IPL Auction Data Analysis.

Abstract:

Cricket is a religion in INDIA, Billions of people follow cricket in INDIA. People follow cricketers as their role models, Now a days T20 cricket has gained lot of popularity and IPL is followed by every house member in India and overseas people also follow it since it has been a tournament with tremendous competition.

World's best player gather to form a team and compete against each other.

IPL Auction data is considered here and analysis is done on the **IPL Auction data.**

Here we are trying to analyze the data from the dataset provided IPLData.csv

Analysis and Visualizations of dataset IPLData.csv is considered.

Here Visualizations are done with respect to Most Expensive players, Players who have done international Debut or not, Number of players with different playing Role, Players bought for different teams ,Players purchased by each team, IPL Matches count of the players, Price planned to purchase the player, Number of Players corresponding to price, Stats of players depending on the playing role.

Introduction:

Here IPLData.csv is the file used as dataset and is read using Pandas, matplotlib and seaborn are used to plot graphs for the various scenarios we have considered. This data analysis and plots help in evaluating whether a player has delivered as per his price tag, whether different teams are trying to purchase Allrounder or players with specific skillset, which player is sought by most of the teams, Pricing of the player. Visualization mainly summarizes the players data and helps to know the team tactics as per the team they have chosen.

Discussion and Results :

DataSet Walkthrough.

S.No : Provides the serial number.

Set No: Provides the Set number, All players are grouped into
- Batsmen : BA1 - Set No 1
- All Rounder : AL1 – Set No 2
- Wicket Keeper : WK1 -Set No 3
- Spinner : SP1 -Set No 5
- Fast Bowler : FA1 -Set No 4
- So players are divided into different Set no as per the above information.

Set : Batsmen , All Rounder, Wicket Keeper, Speinner, Fast Bowler are divided inton different sets and provided with Set No as mentioned below.

Batsmen : BA1 - Set No 1
All Rounder : AL1 – Set No 2
Wicket Keeper : WK1 -Set No 3

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Spinner : SP1 -Set No 5
Fast Bowler : FA1 -Set No 4

Name : Name of the foreign Player.

Country : Country of the foreign Player.

Playing Role : Playing Role of the Foreign Player.

IPL Matches : Number of IPL Matches played by the player till date.

Capped / Uncapped /Associate : Capped Associate is the one who have played for their national team. Uncapped Associate is the one who has not played for their national team yet.

Reserve Price(in RS Lacs) : Planned price to buy the Player in Indian currency in Lakhs.

IPL 2020 Team : Team which has bought the particular player in IPL 2020.

Auctioned Price(in RS Lacs) : Actual price spent in buying the Player in Indian currency in Lakhs.

IPL 2019 Team : IPL team of the player in the year 2019.

IPL Team(s) : All the IPL teams the player has played for till date.

Results are attached in the form of plots.

Pandas are used to read the file IPLData.csv

All the Nan values present in the IPL Matches and IPL 2019 Team are filled with 0 and “No Team” respectively so that data can be meningful and visulaizations can be proper.

Top 10 Highest paid IPL players as per the Auction are chosen from the Dataframe cloumn Auctioned Price in RS Lacs.

Number of Capped and Number of Uncapped Associates are fetched from the dataframe column Capped / Uncapped /Associate.

Players playing in different roles are detched from the dataframe Playing Role column.

Pie chart of players playing in different roles is plotted to know how all the purchased players are distributed. Proportion of players playing in different roles is considered.

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Players purchased by different teams are fetched from the dataframe column IPL 2020 Team, Count of the players in each team is considered. A bar graph plot with grid is visualized.

IPL Matches played by all the purchased players is considered, and number of IPL matches played by all foreign IPL players are plotted in a bar graph format.

Price planned to purchase the overseas players is extracted from the Dataframe Reserve Price(in RS Lacs) column. A bar graph is plotted with Resrve price in RS Lacs vs Number of players.

