

```
In [1]: import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
```

```
# Match : GT vs CSK, 1st Match, Indian Premier League 2023
# Date :Friday, March 31, 2023
# Toss :Gujarat Titans won the toss and opt to bowl
# Time: 7:30 PM
# Venue : Narendra Modi Stadium, Ahmedabad
# Umpires:Nitin Menon, Saiyed Khalid
# Third Umpire:Virender Sharma
```

```
In [2]: df=pd.read_csv(r"C:\Users\DELL\OneDrive\Desktop\cricket .py\match_01.csv")
```

In [3]: df

Out[3]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	1	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
238	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
239	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
240	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
241	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
242	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

243 rows × 7 columns

In [4]: # clean Data

In [5]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 243 entries, 0 to 242
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype  
---  -
 0   ballnumber  243 non-null   int64  
 1   inningno    243 non-null   int64  
 2   over        243 non-null   float64 
 3   outcome     243 non-null   object  
 4   batter      243 non-null   object  
 5   bowler      243 non-null   object  
 6   comment     243 non-null   object  
dtypes: float64(1), int64(2), object(4)
memory usage: 13.4+ KB
```

In [6]: `df.duplicated().sum()`

Out[6]: 0

In [7]: *# splitting the data frame*

```
In [8]: df1=df.iloc[0:121,:]  
df1
```

Out[8]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	1	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
116	117	1	19.2	1lb	Mitchell Santner	Josh Little	Josh Little to Mitchell Santner, 1 leg bye,
117	118	1	19.3	6	MS Dhoni	Josh Little	Josh Little to MS Dhoni, Six,
118	119	1	19.4	4	MS Dhoni	Josh Little	Josh Little to MS Dhoni, Four,
119	120	1	19.5	0	MS Dhoni	Josh Little	Josh Little to MS Dhoni, no run,
120	121	1	19.6	1	MS Dhoni	Josh Little	Josh Little to MS Dhoni, 1 run,

121 rows × 7 columns

```
In [9]: df2=df.iloc[121:,:]
df2
```

Out[9]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
121	1	2	0.1	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
122	2	2	0.2	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
123	3	2	0.3	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
124	4	2	0.4	1	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, 1 run,
125	5	2	0.5	2	Shubman Gill	Deepak Chahar	Deepak Chahar to Shubman Gill, 2 runs,
...
238	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
239	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
240	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
241	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
242	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

122 rows × 7 columns

```
In [10]: df2=df2_reset = df2.reset_index()
```

```
In [11]: df2.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 122 entries, 0 to 121
Data columns (total 8 columns):
#   Column      Non-Null Count  Dtype
---  -
0   index       122 non-null   int64
1   ballnumber  122 non-null   int64
2   inningno    122 non-null   int64
3   over        122 non-null   float64
4   outcome     122 non-null   object
5   batter      122 non-null   object
6   bowler      122 non-null   object
7   comment     122 non-null   object
dtypes: float64(1), int64(3), object(4)
memory usage: 7.8+ KB
```

In [12]: `#drop index (remove)`

```
df2=df2.drop('index', axis=1)
df2
```

Out[12]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	2	0.1	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
1	2	2	0.2	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
2	3	2	0.3	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
3	4	2	0.4	1	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, 1 run,
4	5	2	0.5	2	Shubman Gill	Deepak Chahar	Deepak Chahar to Shubman Gill, 2 runs,
...
117	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
118	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
119	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
120	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
121	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

122 rows × 7 columns

In [13]: `# drop inningno (remove)`

