EDA ANALYSIS ON IPL AUCTION DATASET

In [3]:
```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings('ignore')
```

In [4]:
```python
ipl_data=pd.read_csv("IPL Auction 2022.csv")
```

In [5]: ipl_data

Out[5]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CR
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CR
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CR
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CR
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	55 L
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 L
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 L

184 rows × 16 columns

In [5]: `ipl_data.head()`

Out[5]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Fran
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR	Raja l
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CR	Raja l
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CR	K
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CR	F
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CR	Challe Ban

In [6]: `ipl_data.tail()`

Out[6]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	55 L
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 L
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 L

In [8]: `type(ipl_data)`

Out[8]: `pandas.core.frame.DataFrame`

In [9]: `ipl_data.shape`

Out[9]: `(184, 16)`

In [10]: `type(ipl_data.shape)`

Out[10]: `tuple`

In [11]: `ipl_data.size`

Out[11]: 2944

In [12]: `ipl_data.ndim`

Out[12]: 2

In [13]: `ipl_data.columns.tolist()`

Out[13]: ['Set No.',
          'Set Name',
          'Player',
          'Country',
          'State Association',
          'Age',
          'Specialism',
          'Batting',
          'Bowling',
          'IPL',
          'Previous IPLTeam(s)',
          '2021 Team',
          'C/U/A',
          'Base Price',
          'Sold Price',
          'New Franchise']

In [14]: `ipl_data.values`

Out[14]:
```
array([[1, 'M', 'R Ashwin', ..., '2 CR', '5 CR', 'Rajasthan Royals'],
       [1, 'M', 'Trent Boult', ..., '2 CR', '8 CR', 'Rajasthan Royals'],
       [1, 'M', 'Pat Cummins', ..., '2 CR', '7.25 CR',
        'Kolkata Knight Riders'],
       ...,
       [57, 'UAL10', 'Arjun Tendulkar', ..., '20 L', '30 L',
        'Mumbai Indians'],
       [59, 'UAL12', 'Shubham Garhwal', ..., '20 L', '20 L',
        'Rajasthan Royals'],
       [60, 'UAL13', 'Anunay Singh', ..., '20 L', '20 L',
        'Rajasthan Royals']], dtype=object)
```

In [15]: `type(ipl_data.values)`

Out[15]: `numpy.ndarray`

In [16]: `ipl_data.dtypes`

Out[16]:
```
Set No.                int64
Set Name              object
Player                object
Country               object
State Association      object
Age                    int64
Specialism            object
Batting               object
Bowling               object
IPL                  float64
Previous IPLTeam(s)   object
2021 Team             object
C/U/A                 object
Base Price            object
Sold Price            object
New Franchise         object
dtype: object
```

In [17]: `ipl_data.axes`

Out[17]: [RangeIndex(start=0, stop=184, step=1),
 Index(['Set No.', 'Set Name', 'Player', 'Country', 'State Association', 'Age',
        'Specialism', 'Batting', 'Bowling', 'IPL', 'Previous IPLTeam(s)',
        '2021 Team', 'C/U/A', 'Base Price', 'Sold Price', 'New Franchise'],
       dtype='object')]

In [18]: `ipl_data.head(3)`

Out[18]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Franc
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR	Rajas Ro
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CR	Rajas Ro
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CR	Ko Ki Ri

In [19]: `ipl_data.tail(3)`

Out[19]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	F
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 L	
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20 L	R
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 L	R

BASIC DESCRIPTIVE STATISTICS

In [21]: `ipl_data.describe()`

Out[21]:

	Set No.	Age	IPL
count	184.000000	184.000000	137.000000
mean	17.989130	27.103261	36.897810
std	14.200742	4.428570	46.902635
min	1.000000	17.000000	0.000000
25%	7.000000	24.000000	3.000000
50%	14.500000	27.000000	21.000000
75%	25.000000	30.250000	50.000000
max	60.000000	38.000000	213.000000

In [22]: `ipl_data['Age'].mean()`

Out[22]: `27.10326086956522`

In [23]: `ipl_data['Age'].median()`

Out[23]: `27.0`

In [24]: `ipl_data['Age'].mode()`

Out[24]: `0     26`
`Name: Age, dtype: int64`

In [25]: *#Calculating the standard variance*
```
ipl_data.std()
```

Out[25]: Set No.   14.200742
         Age   4.428570
         IPL   46.902635
         dtype: float64

In [26]: *#Calculating the variance*
```
ipl_data.var()
```

Out[26]: Set No.   201.661083
         Age   19.612230
         IPL   2199.857128
         dtype: float64

HANDLING MISSING AND DUPLICATE DATA

In [27]: `ipl_data`

Out[27]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CR
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CR
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CR
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CR
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	55 L
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 L
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20 L
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 L

