Avg, and H.S.

```
ind.sort_values(by="Runs", ascending=False).head()
```

Visualization Code

```
plt.plot(["H.S", "Average", "SR"], ind.loc[1, ["H.S", "Average", "SR"]], label="Virat Kohli", marker="o")
plt.plot(["H.S", "Average", "SR"], ind.loc[2, ["H.S", "Average", "SR"]], label="Rohit Sharma", marker=">")
plt.plot(["H.S", "Average", "SR"], ind.loc[20, ["H.S", "Average", "SR"]], label="MS Dhoni", marker="s")
plt.plot(["H.S", "Average", "SR"], ind.loc[23, ["H.S", "Average", "SR"]], label="Suresh Raina", marker="d")
plt.plot(["H.S", "Average", "SR"], ind.loc[28, ["H.S", "Average", "SR"]], label="Shikhar Dhawan", marker="^")
```

Output Summary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Code — JupyterLab — Python 3 (ipykernel)

[45]:
```
ind.sort_values(by="Runs",ascending=False).head()
```

[45]:

	Player	Span	Matches	Innings	Not Out	Runs	H.S	Average	Balls faced	SR	100	50	0	4s	6s	Country
1	V Kohli (INDIA)	2010-2019	75	70.0	20.0	2633.0	94	52.66	1907.0	138.07	0.0	24.0	2.0	247.0	71.0	(INDIA)
2	RG Sharma (INDIA)	2007-2019	104	96.0	14.0	2633.0	118	32.10	1905.0	138.21	4.0	19.0	6.0	234.0	120.0	(INDIA)
20	MS Dhoni (INDIA)	2006-2019	98	85.0	42.0	1617.0	56	37.60	1282.0	126.13	0.0	2.0	1.0	116.0	52.0	(INDIA)
23	SK Raina (INDIA)	2006-2018	78	66.0	11.0	1605.0	101	29.18	1190.0	134.87	1.0	5.0	3.0	145.0	58.0	(INDIA)
28	S Dhawan (INDIA)	2011-2019	58	57.0	3.0	1504.0	92	27.85	1173.0	128.21	0.0	9.0	1.0	166.0	46.0	(INDIA)

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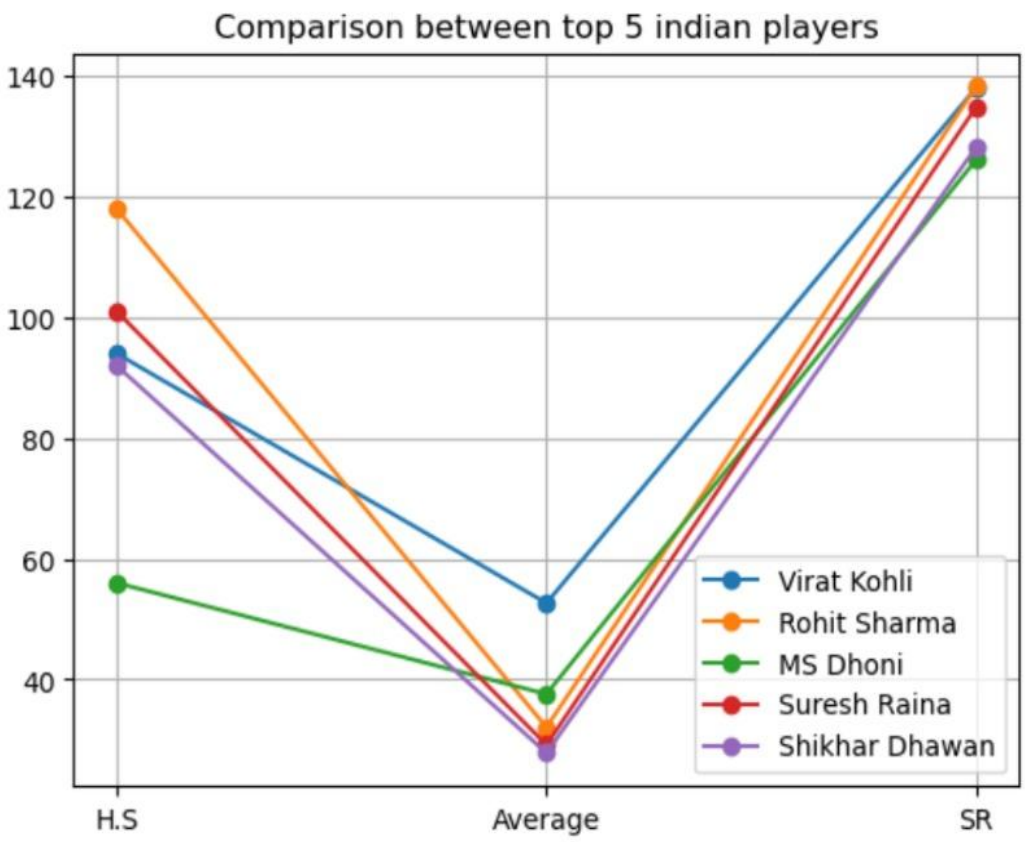
Code Jup

[46]: <matplotlib.legend.Legend at 0x1a037c4bad0>



Player	H.S.	Average	SR
Virat Kohli	94	52.66	138.07
Rohit Sharma	118	32.10	138.21
MS Dhoni	56	37.60	126.13
Suresh Raina	101	29.18	134.87
Shikhar Dhawan	92	27.85	128.21

Insight Observed

High SR values (>125) for all players despite India's **team SR being just 81.11**.

Virat Kohli stands out for his **remarkable average (52.66)** alongside a strong SR.

Rohit Sharma is the most aggressive with SR 138.21 and the highest score (118).

This suggests India's low team SR stems from **lack of depth beyond the top 5**.

Conclusion

India's top players are **world-class finishers and scorers**, but the team's overall SR is weighed down by underperforming middle and lower-order batsmen. Strategic depth remains a concern.

Insight 11: Performance Analysis of Top 5 Australian Players

Goal

To analyze the top 5 Australian run-scorers in ICC tournaments by comparing SR, average, and H.S., revealing the reason behind Australia's leading team strike rate (101.39).