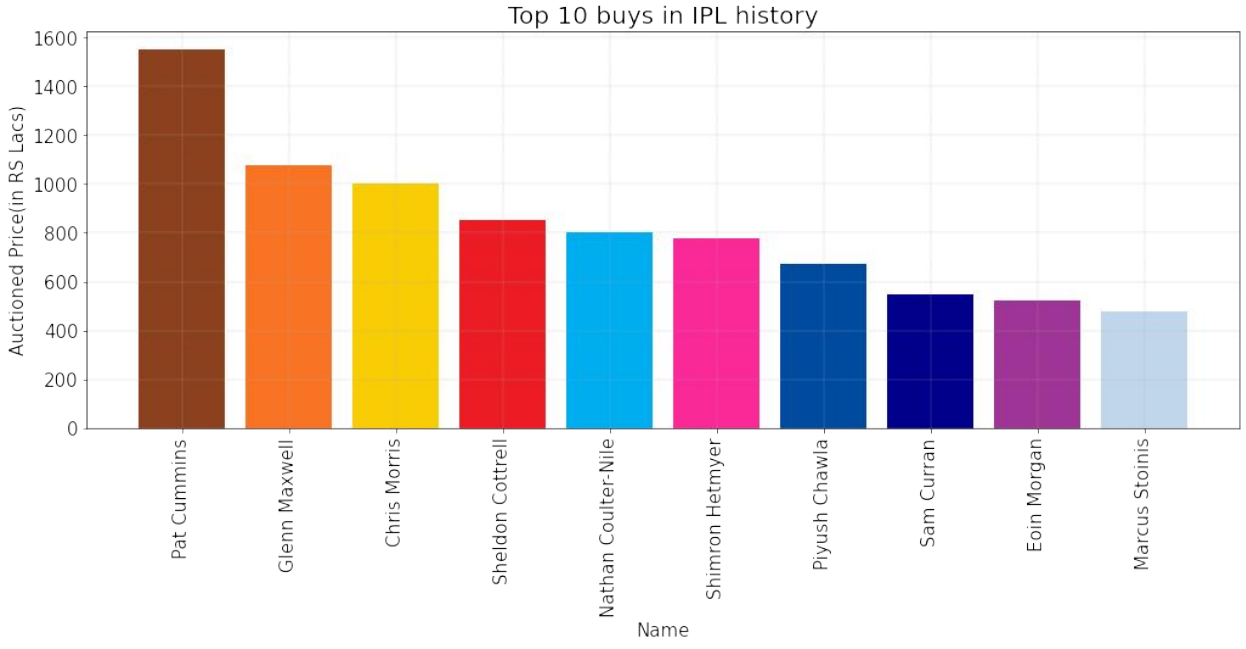
Actual auction price to purchase the overseas players is extracted from the Dataframe Auctioned Price(in RS Lacs) column. A bar graph is plotted with Auctioned Price(in RS Lacs) vs Number of players.

Stats of Players is ploteed i.e how many Batsman, how many Bowlers, how many All Rounders, Spinner Wicket Keeper and Fast Bowler are extracted from Playing Role column in the dataframe. And a bar chart is plotted for all the stats of the players specifying how many number of players play in different role.

Plot Description:

Here Top 10 Players auctioned with highest price in IPL 2020 are listed.

x-axis represents the name of the Player and Y-axis represents the Auction Price in RS Lakhs in IPL season 2020.



Plot Description:

Here Number of Capped and Uncapped players are present in the bar chart.

x-axis represents the specifies the capped and uncapped players and Y-axis represents the number for players in IPL season 2020.