184 rows × 16 columns

In [28]: `ipl_data.isnull()`

Out[28]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Franc
0	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	F
1	False	False	False	False	True	False	False	False	False	False	False	False	False	False	False	F
2	False	False	False	False	True	False	False	False	False	False	False	False	False	False	False	F
3	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	F
4	False	False	False	False	True	False	False	False	False	False	False	False	False	False	False	F
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
179	False	False	False	False	False	False	False	False	False	True	True	True	False	False	False	F
180	False	False	False	False	False	False	False	False	False	True	True	True	False	False	False	F
181	False	False	False	False	False	False	False	False	False	False	False	False	False	False	False	F
182	False	False	False	False	False	False	False	False	False	True	True	True	False	False	False	F
183	False	False	False	False	False	False	False	False	False	True	True	True	False	False	False	F

184 rows × 16 columns

In [29]: `ipl_data.fillna(70)`   *#-this command fills all the Nan entries with value 84*

Out[29]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CF
1	1	M	Trent Boult	New Zealand	70	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CF
2	1	M	Pat Cummins	Australia	70	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CF
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CF
4	1	M	Faf Du Plessis	South Africa	70	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CF
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	70.0	70	70	Uncapped	20 L	20 l
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	70.0	70	70	Uncapped	20 L	55 l
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 l
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	70.0	70	70	Uncapped	20 L	20 l
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	70.0	70	70	Uncapped	20 L	20 l

184 rows × 16 columns

```
In [30]: ipl_data.dropna()          #- 110 entries are removed and we get clean data
```

Out[30]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sol Pric
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 C
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.2 C
5	1	M	Shreyas Iyer	India	MCA	27	BATSMAN	RHB	RIGHT ARM Leg Spin	87.0	DC	DC	Capped	2 CR	12.2 C
7	1	M	Mohammad Shami	India	CAB	32	BOWLER	RHB	RIGHT ARM Fast	77.0	DCH, KKR, DD, PBKS	PBKS	Capped	2 CR	6.2 C
11	2	BA1	Devdutt Padikkal	India	KSCA	21	BATSMAN	LHB	RIGHT ARM Off Spin	29.0	RCB	RCB	Capped	2 CR	7.7 C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
135	25	UAL3	Pravin Dubey	India	KSCA	28	ALL-ROUNDER	RHB	RIGHT ARM Leg Spin	3.0	RCB, DC	DC	Uncapped	20 L	50
137	25	UAL3	Suyash Prabhudessai	India	GCA	24	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	0.0	RCB	RCB	Uncapped	20 L	30
142	27	UFA3	Vaibhav Arora	India	HPCA	24	BOWLER	RHB	RIGHT ARM Fast Medium	0.0	KKR	KKR	Uncapped	20 L	2 C
145	27	UFA3	Mohsin Khan	India	UPCA	23	BOWLER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	20

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sol Pric
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30

74 rows × 16 columns

In [31]: `ipl_data.duplicated()` *#-it checks if any duplicate entry is present or not*

Out[31]:
```
0      False
1      False
2      False
3      False
4      False
       ...
179    False
180    False
181    False
182    False
183    False
Length: 184, dtype: bool
```

In [32]: *#Show the entries of 5th,6th and 7th row.*
```
ipl_data[5:8]
```

Out[32]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Franc
5	1	M	Shreyas Iyer	India	MCA	27	BATSMAN	RHB	RIGHT ARM Leg Spin	87.0	DC	DC	Capped	2 CR	12.25 CR	Ko K Ri
6	1	M	Kagiso Rabada	South Africa	NaN	26	BOWLER	LHB	RIGHT ARM Fast	50.0	DC	DC	Capped	2 CR	9.25 CR	Pu K
7	1	M	Mohammad Shami	India	CAB	32	BOWLER	RHB	RIGHT ARM Fast	77.0	DCH, KKR, DD, PBKS	PBKS	Capped	2 CR	6.25 CR	Gu T

In [33]: *#Show the data of player column ranges from 11 to 17.*
```
ipl_data['Player'][11:18]
```

Out[33]:
```
11      Devdutt Padikkal
12         Manish Pandey
13             Jason Roy
14         Robin Uthappa
15          Dwayne Bravo
16     Wanindu Hasaranga
17          Jason Holder
Name: Player, dtype: object
```
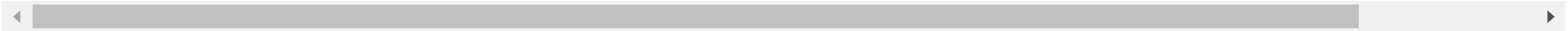
In [36]: `#Show the entries of IPL column whose strike rate is greater than 100.`
`ipl_data[ipl_data['IPL']>100]`   `#-13 entries are there where strike rate is more than 100`