Data Processing

Filtered data for (AUS) and sorted by highest runs.

Extracted top 5 and visualized key batting metrics.

Visualization Code

```
plt.plot(["H.S", "Average", "SR"], Aus.loc[0, ["H.S", "Average", "SR"]], label="David Warner", marker="o")
plt.plot(["H.S", "Average", "SR"], Aus.loc[1, ["H.S", "Average", "SR"]], label="AJ Finch", marker=">")
plt.plot(["H.S", "Average", "SR"], Aus.loc[2, ["H.S", "Average", "SR"]], label="GJ Maxwell", marker="s")
plt.plot(["H.S", "Average", "SR"], Aus.loc[3, ["H.S", "Average", "SR"]], label="SR Watson", marker="d")
plt.plot(["H.S", "Average", "SR"], Aus.loc[4, ["H.S", "Average", "SR"]], label="CL White", marker="^")
```

Output Summary

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Code JupyterLab Python 3 (ipykernel)

[49]:

	index	Player	Span	Matches	Innings	Not Out	Runs	H.S	Average	Balls faced	SR	100	50	0	4s	6s	Country
0	6	DA Warner (AUS)	2009-2019	76	76.0	8.0	2079.0	100	30.57	1476.0	140.85	1.0	15.0	5.0	203.0	86.0	(AUS)
1	13	AJ Finch (AUS)	2011-2019	58	58.0	9.0	1878.0	172	38.32	1200.0	156.50	2.0	11.0	4.0	182.0	90.0	(AUS)
2	24	GJ Maxwell (AUS)	2012-2019	61	54.0	9.0	1576.0	145	35.02	985.0	160.00	3.0	7.0	1.0	133.0	81.0	(AUS)
3	32	SR Watson (AUS)	2006-2016	58	56.0	6.0	1462.0	124	29.24	1006.0	145.32	1.0	10.0	3.0	115.0	83.0	(AUS)
4	63	CL White (AUS)	2007-2014	47	44.0	14.0	984.0	85	32.80	740.0	132.97	0.0	5.0	3.0	71.0	44.0	(AUS)

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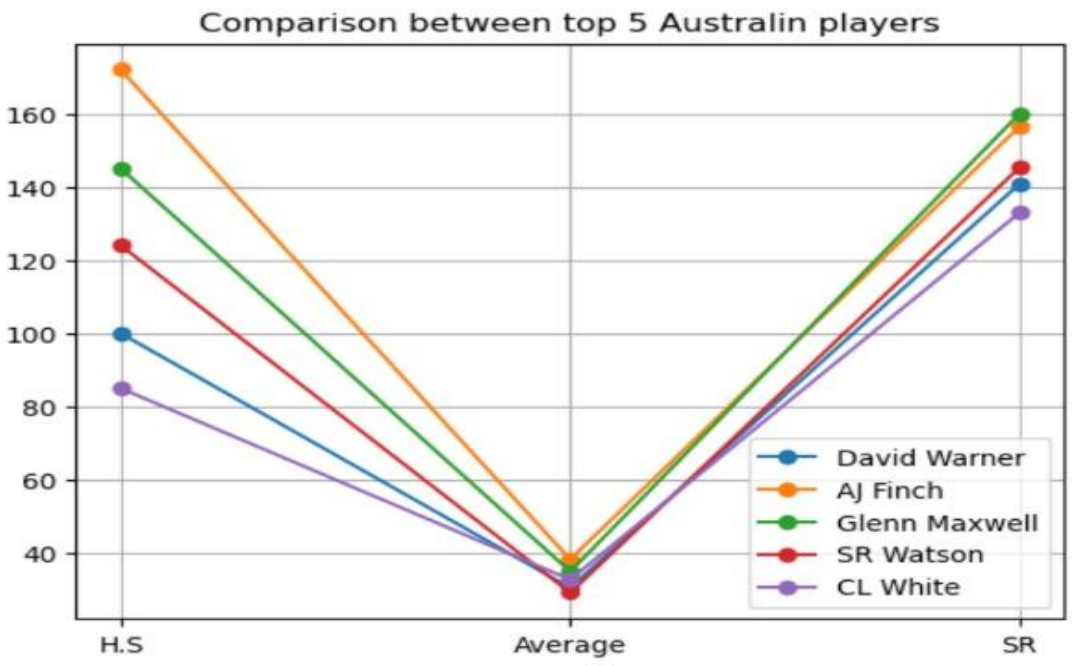
Code Jupy



Player	H.S.	Average	SR
David Warner	100	30.57	140.85
AJ Finch	172	38.32	156.50
GJ Maxwell	145	35.02	160.00
SR Watson	124	29.24	145.32
CL White	85	32.80	132.97

Insight Observed

All five players maintain **SR > 130**, with 3 players crossing **SR 145**.

Aggression is consistent — not isolated to one or two players.

AJ Finch's SR + Average combo (156.50 SR & 38.32 Avg) is **extremely effective**.

Conclusion

Australia's high team SR is **fully justified** by the depth and uniformity in top-order strike rate. Their batting is **built on aggressive intent**, enabling them to dominate in ICC tournaments.

● Insight 12: Performance Analysis of Top 5 New Zealand Players

Goal

To examine the top 5 New Zealand players by runs and analyze their SR, average, and highest scores to understand NZ's aggressive and balanced batting approach.

Data Processing

Filtered New Zealand data ((NZ)), sorted by most runs.

Retrieved top 5 batters and compared core batting KPIs.