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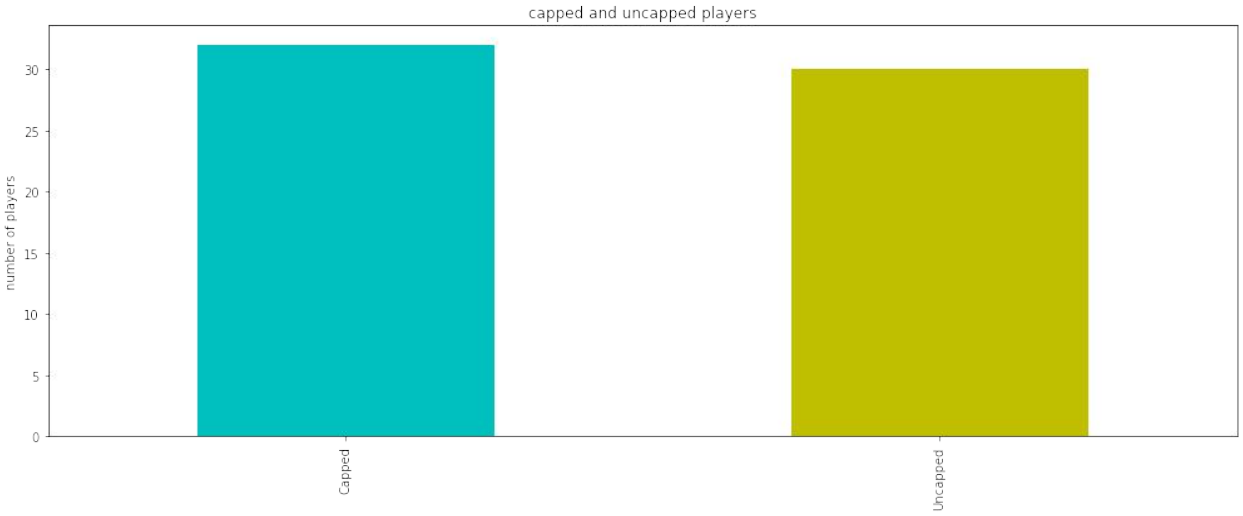
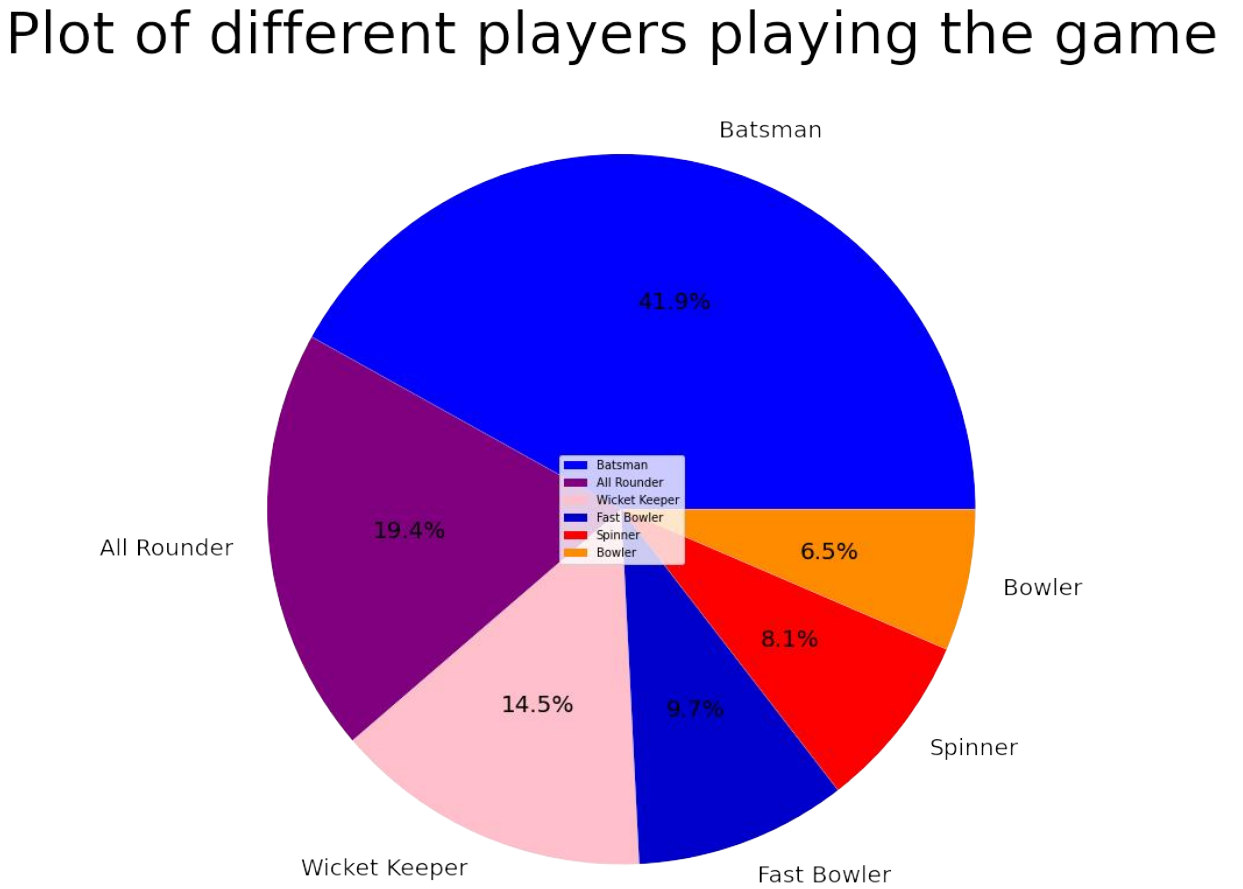


Plot Description:

Here pie chart of players playing different role is specified in percentage.

Bowlers, Batsman, Spinners, Fast Bowler, Wicket Keeper, All Rounder all players proportion playing IPL game is specified.