Out[36]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	
8	1	M	David Warner	Australia	NaN	35	BATSMAN	LHB	-	150.0	DD, SRH	SRH	Capped	2 CR	
12	2	BA1	Manish Pandey	India	KSCA	32	BATSMAN	RHB	RIGHT ARM Off Spin	154.0	MI, RCB, PWI, KKR, SRH	SRH	Capped	1 CR	
14	2	BA1	Robin Uthappa	India	KCA	36	BATSMAN	RHB	-	193.0	MI, PWI, RCB, KKR, RR, CSK	CSK	Capped	2 CR	
15	3	AL1	Dwayne Bravo	West Indies	NaN	38	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	151.0	MI, GL, CSK	CSK	Capped	2 CR	
25	4	WK1	Dinesh Karthik	India	TNCA	36	WICKETKEEPER	RHB	-	213.0	KXIP, MI, DD, RCB, GL, KKR	KKR	Capped	2 CR	
28	4	WK1	Ambati Rayudu	India	ACA	36	WICKETKEEPER	RHB	-	175.0	MI, CSK	CSK	Capped	2 CR	
34	5	FA1	Bhuvneshwar Kumar	India	UPCA	32	BOWLER	RHB	RIGHT ARM Fast Medium	132.0	PWI, SRH	SRH	Capped	2 CR	
38	5	FA1	Umesh Yadav	India	VCA	34	BOWLER	RHB	RIGHT ARM Fast	121.0	DD, KKR,RCB,DC	DC	Capped	2 CR	
39	6	SP1	Yuzvendra Chahal	India	HCA	31	BOWLER	RHB	RIGHT ARM Leg Spin	114.0	MI,RCB	RCB	Capped	2 CR	

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	
74	12	BA2	Ajinkya Rahane	India	MCA	33	BATSMAN	RHB	-	151.0	MI, RPS, RR, DC	DC	Capped	1 CR	
75	12	BA2	Mandeep Singh	India	PCA	30	BATSMAN	RHB	RIGHT ARM Medium	105.0	RCB, PBKS	PBKS	Capped	50 L	

In [37]: `#Show the entries of capped players and uncapped players separately.`
`ipl_data[ipl_data['C/U/A']=='Capped']`   `#-98 players are capped players.`

Out[37]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CR
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.25 CR
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CR
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CR
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
155	31	FA4	Tim Southee	New Zealand	NaN	33	BOWLER	RHB	RIGHT ARM Fast	43.0	CSK, RR, MI, RCB, KKR	KKR	Capped	1.50 CR	1.50 CR
162	38	AL5	Chamika Karunaratne	Sri Lanka	NaN	25	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Capped	50 L	50 L
163	38	AL5	David Willey	England	NaN	32	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	3.0	CSK	NaN	Capped	2 CR	2 CR
164	39	FA5	Varun Aaron	India	JSCA	32	BOWLER	RHB	RIGHT ARM Fast	50.0	DD, RCB,KXIP, RR	NaN	Capped	50 L	50 L

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
174	50	AL7	Kyle Mayers	West Indies	NaN	29	ALL-ROUNDER	LHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Capped	50 L	50 L

98 rows × 16 columns

In [38]: `ipl_data[ipl_data['C/U/A']=='Uncapped']`   `#-86 players are Uncapped players.`

Out[38]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	So Pri
42	7	UBA1	Dewald Brevis	South Africa	NaN	18	BATSMAN	RHB	RIGHT ARM Leg Spin	NaN	NaN	NaN	Uncapped	20 L	3 C
43	7	UBA1	Priyam Garg	India	UPCA	21	BATSMAN	RHB	RIGHT ARM Off Spin	19.0	SRH	SRH	Uncapped	20 L	20
44	7	UBA1	Ashwin Hebbar	India	ACA	26	BATSMAN	RHB	RIGHT ARM Medium	NaN	NaN	NaN	Uncapped	20 L	20
45	7	UBA1	Abhinav Sadarangani	India	KSCA	27	BATSMAN	RHB	RIGHT ARM Leg Spin	NaN	NaN	NaN	Uncapped	20 L	2 C
46	7	UBA1	Anmolpreet Singh	India	PCA	24	BATSMAN	RHB	RIGHT ARM Off Spin	1.0	MI	MI	Uncapped	20 L	20
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	20 L	20
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	55
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20

86 rows × 16 columns

In [39]: *#Show all the information of 7th row in this dataset.*
         ipl_data.loc[7]

Out[39]: Set No.   1
         Set Name   M
         Player   Mohammad Shami
         Country   India
         State Association   CAB
         Age   32
         Specialism   BOWLER
         Batting   RHB
         Bowling   RIGHT ARM Fast
         IPL   77.0
         Previous IPLTeam(s)   DCH, KKR, DD, PBKS
         2021 Team   PBKS
         C/U/A   Capped
         Base Price   2 CR
         Sold Price   6.25 CR
         New Franchise   Gujarat Titans
         Name: 7, dtype: object

