

The IPL 2022 Mega Player auction have featured a total of 600 players who were set to go under the hammer in Bengaluru. The initial list had over 1000 cricketers who had registered for the auction. However, the final list was trimmed to 590. There was a total of 217 slots spread across ten franchises up for grabs. Among the 600 players, 229 are capped players, 371 are uncapped players

```
In [1]: # Import necessary libraries
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
import matplotlib
import warnings
warnings.filterwarnings('ignore')

In [2]: ipl = pd.read_csv('ipl_2022_dataset.csv')
ipl

Out[2]:
   Unnamed: 0  Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
0            0      Ravi Kumar  Draft Pick  BOWLER  15.0  1950.0  SRH  Gujarat Titans
1            1      Hardik Pandya  Draft Pick  ALL-ROUNDER  15.0  1950.0  MI  Gujarat Titans
2            2      Lockie Ferguson  2 Cr  BOWLER  10.0  1300.0  KKR  Gujarat Titans
3            3      Rahul Tewatia  40 Lakh  ALL-ROUNDER  9.0  1170.0  RRR  Gujarat Titans
4            4      Shubman Gill  Draft Pick  BATTER  8.0  1040.0  KKR  Gujarat Titans
...         ...         ...         ...         ...         ...         ...         ...
628          628      Saiqa Patel  20 Lakh  BATTER  NaN  NaN  NaN  Unsold
629          629      Monu Singh  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
630          630      Naveen Radhakrishnan  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
631          631      Lance Morris  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
632          632      Aaron Harde  20 Lakh  ALL-ROUNDER  NaN  NaN  NaN  Unsold
633 rows × 8 columns

In [3]: # To get first 5 rows
ipl.head()

Out[3]:
   Unnamed: 0  Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
0            0      Ravi Kumar  Draft Pick  BOWLER  15.0  1950.0  SRH  Gujarat Titans
1            1      Hardik Pandya  Draft Pick  ALL-ROUNDER  15.0  1950.0  MI  Gujarat Titans
2            2      Lockie Ferguson  2 Cr  BOWLER  10.0  1300.0  KKR  Gujarat Titans
3            3      Rahul Tewatia  40 Lakh  ALL-ROUNDER  9.0  1170.0  RRR  Gujarat Titans
4            4      Shubman Gill  Draft Pick  BATTER  8.0  1040.0  KKR  Gujarat Titans

In [4]: # To get bottom 5 rows
ipl.tail()

Out[4]:
   Unnamed: 0  Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
628          628      Saiqa Patel  20 Lakh  BATTER  NaN  NaN  NaN  Unsold
629          629      Monu Singh  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
630          630      Naveen Radhakrishnan  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
631          631      Lance Morris  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
632          632      Aaron Harde  20 Lakh  ALL-ROUNDER  NaN  NaN  NaN  Unsold

In [6]: # To get the total player present in the dataset
ipl.shape

Out[6]:
(633, 8)

In [7]: ipl.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 633 entries, 0 to 632
Data columns (total 8 columns):
 #   Column  Non-Null Count  Dtype
--  --
 0   Unnamed: 0  633 non-null      int64
 1   Player      633 non-null      object
 2   Base Price  633 non-null      object
 3   TYPE        633 non-null      object
 4   COST IN ₹ (CR.)  237 non-null      float64
 5   Cost IN $ (000)  237 non-null      float64
 6   2021 Squad  399 non-null      object
 7   Team        633 non-null      object