```
df1=df1.drop('inningno',axis=1)
df2=df2.drop('inningno',axis=1)
```

In [14]: df1

Out[14]:

	ballnumber	over	outcome	batter	bowler	comment
0	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
116	117	19.2	1lb	Mitchell Santner	Josh Little	Josh Little to Mitchell Santner, 1 leg bye,
117	118	19.3	6	MS Dhoni	Josh Little	Josh Little to MS Dhoni, Six,
118	119	19.4	4	MS Dhoni	Josh Little	Josh Little to MS Dhoni, Four,
119	120	19.5	0	MS Dhoni	Josh Little	Josh Little to MS Dhoni, no run,
120	121	19.6	1	MS Dhoni	Josh Little	Josh Little to MS Dhoni, 1 run,

121 rows × 6 columns

In [15]: df2

Out[15]:

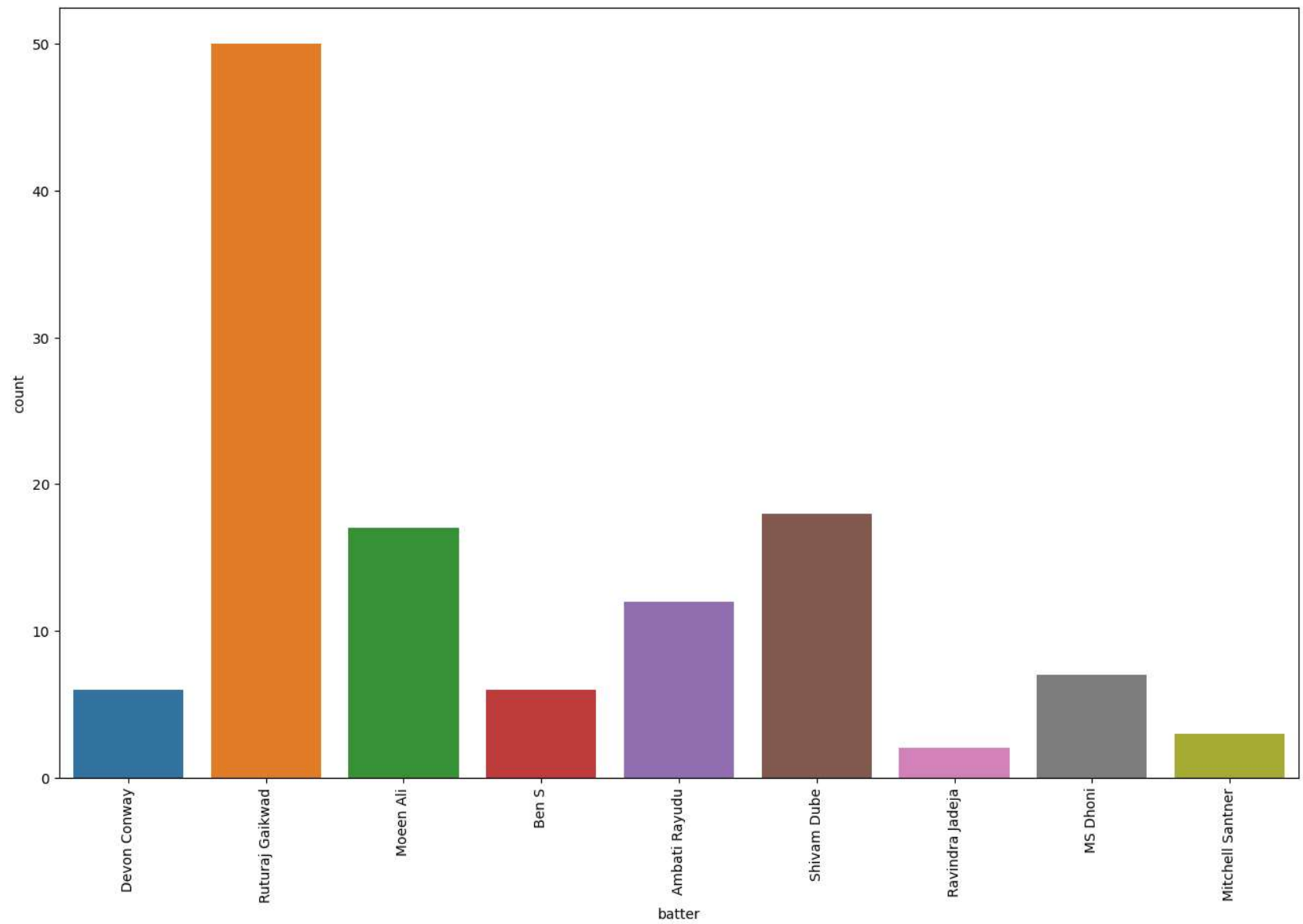
	ballnumber	over	outcome	batter	bowler	comment
0	1	0.1	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
1	2	0.2	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
2	3	0.3	0	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, no run,
3	4	0.4	1	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, 1 run,
4	5	0.5	2	Shubman Gill	Deepak Chahar	Deepak Chahar to Shubman Gill, 2 runs,
...
117	118	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
118	119	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
119	120	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
120	121	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
121	122	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

122 rows × 6 columns

In [16]: *# Count of ball faced by each batsman*

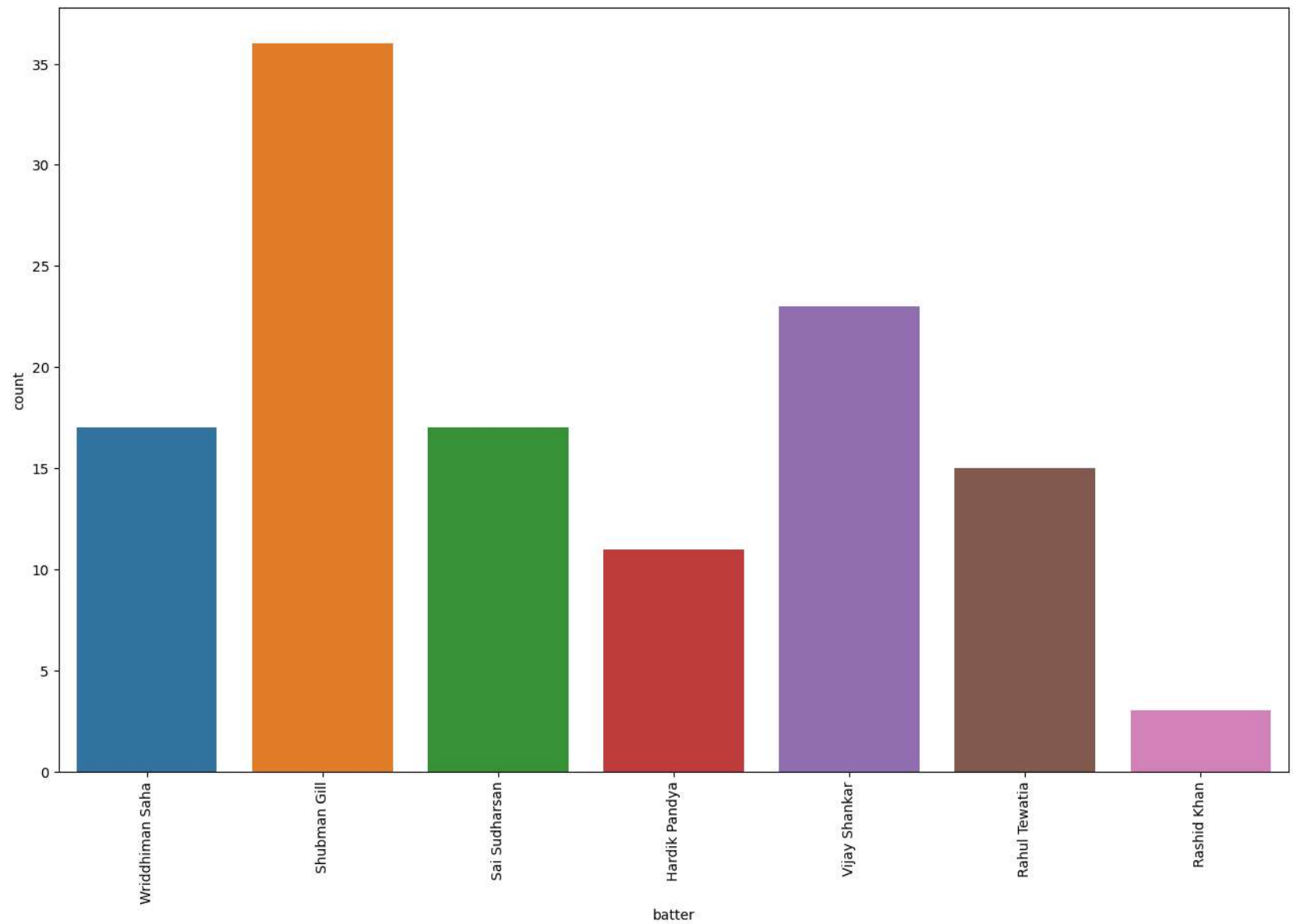
```
In [17]: plt.figure(figsize=(16,10))
ax=sns.countplot(x=df1['batter'])
plt.xticks(rotation=90)
```

```
Out[17]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8]),
 [Text(0, 0, 'Devon Conway'),
  Text(1, 0, 'Ruturaj Gaikwad'),
  Text(2, 0, 'Moeen Ali'),
  Text(3, 0, 'Ben S'),
  Text(4, 0, 'Ambati Rayudu'),
  Text(5, 0, 'Shivam Dube'),
  Text(6, 0, 'Ravindra Jadeja'),
  Text(7, 0, 'MS Dhoni'),
  Text(8, 0, 'Mitchell Santner')])
```