In [40]: ```
#Show all the information whose country is India.
ipl_data[ipl_data['Country']=='India']   #122 players are from country India.
```

Out[40]:

| | Set No. | Set Name | Player | Country | State Association | Age | Specialism | Batting | Bowling | IPL | Previous IPLTeam(s) | 2021 Team | C/U/A | Base Price | So Pri |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | M | R Ashwin | India | TNCA | 35 | ALL-ROUNDER | RHB | RIGHT ARM Off Spin | 167.0 | CSK, RSP, KXIP, DC | DC | Capped | 2 CR | 5 ( |
| 3 | 1 | M | Shikhar Dhawan | India | DDCA | 36 | BATSMAN | LHB | - | 192.0 | DCH, MI, SRH, DC | DC | Capped | 2 CR | 8. ( |
| 5 | 1 | M | Shreyas Iyer | India | MCA | 27 | BATSMAN | RHB | RIGHT ARM Leg Spin | 87.0 | DC | DC | Capped | 2 CR | 12. ( |
| 7 | 1 | M | Mohammad Shami | India | CAB | 32 | BOWLER | RHB | RIGHT ARM Fast | 77.0 | DCH, KKR, DD, PBKS | PBKS | Capped | 2 CR | 6. ( |
| 11 | 2 | BA1 | Devdutt Padikkal | India | KSCA | 21 | BATSMAN | LHB | RIGHT ARM Off Spin | 29.0 | RCB | RCB | Capped | 2 CR | 7. ( |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 179 | 53 | UAL8 | Ansh Patel | India | BCA | 20 | ALL-ROUNDER | RHB | LEFT ARM Slow Unorthodox | NaN | NaN | NaN | Uncapped | 20 L | 2( |
| 180 | 54 | UFA8 | Ashok Sharma | India | RCA | 19 | BOWLER | RHB | RIGHT ARM Fast Medium | NaN | NaN | NaN | Uncapped | 20 L | 5! |
| 181 | 57 | UAL10 | Arjun Tendulkar | India | MCA | 22 | ALL-ROUNDER | LHB | LEFT ARM Fast Medium | 0.0 | MI | MI | Uncapped | 20 L | 3( |
| 182 | 59 | UAL12 | Shubham Garhwal | India | RCA | 26 | ALL-ROUNDER | LHB | LEFT ARM Slow Orthodox | NaN | NaN | NaN | Uncapped | 20 L | 2( |
| 183 | 60 | UAL13 | Anunay Singh | India | BICA | 29 | ALL-ROUNDER | RHB | RIGHT ARM Fast Medium | NaN | NaN | NaN | Uncapped | 20 L | 2( |

122 rows × 16 columns

```
In [41]:  #Show all the information whose age is greater than 30
          ipl_data[ipl_data['Age']>30]        #46 players have age greater than 30.
```

Out[41]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped
7	1	M	Mohammad Shami	India	CAB	32	BOWLER	RHB	RIGHT ARM Fast	77.0	DCH, KKR, DD, PBKS	PBKS	Capped

In [42]: *#Show all the information whose age is greater than 30 and are from country Austraila.*
```
ipl_data[(ipl_data['Age']>30) & (ipl_data['Country']=='Australia')]
```

Out[42]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	So Pri
8	1	M	David Warner	Australia	NaN	35	BATSMAN	LHB	-	150.0	DD, SRH	SRH	Capped	2 CR	6.2 C
29	4	WK1	Matthew Wade	Australia	NaN	34	WICKETKEEPER	LHB	-	3.0	DD	NaN	Capped	2 CR	2.4 C
32	5	FA1	Josh Hazlewood	Australia	NaN	31	BOWLER	LHB	RIGHT ARM Fast	12.0	CSK	CSK	Capped	2 CR	7.7 C
87	14	FA2	Nathan Coulter-Nile	Australia	NaN	34	BOWLER	RHB	RIGHT ARM Fast Medium	38.0	DD, KKR, RCB, MI	MI	Capped	2 CR	2 C
126	22	FA3	Jason Behrendorff	Australia	NaN	31	BOWLER	RHB	LEFT ARM Fast Medium	5.0	MI, CSK	CSK	Capped	75 L	75

In [43]: `#Show all the information of Player column which contains letter A`
`ipl_data[ipl_data['Player'].str.contains('A')]` `#33 players who has alphabet A.`

Out[43]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped
28	4	WK1	Ambati Rayudu	India	ACA	36	WICKETKEEPER	RHB	-	175.0	MI, CSK	CSK	Capped
44	7	UBA1	Ashwin Hebbar	India	ACA	26	BATSMAN	RHB	RIGHT ARM Medium	NaN	NaN	NaN	Uncapped
45	7	UBA1	Abhinav Sadarangani	India	KSCA	27	BATSMAN	RHB	RIGHT ARM Leg Spin	NaN	NaN	NaN	Uncapped
46	7	UBA1	Anmolpreet Singh	India	PCA	24	BATSMAN	RHB	RIGHT ARM Off Spin	1.0	MI	MI	Uncapped

In [44]: #Show all the information of Player column which does not contain letter A.
ipl_data[~(ipl_data['Player'].str.contains('A'))]

Out[44]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	So Pric
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 C
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.2 C
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.2 C
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 C
5	1	M	Shreyas Iyer	India	MCA	27	BATSMAN	RHB	RIGHT ARM Leg Spin	87.0	DC	DC	Capped	2 CR	12.2 C
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
175	51	UAL7	Karan Sharma	India	UPCA	23	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	NaN	NaN	NaN	Uncapped	20 L	20
176	52	UFA7	Baltej Dhanda	India	PCA	31	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20
177	52	UFA7	Saurabh Dubey	India	VCA	24	BOWLER	RHB	LEFT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20
178	52	UFA7	Lalit Yadav	India	VCA	26	BOWLER	RHB	RIGHT ARM Fast	NaN	NaN	NaN	Uncapped	20 L	65

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	So Pric
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20

151 rows × 16 columns

In [45]: ```
#Show the count of new franchise in this dataset.
ipl_data['New Franchise'].value_counts()
```