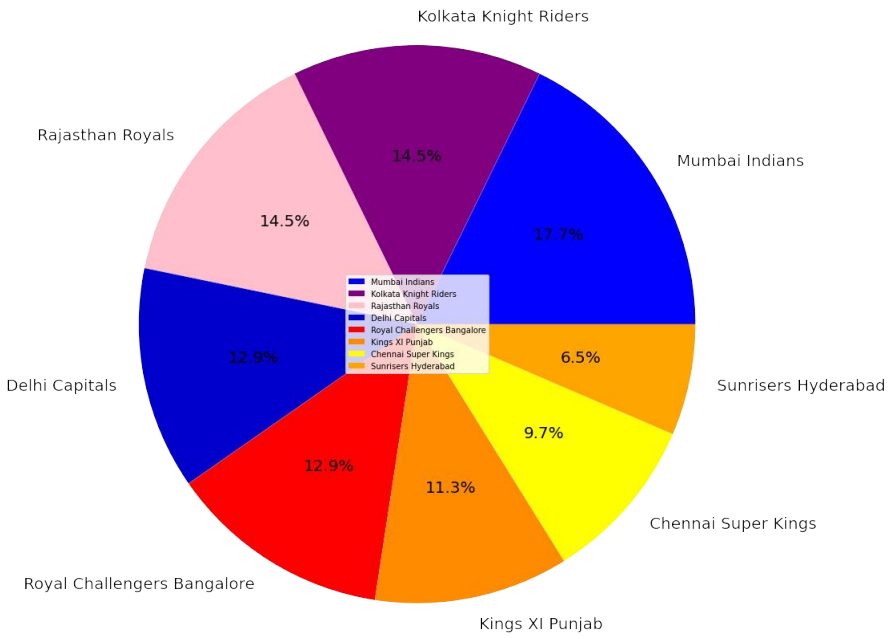


IPL Auction Data Analysis.

Plot Description:

Here pie chart of players playing different teams in IPL is specified in percentage.

Foreign players playing in each IPL team are specified in percentage in PIE chart.



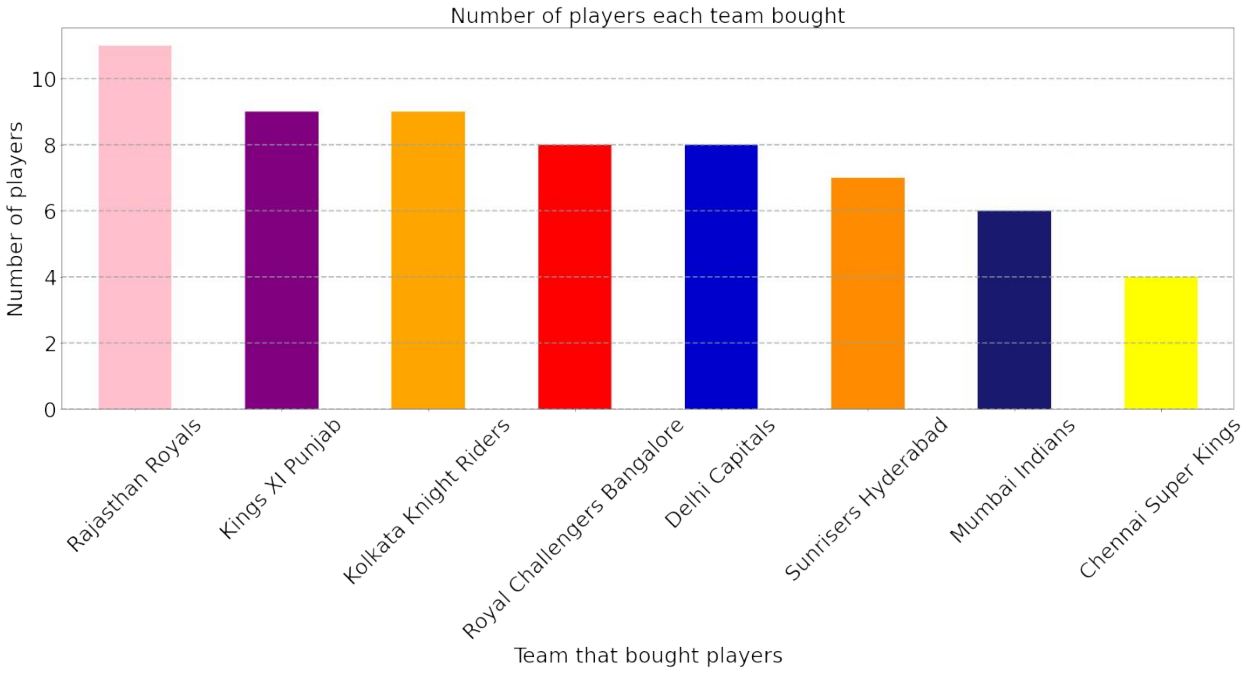
Plot Description:

Here bar chart of players bought by each team are presented.