Visualization Code

```
plt.plot(["H.S", "Average", "SR"], NZ.loc[0, ["H.S", "Average", "SR"]], label="MJ Guptill", marker="o")
plt.plot(["H.S", "Average", "SR"], NZ.loc[1, ["H.S", "Average", "SR"]], label="BB McCullum", marker=">")
plt.plot(["H.S", "Average", "SR"], NZ.loc[2, ["H.S", "Average", "SR"]], label="LRPL Taylor", marker="s")
plt.plot(["H.S", "Average", "SR"], NZ.loc[3, ["H.S", "Average", "SR"]], label="C Munro", marker="d")
plt.plot(["H.S", "Average", "SR"], NZ.loc[4, ["H.S", "Average", "SR"]], label="KS Williamson", marker="^")
```

Output Summary

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Code — JupyterLab — Python 3 (ipykernel)

```
[51]: NZ.head()
```

[51]:

	Player	Span	Matches	Innings	Not Out	Runs	H.S	Average	Balls faced	SR	100	50	0	4s	6s	Country
3	MJ Guptill (NZ)	2009-2019	83	80.0	7.0	2436.0	105	33.36	1810.0	134.58	2.0	15.0	2.0	215.0	113.0	(NZ)
5	BB McCullum (NZ)	2005-2015	71	70.0	10.0	2140.0	123	35.66	1571.0	136.21	2.0	13.0	3.0	199.0	91.0	(NZ)
14	LRPL Taylor (NZ)	2006-2019	95	87.0	19.0	1743.0	63	25.63	1430.0	121.88	0.0	5.0	5.0	110.0	65.0	(NZ)
26	C Munro (NZ)	2012-2019	60	57.0	7.0	1546.0	109	30.92	966.0	160.04	3.0	9.0	5.0	114.0	100.0	(NZ)
27	KS Williamson (NZ)	2011-2019	57	55.0	7.0	1505.0	73	31.35	1236.0	121.76	0.0	9.0	2.0	158.0	26.0	(NZ)

```
[52]: NZ.sort_values(by="Runs",ascending=False).head().reset_index()
```

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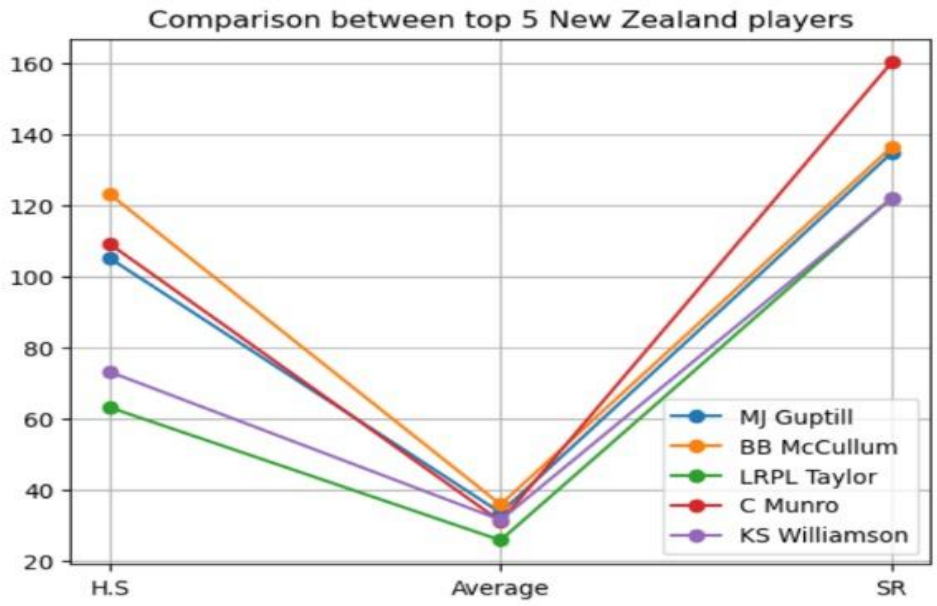
Code

```
[53]: <matplotlib.legend.Legend at 0x1a03af76c60>
```



Player	H.S.	Average	SR
MJ Guptill	105	33.36	134.58
BB McCullum	123	35.66	136.21
LRPL Taylor	63	25.63	121.88
Colin Munro	109	30.92	160.04
KS Williamson	73	31.35	121.76

Insight Observed

Colin Munro leads with an **SR of 160.04** — among the highest in the tournament.

McCullum and Guptill add steady aggression (~135 SR).

Williamson balances the team with **solid averages and reliable strike rotation**.

Conclusion

New Zealand exhibits a **strategic blend** of aggression and anchoring. While Munro and McCullum provide fireworks, players like Williamson provide structure — explaining NZ's **high SR and six count**.

Summary Across Insights 4–6

Country	Team SR	Top 5 Avg SR	Balance Type	Key Insight
India	81.11	~133–138	Star-dependent	World-class top performers, weak middle/lower order
Australia	101.39	~145–160	Uniformly aggressive	Consistent power hitting at every top-order slot
NZ	98.01	~122–160	Balanced	Blends anchors (Williamson) with power hitters

Insight 13: Most Not Out Players

Goal

To explore players with the most "not out" innings — crucial for evaluating **finishing roles** and team stability.

Line Plot Visualization

```
Not Out\",ascending=False).head(10).reset_index()\n
    for i in range(10):\n
plt.plot([\"H.S\",\"Average\",\"SR\",\"100\",\"50\",\"0\",\"4s\",\"6s\"],v.loc[i,[\"H.S\",\"Average\",\"SR\",\"100\",\"50\",\"0\",\"4s\",\"6s\"]],label=v[\
"Player\"][i],marker=\"o\"),
    plt.title(\"Comparison between top 10 most not out players\"),
    plt.grid(True)

    plt.legend(loc=\"upper left\")
    plt.show()
```