Out[45]: ```
Kolkata Knight Riders   20
Punjab Kings   20
Rajasthan Royals   19
Royal Challengers Bangalore   19
Sunrisers Hyderabad   19
Mumbai Indians   19
Delhi Capitals   18
Chennai Super Kings   17
Gujarat Titans   16
Lucknow Super Giants   15
Luknow Super Giants   1
Gujarat Titan   1
Name: New Franchise, dtype: int64
```

In [46]: ```
#Show the count of batsman,bowlers,allrounders and wicketkeeper in this dataset.
ipl_data['Specialism'].value_counts()
```

Out[46]: ```
ALL-ROUNDER   70
BOWLER   63
BATSMAN   33
WICKETKEEPER   18
Name: Specialism, dtype: int64
```

In [47]: `#Show the count of left hand batsman and right hand batsman separately.`
`ipl_data['Batting'].value_counts()`

Out[47]: RHB     135
LHB      49
Name: Batting, dtype: int64

In [49]: `#Show the count of countries players are representing in this dataset.`
`ipl_data['Country'].value_counts()`

Out[49]: India           122
West Indies      14
Australia        12
New Zealand      11
England          11
South Africa      7
Sri Lanka         4
Afghanistan       2
Bangladesh        1
Name: Country, dtype: int64

In [50]: `#Show the count of entries who have CSK as their 2021 team.`
`ipl_data[ipl_data['2021 Team']=='CSK']` `#12 entries are there who have CSK as their 2021 team.`

Out[50]:

| | Set No. | Set Name | Player | Country | State Association | Age | Specialism | Batting | Bowling | IPL | Previous IPLTeam(s) | 2021 Team | C/U/A | Base Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1 | M | Faf Du Plessis | South Africa | NaN | 37 | BATSMAN | RHB | RIGHT ARM Leg Spin | 100.0 | RPS, CSK | CSK | Capped | 2 CR |
| 14 | 2 | BA1 | Robin Uthappa | India | KCA | 36 | BATSMAN | RHB | - | 193.0 | MI, PWI, RCB, KKR, RR, CSK | CSK | Capped | 2 CR |
| 15 | 3 | AL1 | Dwayne Bravo | West Indies | NaN | 38 | ALL-ROUNDER | RHB | RIGHT ARM Fast Medium | 151.0 | MI, GL, CSK | CSK | Capped | 2 CR |
| 28 | 4 | WK1 | Ambati Rayudu | India | ACA | 36 | WICKETKEEPER | RHB | - | 175.0 | MI, CSK | CSK | Capped | 2 CR |
| 30 | 5 | FA1 | Deepak Chahar | India | RCA | 29 | BOWLER | RHB | RIGHT ARM Fast Medium | 63.0 | RPS, CSK | CSK | Capped | 2 CR |
| 32 | 5 | FA1 | Josh Hazlewood | Australia | NaN | 31 | BOWLER | LHB | RIGHT ARM Fast | 12.0 | CSK | CSK | Capped | 2 CR |
| 36 | 5 | FA1 | Shardul Thakur | India | MCA | 30 | BOWLER | RHB | RIGHT ARM Fast Medium | 61.0 | KXIP, RPS, CSK | CSK | Capped | 2 CR |
| 76 | 13 | AL2 | Dominic Drakes | West Indies | NaN | 24 | ALL-ROUNDER | LHB | LEFT ARM Fast | 0.0 | CSK | CSK | Capped | 75 L |
| 78 | 13 | AL2 | K. Gowtham | India | KSCA | 33 | ALL-ROUNDER | RHB | RIGHT ARM Off Spin | 24.0 | MI, RR, KXIP, CSK | CSK | Capped | 50 L |
| 94 | 15 | SP2 | Karn Sharma | India | RSPB | 34 | BOWLER | LHB | RIGHT ARM Leg Spin | 68.0 | RCB, SRH, MI, CSK | CSK | Capped | 50 L |

| Set No. | Set Name | Player | Country | State Association | Age | Specialism | Batting | Bowling | IPL | Previous IPLTeam(s) | 2021 Team | C/U/A | Base Price |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **122** | 20 | AL3 | Mitchell Santner | New Zealand | NaN | 30 | ALL-ROUNDER | LHB | LEFT ARM Slow Orthodox | 6.0 | CSK | CSK | Capped | 1 CR |
| **126** | 22 | FA3 | Jason Behrendorff | Australia | NaN | 31 | BOWLER | RHB | LEFT ARM Fast Medium | 5.0 | MI, CSK | CSK | Capped | 75 L |

In [51]:
```python
#Show the information of players and sold price.
ipl_data[['Player','Sold Price']]
```

Out[51]:

	Player	Sold Price
0	R Ashwin	5 CR
1	Trent Boult	8 CR
2	Pat Cummins	7.25 CR
3	Shikhar Dhawan	8.25 CR
4	Faf Du Plessis	7 CR
