> ***Visualization***

The primary objective of this data analysis is to assess the performance and anticipate the upcoming challenges faced by the Indian football team, with a particular focus on their journey towards the FIFA World Cup 2026.

Indian Football Team Analysis

```
[ ] #first of all lets import all the required libraries
    import matplotlib.pyplot as plt
    import seaborn as sns
    import pandas as pd
    import numpy as np
```

```
    #loading the data
    df_data=pd.read_csv('/content/AFC RANKING.csv')
    #head is used to display first 5 records of the dataset
    df_data.head()
```

	rank	country_full	country_abrv	total_points	previous_points	rank_change	confederation	rank_date
0	135	Philippines	PHI	1095.66	1095.66	0	AFC	7/20/2023
1	136	Malaysia	MAS	1091.57	1091.57	-1	AFC	7/20/2023
2	137	Kuwait	KUW	1090.42	1084.34	-4	AFC	7/20/2023
3	138	Turkmenistan	TKM	1089.77	1089.77	0	AFC	7/20/2023
4	99	India	IND	1208.69	1204.90	-1	AFC	7/20/2023

```
[ ] #head is used to display last 5 records of the dataset
    df_data.tail()
```

	rank	country_full	country_abrv	total_points	previous_points	rank_change	confederation	rank_date
43	54	Saudi Arabia	KSA	1421.46	1421.46	1	AFC	7/20/2023
44	70	Iraq	IRQ	1345.21	1345.21	0	AFC	7/20/2023
45	59	Qatar	QAT	1395.57	1393.52	1	AFC	7/20/2023
46	146	Hong Kong	HKG	1062.39	1062.39	1	AFC	12/22/2022
47	77	Lebanon	LIB	1308.00	1304.00	-2	AFC	9/20/2018

```
[ ] #returns the number of columns and rows
    df_data.shape
```

```
    (48, 8)
```

```
[ ] #used to check whether null values are there in the dataset or not
    null_values=df_data.isnull().sum()
    print("Null values in the DataFrame:")
    print(null_values)
    #as there are no null Values our data is complete so we can do the further visualization
```

```
    Null values in the DataFrame:
    rank              0
    country_full      0
    country_abrv      0
    total_points      0
    previous_points   0
    rank_change       0
    confederation     0
    rank_date         0
    dtype: int64
```

```
#info is used to get the datatype of each column with their name non-null count respectively
df_data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 48 entries, 0 to 47
Data columns (total 8 columns):
 #   Column           Non-Null Count  Dtype
---  ------           --------------  -----
 0   rank             48 non-null     int64
 1   country_full     48 non-null     object
 2   country_abrv     48 non-null     object
 3   total_points     48 non-null     float64
 4   previous_points  48 non-null     float64
 5   rank_change      48 non-null     int64
 6   confederation    48 non-null     object
 7   rank_date        48 non-null     object
dtypes: float64(2), int64(2), object(4)
memory usage: 3.1+ KB
```

```
#describe gives the Statistical Measures of the Data set such as Mean, max, min, count
df_data.describe()
```

	rank	total_points	previous_points	rank_change
count	48.000000	48.000000	48.000000	48.000000
mean	123.750000	1140.616875	1140.438958	-0.354167
std	53.053766	207.429902	207.034003	1.175813
min	20.000000	825.250000	825.250000	-4.000000
25%	81.500000	989.707500	990.035000	0.000000
50%	135.500000	1093.615000	1093.615000	0.000000
75%	163.750000	1298.390000	1298.195000	0.000000
max	204.000000	1595.960000	1595.960000	1.000000

```
#returns the names of the colums
df_data.columns
```

```
Index(['rank', 'country_full', 'country_abrv', 'total_points',
       'previous_points', 'rank_change', 'confederation', 'rank_date'],
      dtype='object')
```

```
#it is used to return the number of duplicat values in the dataset
df_data.duplicated().sum()
```

```
0
```

```
df_data.nunique()
```

```
rank               48
country_full       47
country_abrv       47
total_points       48
previous_points    48
rank_change         6
confederation       1
rank_date           3
dtype: int64
```

```
[ ] #here we got to know that all countries are there which are under AFC Confederation
    df_data['country_full'].value_counts()
```

```
Lebanon                2
Philippines            1
Pakistan               1
Kyrgyz Republic        1
Palestine              1
Vietnam                1
IR Iran                1
Australia              1
Korea Republic         1
Japan                  1
Sri Lanka              1
Guam                   1
Oman                   1
Singapore              1
Uzbekistan             1
China PR               1
Jordan                 1
United Arab Emirates   1
Bahrain                1
Syria                  1
Saudi Arabia           1
Iraq                   1
Qatar                  1
Myanmar                1
Afghanistan            1
Malaysia               1
Yemen                  1
Kuwait                 1
Turkmenistan           1
India                  1

Thailand               1
Korea DPR              1
Tajikistan             1
Hong Kong, China       1
Cambodia               1
Macau                  1
Mongolia               1
Bhutan                 1
Nepal                  1
Bangladesh             1
Brunei Darussalam      1
Timor-Leste            1
Laos                   1
Indonesia              1
Chinese Taipei         1
Maldives               1
Hong Kong              1
Name: country_full, dtype: int64
```

In the pictures we shared earlier, we did a bunch of things to get ready and understand our dataset. Here's what we did:

1. We started by getting the dataset ready.
2. Then, we looked at how big it is, like how many columns and rows it has.
3. We also checked if there were any missing pieces of information (null values) to make sure our data is complete.
4. We examined if there were any duplicate values.
5. After doing all of this, we're going to make some pictures and graphs to help us see and understand the important things in our dataset, like trends and patterns.

> ***Scenario Analysis***

India's qualification journey for the FIFA World Cup 2026 through the AFC (Asian Football Confederation) involves a multi-stage process:

1. ***AFC First Round (Initial Qualifiers):***
    - ***24 teams are grouped and compete in a round-robin format.***
    - ***The top two teams from each group qualify for the AFC Asian Cup 2027 and progress to the next round of World Cup qualifiers.***
2. ***AFC Second Round (World Cup Qualifiers):***
    - ***18 teams are reorganized into new groups.***
    - ***The top two teams from each group qualify directly for the FIFA World Cup.***
    - ***Teams finishing 3rd and 4th move to Round 3.***
3. ***AFC Third Round:***
    - ***6 remaining teams are split into 2 groups of 3.***
    - ***Group winners qualify for the World Cup; runners-up proceed to Round 4.***
4. ***AFC Fourth Round:***
    - ***The two runners-up face off in a two-legged playoff.***
    - ***The winner advances to the Inter-Confederation Playoffs — the final hurdle toward World Cup qualification.***

Now let's Visualize all these things for clear understanding.!

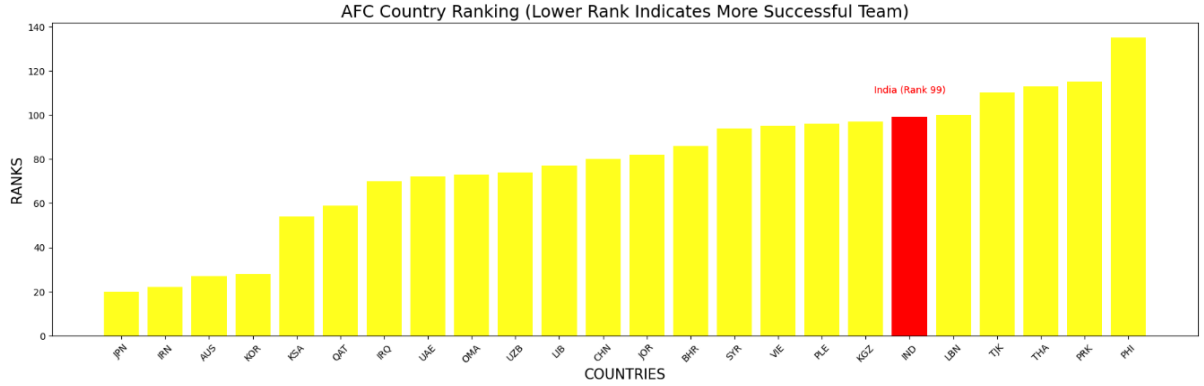
*ROUND 2 AFC Qualifier *

```
df = df_data.sort_values('rank', ascending=True)

new_df_data=df.head(24)
new_df_data
```