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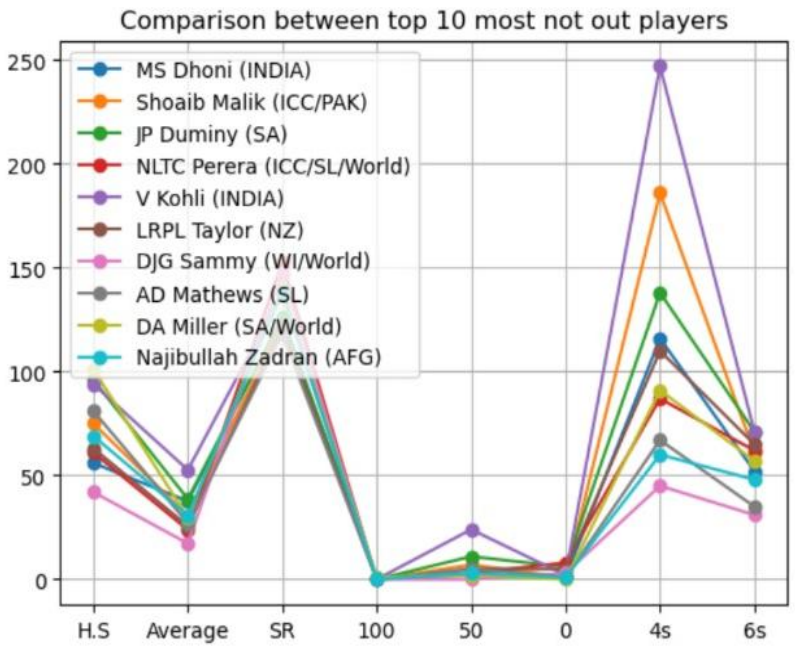
Code JupyterLab Python 3 (ipykernel)



Top Players:

MS Dhoni ,Shoaib Malik, JP Duminy, D.J. Sammy, D. Miller

Insight Observed

These players consistently remain not out — typically **finisher roles**.

They may have moderate SRs but **high match impact** due to:

Controlled hitting

Late-overs acceleration

Match-winning stability

Conclusion

"Not out" data introduces a deeper performance layer: **SR alone doesn't measure contribution**. Finishers like Dhoni or Miller shape innings even without sky-high SRs, and are critical for successful chases or death-over tactics.

Insight 14: Average of Top 10 Highest Scorers

Goal

To identify the players with the highest overall run totals in the dataset and analyze their batting averages.

Data Processing Steps

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Code JupyterLab Python 3 (ipykernel)

```
[55]: col=["red","green","black","pink","magenta","orange","yellow","blue","violet","cyan"]

[56]: x=df.sort_values(by="Runs",ascending=False).head(10)

[57]: plt.barh(x["Player"],x["Average"],color=col,alpha=0.7)
      plt.title("Average Of Top 10 Highest Scorers")
```

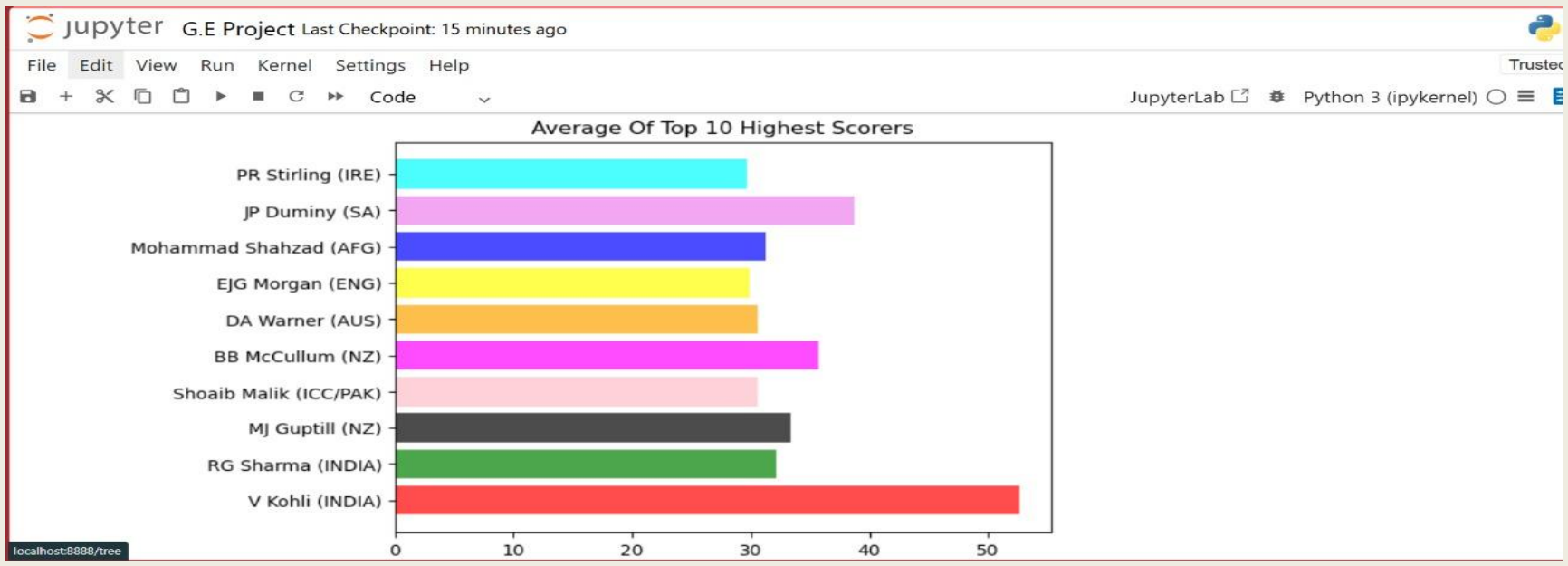
1. The dataset was sorted by the 'Runs' column in descending order.
2. The top 10 rows were selected representing the top 10 run scorers.
3. Their batting averages were extracted from the 'Average' column.
4. A horizontal bar plot was created to visualize these averages using different colors.

Insight Observed

- Virat Kohli stands out with the highest average among all top 10 run scorers, crossing the 50 mark.
- Players like JP Duminy, BB McCullum, and MJ Guptill also show consistent averages around 30–35.
- The spread of averages shows consistency among elite batsmen, though Kohli's standout figure indicates his exceptional consistency.

Output visualization

A colorful horizontal bar chart titled 'Average Of Top 10 Highest Scorers' displays the averages of the top scorers, sorted from highest to lowest.