```
In [18]: plt.figure(figsize=(16,10))
ax=sns.countplot(x=df2['batter'])
plt.xticks(rotation=90)
```

```
Out[18]: (array([0, 1, 2, 3, 4, 5, 6]),
 [Text(0, 0, 'Wriddhiman Saha'),
  Text(1, 0, 'Shubman Gill'),
  Text(2, 0, 'Sai Sudharsan'),
  Text(3, 0, 'Hardik Pandya'),
  Text(4, 0, 'Vijay Shankar'),
  Text(5, 0, 'Rahul Tewatia'),
  Text(6, 0, 'Rashid Khan')])
```



In [19]: df

Out[19]:

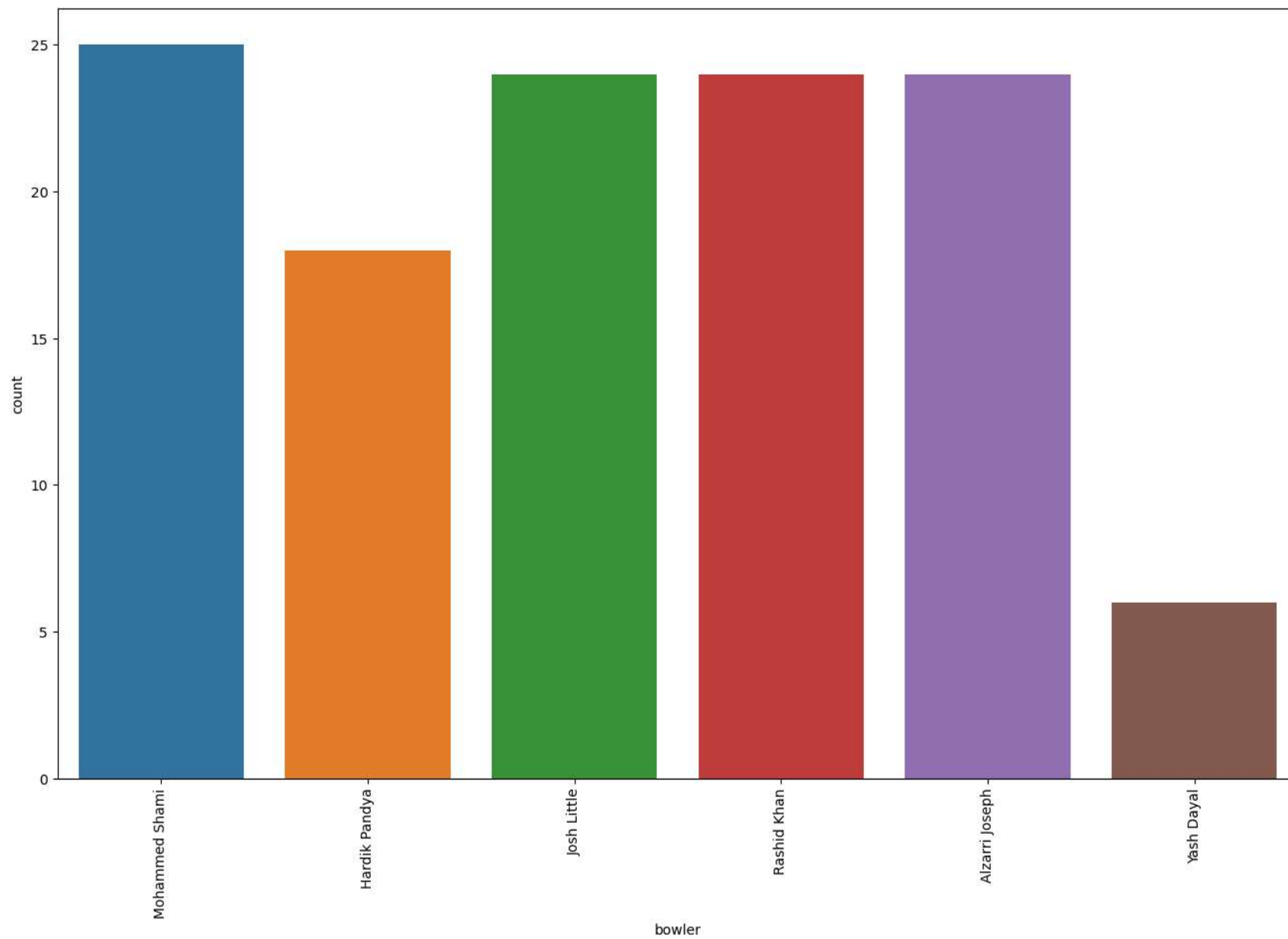
	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	1	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
238	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
239	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
240	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
241	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
242	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

243 rows × 7 columns

In [20]: *#count of balls done by each bowler*

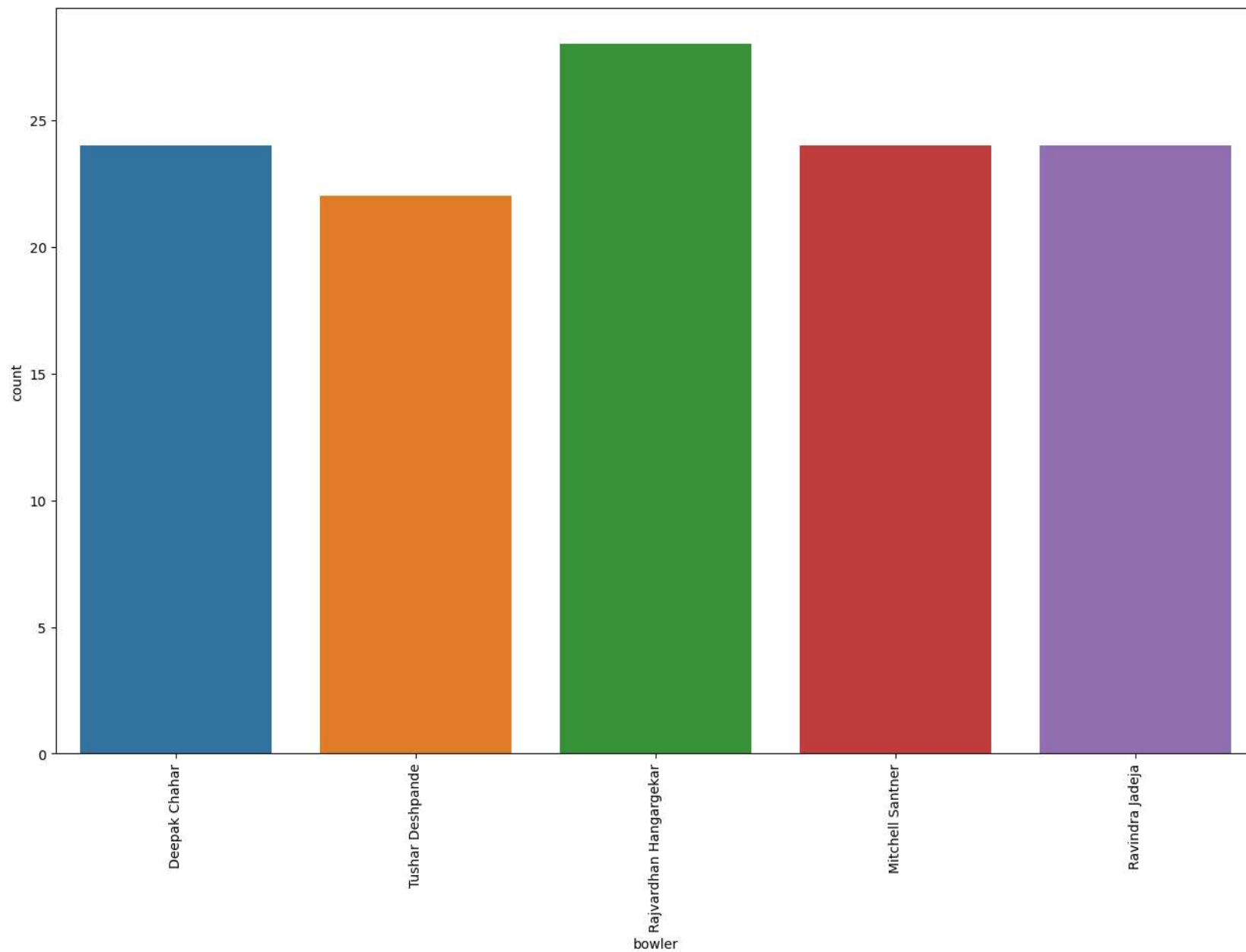
```
In [21]: plt.figure(figsize=(16,10))  
ax=sns.countplot(x=df1['bowler'])  
plt.xticks(rotation=90)
```