	rank	country_full	country_abrv	total_points	previous_points	rank_change	confederation	rank_date
32	20	Japan	JPN	1595.96	1595.96	0	AFC	7/20/2023
29	22	IR Iran	IRN	1556.59	1556.59	0	AFC	7/20/2023
30	27	Australia	AUS	1530.45	1530.45	0	AFC	7/20/2023
31	28	Korea Republic	KOR	1529.30	1529.30	0	AFC	7/20/2023
43	54	Saudi Arabia	KSA	1421.46	1421.46	1	AFC	7/20/2023
45	59	Qatar	QAT	1395.57	1393.52	1	AFC	7/20/2023
44	70	Iraq	IRQ	1345.21	1345.21	0	AFC	7/20/2023
40	72	United Arab Emirates	UAE	1336.28	1336.28	0	AFC	7/20/2023
36	73	Oman	OMA	1332.45	1332.45	0	AFC	7/20/2023
37	74	Uzbekistan	UZB	1327.58	1327.58	0	AFC	7/20/2023
47	77	Lebanon	LIB	1308.00	1304.00	-2	AFC	9/20/2018
38	80	China PR	CHN	1304.78	1304.78	1	AFC	7/20/2023
39	82	Jordan	JOR	1296.26	1296.26	0	AFC	7/20/2023
41	86	Bahrain	BHR	1282.05	1282.05	0	AFC	7/20/2023
42	94	Syria	SYR	1241.62	1241.62	0	AFC	7/20/2023
28	95	Vietnam	VIE	1238.23	1238.23	0	AFC	7/20/2023
27	96	Palestine	PLE	1233.02	1233.02	0	AFC	7/20/2023
26	97	Kyrgyz Republic	KGZ	1224.80	1224.80	0	AFC	7/20/2023
4	99	India	IND	1208.69	1204.90	-1	AFC	7/20/2023
5	100	Lebanon	LBN	1205.77	1201.74	-2	AFC	7/20/2023
8	110	Tajikistan	TJK	1179.54	1179.54	1	AFC	7/20/2023
6	113	Thailand	THA	1174.37	1174.37	0	AFC	7/20/2023
7	115	Korea DPR	PRK	1169.96	1169.96	0	AFC	7/20/2023
0	135	Philippines	PHI	1095.66	1095.66	0	AFC	7/20/2023

I've applied the "ascending" parameter to rank countries in the World Football Chart. This ranking is essential because it determines the qualification of teams for the AFC. To advance to the AFC Group Stage, the top 24 teams based on their ranks will be selected as qualifiers.

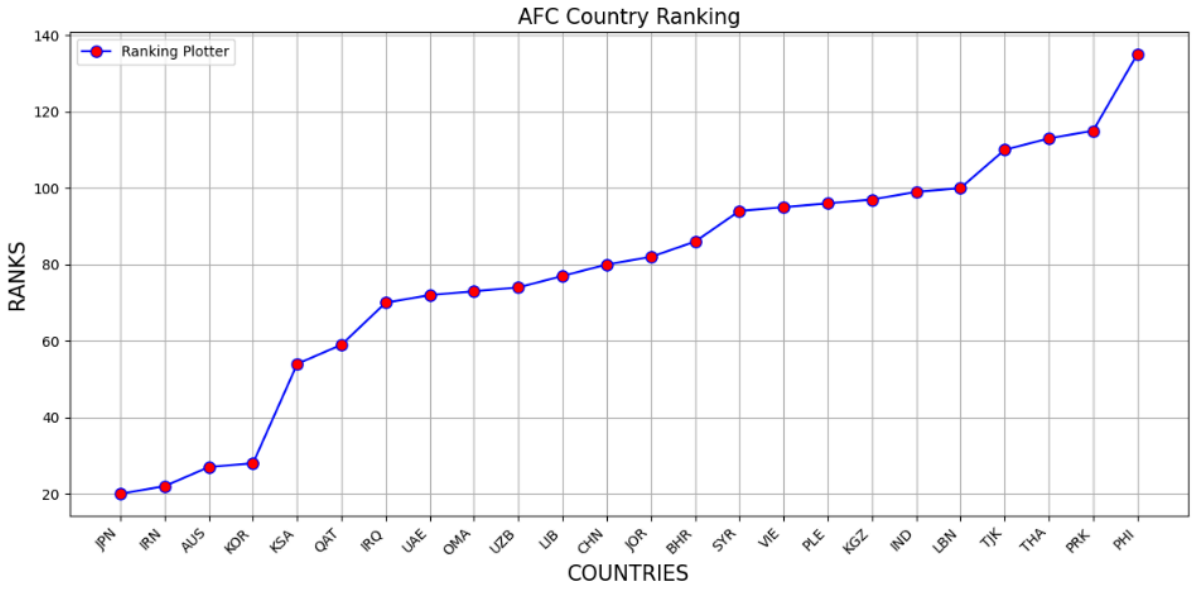
```
[ ]  plt.figure(figsize=(22,6))

     colors = ['yellow'] * 24
     highlight_index = 18
     colors[highlight_index] = 'red'  # Change the color of the highlighted bar

     plt.bar(new_df_data['country_abrv'],new_df_data['rank'],color=colors)
     plt.title("AFC Country Ranking (Lower Rank Indicates More Successful Team)", fontsize=18)
     plt.annotate("India (Rank 99)",(17.2,110),color="r")
     plt.xlabel("COUNTRIES",fontsize=15)
     plt.ylabel("RANKS",fontsize=15)
     plt.xticks(rotation=45)
     plt.show()
     #note here more the rank of the country is less the more successful team it is
```



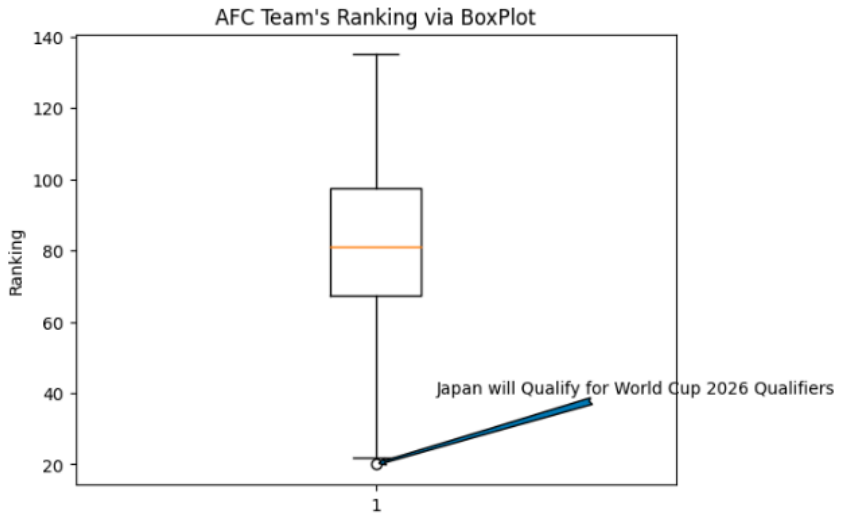
The bar chart displayed above illustrates India's current ranking, which stands at 99. This ranking makes India eligible to participate in the AFC, marking our initial step toward progressing to the FIFA World Cup 2026 Qualifiers. The ranking information is highlighted in the chart.

```
[86] plt.figure(figsize=(12, 6))

     plt.plot(new_df_data['country_abrv'],new_df_data['rank'],linestyle='-',marker='o',color='b',markersize=8,markerfacecolor='r',label="Ranking Plotter")

     plt.title("AFC Country Ranking", fontsize=15)
     plt.xlabel("COUNTRIES", fontsize=15)
     plt.ylabel("RANKS", fontsize=15)

     plt.xticks(rotation=45, ha='right', fontsize=10)

     plt.tight_layout()
     plt.grid(True)
     plt.legend()
     plt.show()
```

This above code creates a line plot that visually displays the timeline of rankings. On the x-axis, you'll find the names of countries, and on the y-axis, their corresponding rankings are represented.




```
plt.boxplot(new_df_data['rank'])
plt.title("AFC Team's Ranking via BoxPlot")
plt.ylabel("Ranking")
plt.annotate("Japan will Qualify for World Cup 2026 Qualifiers",(1,20),xytext=(1.1,40),arrowprops=dict(arrowstyle="fancy"))
plt.show()
```



A box plot is a tool for identifying outliers, and in Asia, several teams, including Australia, the Islamic Republic of Iran, Japan, Korea Republic, Qatar, and Saudi Arabia, participated in the 2022 FIFA World Cup Qualifiers. These teams have a track record of success. Among them, Japan stands out as having a higher world ranking, suggesting that their chances of qualifying for the 2026 World Cup are favorable. This high ranking indicates that Japan possesses a combination of both young and experienced football talent.