Conclusion

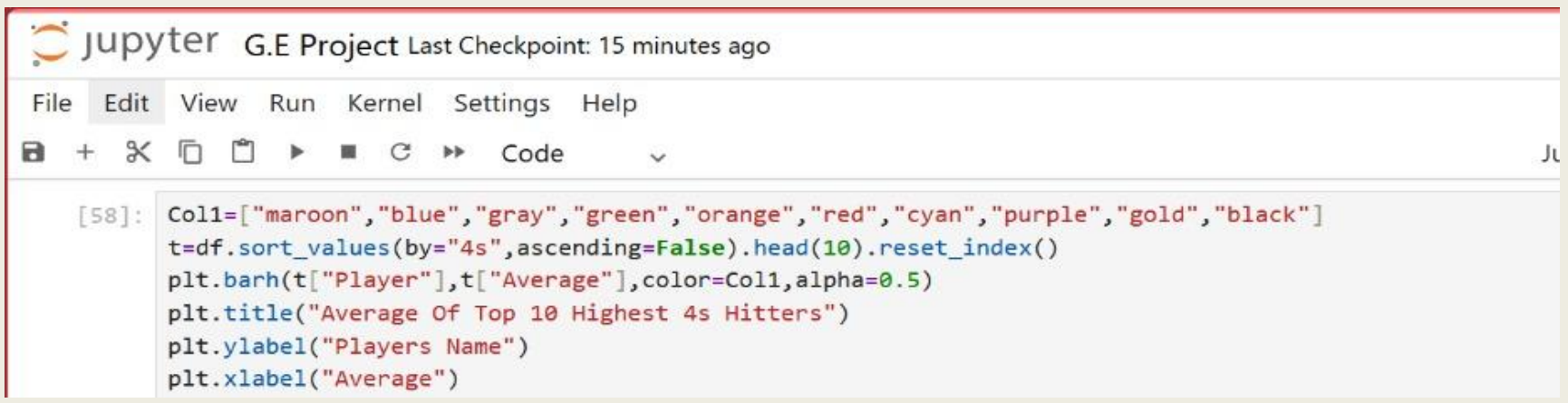
Virat Kohli not only ranks among the highest run-scorers but also maintains a remarkably high average, proving his reliability and impact at the crease.

Insight 15: Average of Top 10 Highest 4s Hitters

Goal

To determine which batsmen hit the most boundaries (fours) and analyze their batting averages.

Data Processing Steps



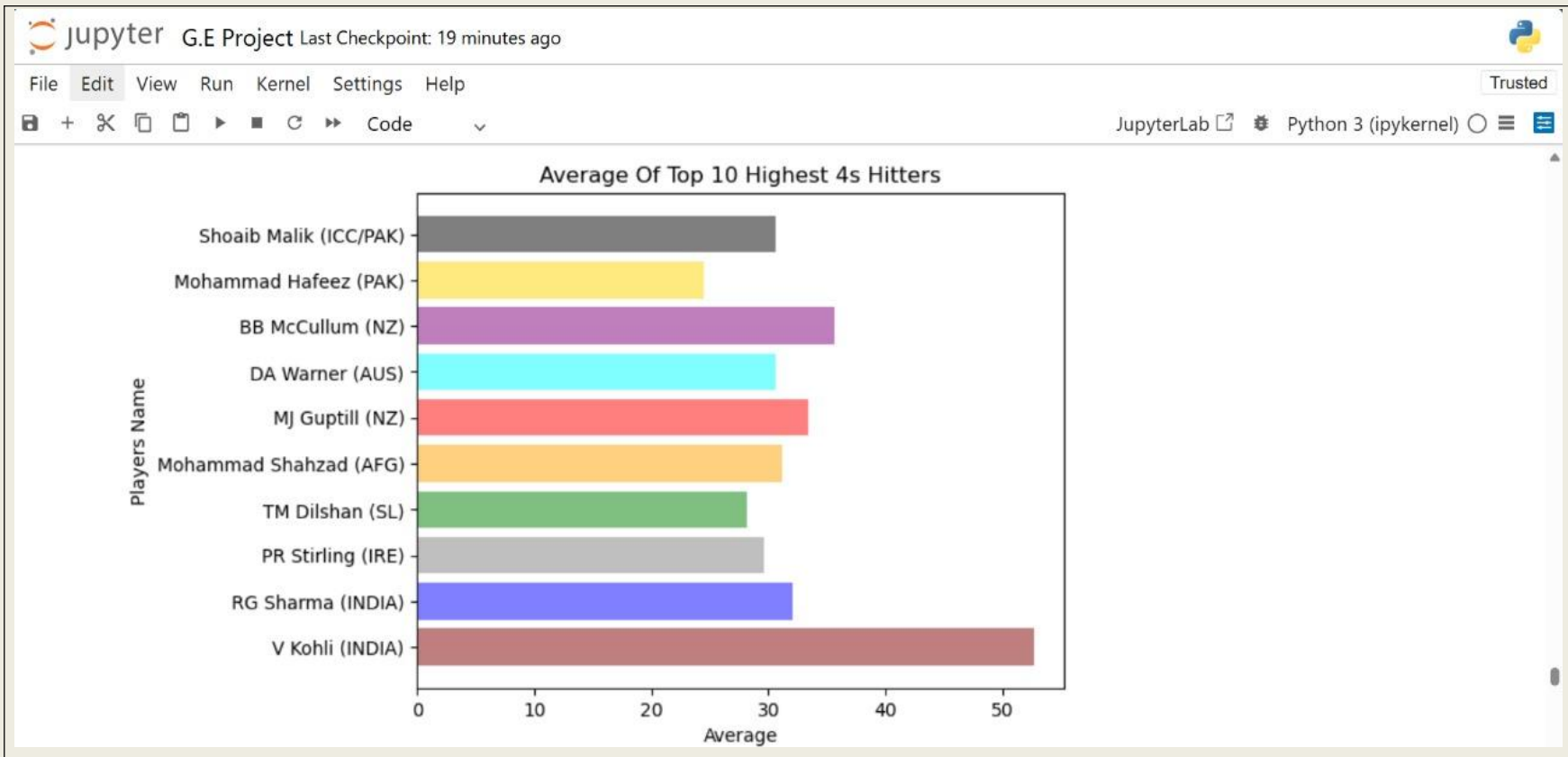
1. The dataset was sorted by the '4s' column in descending order.
2. The top 10 rows were extracted based on the highest number of 4s hit.
3. The batting averages for these players were retrieved.
4. A horizontal bar plot was generated to visualize the average of top 10 highest 4s hitters.