...	...	...
179	Ansh Patel	20 L
180	Ashok Sharma	55 L
181	Arjun Tendulkar	30 L
182	Shubham Garhwal	20 L
183	Anunay Singh	20 L

184 rows × 2 columns

In [52]: `#Extract the entries whose sold price is 10 Cr.`
`ipl_data[ipl_data['Sold Price']=='10 CR']`

Out[52]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Fran
31	5	FA1	Lockie Ferguson	New Zealand	NaN	30	BOWLER	RHB	RIGHT ARM Fast	22.0	RPS, KKR	KKR	Capped	2 CR	10 CR	G
33	5	FA1	Prasidh Krishna	India	KSCA	26	BOWLER	RHB	RIGHT ARM Fast	34.0	KKR	KKR	Capped	1 CR	10 CR	Raja F
65	10	UFA1	Avesh Khan	India	MPCA	25	BOWLER	RHB	RIGHT ARM Fast	25.0	DC	DC	Uncapped	20 L	10 CR	Lu

In [53]: `#Extract the entries whose sold is 20 L(base price).`
`ipl_data[ipl_data['Sold Price']=='20 L']`

Out[53]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Ba Pr
43	7	UBA1	Priyam Garg	India	UPCA	21	BATSMAN	RHB	RIGHT ARM Off Spin	19.0	SRH	SRH	Uncapped	2
44	7	UBA1	Ashwin Hebbar	India	ACA	26	BATSMAN	RHB	RIGHT ARM Medium	NaN	NaN	NaN	Uncapped	2
46	7	UBA1	Anmolpreet Singh	India	PCA	24	BATSMAN	RHB	RIGHT ARM Off Spin	1.0	MI	MI	Uncapped	2
51	8	UAL1	Sarfaraz Khan	India	MCA	24	ALL-ROUNDER	RHB	RIGHT ARM Leg Spin	40.0	RCB,PBKS	PBKS	Uncapped	2
60	9	UWK1	Jitesh Sharma	India	VCA	28	WICKETKEEPER	RHB	-	0.0	MI	NaN	Uncapped	2

In [54]: *#Show the entries who have new franchise as lucknow super giants.*
ipl_data[ipl_data['New Franchise']=='Lucknow Super Giants']

Out[54]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
12	2	BA1	Manish Pandey	India	KSCA	32	BATSMAN	RHB	RIGHT ARM Off Spin	154.0	MI, RCB, PWI, KKR, SRH	SRH	Capped	1 CR	4.6 CR
17	3	AL1	Jason Holder	West Indies	NaN	30	ALL-ROUNDER	RHB	RIGHT ARM Fast	26.0	CSK, KKR, SRH	SRH	Capped	1.5 CR	8.75 CR
19	3	AL1	Krunal Pandya	India	BCA	31	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	84.0	MI	MI	Capped	2 CR	8.25 CR
37	5	FA1	Mark Wood	England	NaN	32	BOWLER	RHB	RIGHT ARM Fast	1.0	CSK	NaN	Capped	2 CR	7.5 CR
50	8	UAL1	Deepak Hooda	India	RCA	26	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	80.0	RR, SRH, PBKS	PBKS	Uncapped	75 L	5.75 CR
65	10	UFA1	Avesh Khan	India	MPCA	25	BOWLER	RHB	RIGHT ARM Fast	25.0	DC	DC	Uncapped	20 L	10 CR
78	13	AL2	K. Gowtham	India	KSCA	33	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	24.0	MI, RR, KXIP, CSK	CSK	Capped	50 L	90 L
86	14	FA2	Dushmanta Chameera	Sri Lanka	NaN	30	BOWLER	RHB	RIGHT ARM Fast	0.0	RR	NaN	Capped	50 L	2 CR
93	15	SP2	Shahbaz Nadeem	India	JSCA	32	BOWLER	RHB	LEFT ARM Slow Orthodox	72.0	DD, SRH	SRH	Capped	50 L	50 L
97	16	UBA2	Manan Vohra	India	UTCA	28	BATSMAN	RHB	-	53.0	KXIP, RCB, RR	RR	Uncapped	20 L	20 L

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price
113	19	BA3	Evin Lewis	West Indies	NaN	30	BATSMAN	LHB	-	21.0	MI, RR	RR	Capped	2 CR	2 CR
147	27	UFA3	Mayank Yadav	India	DDCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 L
157	33	UAL4	Ayush Badoni	India	DDCA	22	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	NaN	NaN	NaN	Uncapped	20 L	20 L
174	50	AL7	Kyle Mayers	West Indies	NaN	29	ALL-ROUNDER	LHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Capped	50 L	50 L
175	51	UAL7	Karan Sharma	India	UPCA	23	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	NaN	NaN	NaN	Uncapped	20 L	20 L

In [55]:
```
#Show all the entries where Player name starts with D.
ipl_data[ipl_data['Player'].str.startswith("D")]
```

Out[55]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price
8	1	M	David Warner	Australia	NaN	35	BATSMAN	LHB	-	150.0	DD, SRH	SRH	Capped	2 CR
10	2	BA1	David Miller	South Africa	NaN	32	BATSMAN	LHB	-	89.0	KXIP, RR	RR	Capped	1 CR