Loading the dataset which will help us to see the performance of the team

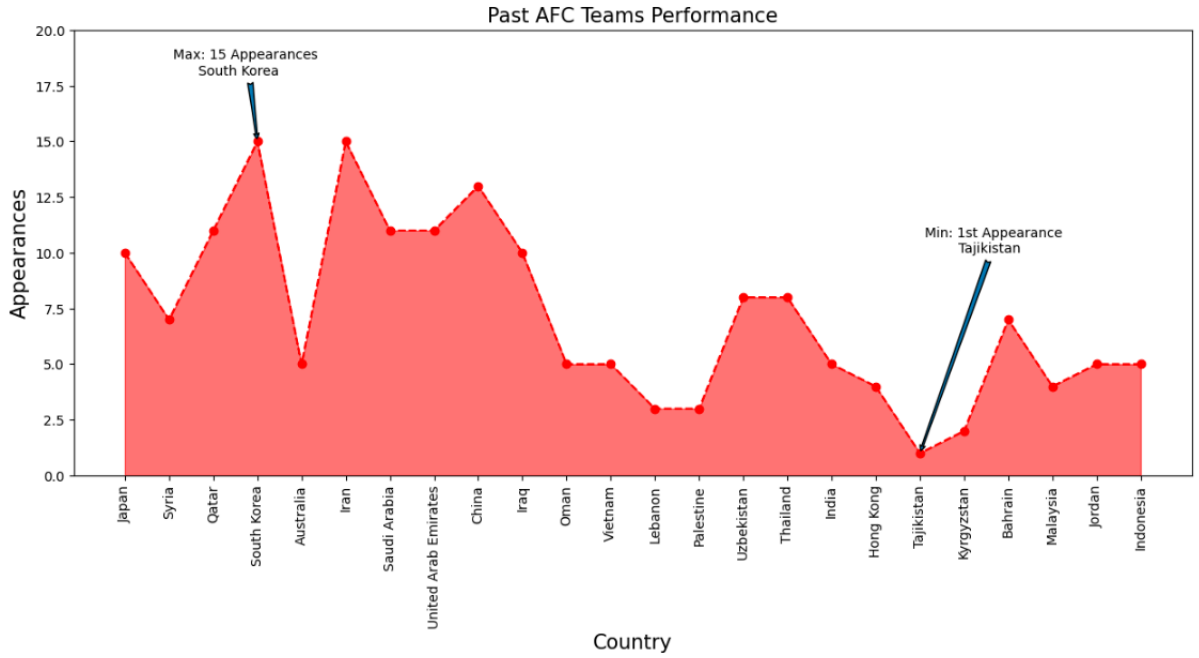
```
#now we will load the afc teams performance dataset
df2_data=pd.read_csv('/content/AFC_CUP_QUALIFICATION.csv')

df2_data
```

	Team	Method of qualification	Date of qualification	Finals appearances	Last appearance	Previous best performance	CUP Won	Runner-Up
0	Japan	Second round Group F winners	28-May-21	10	2019	Winners (1992,2000,2004,2011)	4	0
1	Syria	Second round Group A winners	7-Jun-21	7	2019	Group stage (1980,1984,1988,1996,2011,2019)	0	0
2	Qatar	Hosts / Second round Group E winners	7-Jun-21	11	2019	Winners (2019)	1	0
3	South Korea	Second round Group H winners	9-Jun-21	15	2019	Winners (1956,1960)	2	0
4	Australia	Second round Group B winners	11-Jun-21	5	2019	Winners (2015)	1	0
5	Iran	Second round Group C winners	15-Jun-21	15	2019	Winners (1968,1972,1976)	3	0
6	Saudi Arabia	Second round Group D winners	15-Jun-21	11	2019	Winners (1984,1988,1996)	3	0
7	United Arab Emirates	Second round Group G winners	15-Jun-21	11	2019	Runners-up (1996)	0	1
8	China	Second round Group A runners-up	15-Jun-21	13	2019	Runners-up (1984,2004)	0	2
9	Iraq	Second round Group C runners-up	15-Jun-21	10	2019	Winners (2007)	1	0
10	Oman	Second round Group E runners-up	15-Jun-21	5	2019	Round of 16 (2019)	0	0
11	Vietnam	Second round Group G runners-up	15-Jun-21	5	2019	Fourth place (1956,1960)	0	0
12	Lebanon	Second round Group H runners-up	15-Jun-21	3	2019	Group stage (2000,2019)	0	0
13	Palestine	Third round Group B winners	14-Jun-22	3	2019	Group stage (2015,2019)	0	0
14	Uzbekistan	Third round Group C winners	14-Jun-22	8	2019	Fourth place (2011)	0	0
15	Thailand	Third round Group C runners-up	14-Jun-22	8	2019	Third place (1972)	0	0
16	India	Third round Group D winners	14-Jun-22	5	2019	Runners-up (1964)	0	1
17	Hong Kong	Third round Group D runners-up	14-Jun-22	4	1968	Third place (1956)	0	0
18	Tajikistan	Third round Group F winners	14-Jun-22	1	Debut	None	0	0
19	Kyrgyzstan	Third round Group F runners-up	14-Jun-22	2	2019	Round of 16 (2019)	0	0
20	Bahrain	Third round Group E winners	14-Jun-22	7	2019	Fourth place (2004)	0	0
21	Malaysia	Third round Group E runners-up	14-Jun-22	4	2007	Group stage (1976,1980,2007)	0	0
22	Jordan	Third round Group A winners	14-Jun-22	5	2019	Quarter-finals (2004,2011)	0	0
23	Indonesia	Third round Group A runners-up	14-Jun-22	5	2007	Group stage (1996,2000,2004,2007)	0	0