dtypes: float64(2), int64(1), object(5)
memory usage: 39.7+ KB

In [8]: # To get the column names
ipl.columns

Out[8]:
Index(['Unnamed: 0', 'Player', 'Base Price', 'TYPE', 'COST IN ₹ (CR.)',
      'Cost IN $ (000)', '2021 Squad', 'Team'],
      dtype='object')

In [9]: # drop unnecessary column
ipl.drop(['Unnamed: 0', axis = 1, inplace = True)

In [10]: ipl.head()

Out[10]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
0  Ravi Kumar  Draft Pick  BOWLER  15.0  1950.0  SRH  Gujarat Titans
1  Hardik Pandya  Draft Pick  ALL-ROUNDER  15.0  1950.0  MI  Gujarat Titans
2  Lockie Ferguson  2 Cr  BOWLER  10.0  1300.0  KKR  Gujarat Titans
3  Rahul Tewatia  40 Lakh  ALL-ROUNDER  9.0  1170.0  RRR  Gujarat Titans
4  Shubman Gill  Draft Pick  BATTER  8.0  1040.0  KKR  Gujarat Titans

In [11]: # To check the null values
ipl.isnull().sum()

Out[11]:
Player      0
Base Price  0
TYPE        0
COST IN ₹ (CR.)  396
Cost IN $ (000)  396
2021 Squad  434
Team        0
dtype: int64

In [12]: ipl[ipl['Cost IN $ (000)'].isnull()]

Out[12]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
237  Sunam Rawat  2 Cr  BATTER  NaN  NaN  CSK  Unsold
238  Same Smith  2 Cr  BATTER  NaN  NaN  DC  Unsold
239  Shaibul Hasan  2 Cr  ALL-ROUNDER  NaN  NaN  KKR  Unsold
240  Anil Mishra  15 Cr  BOWLER  NaN  NaN  DC  Unsold
241  Anil Rashid  2 Cr  BOWLER  NaN  NaN  PBKS  Unsold
...     ...         ...         ...         ...         ...         ...
628  Saiqa Patel  20 Lakh  BATTER  NaN  NaN  NaN  Unsold
629  Monu Singh  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
630  Naveen Radhakrishnan  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
631  Lance Morris  20 Lakh  BOWLER  NaN  NaN  NaN  Unsold
632  Aaron Harde  20 Lakh  ALL-ROUNDER  NaN  NaN  NaN  Unsold
396 rows × 7 columns

In [13]: ipl['COST IN ₹ (CR.)'] = ipl['COST IN ₹ (CR.)'].fillna(0)
ipl['Cost IN $ (000)'] = ipl['Cost IN $ (000)'].fillna(0)

In [14]: ipl[ipl['2021 Squad'].isnull()]

Out[14]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team
6   Yash Dayal  20 Lakh  BOWLER  3.2  416.0  NaN  Gujarat Titans
9  Ashwin Sedarangan  20 Lakh  BATTER  2.6  338.0  NaN  Gujarat Titans
10  Matthew Wade  2 Cr  WICKETKEEPER  2.4  312.0  NaN  Gujarat Titans
11  Alzani Joseph  75 Lakh  BOWLER  2.4  312.0  NaN  Gujarat Titans
17  Varun Aaron  50 Lakh  BATTER  0.5  65.0  NaN  Gujarat Titans
...     ...         ...         ...         ...         ...         ...
628  Saiqa Patel  20 Lakh  BATTER  0.0  0.0  NaN  Unsold
629  Monu Singh  20 Lakh  BOWLER  0.0  0.0  NaN  Unsold
630  Naveen Radhakrishnan  20 Lakh  BOWLER  0.0  0.0  NaN  Unsold
631  Lance Morris  20 Lakh  BOWLER  0.0  0.0  NaN  Unsold
632  Aaron Harde  20 Lakh  ALL-ROUNDER  0.0  0.0  NaN  Unsold
434 rows × 7 columns

In [15]: ipl['2021 Squad'] = ipl['2021 Squad'].fillna('Not Participated')

In [16]: ipl.isnull().sum()

Out[16]:
Player      0
Base Price  0
TYPE        0
COST IN ₹ (CR.)  0
Cost IN $ (000)  0
2021 Squad  0
Team        0
dtype: int64

In [18]: teams = ipl[ipl['COST IN ₹ (CR.)']>0]['Team'].unique()

Out[18]:
array(['Gujarat Titans', 'Chennai Super Kings', 'Delhi Capitals',
      'Kolkata Knight Riders', 'Punjab Kings', 'Lucknow Super Giants',
      'Mumbai Indians', 'Royal Challengers Bangalore',
      'Rajasthan Royals', 'Sunrisers Hyderabad'], dtype=object)

In [20]: ipl['status'] = ipl['Team'].replace(teams,'sold')
ipl.head()