11	2	BA1	Devdutt Padikkal	India	KSCA	21	BATSMAN	LHB	RIGHT ARM Off Spin	29.0	RCB	RCB	Capped	2 CR
15	3	AL1	Dwayne Bravo	West Indies	NaN	38	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	151.0	MI, GL, CSK	CSK	Capped	2 CR
25	4	WK1	Dinesh Karthik	India	TNCA	36	WICKETKEEPER	RHB	-	213.0	KXIP, MI, DD, RCB, GL, KKR	KKR	Capped	2 CR
30	5	FA1	Deepak Chahar	India	RCA	29	BOWLER	RHB	RIGHT ARM Fast Medium	63.0	RPS, CSK	CSK	Capped	2 CR
42	7	UBA1	Dewald Brevis	South Africa	NaN	18	BATSMAN	RHB	RIGHT ARM Leg Spin	NaN	NaN	NaN	Uncapped	20 L
50	8	UAL1	Deepak Hooda	India	RCA	26	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	80.0	RR, SRH, PBKS	PBKS	Uncapped	75 L
76	13	AL2	Dominic Drakes	West Indies	NaN	24	ALL-ROUNDER	LHB	LEFT ARM Fast	0.0	CSK	CSK	Capped	75 L
86	14	FA2	Dushmanta Chameera	Sri Lanka	NaN	30	BOWLER	RHB	RIGHT ARM Fast	0.0	RR	NaN	Capped	50 L

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	
101	17	UAL2	Darshan Nalkande	India	VCA	23	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	0.0	PBKS	PBKS	Uncapped	20 L	
111	19	BA3	Devon Conway	New Zealand	NaN	30	BATSMAN	LHB	RIGHT ARM Medium	NaN	NaN	NaN	Capped	1 CR	
118	20	AL3	Daryl Mitchell	New Zealand	NaN	30	ALL-ROUNDER	RHB	RIGHT ARM Medium	NaN	NaN	NaN	Capped	75 L	
119	20	AL3	Dwaine Pretorius	South Africa	NaN	33	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Capped	50 L	
121	20	AL3	Daniel Sams	Australia	NaN	29	ALL-ROUNDER	RHB	LEFT ARM Fast Medium	5.0	DC, RCB	RCB	Capped	1 CR	
139	26	UWK2	Dhruv Jurel	India	UPCA	21	WICKETKEEPER	RHB	-	NaN	NaN	NaN	Uncapped	20 L	
163	38	AL5	David Willey	England	NaN	32	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	3.0	CSK	NaN	Capped	2 CR	

In [57]: *#Show the entries where new franchise is Rajasthan Royals and sold price is 20L.*
ipl_data[(ipl_data['New Franchise']=='Rajasthan Royals') & (ipl_data['Sold Price']=='20 L')]

Out[57]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	So Pri
108	18	UFA2	Kuldeep Sen	India	MPCA	25	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20
139	26	UWK2	Dhruv Jurel	India	UPCA	21	WICKETKEEPER	RHB	-	NaN	NaN	NaN	Uncapped	20 L	20
148	28	USP2	Tejas Baroka	India	DDCA	26	BOWLER	RHB	RIGHT ARM Leg Spin	1.0	GL	NaN	Uncapped	20 L	20
161	35	UFA4	Kuldip Yadav	India	DDCA	25	BOWLER	LHB	LEFT ARM Fast	1.0	NaN	RR	Uncapped	20 L	20
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20

In [58]:
```
#Show all the entries where Player first name starts with D and last name starts with C.
import re
ipl_data[ipl_data['Player'].str.contains("D[a-z]* C[a-z]*",regex=True)]
```

Out[58]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	Fra
30	5	FA1	Deepak Chahar	India	RCA	29	BOWLER	RHB	RIGHT ARM Fast Medium	63.0	RPS, CSK	CSK	Capped	2 CR	14 CR	C
86	14	FA2	Dushmanta Chameera	Sri Lanka	NaN	30	BOWLER	RHB	RIGHT ARM Fast	0.0	RR	NaN	Capped	50 L	2 CR	Lu
111	19	BA3	Devon Conway	New Zealand	NaN	30	BATSMAN	LHB	RIGHT ARM Medium	NaN	NaN	NaN	Capped	1 CR	1 CR	C

In [60]:
```python
#Arrange the data of age in ascending order in this dataset.
ipl_data.sort_values(['Age'])
```

Out[60]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	
69	11	USP1	Noor Ahmad	Afghanistan	NaN	17	BOWLER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	
42	7	UBA1	Dewald Brevis	South Africa	NaN	18	BATSMAN	RHB	RIGHT ARM Leg Spin	NaN	NaN	NaN	Uncapped	
99	17	UAL2	Rajvardhan Hangargekar	India	MACA	19	ALL-ROUNDER	RHB	RIGHT ARM Fast	NaN	NaN	NaN	Uncapped	
147	27	UFA3	Mayank Yadav	India	DDCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28	4	WK1	Ambati Rayudu	India	ACA	36	WICKETKEEPER	RHB	-	175.0	MI, CSK	CSK	Capped	