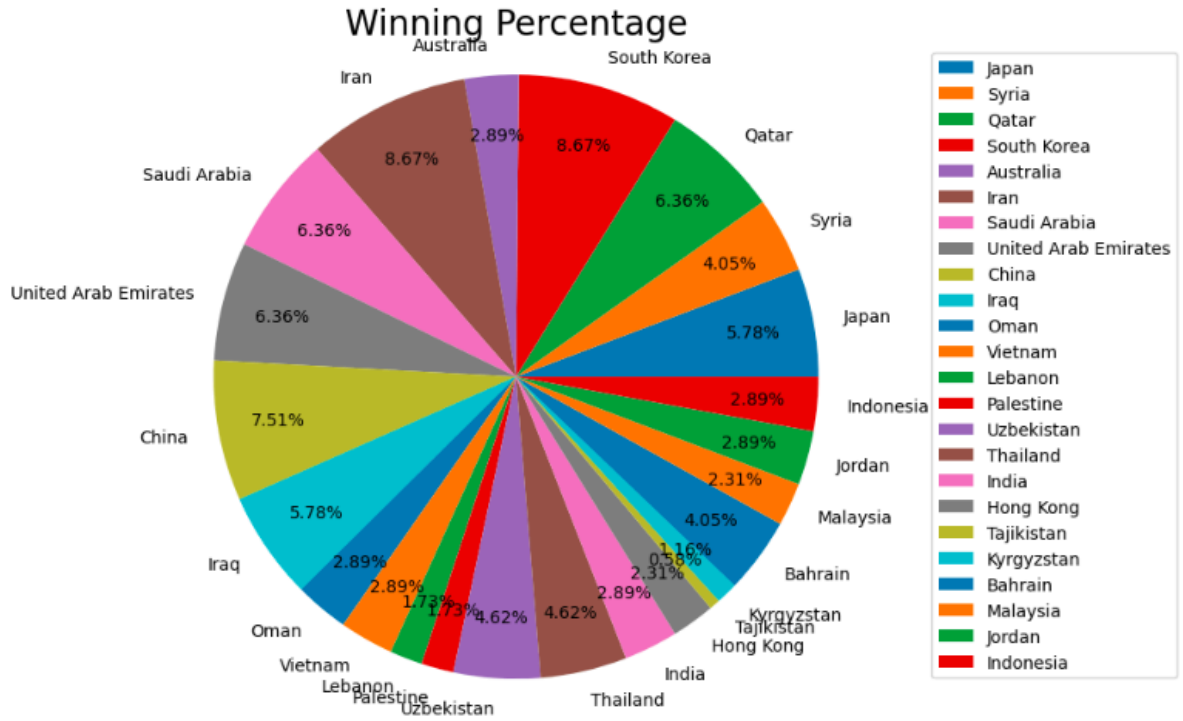
```
[69] plt.figure(figsize=(15, 6))
     plt.plot(df2_data['Team'], df2_data['Finals appearances'],'r--o')
     plt.fill_between(df2_data['Team'], df2_data['Finals appearances'], color='red', alpha=0.5)
     plt.xticks(rotation=90)
     plt.title("Past AFC Teams Performance", fontsize=15)
     plt.xlabel("Country", fontsize=15)
     plt.ylabel("Appearances", fontsize=15)
     plt.annotate("Max: 15 Appearances \n      South Korea",(3,15),xytext=(1.1,18),arrowprops=dict(arrowstyle="fancy"))
     plt.annotate("Min: 1st Appearance \n        Tajikistan",(18,1),xytext=(18.1,10),arrowprops=dict(arrowstyle="fancy"))
     plt.ylim(0,20)
     plt.show()
```

The visualization below provides insights into India's history in the AFC (Asian Football Confederation). India has participated in the AFC five times and was the runner-up once in 1964. However, recent statistics show that India has not been able to clinch the AFC title due to stiff competition from formidable opponents. While Indian football players have shown good overall performance, the AFC boasts tough competitors.

From the visualization, it becomes evident that India's performance in the AFC is average, indicating a need for improvement as a team. We will continue to explore India's team performance through further visualizations.




```
plt.figure(figsize=(14,7))
plt.pie(df2_data['Finals appearances'],labels=df2_data['Team'],autopct="%1.2f%%",pctdistance=0.8)
plt.legend(loc='best', labels=df2_data['Team'])
plt.title("Winning Percentage",fontsize=20)
plt.axis('equal')
plt.show()
```



This pie chart offers valuable insights into the winning percentages of different teams within the AFC (Asian Football Confederation), taking into account their number of appearances. It's intriguing to observe that a majority of these teams haven't secured top positions in the AFC, somewhat resembling Morocco's impressive debut in the FIFA World Cup 2022, where they reached the quarter-finals.

In contrast, India has been making strides in the world of football recently. They have showcased their talent by winning the SAFF Cup and delivering outstanding performances in the Indian Super League (ISL). These achievements collectively contribute to the growth of Indian football and signify significant progress towards our overarching goal.

Now, let's dig deeper into the statistical aspects of Indian players to pinpoint areas for improvement. Our analysis will focus on the Indian Super League (ISL), which serves as a pathway for Indian teams to qualify for the AFC (Asian Football Confederation). Although India may not qualify directly for the AFC due to its lower ranking, it's worth noting that the winning team of the ISL earns the opportunity to compete in the AFC. This achievement is essentially a victory for India.

Let's proceed with a visualization to shed light on this aspect as well.

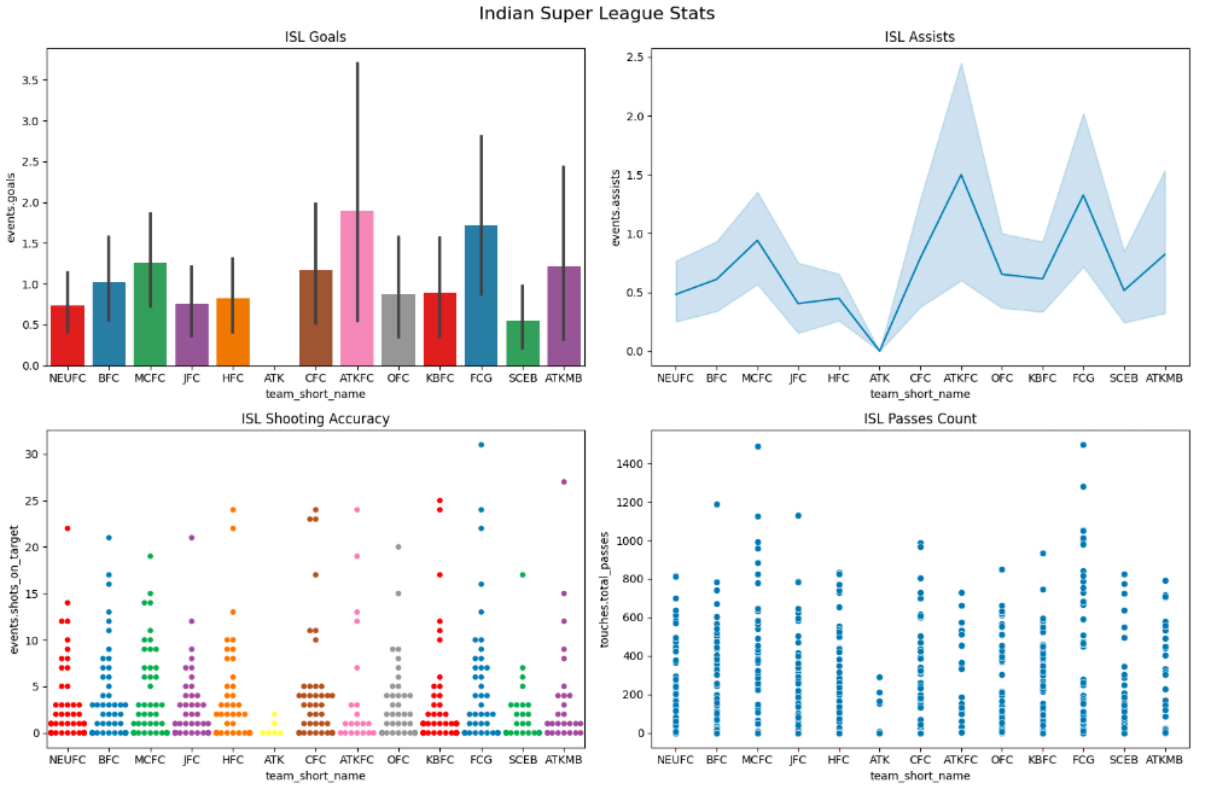
ISL

```
[71] #now we will load the afc teams performance dataset
     df3_data=pd.read_csv('/content/ISL.csv')

     df3_data.head()
```

	tour_id	tour_name	id	jersey_no	name	short_name	position_id	position	position_short	team_id	...
0	148	ISL6	1514	3	Asamoah Gyan	Asamoah Gyan	2	Forward	FWD	504	...
1	148	ISL6	2475	26	Deshorn Dwayne Brown	Deshorn Brown	2	Forward	FWD	656	...
2	148	ISL6	2900	9	Amine Chermiti	Amine Chermiti	2	Forward	FWD	506	...
3	148	ISL6	3753	7	Francisco Medina Luna	Piti	3	Midfielder	MF	1159	...
4	148	ISL6	3809	4	Rafael Lopez Gomez	Rafael Lopez Gomez	1	Defender	DEF	1536	...