Out[20]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status
0  Ravi Kumar  Draft Pick  BOWLER  15.0  1950.0  SRH  Gujarat Titans  sold
1  Hardik Pandya  Draft Pick  ALL-ROUNDER  15.0  1950.0  MI  Gujarat Titans  sold
2  Lockie Ferguson  2 Cr  BOWLER  10.0  1300.0  KKR  Gujarat Titans  sold
3  Rahul Tewatia  40 Lakh  ALL-ROUNDER  9.0  1170.0  RRR  Gujarat Titans  sold
4  Shubman Gill  Draft Pick  BATTER  8.0  1040.0  KKR  Gujarat Titans  sold

In [21]: ipl

Out[21]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status
0      Ravi Kumar  Draft Pick  BOWLER  15.0  1950.0  SRH  Gujarat Titans  sold
1      Hardik Pandya  Draft Pick  ALL-ROUNDER  15.0  1950.0  MI  Gujarat Titans  sold
2      Lockie Ferguson  2 Cr  BOWLER  10.0  1300.0  KKR  Gujarat Titans  sold
3      Rahul Tewatia  40 Lakh  ALL-ROUNDER  9.0  1170.0  RRR  Gujarat Titans  sold
4      Shubman Gill  Draft Pick  BATTER  8.0  1040.0  KKR  Gujarat Titans  sold
...     ...         ...         ...         ...         ...         ...
628  Saiqa Patel  20 Lakh  BATTER  0.0  0.0  Not Participated  Unsold  Unsold
629  Monu Singh  20 Lakh  BOWLER  0.0  0.0  Not Participated  Unsold  Unsold
630  Naveen Radhakrishnan  20 Lakh  BOWLER  0.0  0.0  Not Participated  Unsold  Unsold
631  Lance Morris  20 Lakh  BOWLER  0.0  0.0  Not Participated  Unsold  Unsold
632  Aaron Harde  20 Lakh  ALL-ROUNDER  0.0  0.0  Not Participated  Unsold  Unsold
633 rows × 8 columns

In [22]: # To check duplicate players
ipl[ipl['Player'].duplicated(keep = False)]

Out[22]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status
42  Lali Yadav  20 Lakh  ALL-ROUNDER  0.65  84.5  DC  Delhi Capitals  sold
240  Anil Mishra  15 Cr  BOWLER  0.00  0.0  DC  Unsold  Unsold
518  Shivam Sharma  20 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold
530  Lali Yadav  20 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold
537  Shubham Singh  20 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold
544  Shubham Singh  20 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold
569  Shivam Sharma  20 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold

In [23]: # To check total players participated in 2022 IPL
ipl.shape[0]

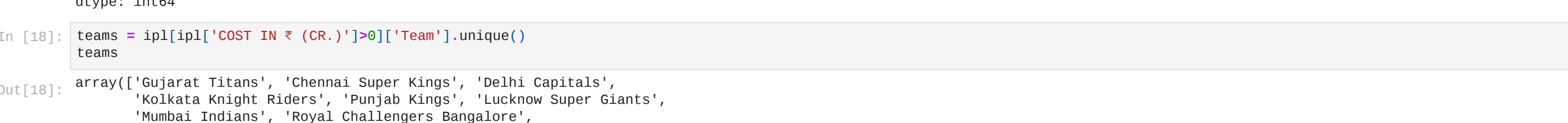
Out[23]:
633

In [24]: # To check the types of players participated in 2022 IPL
types = ipl['TYPE'].value_counts()
types.reset_index()

Out[24]:
   index  TYPE
0  ALL-ROUNDER  242
1  BATTER  215
3  WICKETKEEPER  64

Data Visualization
```

```
In [26]: # Using the above table to create a pie chart
plt.pie(types.values, labels = types.index, labeldistance = 1.2, autopct = '%1.2f%%', shadow = True, startangle = 60)
plt.title('Role of Players Participated', fontsize = 15)
plt.show()
```



Observations

- Here we have a All Rounder in 38.23%
- Bowler in 33.97%
- Batter in 31.69%
- Wicketkeeper in 10.11%

```
In [28]: # Players sold and unsold using a bar graph.
plt.figure(figsize=(20,10))
fig = sns.countplot(ipl['status'], palette = ['Orange', 'Pink'])
plt.xlabel('Sold or Unsold')
plt.ylabel('Number of Players')
plt.title('Sold vs Unsold', fontsize = 15)
plt.show()

for p in fig.patches:
    fig.annotate(format(p.get_height(), '.0f'), (p.get_x() +
    p.get_width()/2, p.get_height()), ha = 'center', va = 'center',
    xytext = (0,4), textcoords = 'offset points')
```



Observation

- Here we have a bar plot which is total 237 players sold and 396 players unsold.