Number of Players bought by each team is presented in the bar chart.

```
Rajasthan Royals              11
Kings XI Punjab                9
Kolkata Knight Riders          9
Royal Challengers Bangalore    8
Delhi Capitals                 8
Sunrisers Hyderabad            7
Mumbai Indians                 6
Chennai Super Kings            4
Name: IPL 2020 Team, dtype: int64
```

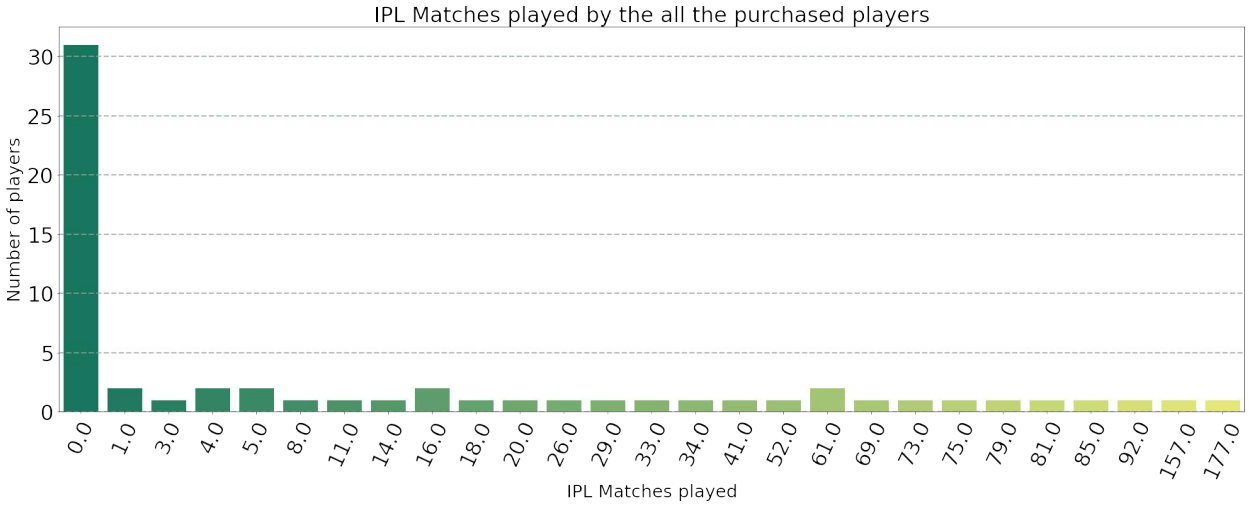
IPL Auction Data Analysis.



Plot Description:

Here bar chart represents number of matches played by each IPL player.

X-axis represents the number of IPL matches played and Y-axis represents the Number of Players.

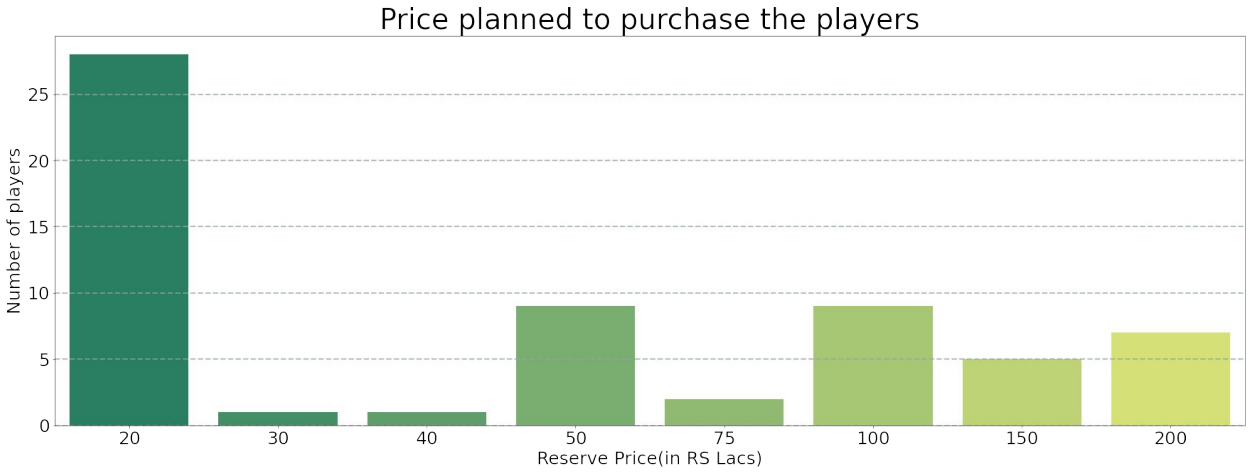


IPL Auction Data Analysis.