Insight Observed

- Virat Kohli again tops the list not only for hitting many 4s but also maintaining a high average.
- Players like BB McCullum and RG Sharma also show strong averages among boundary-hitters.
- Players with high 4 counts also tend to have strong average scores, indicating they play calculated and impactful innings.

Output visualization

A bar chart titled 'Average Of Top 10 Highest 4s Hitters' displays a breakdown of average scores against player names, emphasizing consistency with boundary-hitting ability.



Conclusion

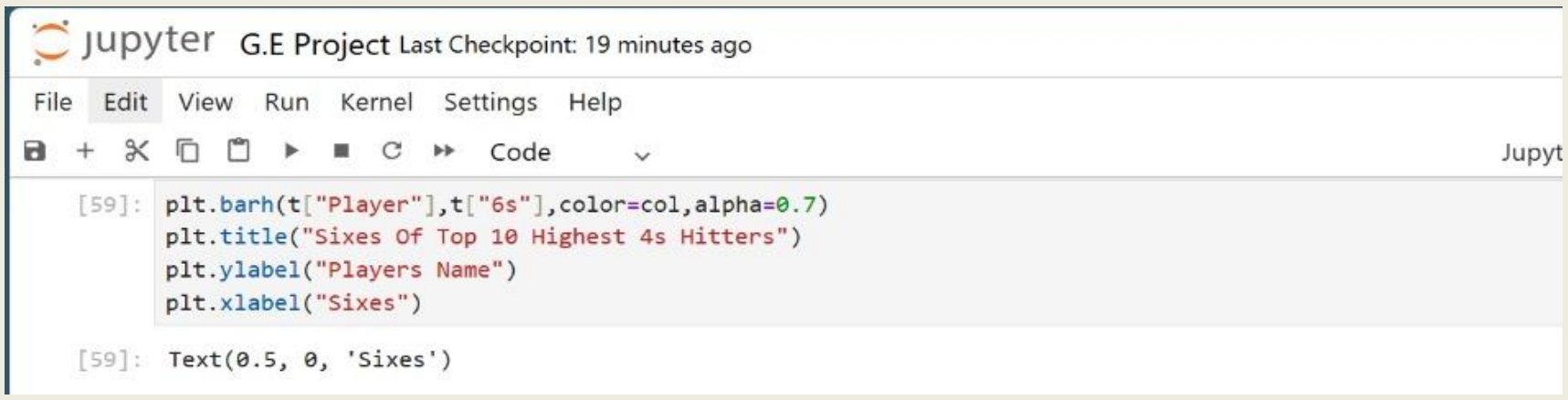
Boundary-hitting ability correlates well with higher averages, showcasing that these players manage both aggression and consistency.

Insight 16: Sixes Hit by Top 10 4s Hitters

Goal

To examine the aggressive playing style of top 4s hitters by analyzing how many sixes they've hit.

Data Processing Steps



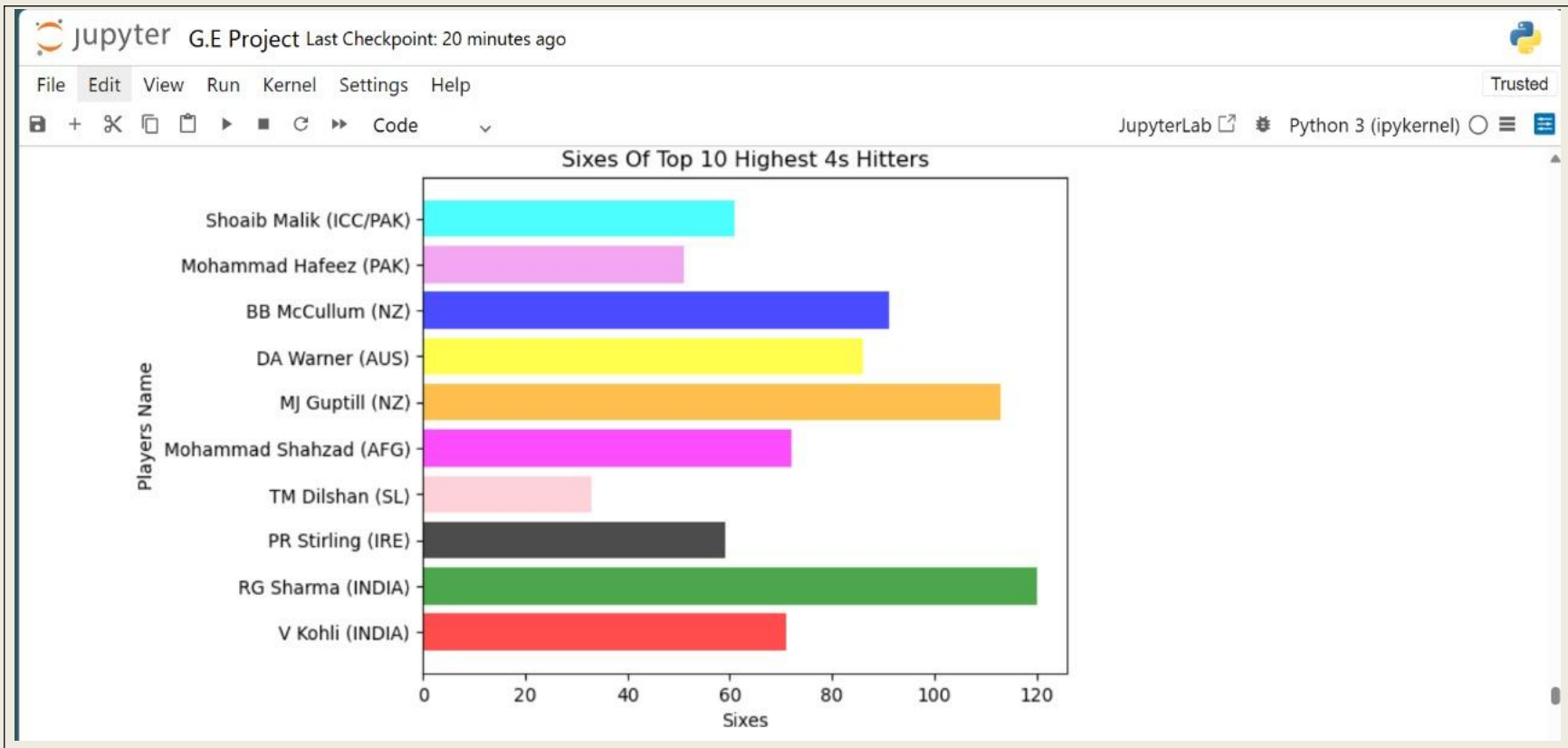
1. From the top 10 4s hitters obtained previously, the '6s' column was analyzed.
2. A bar graph was plotted using the number of sixes hit by each of those players.
3. Each bar was color-coded to align with previous visual themes.