```
In [31]: # print the total sold and unsold value
ipl.groupby('status')['Player'].count()

Out[31]:
status
Unsold    396
Sold       237
Name: Player, dtype: int64

In [32]: # Total number of players bought by each team
plt.figure(figsize=(20,10))
fig = sns.countplot(ipl[ipl['Team']!='Unsold']['Team'])
plt.xlabel('Team Names')
plt.ylabel('Number of Players')
plt.title('Players Bought by Each Team', fontsize = 12)
plt.show()

for p in fig.patches:
    fig.annotate(format(p.get_height(), '.0f'), (p.get_x() +
    p.get_width()/2, p.get_height()), ha = 'center', va = 'center',
    xytext = (0,4), textcoords = 'offset points')
```



Observation

- The maximum the team can purchase 25 players
- Here Chennai Super Kings, Kolkata Knight Riders, Punjab Kings, Mumbai Indians are have 25 players respectively.
- Gujarat Titans, Lucknow Super Giants, Royal Challengers Bangalore are have 22 players respectively.
- Delhi Capitals, Rajasthan Royals have 24 players respectively.
- Sunrisers Hyderabad have 23 players.

```
In [31]: ipl['retention'] = ipl['Base Price']

In [31]: ipl['retention'].replace(['2 Cr', '40 Lakh', '1 Cr', '75 Lakh', '50 Lakh', '30 Lakh', '1.5 Cr', 'From Auction'], inplace = True)

In [31]: # Treating Base Price
ipl['Base Price'].replace(['Draft Pick', 0], inplace = True)

In [36]: ipl['base_price_unit'] = ipl['Base Price'].apply(lambda x: str(x).split('.')[1])
ipl['base_price'] = ipl['Base Price'].apply(lambda x: str(x).split('.')[0])

In [37]: ipl['base_price'].replace('Retained', 0, inplace = True)

In [38]: ipl.head()
```

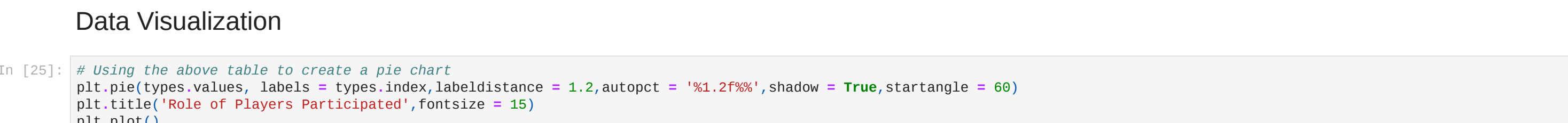
	Player	Base Price	TYPE	COST IN ₹ (CR.)	Cost IN \$ (000)	2021 Squad	Team	status	retention	base_price_unit	base_price
0	Ravi Kumar	0	BOWLER	15.0	1950.0	SRH	Gujarat Titans	sold	Draft Pick	0	0
1	Hardik Pandya	0	ALL-ROUNDER	15.0	1950.0	MI	Gujarat Titans	sold	Draft Pick	0	0
2	Lockie Ferguson	2 Cr	BOWLER	10.0	1300.0	KKR	Gujarat Titans	sold	From Auction	Cr	2
3	Rahul Tewatia	40 Lakh	ALL-ROUNDER	9.0	1170.0	RRR	Gujarat Titans	sold	From Auction	Lakh	40
4	Shubman Gill	0	BATTER	8.0	1040.0	KKR	Gujarat Titans	sold	Draft Pick	0	0

```
In [41]: # Total Players retained and bought
ipl.groupby(['Team', 'retention']).count()[['Team']]

Out[41]:
Team
Chennai Super Kings    retention
Retained              9
Retained              4
From Auction          12
Delhi Capitals
Retained              4
Retained              5
From Auction          3
Kolkata Knight Riders
Retained              4
From Auction          4
Lucknow Super Giants
Retained              4
Draft Pick           3
Mumbai Indians
From Auction         11
Lakh               13
Punjab Kings