Plot Description:

Here bar chart represents Amount reserved or planned to buy each IPL player in IPL 2020.

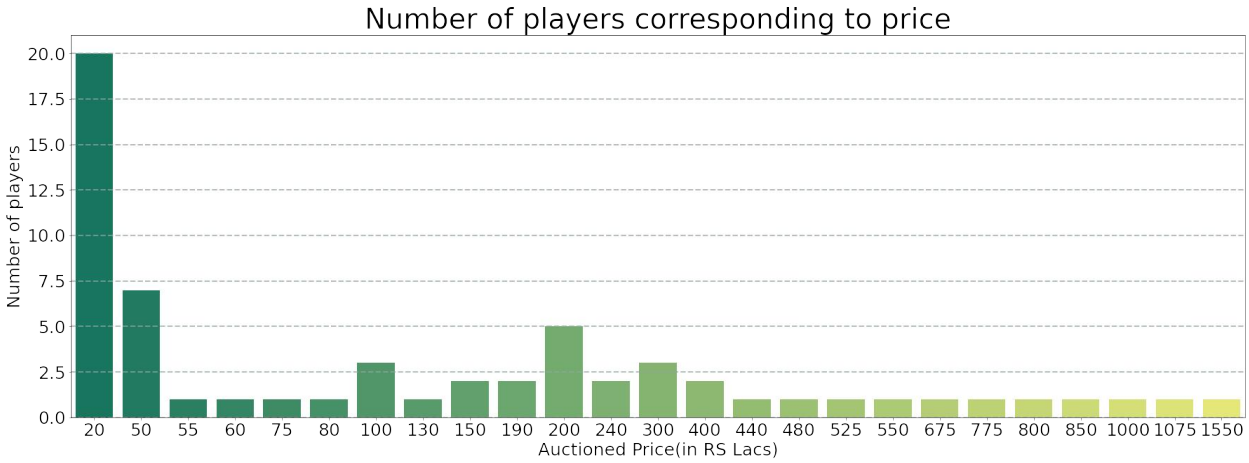
X-axis represents the reserved price in Indian currency Lakhs and Y-axis represents the Number of Players.



Plot Description:

Here bar chart represents Auctioned price spent in Lakhs to purchase the Foreign player in IPL 2020.

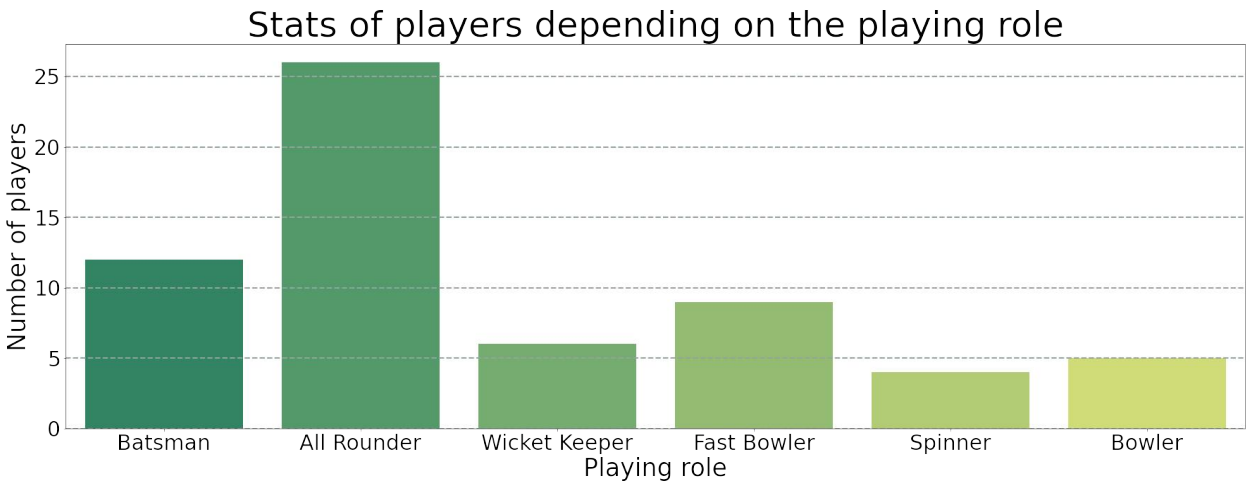
X-axis represents the Auctioned price in Indian currency Lakhs and Y-axis represents the Number of Players.