5 rows × 93 columns

```
[72] #dashboard of ISL League

     plt.figure(figsize=(15,10))
     plt.suptitle("Indian Super League Stats", fontsize=16)
     custom_palette = sns.color_palette("Set1")

     plt.subplot(2,2,1)
     sns.barplot(x='team_short_name',y='events.goals',data=df3_data,palette=custom_palette)
     plt.title("ISL Goals")

     plt.subplot(2,2,2)
     sns.lineplot(x='team_short_name',y='events.assists',data=df3_data,palette=custom_palette)
     plt.title("ISL Assists")

     plt.subplot(2,2,3)
     sns.swarmplot(x='team_short_name',y='events.shots_on_target',data=df3_data,palette=custom_palette)
     plt.title("ISL Shooting Accuracy")

     plt.subplot(2,2,4)
     sns.scatterplot(x='team_short_name',y='touches.total_passes',data=df3_data,palette=custom_palette)
     plt.title("ISL Passes Count")

     plt.tight_layout()
     plt.show()
```



The Indian Super League (ISL) holds recognition as a prominent football league in Asia by FIFA. The statistics showcased earlier highlight the impressive contributions of players from various teams in the league, each making valuable contributions to their respective squads.

In the fourth visualization on the dashboard, we observe a scatter plot that displays various statistics. Team ATK is depicted with the number of passes made and shots on target. However, the conversion of chances into goals is notably absent for ATK this season as they haven't scored. In contrast, teams MCFC and CFC are excelling in this aspect.

This highlights the need for ATK to enhance their performance statistics. Meanwhile, other teams are thriving, contributing to the growing excitement and popularity of the ISL.

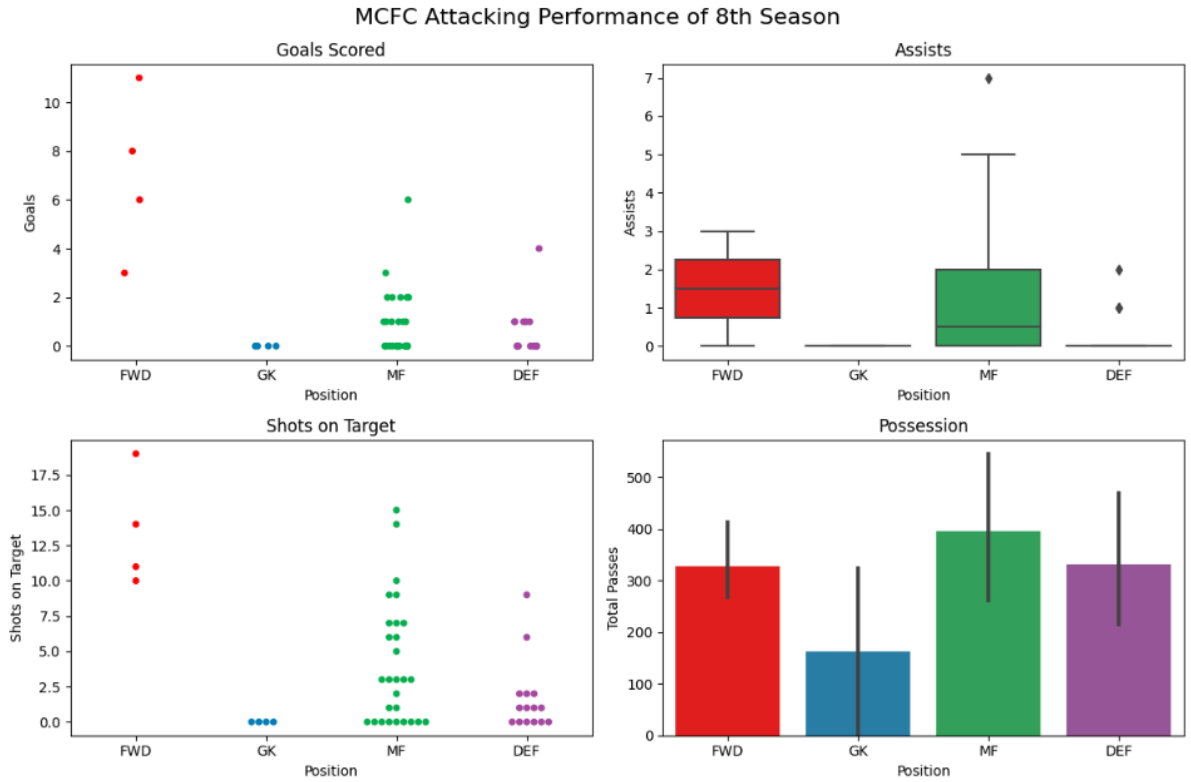
In this step, we'll narrow down our dataset to focus exclusively on Mumbai City FC (MCFC) because they have successfully qualified to represent India in the AFC.

```
[73] # Define the name of the team you want to select players from
     target_team = 'Mumbai City FC'

     # Filter the DataFrame to select players from the target team
     mcfc_players = df3_data[df3_data['team_name'] == target_team]

     # Now, the 'mcfc_players' DataFrame contains only the players from the specified team
     mcfc_players.head(10)
```

	tour_id	tour_name	id	jersey_no	name	short_name	position_id	position	position_short	team_id	...
2	148	ISL6	2900	9	Amine Chermiti	Amine Chermiti	2	Forward	FWD	506	...
9	148	ISL6	3997	1	Amrinder Ranjit Singh	Amrinder Singh	4	Goalkeeper	GK	506	...
18	148	ISL6	7637	28	Pape Amodou Sougou	Modou Sougou	2	Forward	FWD	506	...
27	148	ISL6	10278	10	Paulo Ricardo Ribeiro De Jesus Machado	Paulo Machado	3	Midfielder	MF	506	...
32	148	ISL6	10648	8	Mohammed Rafique	Mohammed Rafique	3	Midfielder	MF	506	...
35	148	ISL6	10659	23	Sauvik Alok Chakrabarti	Sauvik Chakrabarti	1	Defender	DEF	506	...
81	148	ISL6	19144	22	Ravi Vijay Kumar	Ravi Kumar	4	Goalkeeper	GK	506	...
87	148	ISL6	19230	21	Mohamed Larbi	Mohamed Larbi	3	Midfielder	MF	506	...
89	148	ISL6	21028	23	Keenan Almeida	Keenan Almeida	1	Defender	DEF	506	...
98	148	ISL6	25873	12	Bidyananda Singh	Bidyananda Singh	3	Midfielder	MF	506	...

10 rows × 93 columns

```
[88] #dashboard for checking the Attacking Of the Team
     # Create a color palette for the plots
     palette = "Set1"

     # Create a figure with subplots
     plt.figure(figsize=(12, 8))

     # Dashboard Title
     plt.suptitle("MCFC Attacking Performance of 8th Season", fontsize=16)

     # Subplot 1: Goals Scored
     plt.subplot(2, 2, 1)
     sns.stripplot(x='position_short', y='events.goals', data=mcfc_players, palette=palette)
     plt.title("Goals Scored")
     plt.xlabel("Position")
     plt.ylabel("Goals")

     # Subplot 2: Assists
     plt.subplot(2, 2, 2)
     sns.boxplot(x='position_short', y='events.assists', data=mcfc_players, palette=palette)
     plt.title("Assists")
     plt.xlabel("Position")
     plt.ylabel("Assists")

     # Subplot 3: Shots on Target
     plt.subplot(2, 2, 3)
     sns.swarmplot(x='position_short', y='events.shots_on_target', data=mcfc_players, palette=palette)
     plt.title("Shots on Target")
     plt.xlabel("Position")
     plt.ylabel("Shots on Target")

     # Subplot 4: Possession
     plt.subplot(2, 2, 4)
     sns.barplot(x='position_short', y='touches.total_passes', data=mcfc_players, palette=palette)
     plt.title("Possession")
     plt.xlabel("Position")
     plt.ylabel("Total Passes")

     plt.tight_layout()
     plt.show()
```