From Auction         12
Retained            12
Rajasthan Royals
Retained              7
From Auction         14
Royal Challengers Bangalore
Retained              4
From Auction         13
Sunrisers Hyderabad
Retained              3
From Auction         9
Sunrisers Hyderabad
From Auction         21
Name: retention, dtype: int64

In [42]: # To figure the players in each team
fig = sns.countplot(ipl[ipl['Team']!='Unsold']['Team'], hue = ipl['TYPE'])
plt.xlabel('Team Names')
plt.ylabel('Number of Player')
plt.xticks(rotation = 50)

Out[42]:
(array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9]),
 Text(0, 0, 'Gujarat Titans'),
 Text(1, 0, 'Chennai Super Kings'),
 Text(2, 0, 'Delhi Capitals'),
 Text(3, 0, 'Kolkata Knight Riders'),
 Text(4, 0, 'Punjab Kings'),
 Text(5, 0, 'Lucknow Super Giants'),
 Text(6, 0, 'Mumbai Indians'),
 Text(7, 0, 'Royal Challengers Bangalore'),
 Text(8, 0, 'Rajasthan Royals'),
 Text(9, 0, 'Sunrisers Hyderabad'))
```



```
In [44]: # Highest amount spent on a single player by each team
ipl[ipl['retention']!='From Auction'].groupby(['Team'])['COST IN ₹ (CR.)'].max()[::-1].sort_values(ascending = False)

Team
Mumbai Indians    15.25
Chennai Super Kings    14.99
Kolkata Knight Riders    12.75
Punjab Kings        12.10
Delhi Capitals        11.75
Royal Challengers Bangalore    10.75
Sunrisers Hyderabad    10.75
Gujarat Titans       10.00
Rajasthan Royals     10.00
Lucknow Super Giants    8.75
Name: COST IN ₹ (CR.), dtype: float64

In [45]: # Player retained at max price
ipl[ipl['retention']=='Retained'].sort_values(by = 'COST IN ₹ (CR.)', ascending = False).head(1)
```

	Player	Base Price	TYPE	COST IN ₹ (CR.)	Cost IN \$ (000)	2021 Squad	Team	status	retention	base_price_unit	base_price
22	Ravindra Jadeja	Retained	ALL-ROUNDER	16.0	2080.0	CSK	Chennai Super Kings	sold	Retained	Retained	0

```
In [49]: # TOP 5 Bowlers
ipl[ipl['retention']!='From Auction'] & ipl['TYPE'] == 'BOWLER'].sort_values(by = 'COST IN ₹ (CR.)', ascending = False)

Out[49]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status  retention  base_price_unit  base_price
23  Deepak Chahar  2 Cr  BOWLER  14.00  1820.0  CSK  Chennai Super Kings  sold  From Auction  Cr  2
48  Shadiel Thakur  2 Cr  BOWLER  10.75  1397.5  CSK  Delhi Capitals  sold  From Auction  Cr  2
2  Lockie Ferguson  2 Cr  BOWLER  10.00  1300.0  KKR  Gujarat Titans  sold  From Auction  Cr  2
182  Pankaj Singh  1 Cr  BOWLER  10.00  1200.0  KKR  Rajasthan Royals  sold  From Auction  Cr  1
58  Kago Rabada  2 Cr  BOWLER  9.25  1202.5  DC  Punjab Kings  sold  From Auction  Cr  2
...     ...         ...         ...         ...         ...         ...         ...