Insight Observed

- RG Sharma and DA Warner top the six-hitting charts among 4s hitters, showing they excel in both types of boundaries.
- TM Dilshan and Mohammad Hafeez, though good 4s hitters, have significantly fewer sixes, indicating a more ground-focused style.

Output visualization

A horizontal bar plot titled 'Sixes Of Top 10 Highest 4s Hitters' shows the six counts visually for easy comparison.



Conclusion

Boundary-heavy players like RG Sharma and Warner balance four and six hitting, while others rely more on calculated shots rather than pure aggression.

Insight 17: Strike Rate of Top 10 4s Hitters

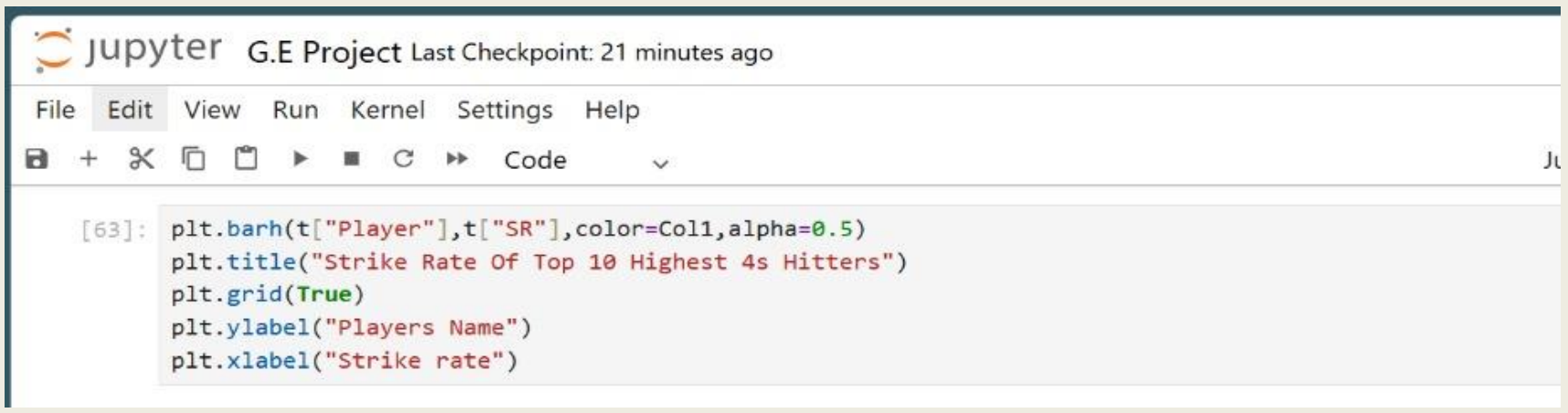
Goal

To evaluate the scoring efficiency (strike rate) of players who hit the most 4s.

Data Processing Steps

1. Using the same dataset of top 10 4s hitters, their 'SR' (strike rate) was plotted.
2. A horizontal bar chart was created with appropriate labels.
3. Data grid and color transparency was enhanced for better visualization.

Insight Observed



- DA Warner and MJ Guptill lead in strike rates, showcasing their fast-scoring capability.
- Players like Kohli, even though high on average, have slightly lower strike rates compared to more explosive hitters.

Output visualization

A bar plot titled 'Strike Rate Of Top 10 Highest 4s Hitters' provides a clear visual comparison of their scoring rates.

Conclusion

Not all boundary hitters are fast scorers. While some combine average with aggression, others may favor stability over speed.

Insight 18: Combined Comparison of Top 10 4s Hitters

Goal

To present a holistic comparison of the top 4s hitters based on three critical metrics: Average, 6s, and Strike Rate.

Data Processing Steps

1. Data from the top 10 4s hitters was plotted across three metrics — Average, 6s, and SR.
2. A line graph was used to represent each player with different colors.
3. The plot was titled and legends were added for clarity.

Insight Observed

- Kohli maintains high consistency with moderate 6s and high average.
- Warner balances all three metrics well — high 4s, 6s, and strike rate.
- Players like Dilshan and Hafeez perform well in average but are relatively conservative in 6-hitting.

Output visualization

A multi-line comparison chart illustrates the trade-offs and strengths of each player across the three metrics.