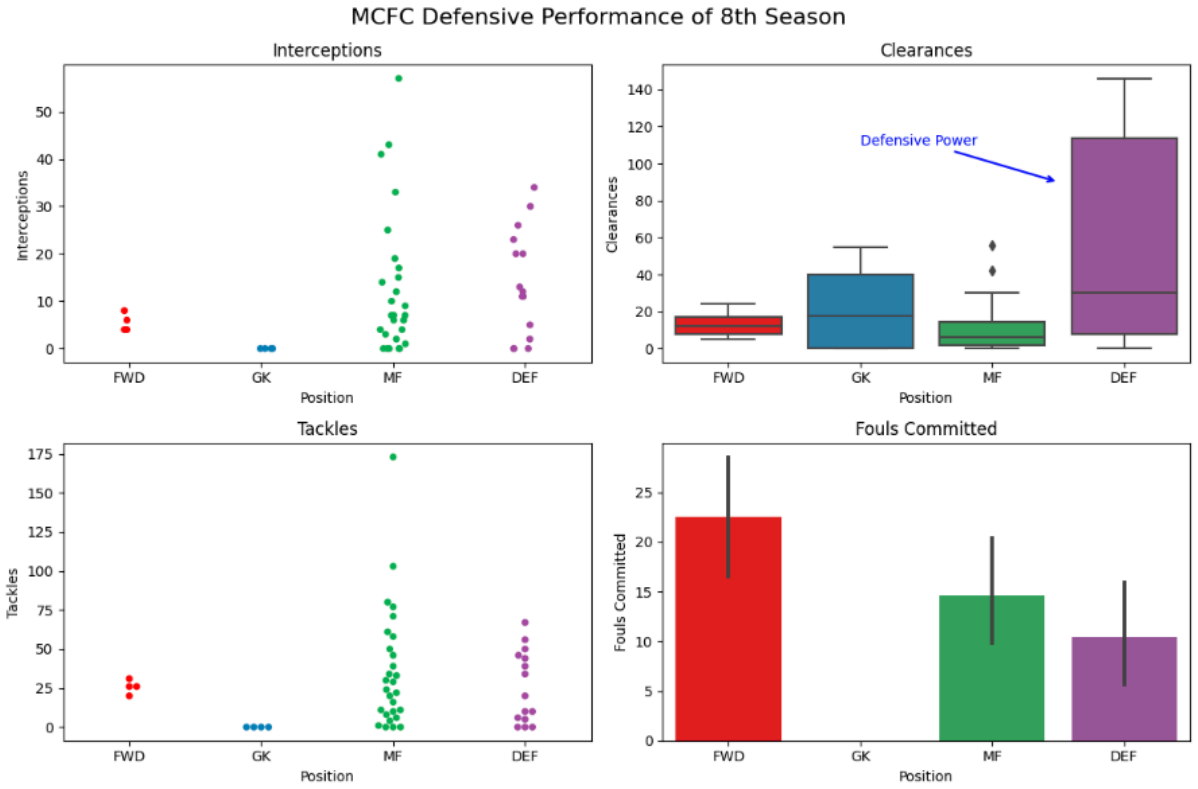


Currently, Mumbai City FC faces some challenges in the attacking department. The goal-scoring performance of MCFC's forwards is not meeting expectations. Surprisingly, midfielders have contributed more goals, highlighting an area where improvement is needed. Additionally, possession statistics look promising, but the number of shots taken by the forwards is relatively low, indicating another area requiring enhancement.

On the bright side, the midfielders have excelled in creating goal-scoring opportunities, as evident in the third subplot. This reinforces the notion that our forward line needs to step up its performance to match the level of chances being generated by the midfielders.

Now, let's turn our attention to the defensive department of MCFC for further analysis

```
palette = sns.color_palette("Set1")

plt.figure(figsize=(12, 8))

plt.suptitle("MCFC Defensive Performance of 8th Season", fontsize=16)

# Subplot 1: Interceptions
plt.subplot(2, 2, 1)
sns.stripplot(x='position_short', y='touches.interceptions', data=mcfc_players, palette=palette)
plt.title("Interceptions")
plt.xlabel("Position")
plt.ylabel("Interceptions")

# Subplot 2: Clearances
plt.subplot(2, 2, 2)
sns.boxplot(x='position_short', y='touches.clearance', data=mcfc_players, palette=palette)
plt.title("Clearances")
plt.xlabel("Position")
plt.ylabel("Clearances")
plt.annotate("Defensive Power", (2.5, 90), xytext=(1, 110), fontsize=10, color='blue',arrowprops=dict(arrowstyle="->", lw=1.5, color='blue'))

# Subplot 3: Tackles
plt.subplot(2, 2, 3)
sns.swarmplot(x='position_short', y='touches.tackles', data=mcfc_players, palette=palette)
plt.title("Tackles")
plt.xlabel("Position")
plt.ylabel("Tackles")

# Subplot 4: Fouls Committed
plt.subplot(2, 2, 4)
sns.barplot(x='position_short', y='events.fouls_committed', data=mcfc_players, palette=palette)
plt.title("Fouls Committed")
plt.xlabel("Position")
plt.ylabel("Fouls Committed")
plt.tight_layout()
plt.show()
```



In terms of defense, the defenders are performing admirably. They excel in areas such as clearances and interceptions, thanks to the exceptional work of the midfielders. This support from the midfielders significantly eases the defensive workload. Overall, the defense doesn't require major improvements.

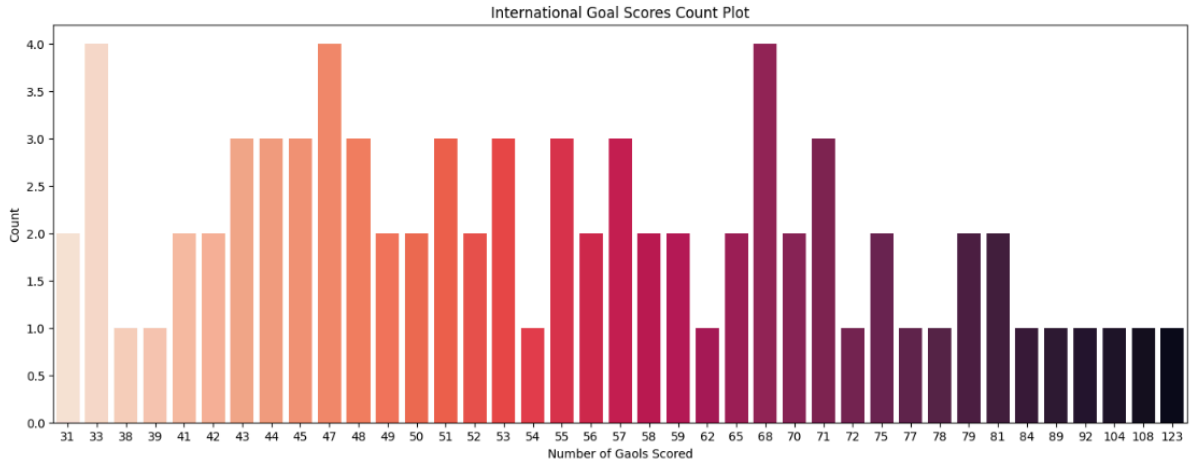
However, it's crucial for the forwards/strikers to exercise caution when handling the ball in opposition territory. The highest number of fouls occurs among the forwards, which poses a risk. If a forward receives a card and is benched, it can significantly weaken our attacking strategy for the remainder of the game. The same consideration applies to the midfielders.