296  Rahul Mishra  50 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
296  Hayden Walsh  50 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
315  Ben Deane  30 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  30
325  Jai Singh  30 Lakh  BOWLER  0.00  0.0  PBKS  Unsold  Unsold  From Auction  Lakh  30
529  Brad Wheal  50 Lakh  BOWLER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
94 rows × 11 columns

In [50]: # TOP 5 BATTER
ipl[ipl['retention']!='From Auction'] & ipl['TYPE'] == 'BATTER'].sort_values(by = 'COST IN ₹ (CR.)', ascending = False)

Out[50]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status  retention  base_price_unit  base_price
71  Shreyas Iyer  2 Cr  BATTER  12.25  1592.5  DC  Kolkata Knight Riders  sold  From Auction  Cr  1
193  Shimon Hetmyer  1.5 Cr  BATTER  8.50  1106.0  DC  Rajasthan Royals  sold  From Auction  Cr  1.5
217  Rahul Tripathi  40 Lakh  BATTER  8.25  1106.0  KKR  Sunrisers Hyderabad  sold  From Auction  Lakh  40
100  Shikhar Dhawan  2 Cr  BATTER  8.20  1072.5  DC  Punjab Kings  sold  From Auction  Cr  2
195  Devdas Pandey  2 Cr  BATTER  7.75  1007.5  RCB  Rajasthan Royals  sold  From Auction  Cr  2
173  Faf du Plessis  1 Cr  BATTER  7.00  900.0  CSK  Royal Challengers Bangalore  sold  From Auction  Cr  2
53  David Warner  1 Cr  BATTER  6.25  812.5  SRH  Delhi Capitals  sold  From Auction  Cr  1
129  Manish Pandey  1 Cr  BATTER  4.60  596.0  SRH  Lucknow Super Giants  sold  From Auction  Cr  1
7  David Miller  1 Cr  BATTER  3.00  390.0  RR  Gujarat Titans  sold  From Auction  Cr  1
56  Rohan Mahipal  75 Lakh  BATTER  2.80  364.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
226  Aiden Markram  1 Cr  BATTER  2.60  338.0  PBKS  Sunrisers Hyderabad  sold  From Auction  Cr  1
31  Robin Uthappa  2 Cr  BATTER  2.00  260.0  CSK  Chennai Super Kings  sold  From Auction  Cr  2
12  Jason Roy  2 Cr  BATTER  2.00  260.0  SRH  Gujarat Titans  sold  From Auction  Cr  2
132  Alex Lewis  2 Cr  BATTER  2.00  260.0  RR  Lucknow Super Giants  sold  From Auction  Cr  1.5
82  Evan Hales  1.5 Cr  BATTER  1.50  195.0  Not Participated  Unsold  Unsold  From Auction  Cr  2
63  Manish Rawat  50 Lakh  BATTER  1.40  182.0  KKR  Rajasthan Royals  sold  From Auction  Lakh  50
201  Manpreet Singh  50 Lakh  BATTER  1.10  143.0  PBKS  Delhi Capitals  sold  From Auction  Lakh  50
239  Devon Conway  1 Cr  BATTER  1.00  130.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
59  Arvinah Kumaar  1 Cr  BATTER  1.00  130.0  DC  Kolkata Knight Riders  sold  From Auction  Cr  1
204  Rassie van der Dussen  1 Cr  BATTER  1.00  130.0  Not Participated  Unsold  Unsold  From Auction  Cr  1
181  Finn Allen  50 Lakh  BATTER  0.80  104.0  RCB  Royal Challengers Bangalore  sold  From Auction  Lakh  50
212  Bhuvaneshwar Puri  50 Lakh  BATTER  0.50  65.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
330  Rilee Rossouw  1 Cr  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  1
400  Hasnatullah Shahidi  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
399  Kurtis Patterson  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
398  Pathum Nissanka  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
343  Zubayr Hamza  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
396  Avishka Fernando  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
395  Shamane Brooks  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
395  Darren Bravo  75 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  75
254  Luane Evans  40 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  40
390  Haymuel Rutherford  40 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  40
335  Hazratullah Zaki  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
334  James Vince  2 Cr  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  2