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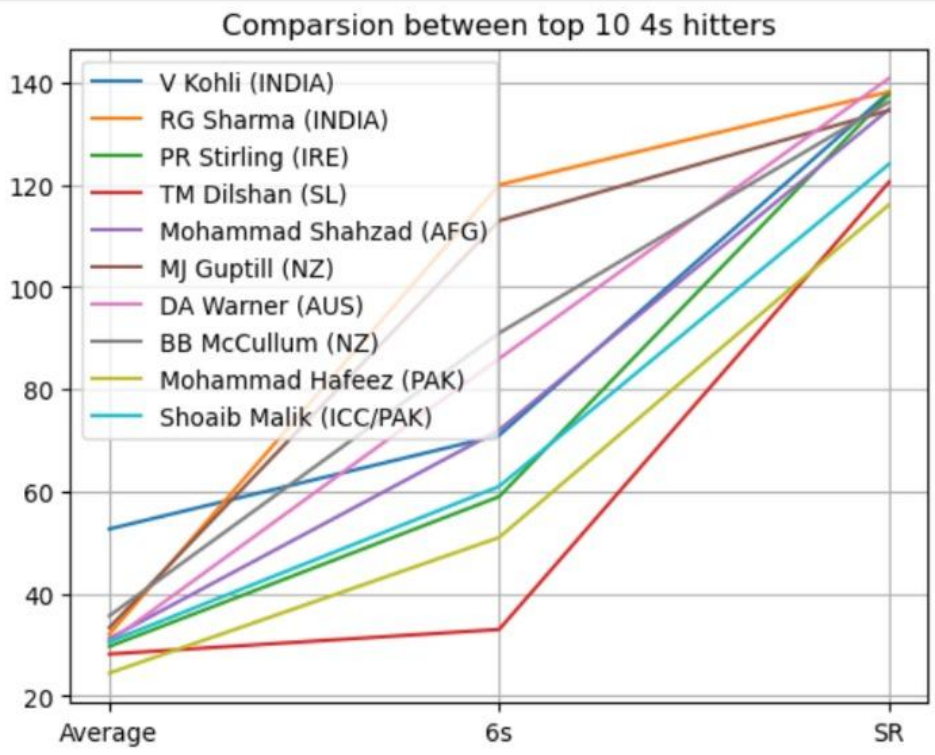
Code JupyterLab Pyt



Conclusion

The combined analysis helps identify players who are all-round offensive threats versus those who specialize in selective metrics like consistency or strike rate.

6. Conclusion

Insight 1: Highest Individual Score by Country

Australia topped the list with the highest individual score in an inning. Associate teams like Afghanistan, Scotland, and Hong Kong featured prominently, showing emerging batting talent.

Insight 2: Total Runs by Country

India led with the highest total runs scored by a single player, followed by New Zealand and Australia.Highlights the presence of high-volume run-scorers like Virat Kohli and Rohit Sharma.

Insight 3: Most Six-Hitting Countries

New Zealand, West Indies, and Australia recorded the most sixes in total. West Indies confirmed their reputation for boundary-heavy innings. Teams like India and England also contributed significantly to six totals despite varying strike rates

Insight 4: Highest Average Strike Rate by Country

Austria, Bahrain, and USA showed surprisingly high average strike rates, driven by fearless cricket in shorter formats. Indicates evolving aggression in associate nations influenced by T20 franchise cricket.Top-tier teams like England and Pakistan rank just below, showcasing balance.

Insight 5: Highest Batting Average by Country

Kuwait, Namibia, and Saudi Arabia had the highest average scores per player.Suggests these nations rely on stability and technique over raw aggression.Reflects rising cricketing standards among emerging countries.

Insight 6: Players Who Faced the Most Balls

Virat Kohli and Rohit Sharma faced the most balls, proving their role as long-term innings anchors.Players like Shoaib Malik and Martin Guptill also contributed sustained innings.

Insight 7: Strike Rate of ICC Tournament Teams
Calculated the average strike rate for each country using `.mean()` on filtered data.
Australia recorded the highest team SR (~101.39), while India had the lowest (~81.11).
New Zealand, England, and Pakistan displayed strong strike rates in the mid-90s.

Insight 8: Number of Sixes by Country
New Zealand and West Indies led in total sixes hit, indicating power-centric batting.
India, despite its low team SR, had a high six count, suggesting top-order explosiveness.
Lower-performing teams like Bangladesh and Sri Lanka had both low SR and six totals.

Insight 9: Top Scorers by Country
India dominated the run-scoring chart with both Virat Kohli and Rohit Sharma scoring over 2600 runs.
High run totals didn't always correlate with high team SR, showing an imbalance in middle-order contributions.

Insight 10: India – Top 5 Player Analysis
Top players had high SRs (Rohit 138.21, Kohli 138.07) and strong averages.
Despite this, India's team SR was lowest overall—highlighting poor depth and inconsistency beyond the top 5.

Insight 11: Australia – Top 5 Player Analysis
Every top Australian player had SR >130; Maxwell (160), Finch (156), and Warner (140).
The high SR across top 5 supports Australia's team-wide aggressive play.

Insight 12: New Zealand – Top 5 Player Analysis
NZ's batting blended consistency (Williamson, Taylor) with explosive hitting (Munro SR 160).
This explains their high team SR (98.01) and highest six count (713).

Insight 13: Most Not Out Players
Players like MS Dhoni, Shoaib Malik, and Duminy had high not-out counts.
These players played finishing roles, contributing stability despite lower SRs.

Insight 14: Average of Top 10 Highest scorers
Players like JP Duminy, BB McCullum, and MJ Guptill show consistent averages around 30–35. we observe that Virat kohli stands out with highest average as he is the only one crossing the 50 mark .

Insight 15: Average of Top 10 Highest 4s Hitters
Virat Kohli again tops the list and Players like BB McCullum and RG Sharma also show strong averages.

Insight 16: Sixes Hit by Top 10 4s Hitters
RG Sharma and DA Warner top the six-hitting charts among 4s hitters, showing they excel in both types of boundaries.TM Dilshan and Mohammad Hafeez, though good 4s hitters, have significantly fewer sixes, indicating a more ground-focused style.

Insight 17: Strike Rate of Top 10 4s Hitters
DA Warner and MJ Guptill lead in strike rates, showcasing their fast-scoring capability. Players like Kohli, even though high on average, have slightly lower strike rates.

Insight 18: Combined Comparison of Top 10 4s Hitters
Warner balances all three metrics well — high 4s, 6s, and strike rate. Kohli maintains high consistency with moderate 6s and high average. Players like Dilshan and Hafeez perform well in average but are relatively conservative in 6-hitting.

The analysis of ICC tournament batting performances reveals distinct team strategies and player roles. Australia excels through consistent aggression across their batting order, while New Zealand uses a mix of power and anchor roles. India, despite boasting some of the top individual performers, suffers from depth issues.

Strike rate, six-hitting, and finishing consistency are key metrics for success in modern limited-overs cricket. This study provides data-backed insights that can help selectors, analysts, and coaches to optimize squad selection and in-game strategy.