TOP GOAL SCORRER DATASET

```
[76] # Load the AFC teams performance dataset with ISO-8859-1 encoding
     df4_data = pd.read_csv('/content/finaltryfortop.csv', encoding='ISO-8859-1')

     df4_data.head()
```

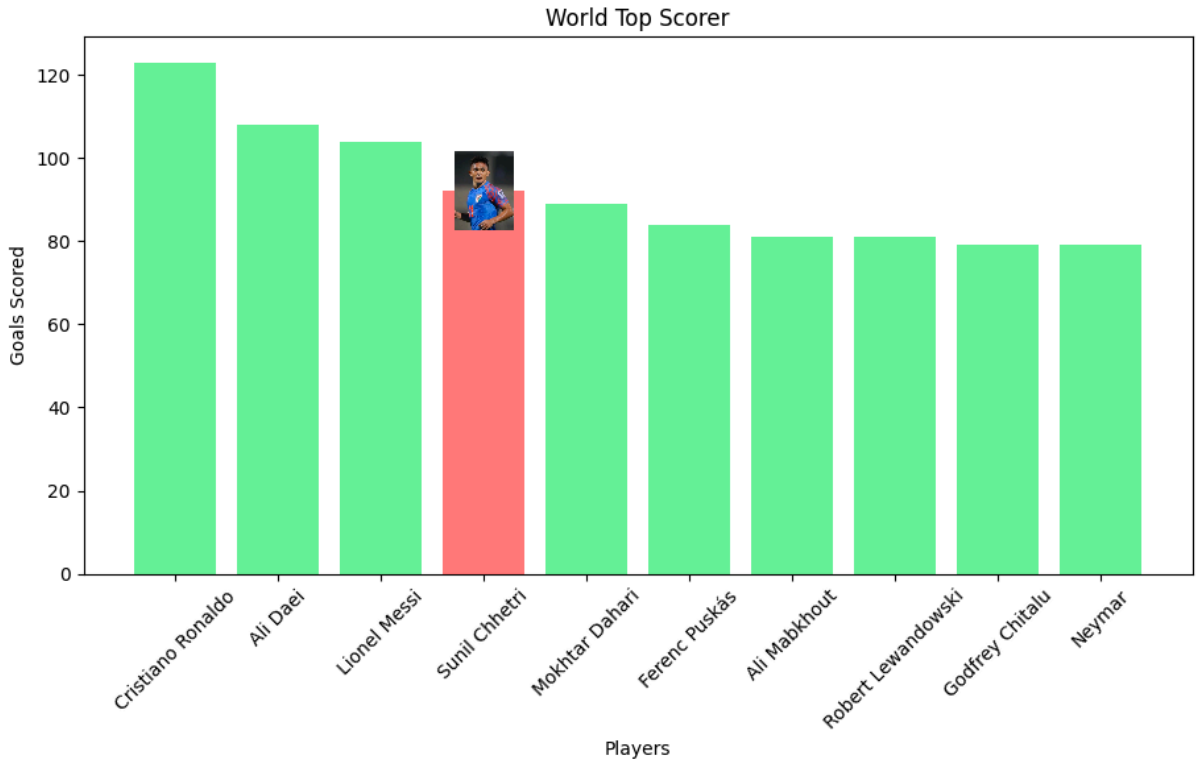
	Rank	Player	Country	Goals	Caps	Ratio	First cap	Last cap
0	1	Cristiano Ronaldo	Portugal	123	201	0.62	20-Aug-03	8-Sep-23
1	2	Ali Daei	Iran	108	148	0.73	6-Jun-93	21-Jun-06
2	3	Lionel Messi	Argentina	104	176	0.59	17-Aug-05	7-Sep-23
3	4	Sunil Chhetri	India	92	142	0.65	12-Jun-05	4-Jul-23
4	5	Mokhtar Dahari	Malaysia	89	142	0.63	5-Jun-72	19-May-85

```
plt.figure(figsize=(17, 6))
sns.countplot(x=df4_data['Goals'],palette='rocket_r')
plt.title("International Goal Scores Count Plot")
plt.xlabel("Number of Gaols Scored")
plt.ylabel("Count")
plt.show()
```



This count plot examines the tally of international goals scored. To enhance comprehension, let's represent this visualization as a bar plot, with our standout Indian star highlighted as one of the top goal scorers.

```
import matplotlib.pyplot as plt
from matplotlib.offsetbox import OffsetImage, AnnotationBbox

# Create the figure and axis
fig, ax = plt.subplots(figsize=(10, 6))

colors = ['lightgreen','lightgreen','lightgreen','lightcoral','lightgreen','lightgreen','lightgreen','lightgreen','lightgreen','lightgreen']
# Plot the bars with colors

bars = plt.bar(bardata['Player'], bardata['Goals'], color=colors)
plt.title("World Top Scorer")
plt.xlabel("Players")
plt.ylabel("Goals Scored")
plt.xticks(rotation=45)

# Load the image of the India flag
india_image = plt.imread('/content/Chhetri_(cropped).png')

# Define the position to place the image (for Sunil Chhetri)
x_position = bardata[bardata['Player'] == 'Sunil Chhetri'].index[0]
y_position = bardata['Goals'][x_position]

# Create an OffsetImage
india_flag = OffsetImage(india_image, zoom=0.05)

# Create an AnnotationBbox for the image
ab = AnnotationBbox(india_flag, (x_position, y_position), frameon=False)
ax.add_artist(ab)

plt.tight_layout()
plt.show()
```



Observe the moment of pride as Sunil Chhetri, a prominent figure in Indian football, stands alongside the world's top goal scorers. This remarkable feat not only fills every Indian heart with pride but also inspires us to aim for even greater accomplishments. It kindles our aspirations to witness India's representation in the FIFA World Cup.

Sunil Chhetri, hailing from Bengaluru FC in the Indian Super League, holds the captain's armband for our national football team. He serves as a true example that talent thrives within our country, emphasizing the importance of dedicated efforts to nurture it.

The remarkable feat of our national team securing 8 SAFF Cup titles is unquestionably impressive. It serves as a testament to the exceptional performance of our players, signifying substantial progress when compared to past years. The titles and accolades earned by Sunil Chhetri also play a pivotal role in boosting India's ranking, ultimately contributing to the success of Indian football.

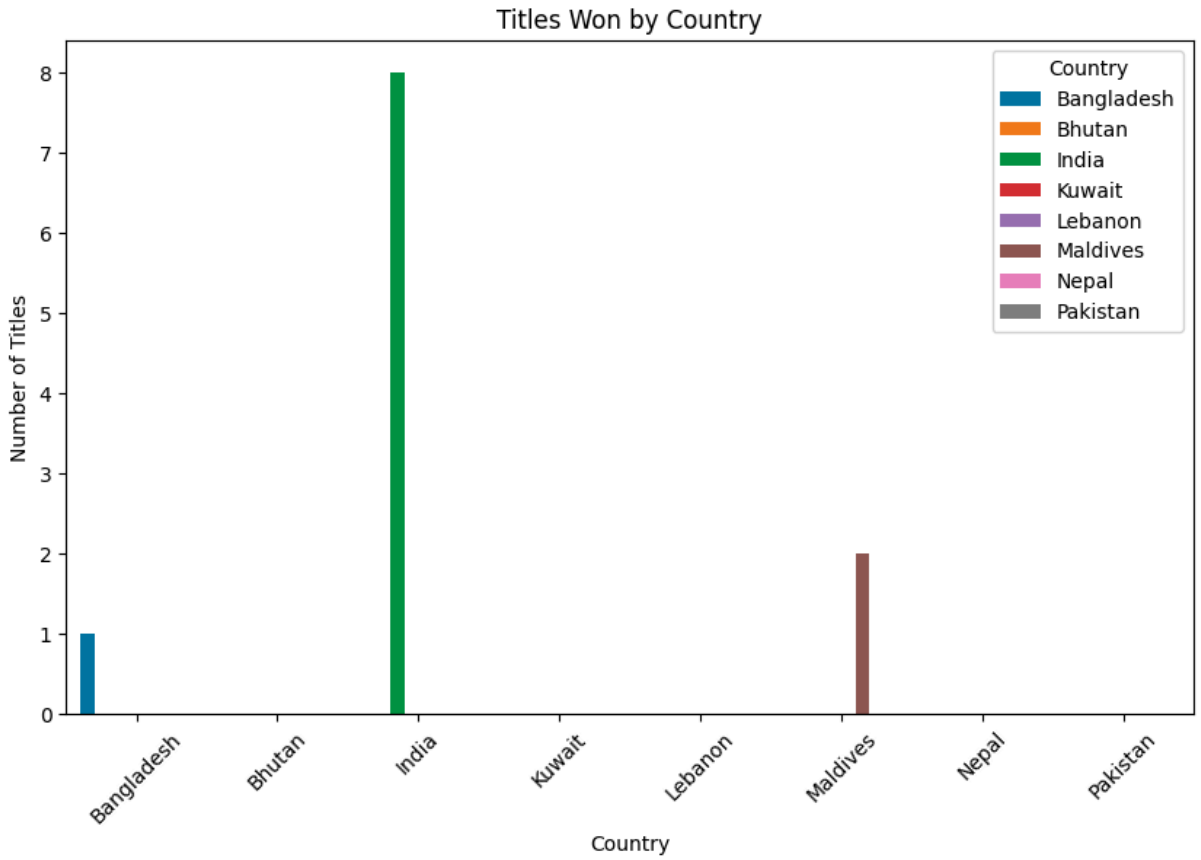
To provide a visual depiction of our trophy collection, let's proceed with creating a representation of the number of trophies we've garnered.