```
Out[21]: (array([0, 1, 2, 3, 4, 5]),  
[Text(0, 0, 'Mohammed Shami'),  
Text(1, 0, 'Hardik Pandya'),  
Text(2, 0, 'Josh Little'),  
Text(3, 0, 'Rashid Khan'),  
Text(4, 0, 'Alzarri Joseph'),  
Text(5, 0, 'Yash Dayal')])
```




```
In [22]: plt.figure(figsize=(16,10))  
ax=sns.countplot(x=df2['bowler'])  
plt.xticks(rotation=90)
```

```
Out[22]: (array([0, 1, 2, 3, 4]),  
[Text(0, 0, 'Deepak Chahar'),  
Text(1, 0, 'Tushar Deshpande'),  
Text(2, 0, 'Rajvardhan Hangargekar'),  
Text(3, 0, 'Mitchell Santner'),  
Text(4, 0, 'Ravindra Jadeja')])
```



In [23]: df

Out[23]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	1	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
238	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
239	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
240	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
241	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
242	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

243 rows × 7 columns

1 st inning # players who scored most six

```
In [24]: # DF1 # how many six to batter
players=df1[df1['outcome']=='6']
players
```

Out[24]:

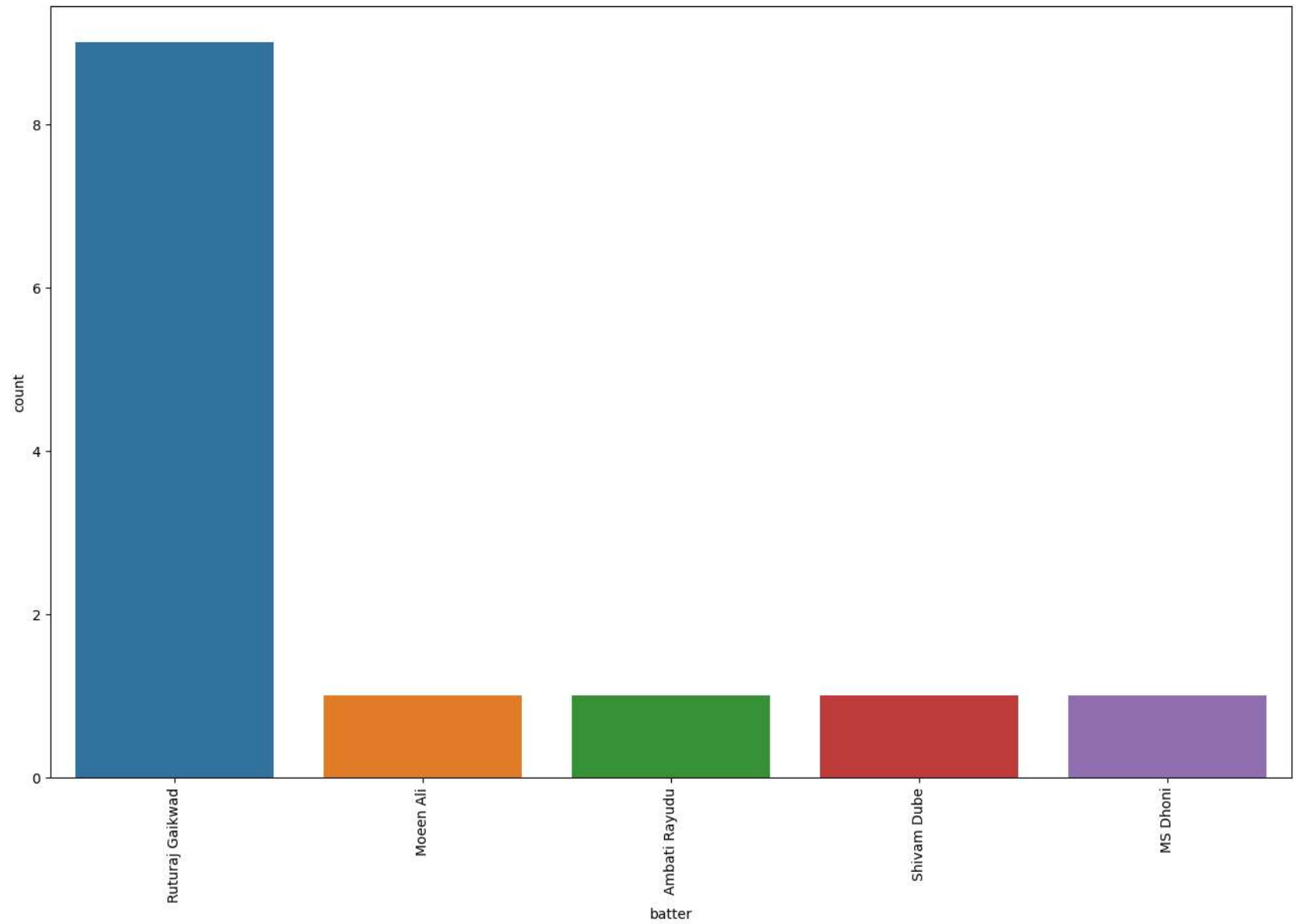
	ballnumber	over	outcome	batter	bowler	comment
18	19	3.1	6	Ruturaj Gaikwad	Josh Little	Josh Little to Ruturaj Gaikwad, Six,
28	29	4.4	6	Moeen Ali	Mohammed Shami	Mohammed Shami to Moeen Ali, Six,
39	40	6.3	6	Ruturaj Gaikwad	Hardik Pandya	Hardik Pandya to Ruturaj Gaikwad, Six,
40	41	6.4	6	Ruturaj Gaikwad	Hardik Pandya	Hardik Pandya to Ruturaj Gaikwad, Six,
49	50	8.1	6	Ruturaj Gaikwad	Alzarri Joseph	Alzarri Joseph to Ruturaj Gaikwad, Six,
52	53	8.4	6	Ruturaj Gaikwad	Alzarri Joseph	Alzarri Joseph to Ruturaj Gaikwad, Six,
54	55	8.6	6	Ruturaj Gaikwad	Alzarri Joseph	Alzarri Joseph to Ruturaj Gaikwad, Six,
66	67	10.6	6	Ruturaj Gaikwad	Josh Little	Josh Little to Ruturaj Gaikwad, Six,
69	70	11.3	6	Ruturaj Gaikwad	Yash Dayal	Yash Dayal to Ruturaj Gaikwad, Six,
72	73	11.6	6	Ambati Rayudu	Yash Dayal	Yash Dayal to Ambati Rayudu, Six,
97	98	16.1	6	Ruturaj Gaikwad	Rashid Khan	Rashid Khan to Ruturaj Gaikwad, Six,
110	111	18.2	6	Shivam Dube	Mohammed Shami	Mohammed Shami to Shivam Dube, Six,
117	118	19.3	6	MS Dhoni	Josh Little	Josh Little to MS Dhoni, Six,