333  Hanuma Vihari  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
232  David Malen  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
352  David Miller  1.5 Cr  BATTER  0.00  0.0  PBKS  Unsold  Unsold  From Auction  Cr  1.5
330  Janneman Malen  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
320  Brandon King  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
328  Usman Khawaja  1.5 Cr  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  1.5
327  Martin Gupill  75 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  75
301  Tim Kohler-Cadmore  40 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  40
274  Najibul Zaman  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
273  Chris Lynn  15 Cr  BATTER  0.00  0.0  MI  Unsold  Unsold  From Auction  Cr  1.5
255  Sayash Tiwary  50 Lakh  BATTER  0.00  0.0  MI  Unsold  Unsold  From Auction  Lakh  50
254  Cheteshwar Pujara  50 Lakh  BATTER  0.00  0.0  CSK  Unsold  Unsold  From Auction  Lakh  50
253  Eoin Morgan  1 Cr  BATTER  0.00  0.0  KKR  Unsold  Unsold  From Auction  Cr  1
251  Marcus Labuschagne  1.5 Cr  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  1.5
250  Aaron Finch  1.5 Cr  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  1.5
238  Steve Smith  2 Cr  BATTER  0.00  0.0  DC  Unsold  Unsold  From Auction  Cr  2
237  Suresh Raina  2 Cr  BATTER  0.00  0.0  CSK  Unsold  Unsold  From Auction  Cr  2
401  Manoj Tawary  50 Lakh  BATTER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
86 rows × 11 columns

In [51]: ipl[ipl['retention']!='From Auction'] & ipl['TYPE'] == 'ALL-ROUNDER'].sort_values(by = 'COST IN ₹ (CR.)', ascending = False)

Out[51]:
   Player  Base Price  TYPE  COST IN ₹ (CR.)  Cost IN $ (000)  2021 Squad  Team  status  retention  base_price_unit  base_price
97  Liam Livingstone  1 Cr  ALL-ROUNDER  11.50  1465.0  RR  Punjab Kings  sold  From Auction  Cr  1
173  Harshal Patel  2 Cr  ALL-ROUNDER  10.75  1397.5  RCB  Royal Challengers Bangalore  sold  From Auction  Cr  2
129  Wasimuddin Butt  40 Lakh  ALL-ROUNDER  9.00  1170.0  RCB  Royal Challengers Bangalore  sold  From Auction  Cr  1
99  Shaheer Khan  40 Lakh  ALL-ROUNDER  9.00  1170.0  PBKS  Punjab Kings  sold  From Auction  Lakh  40
...     ...         ...         ...         ...         ...         ...         ...
404  Kedar Jadhav  1 Cr  ALL-ROUNDER  0.00  0.0  SRH  Unsold  Unsold  From Auction  Cr  1
405  Colin Munro  1.5 Cr  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Cr  1.5
406  Outamba Paul  50 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  50
407  Keemo Paul  75 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  75
533  Chris Green  40 Lakh  ALL-ROUNDER  0.00  0.0  Not Participated  Unsold  Unsold  From Auction  Lakh  40
86 rows × 11 columns

In [52]: ipl = ipl.rename(columns = {'2021 Squad':'Prev_team'})

In [54]: unsold_players = ipl[ipl.Prev_team != 'UnsoldParticipated']
& ipl.Team != 'Unsold')[['Player', 'Prev_team']]

In [55]: print(unsold_players)

Player Prev_team
237  Suresh Raina CSK
238  Steve Smith DC
239  Shaibul Hasan KKR
240  Anil Mishra DC
241  Anil Rashid PBKS
242  Irfan Tahir CSK
243  Mujeeb Zadran SRH
244  Aadam Zampa RCB
245  Ben Cutting KKR
246  Mohammed Agha RCB
247  R. Siddharth DC
252  David Miller PBKS
253  Eoin Morgan KKR
254  Cheteshwar Pujara CSK
255  Saurabh Tiwary MI
257  Ishant Sharma RCB
259  Piyush Chawla MI
260  Tabraiz Shamsi KKR
262  Sachin Baby RCB
267  Virat Singh SRH
269  Akash Singh RR
273  Chris Lynn MI
276  George Gordon RCB
288  Andrew Tye RR
289  Sandeep Narain RCB
311  Shreyas Iyer SRH
313  Aditya Tare MI
325  Jaiya Saxena PBKS
327  Ben Cutting KKR
330  Moises Henriques PBKS
343  Scott Kugelelly KKR
346  Bhawel Kularni MI
348  Kane Richardson RCB
484  Kedar Jadhav SRH
489  Yuvraj Chahal MI
447  Kulwant Khejraliya DC
623  Agnivesh Awasthi PBKS
```

```
In [ ]:
```