Plot Description:

Here bar chart represents Number of players playing in different Role in IPL.

X-axis represents the different category of players as per playing role and Y-axis represents the Number of Players.



Code:

Code References:

https://github.com/nidhi988/IPL-Auction-analysis

https://www.kaggle.com/ramesh1511/ipl-auction-2020-analysis

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns

#Using pandas to read the file
#Dataframe of IPL Auction Data is formed.
ipl_auction_df = pd.read_csv("IPLData.csv",engine = 'python')

#Show the first 5 rows of the ipl_auction_df Dataframe.
ipl_auction_df.head()

# IPL Matches played by any Player is Nan then they are replaced by 0.
ipl_auction_df['IPL Matches'] = ipl_auction_df['IPL Matches'].fillna(0)

#IPL 2019 Team  column in dataframe has Nan value then replace it by "No T
eam"
```

```
ipl_auction_df['IPL 2019 Team'] = ipl_auction_df['IPL 2019 Team'].fillna("
No Team")

#Represents colours brown,orange,yellow,red, blue, pink,blue,dark blue,dar
k blue , magenta, light blue.
a1_color = [ '#8C411E','#F97324','#F9CD05','#EC1C24','#00ADEF','#FB2897','
#004BA0','#00008B','#9E3495','#C0D6EB']

plt.figure(figsize=(17,6))
plt.yticks(fontsize=15)
#Data of Top 10 Highest Auction Price players Data from the ipl_auction_df
 dataframe is considered.
a_r =ipl_auction_df.nlargest(10, ['Auctioned Price(in RS Lacs)'])

#Arranged List of Top 10 Highest Auctioned IPL Players are considered and
plotted in bar graph.
plt.bar(np.arange(10),a_r.iloc[0:11,10],color=a1_color,align='center')
plt.xticks(np.arange(10),a_r.iloc[0:11,3],rotation=90,fontsize=15)
plt.grid(True , linestyle = '--',linewidth = 0.3)
plt.xlabel("Name",fontsize=15)
plt.ylabel('Auctioned Price(in RS Lacs)',fontsize=15)
plt.title("Top 10 buys in IPL history",fontsize=20)
plt.show()

plt.figure(figsize=(17,6))
#cap_count gives the number of Capped and number of Uncapped Associates.
cap_count  = ipl_auction_df['Capped / Uncapped /Associate'].value_counts()
ax = cap_count.plot(kind='bar', color=['c','y'])
ax.set_ylabel('number of players')
ax.set_title('capped and uncapped players')


#  playing_role specifies all the different role of players.
playing_role = ipl_auction_df['Playing Role']
#list of playing role is formed.
playing_role = list(dict.fromkeys(playing_role))

#Provides count of All Rounder, Wicket Keeper, Fast Bowler, Spinner, Bowle
r, Batsmen.
playing_role_count = ipl_auction_df['Playing Role'].value_counts()

#Player playing roles are considered as labels.
labels = ipl_auction_df['Playing Role']

plt.figure(figsize=(14,14))
```

```
#plotting Piechart of Players playign differnt Roles.
plt.pie(playing_role_count, labels = playing_role ,colors = ['blue','purpl
e','pink','mediumblue','red','darkorange','yellow','orange'],
        autopct='%0.1f%%', textprops={'fontsize': 20})
plt.xticks(fontsize = 100)
plt.title("Plot of different players playing the game ",fontsize = 50)
plt.legend(loc = 'center')
plt.show()

plt.figure(figsize=(16,16))
# team_name specifies the team names in IPL.
team_name = ipl_auction_df['IPL 2020 Team']

#list of team names are formed.
team_name = list(dict.fromkeys(team_name))

# number_of_players_in_different_teams are feteched from the ipl_auction_d
f dataframe.
number_of_players_in_different_teams = ipl_auction_df['IPL 2020 Team'].val
ue_counts()
labels = ipl_auction_df['IPL 2020 Team']
plt.pie(number_of_players_in_different_teams, labels = team_name ,colors =
 ['blue','purple','pink','mediumblue','red','darkorange','yellow','orange'
],
        autopct='%2.1f%%', textprops={'fontsize': 20})
plt.xticks(fontsize = 100)
plt.title("Total number of players in input belonging to different teams "
,fontsize = 50)
plt.legend(loc = 'center')
plt.show()