14	2	BA1	Robin Uthappa	India	KCA	36	BATSMAN	RHB	-	193.0	MI, PWI, RCB, KKR, RR, CSK	CSK	Capped	
25	4	WK1	Dinesh Karthik	India	TNCA	36	WICKETKEEPER	RHB	-	213.0	KXIP, MI, DD, RCB, GL, KKR	KKR	Capped	
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	
15	3	AL1	Dwayne Bravo	West Indies	NaN	38	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	151.0	MI, GL, CSK	CSK	Capped	

184 rows × 16 columns

In [61]: *#Arrange the data of age in descending order showing top 7 rows in this dataset.*
ipl_data.sort_values(['Age'],ascending=False).head(7)

Out[61]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sold Price	
15	3	AL1	Dwayne Bravo	West Indies	NaN	38	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	151.0	MI, GL, CSK	CSK	Capped	2 CR	4.4 CR	S
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CR	C
28	4	WK1	Ambati Rayudu	India	ACA	36	WICKETKEEPER	RHB	-	175.0	MI, CSK	CSK	Capped	2 CR	6.75 CR	S
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.25 CR	
25	4	WK1	Dinesh Karthik	India	TNCA	36	WICKETKEEPER	RHB	-	213.0	KXIP, MI, DD, RCB, GL, KKR	KKR	Capped	2 CR	5.5 CR	C
14	2	BA1	Robin Uthappa	India	KCA	36	BATSMAN	RHB	-	193.0	MI, PWI, RCB, KKR, RR, CSK	CSK	Capped	2 CR	2 CR	S
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CR	

In [62]: *#Show the mean according to the Country column.*
ipl_data.groupby(['Country']).mean()

Out[62]:

	Set No.	Age	IPL
Country			
Afghanistan	16.500000	19.000000	NaN
Australia	14.916667	30.000000	23.500000
Bangladesh	5.000000	26.000000	38.000000
England	15.727273	30.909091	14.600000
India	19.286885	26.467213	44.386364
New Zealand	17.454545	29.000000	17.555556
South Africa	8.000000	27.714286	49.400000
Sri Lanka	17.500000	25.000000	1.000000
West Indies	17.785714	27.214286	27.600000

In [63]: *#Show the mean according to the Country column showing only Age column data.*
ipl_data.groupby(['Country']).mean()['Age']

Out[63]:
```
Country
Afghanistan     19.000000
Australia       30.000000
Bangladesh      26.000000
England         30.909091
India           26.467213
New Zealand     29.000000
South Africa    27.714286
Sri Lanka       25.000000
West Indies     27.214286
Name: Age, dtype: float64
```

In [64]: *#Delete the column New Franchise column from this dataset.*
ipl_data.drop(columns=['New Franchise'])

Out[64]:

	Set No.	Set Name	Player	Country	State Association	Age	Specialism	Batting	Bowling	IPL	Previous IPLTeam(s)	2021 Team	C/U/A	Base Price	Sol Pric
0	1	M	R Ashwin	India	TNCA	35	ALL-ROUNDER	RHB	RIGHT ARM Off Spin	167.0	CSK, RSP, KXIP, DC	DC	Capped	2 CR	5 CF
1	1	M	Trent Boult	New Zealand	NaN	32	BOWLER	RHB	LEFT ARM Fast Medium	62.0	SRH, KKR, DD,MI	MI	Capped	2 CR	8 CF
2	1	M	Pat Cummins	Australia	NaN	28	ALL-ROUNDER	RHB	RIGHT ARM Fast	37.0	DD, MI, KKR	KKR	Capped	2 CR	7.2 CF
3	1	M	Shikhar Dhawan	India	DDCA	36	BATSMAN	LHB	-	192.0	DCH, MI, SRH, DC	DC	Capped	2 CR	8.2 CF
4	1	M	Faf Du Plessis	South Africa	NaN	37	BATSMAN	RHB	RIGHT ARM Leg Spin	100.0	RPS, CSK	CSK	Capped	2 CR	7 CF
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.
179	53	UAL8	Ansh Patel	India	BCA	20	ALL-ROUNDER	RHB	LEFT ARM Slow Unorthodox	NaN	NaN	NaN	Uncapped	20 L	20 l
180	54	UFA8	Ashok Sharma	India	RCA	19	BOWLER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	55 l
181	57	UAL10	Arjun Tendulkar	India	MCA	22	ALL-ROUNDER	LHB	LEFT ARM Fast Medium	0.0	MI	MI	Uncapped	20 L	30 l
182	59	UAL12	Shubham Garhwal	India	RCA	26	ALL-ROUNDER	LHB	LEFT ARM Slow Orthodox	NaN	NaN	NaN	Uncapped	20 L	20 l
183	60	UAL13	Anunay Singh	India	BICA	29	ALL-ROUNDER	RHB	RIGHT ARM Fast Medium	NaN	NaN	NaN	Uncapped	20 L	20 l

184 rows × 15 columns