```
In [25]: players['batter'].value_counts()
```

```
Out[25]: batter
Ruturaj Gaikwad    9
Moeen Ali          1
Ambati Rayudu      1
Shivam Dube        1
MS Dhoni           1
Name: count, dtype: int64
```

```
In [26]: plt.figure(figsize=(16,10))
ax=sns.countplot(x=players['batter'])
plt.xticks(rotation=90)
```

```
Out[26]: (array([0, 1, 2, 3, 4]),
 [Text(0, 0, 'Ruturaj Gaikwad'),
  Text(1, 0, 'Moeen Ali'),
  Text(2, 0, 'Ambati Rayudu'),
  Text(3, 0, 'Shivam Dube'),
  Text(4, 0, 'MS Dhoni')])
```



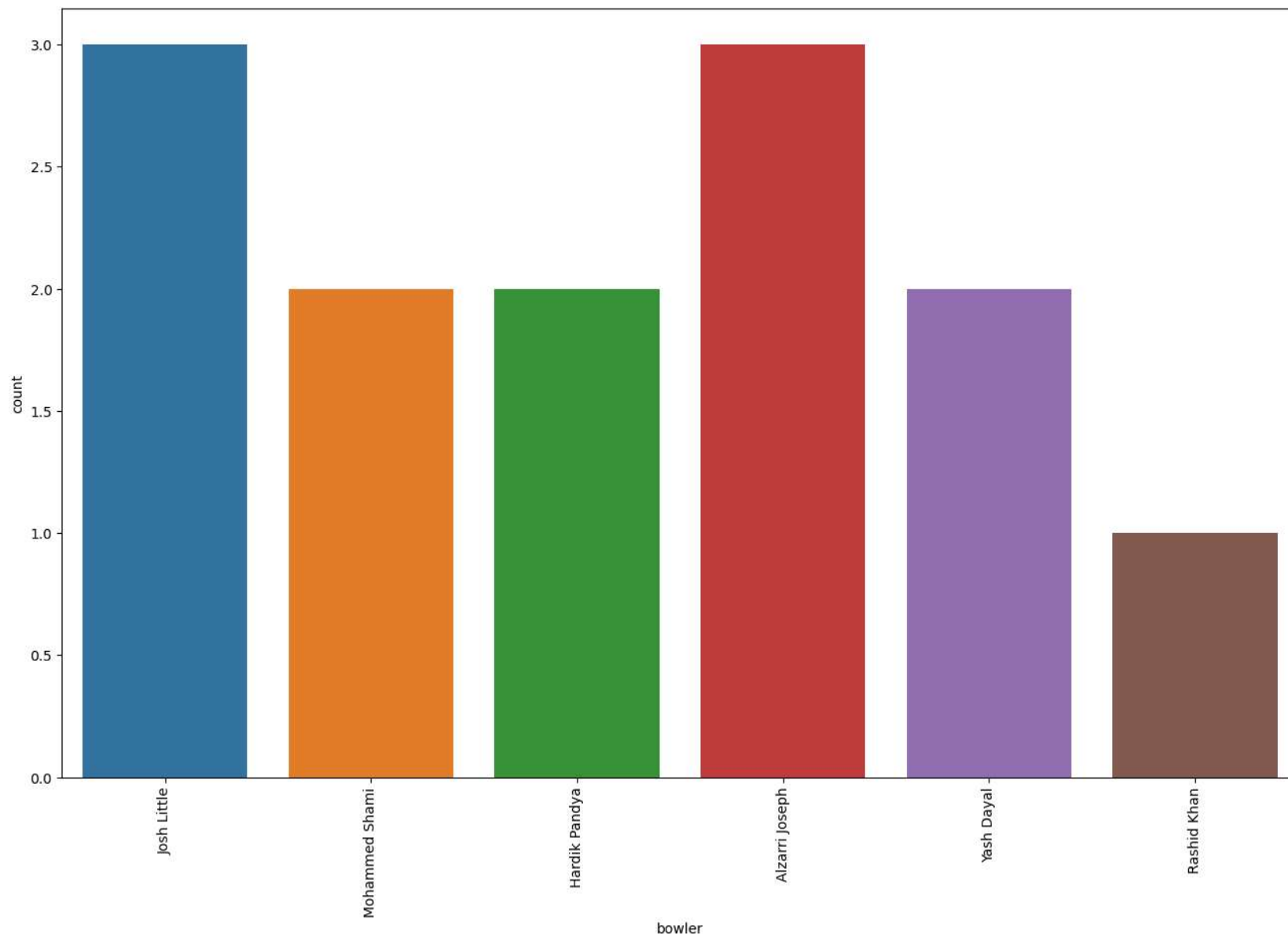
```
In [27]: # first inning #DF1 # how many six did the Bowller
```