SAFF

```
#now we will load the afc teams performance dataset
df5_data=pd.read_csv('/content/SAFF CHAMPIONSHIP CM.csv')

df5_data
```

	Country	Appearance	Previous best performance	FIFA ranking (6 April 2023)	Title's Won
0	Bangladesh	13th	Champions (2003)	192	1
1	Bhutan	9th	Semi-finals (2008)	185	0
2	India	14th	Champions (1993,1997,1999,2005,2009,2011,2015,...	101	8
3	Kuwait	1st	Debut (invitee)	143	0
4	Lebanon	1st	Debut (invitee)	99	0
5	Maldives	12th	Champions (2008,2018)	154	2
6	Nepal	14th	Runners-up (2021)	174	0
7	Pakistan	12th	Third place (1997)	195	0

```
plt.figure(figsize=(10, 6))
sns.barplot(x="Country", y="Title's Won", data=df5_data, hue='Country')
plt.xticks(rotation=45)
plt.title("Titles Won by Country")
plt.xlabel("Country")
plt.ylabel("Number of Titles")
plt.show()
```



> ***Conclusion***

This project presents a comprehensive data-driven evaluation of the Indian football team's prospects of qualifying for the FIFA World Cup 2026, leveraging data visualization as a key tool to uncover trends, performance indicators, and strategic insights. From understanding the qualification roadmap to evaluating the statistical contributions of players and teams within the Indian football ecosystem, every aspect of this analysis was designed to highlight both the current state and the potential future of Indian football.

⚽ ***Summary of Insights***

The initial dataset preparation involved cleansing, handling missing values, and identifying duplicates—ensuring the reliability of the analysis. This enabled effective use of visualizations like line graphs, boxplots, scatter plots, and bar charts to understand India's ranking trajectory, league performances, and comparative analysis with other AFC nations.

- ***Ranking and Qualification Eligibility: India's current FIFA ranking of 99 positions it within the top 24 in the AFC, making it eligible for the World Cup qualification journey. However, competing against higher-ranked, well-established teams like Japan, Iran, and South Korea remains a significant challenge.***

- ***Historical Performance: India has participated in the AFC Asian Cup five times but has not clinched the title since its best-ever runner-up finish in 1964. This underlines the consistency gap when competing on the continental stage.***

- ***ISL and Club-Level Impact: The Indian Super League, particularly teams like Mumbai City FC (MCFC), serves as a pipeline for national talent. Analysis showed that while MCFC has strong midfield and defensive performance, their attacking line suffers from poor shot conversion and high foul rates—affecting their competitiveness.***

- ***Star Power and Legacy: Sunil Chhetri's presence as one of the world's top international goal scorers is a major highlight. His leadership and achievements boost morale and international recognition for India but also reflect the lack of similarly impactful players emerging consistently.***

🛠️ *Areas of Improvement*

This analysis helped pinpoint several critical areas that need targeted improvement for India to realize its World Cup aspirations:

1. ***Attacking Efficiency***
    - ***Low shot-to-goal conversion rates by key forwards indicate the need for better finishing skills.***
    - ***India must invest in striker development through specialized training and tactical refinement.***
2. ***Discipline in Attacking Play***
    - ***Forwards are committing the highest number of fouls, which not only disrupt gameplay but also risk suspensions and affect team morale.***
    - ***Better judgment, positioning, and ball control training are essential.***
3. ***Midfield-Forward Coordination***
    - ***While midfielders have been successful in generating goal-scoring opportunities, poor follow-through by the forwards wastes these chances.***
    - ***Tactical drills and match simulations focusing on final-third synergy can help bridge this disconnect.***
4. ***Defensive Reliability***
    - ***Defense remains a strong point, with effective clearances and interceptions.***
    - ***Continued focus on defense training and fitness can ensure consistency under pressure.***
5. ***Talent Pipeline and Youth Development***
    - ***The performance of a few standout players cannot sustain long-term growth.***
    - ***Investing in grassroots programs, state leagues, and coaching academies is vital to ensure a broader and stronger talent base.***
6. ***Mental and Strategic Readiness***
    - ***India's struggle in high-pressure continental matches suggests a lack of psychological preparedness.***
    - ***Inclusion of sports psychologists, match analysts, and tactical coaching can enhance decision-making during crucial moments.***

📊 *Role of Data Analytics in Future Strategy*

This project also demonstrates how data analytics and visualization can play a transformative role in modern football. By identifying patterns in performance, predicting future outcomes, and suggesting targeted improvements, data becomes a crucial tool for coaches, analysts, and decision-makers in Indian football.

Visual representations helped clarify not just how teams are performing, but why they're performing that way—unveiling hidden inefficiencies and untapped potential. Using such insights, future strategies can be more evidence-based, measurable, and impactful.

🌍 *Final Outlook and Summary*

India's ambition to qualify for the FIFA World Cup 2026 is bold—but not beyond reach. This project has illustrated that while there are numerous challenges ahead, the potential and momentum to overcome them are clearly present. Realizing this goal will demand a strategic, multi-dimensional approach across several areas:

- ***Technical, physical, and mental development: Players must be nurtured holistically, with a greater emphasis on fitness, tactical understanding, and psychological preparedness for high-stakes matches.***

- ***Bridging club and country performance: Strong showings at the club level, particularly in the Indian Super League (ISL), must be effectively translated into national team success.***

- ***Collaborative ecosystem: Coordination between the AIFF, football clubs, coaching staff, sports scientists, and data analysts is essential to drive sustained improvement.***

- ***Data-driven decision-making: Continuous performance tracking and use of analytics can uncover hidden inefficiencies, support better training programs, and help make informed strategic choices.***

India has already made visible strides through improved league infrastructure, international exposure, and the emergence of talented players. However, converting potential into qualification will require discipline, direction, and data-backed execution. This project doesn't merely serve as a review of India's current football scenario—it functions as a strategic reflection and roadmap for transformation. With the right efforts in place, the dream of seeing India on football's grandest stage can shift from hope to history.

To explore India's path to the FIFA World Cup 2026, this project followed a structured data analysis approach, offering both insights and recommendations:

1. ***Data Preparation & Cleaning***
   We started by ensuring that our dataset was accurate and complete—checking

for null values, duplicates, and inconsistencies before beginning analysis.

2. *Understanding the Qualification Process*
   A detailed roadmap of the AFC qualification structure was analyzed and visualized, helping us grasp the path India must take across multiple rounds to reach the World Cup.

3. *Current Rankings & Eligibility*
   India's FIFA ranking (currently 99) places it within AFC's qualification zone. This was visualized to emphasize the importance of maintaining and improving rank.

4. *Team Performance Overview*
   Historical AFC performance data showed India's average competitiveness, highlighting the need for tactical and technical growth.

5. *Indian Super League (ISL) Analysis*
   A focused analysis of Mumbai City FC revealed strengths in possession and midfield creativity, but also weaknesses in goal conversion and offensive discipline.

6. *Defensive Strengths*
   The defensive unit, backed by strong midfield support, shows consistency and structure—an area India can build upon further.

7. *Individual Brilliance: Sunil Chhetri*
   The presence of Indian football legend Sunil Chhetri among the world's top goal scorers serves as both a symbol of excellence and a beacon of inspiration for the next generation.

8. *SAFF Cup Success*
   India's eight SAFF Cup titles underscore regional dominance, showcasing the nation's growing capabilities and competitive spirit.

India's football journey is on an upward curve. While the destination—FIFA World Cup 2026—remains challenging, this project reinforces that the path forward is clearer than ever. Through data, we've identified where India excels, where it needs improvement, and how targeted actions can make qualification a tangible reality. With sustained effort and the right support systems, India's place on the world football map isn't just possible—it's waiting to be claimed.