#Finding how many number of players each team bought
width1 = 30
height1 = 10
width_height_1 = (width1, height1)
plt.figure(figsize=width_height_1)
d = ipl_auction_df['IPL 2020 Team']
dv = ipl_auction_df['IPL 2020 Team'].value_counts()
print(dv)
dv.plot(kind = 'bar',color = ['pink','purple','Orange','red','mediumblue',
'darkorange','midnightblue','yellow'])
plt.grid(color='#95a5a6', linestyle='--
', linewidth=2, axis='y', alpha=0.7)
#for printing the team names in bold fashion.
plt.xticks(fontsize = 30,rotation = 45)
```

```
plt.yticks(fontsize = 30)
plt.xlabel("Team that bought players",fontsize = 30)
plt.ylabel("Number of players",fontsize = 30)
plt.title("Number of players each team bought",fontsize = 30)
plt.show()

#width1 = 30
#height1 = 10
width_height_1 = (width1, height1)
plt.figure(figsize=width_height_1)
sns.countplot(x = 'IPL Matches',data = ipl_auction_df,
              palette = 'summer')
plt.grid(color='#95a5a2', linestyle='--
', linewidth=2, axis='y', alpha=0.7)
plt.xticks(fontsize = 30,rotation = 65)
plt.yticks(fontsize = 30)
plt.xlabel("IPL Matches played",fontsize = 25)
plt.ylabel("Number of players",fontsize = 25)
plt.title("IPL Matches played by the all the purchased players",fontsize =
 30)
plt.show()


#Finding the correlation between reserved price and number of players sold
#width1 = 30
#height1 = 10
width_height_1 = (width1, height1)
plt.figure(figsize=width_height_1)

i = ipl_auction_df['Reserve Price(in RS Lacs)'].value_counts()
print(i)
sns.countplot(x = 'Reserve Price(in RS Lacs)',data = ipl_auction_df,
              palette = 'summer',)
plt.grid(color='#95a5a6', linestyle='--
', linewidth=2, axis='y', alpha=0.7)
plt.xticks(fontsize =25)
plt.yticks(fontsize = 25)
plt.xlabel("Reserve Price(in RS Lacs)",fontsize = 25)
plt.ylabel("Number of players",fontsize = 25)
plt.title("Price planned to purchase the players",fontsize = 40)


#Finding the correlation between reserved price and number of players sold
#width1 = 30
#height1 = 10
```

```
width_height_1 = (width1, height1)
plt.figure(figsize=width_height_1)

i = ipl_auction_df['Auctioned Price(in RS Lacs)'].value_counts()
print(i)
sns.countplot(x = 'Auctioned Price(in RS Lacs)',data = ipl_auction_df,
              palette = 'summer',)
plt.grid(color='#95a5a6', linestyle='--
', linewidth=2, axis='y', alpha=0.7)
plt.xticks(fontsize =25)
plt.yticks(fontsize = 25)
plt.xlabel("Auctioned Price(in RS Lacs)",fontsize = 25)
plt.ylabel("Number of players",fontsize = 25)
plt.title("Number of players corresponding to price",fontsize = 40)

#Finding the correlation between playing role and number of players sold
#width1 = 30
#height1 = 10
width_height_1 = (width1, height1)
plt.figure(figsize=width_height_1)

g = ipl_auction_df['Playing Role'].value_counts()
print(g)
sns.countplot(x = 'Playing Role',data = ipl_auction_df,
              palette = 'summer',
             #order = df['Playing Role'].value_counts()
             )
plt.grid(color='#95a3a1', linestyle='--', linewidth=2, axis='y')
plt.xticks(fontsize =30,rotation = 0)
plt.yticks(fontsize = 30)
plt.xlabel("Playing role",fontsize = 35)
plt.ylabel("Number of players",fontsize = 35)
plt.title("Stats of players depending on the playing role",fontsize = 50)
```

Dataset:

https://www.kaggle.com/ramesh1511/ipl-auction-2020-analysis

Conclusion:

Data Visualization of IPL Auction Dataset gives us a detailed analysis of all the Players and their Auction details. All the Plots give us a detailed analysis of the IPL Auction dataset. These plots help in critical decision making for all the teams.