```
In [28]: players['bowler'].value_counts()
```

```
Out[28]: bowler
Josh Little      3
Alzarri Joseph  3
Mohammed Shami   2
Hardik Pandya    2
Yash Dayal       2
Rashid Khan      1
Name: count, dtype: int64
```

```
In [29]: plt.figure(figsize=(16,10))
ax=sns.countplot(x=players['bowler'])
plt.xticks(rotation=90)
```

```
Out[29]: (array([0, 1, 2, 3, 4, 5]),
 [Text(0, 0, 'Josh Little'),
  Text(1, 0, 'Mohammed Shami'),
  Text(2, 0, 'Hardik Pandya'),
  Text(3, 0, 'Alzarri Joseph'),
  Text(4, 0, 'Yash Dayal'),
  Text(5, 0, 'Rashid Khan')])
```

2nd innings

```
In [30]: players=df2[df2['outcome']=='6']
         players
```

Out[30]:

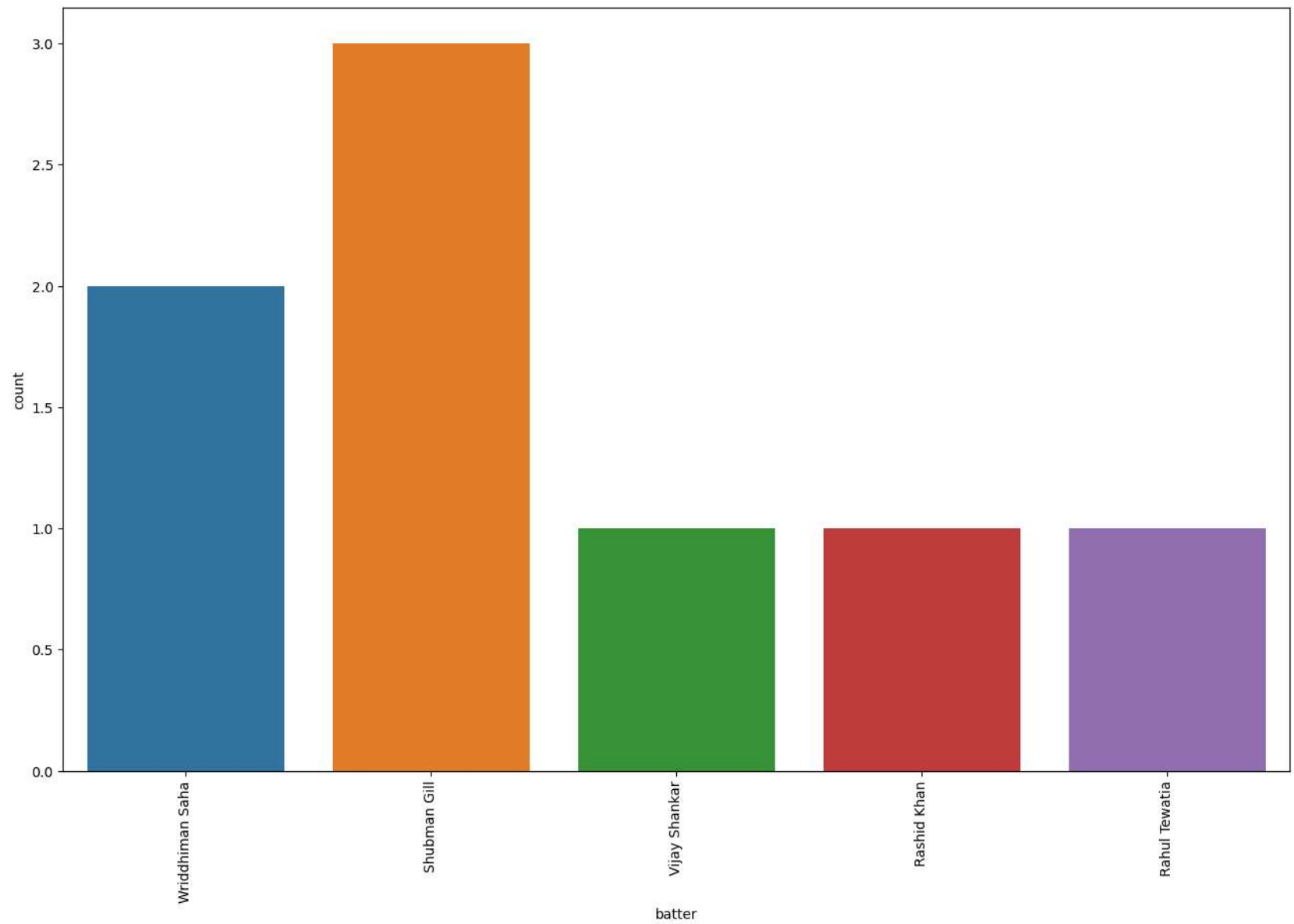
	ballnumber	over	outcome	batter	bowler	comment
6	7	1.1	6	Wriddhiman Saha	Tushar Deshpande	Tushar Deshpande to Wriddhiman Saha, Six,
16	17	2.5	6	Wriddhiman Saha	Deepak Chahar	Deepak Chahar to Wriddhiman Saha, Six,
29	30	4.3	6	Shubman Gill	Tushar Deshpande	Tushar Deshpande to Shubman Gill, Six,
68	69	10.6	6	Shubman Gill	Ravindra Jadeja	Ravindra Jadeja to Shubman Gill, Six,
93	94	14.5	6	Shubman Gill	Tushar Deshpande	Tushar Deshpande to Shubman Gill, Six,
110	111	17.4	6	Vijay Shankar	Rajvardhan Hangargekar	Rajvardhan Hangargekar to Vijay Shankar, Six,
116	117	18.4	6	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Six,
120	121	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,

```
In [31]: players['batter'].value_counts()
```

```
Out[31]: batter
Shubman Gill      3
Wriddhiman Saha   2
Vijay Shankar     1
Rashid Khan       1
Rahul Tewatia     1
Name: count, dtype: int64
```

```
In [32]: plt.figure(figsize=(16,10))  
ax=sns.countplot(x=players['batter'])  
plt.xticks(rotation=90)
```

```
Out[32]: (array([0, 1, 2, 3, 4]),  
[Text(0, 0, 'Wriddhiman Saha'),  
Text(1, 0, 'Shubman Gill'),  
Text(2, 0, 'Vijay Shankar'),  
Text(3, 0, 'Rashid Khan'),  
Text(4, 0, 'Rahul Tewatia')])
```

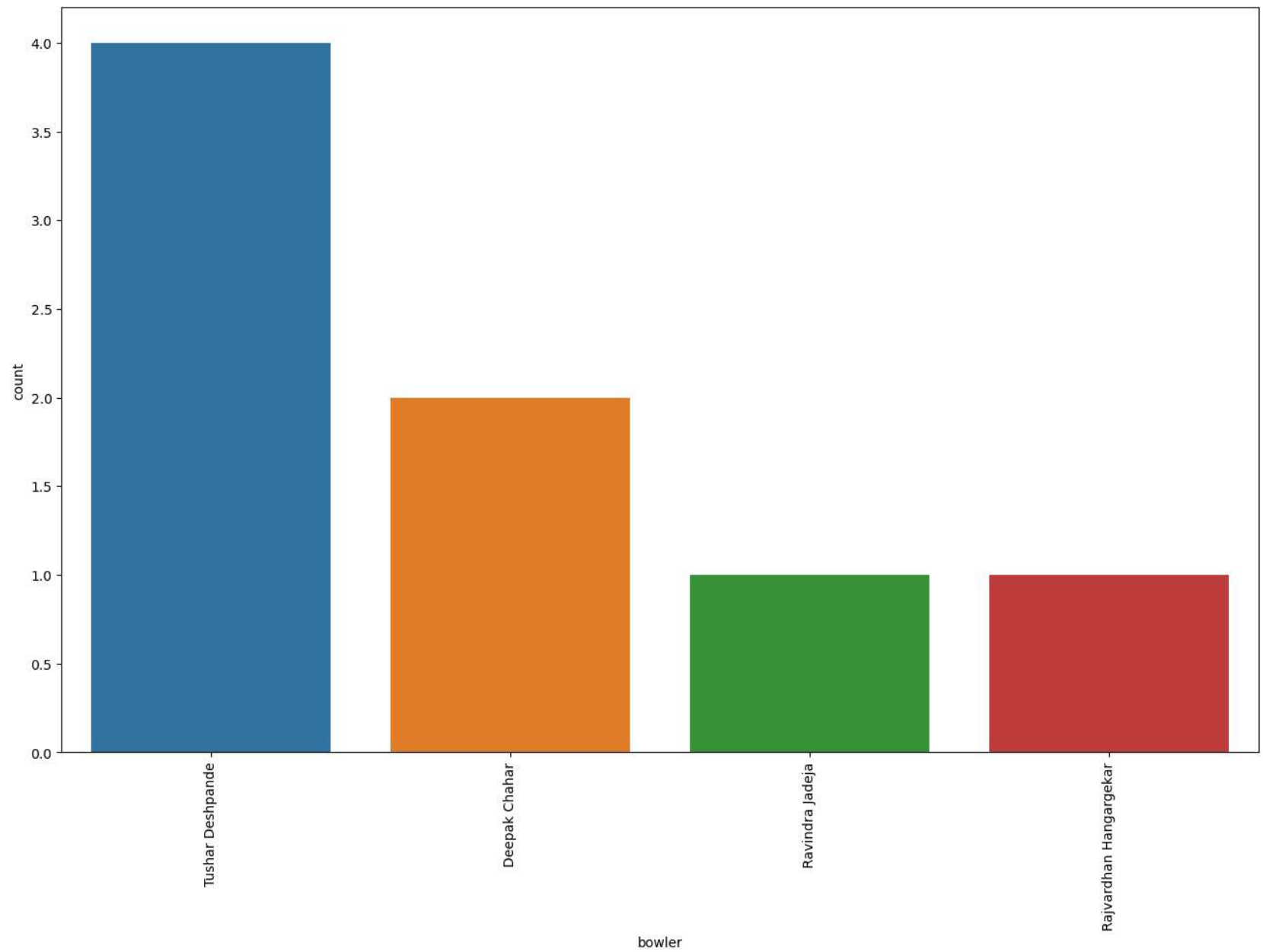


```
In [33]: players['bowler'].value_counts()
```

```
Out[33]: bowler
Tushar Deshpande      4
Deepak Chahar         2
Ravindra Jadeja       1
Rajvardhan Hangargekar 1
Name: count, dtype: int64
```

```
In [34]: plt.figure(figsize=(16,10))  
ax=sns.countplot(x=players['bowler'])  
plt.xticks(rotation=90)
```

```
Out[34]: (array([0, 1, 2, 3]),  
[Text(0, 0, 'Tushar Deshpande'),  
Text(1, 0, 'Deepak Chahar'),  
Text(2, 0, 'Ravindra Jadeja'),  
Text(3, 0, 'Rajvardhan Hangargekar')])
```



In [35]: df

Out[35]:

	ballnumber	inningno	over	outcome	batter	bowler	comment
0	1	1	0.1	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, 1 leg bye,
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, no run,
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	5	1	0.5	0	Devon Conway	Mohammed Shami	Mohammed Shami to Devon Conway, no run,
...
238	118	2	18.5	4	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, Four,
239	119	2	18.6	0	Rashid Khan	Deepak Chahar	Deepak Chahar to Rashid Khan, no run,
240	120	2	19.1	1wd	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, 1 wide,
241	121	2	19.1	6	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Six,
242	122	2	19.2	4	Rahul Tewatia	Tushar Deshpande	Tushar Deshpande to Rahul Tewatia, Four,

243 rows × 7 columns

In [36]: df.info()

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 243 entries, 0 to 242
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype  
---  -
 0   ballnumber  243 non-null   int64  
 1   inningno    243 non-null   int64  
 2   over        243 non-null   float64 
 3   outcome     243 non-null   object  
 4   batter      243 non-null   object  
 5   bowler      243 non-null   object  
 6   comment     243 non-null   object  
dtypes: float64(1), int64(2), object(4)
memory usage: 13.4+ KB

```


In [37]: `print(df.head())`

	ballnumber	inningno	over	outcome	batter	bowler	\
0	1	1	0.1	0	Devon Conway	Mohammed Shami	
1	2	1	0.2	1lb	Devon Conway	Mohammed Shami	
2	3	1	0.3	0	Ruturaj Gaikwad	Mohammed Shami	
3	4	1	0.4	1	Ruturaj Gaikwad	Mohammed Shami	
4	5	1	0.5	0	Devon Conway	Mohammed Shami	

	comment
0	Mohammed Shami to Devon Conway, no run,
1	Mohammed Shami to Devon Conway, 1 leg bye,
2	Mohammed Shami to Ruturaj Gaikwad, no run,
3	Mohammed Shami to Ruturaj Gaikwad, 1 run,
4	Mohammed Shami to Devon Conway, no run,

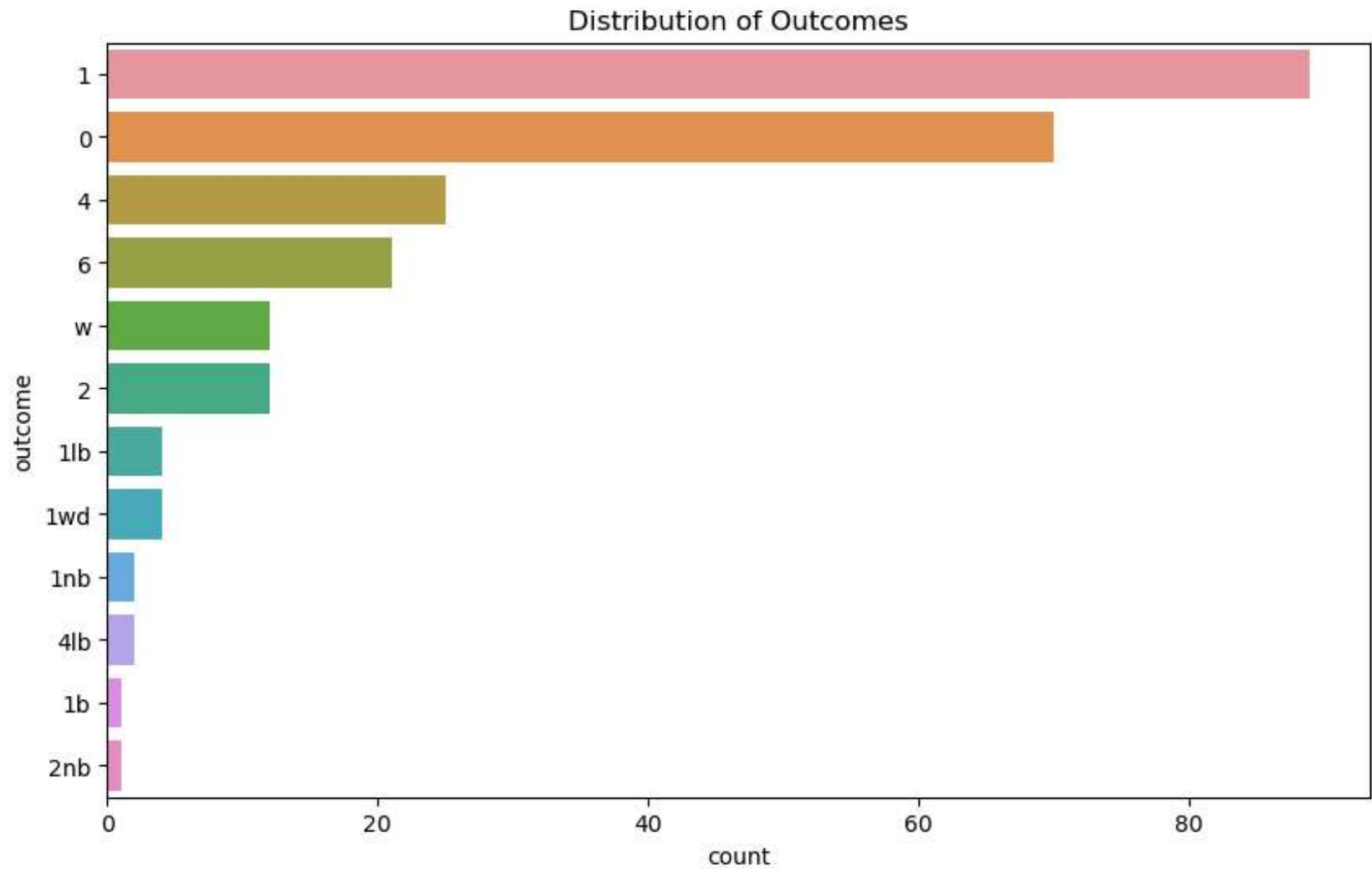
In [38]: `print(df.describe())`

	ballnumber	inningno	over
count	243.000000	243.000000	243.000000
mean	61.251029	1.502058	9.658436
std	35.147016	0.501028	5.701888
min	1.000000	1.000000	0.100000
25%	31.000000	1.000000	4.500000
50%	61.000000	2.000000	9.500000
75%	91.500000	2.000000	14.450000
max	122.000000	2.000000	19.600000

In [39]: `print(df.isnull().sum())`

```
ballnumber    0
inningno      0
over          0
outcome       0
batter        0
bowler        0
comment       0
dtype: int64
```

```
In [40]: # Distribution of 'outcome'  
plt.figure(figsize=(10, 6))  
sns.countplot(y=df['outcome'], order=df['outcome'].value_counts().index)  
plt.title('Distribution of Outcomes')  
plt.show()
```



```
In [41]: print("Top 5 bowlers who bowled the most deliveries:")  
print(df['bowler'].value_counts().head())
```

Top 5 bowlers who bowled the most deliveries:

bowler

Rajvardhan Hangargekar 28

Mohammed Shami 25

Josh Little 24

Rashid Khan 24

Alzarri Joseph 24

Name: count, dtype: int64

```
In [42]: print("\nTop 5 batters who faced the most deliveries:")  
print(df['batter'].value_counts().head())
```

Top 5 batters who faced the most deliveries:

batter

Ruturaj Gaikwad 50

Shubman Gill 36

Vijay Shankar 23

Shivam Dube 18

Moeen Ali 17

Name: count, dtype: int64

In []:

In []:

In []: