👋 Hi, I'm **Ashish Mishra**

📊 Internship in Data Science

🏢 at ShadowFox

Cricket Fielding Analysis

In [1]:
```
import pandas as pd
```

In [2]:
```
df = pd.read_excel(r'C:\Users\Ashish Mishra\OneDrive\Desktop\ShadowFox\Shadowfox_DS
```

In [3]:
```
df.head()
```

Out[3]:

	Pick	Y->	Clean Pick	N->	Fumble	C->	Catch	DC->	Dropped Catch	S->	Stu
0	Throw	Y->	Good Throw	N->	Bad throw	DH->	Dirct Hit	RO->	Run Out	MR->	
1	Runs	"+" stands for runs saved "-" stands for runs ...	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
2	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
3	NaN	Match No.	Innings	Teams	Player Name	BallCount	Position	Pick	Throw	Runs	Ov
4	NaN	IPL2367	1	Delhi Capitals	Rilee russouw	0.1	Short mid wicket	n	NaN	1	

In [4]:
```
# Reload the dataset with a specific skiprows parameter to better clean and structu
data_refined = pd.read_excel(r"C:\Users\Ashish Mishra\OneDrive\Desktop\ShadowFox\Sh

# Rename columns based on their actual meaning and drop any unnecessary columns
data_refined.columns = [
    'Pick',
    'Match_No',
    'Innings',
    'Team',
    'Player_Name',
```

```
    'BallCount',
    'Position',
    'Pick_Type',
    'Throw_Type',
    'Runs',
    'Overcount',
    'Venue',
    'Stadium'
]

# Convert numeric fields (e.g., Runs, BallCount) to appropriate data types
data_refined['Runs'] = pd.to_numeric(data_refined['Runs'], errors='coerce').fillna(
data_refined['BallCount'] = pd.to_numeric(data_refined['BallCount'], errors='coerce

# Display the cleaned and structured dataset
data_refined.head()
```

Out[4]:

	Pick	Match_No	Innings	Team	Player_Name	BallCount	Position	Pick_Type	Throw_
0	NaN	Match No.	Innings	Teams	Player Name	NaN	Position	Pick	
1	NaN	IPL2367	1	Delhi Capitals	Rilee russouw	0.1	Short mid wicket	n	
2	NaN	IPL2367	1	Delhi Capitals	Phil Salt	0.2	wicket keeper	Y	
3	NaN	IPL2367	1	Delhi Capitals	Yash Dhull	0.3	covers	Y	
4	NaN	IPL2367	1	Delhi Capitals	Axer Patel	0.4	point	Y	

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

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 74 entries, 0 to 73
Data columns (total 13 columns):
 #   Column         Non-Null Count  Dtype 
---  ------         --------------  ----- 
 0   Pick           2 non-null      object
 1   Y->            31 non-null     object
 2   Clean Pick     54 non-null     object
 3   N->            22 non-null     object
 4   Fumble         19 non-null     object
 5   C->            22 non-null     object
 6   Catch          19 non-null     object
 7   DC->           19 non-null     object
 8   Dropped Catch  16 non-null     object
 9   S->            11 non-null     object
 10  Stumping       22 non-null     object
 11  Unnamed: 11    21 non-null     object
 12  Unnamed: 12    13 non-null     object
dtypes: object(13)
memory usage: 7.6+ KB
```

In [6]:
```
# Drop rows where essential columns like 'Player_Name' or 'Position' are NaN
data_refined.dropna(subset=['Player_Name', 'Position'], inplace=True)

# Convert numeric fields (e.g., Runs, BallCount) to appropriate data types
data_refined['Runs'] = pd.to_numeric(data_refined['Runs'], errors='coerce').fillna(
data_refined['BallCount'] = pd.to_numeric(data_refined['BallCount'], errors='coerce
```

In [7]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
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 5   C->            22 non-null     object
 6   Catch          19 non-null     object
 7   DC->           19 non-null     object
 8   Dropped Catch  16 non-null     object
 9   S->            11 non-null     object
 10  Stumping       22 non-null     object
 11  Unnamed: 11    21 non-null     object
 12  Unnamed: 12    13 non-null     object
dtypes: object(13)
memory usage: 7.6+ KB
```

In [8]:
```
weights = {
    'CP': 1.5,  # Clean Picks
    'GT': 1.2,  # Good Throws
    'C': 2.0,   # Catches
    'DC': -1.0, # Dropped Catches
```

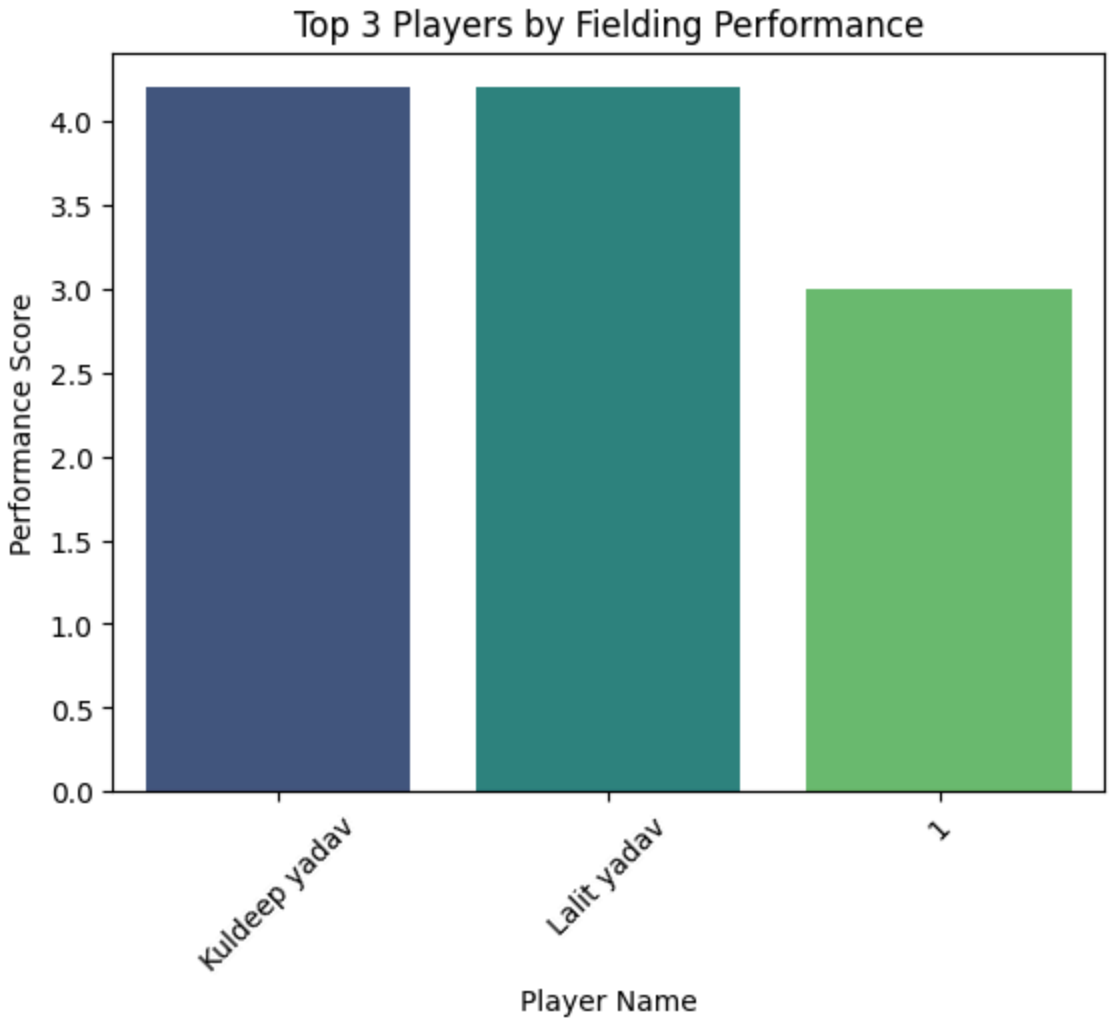
```
    'ST': 2.5,  # Stumpings
    'RO': 3.0,  # Run Outs
    'MRO': -0.5, # Missed Run Outs
    'DH': 2.0,  # Direct Hits
    'RS': 1.0   # Runs Saved
}
```

In [9]:
```
# Initialize a performance score column
data_refined['Performance Score'] = 0

# Calculate the performance score for each player
data_refined['Performance Score'] = (
    data_refined['Pick_Type'].apply(lambda x: weights['CP'] if x == 'Y' else 0) +
    data_refined['Throw_Type'].apply(lambda x: weights['GT'] if x == 'Y' else 0) +
    data_refined['Runs'] * weights['RS']
)

# Group by player and calculate total performance scores
top_players = data_refined[['Player_Name', 'Performance Score', 'Match_No', 'Inning
top_players_grouped = top_players.groupby('Player_Name').agg({
    'Performance Score': 'sum',
    'Match_No': 'first',
    'Innings': 'first',
    'Team': 'first',
    'Position': 'first',
    'Venue': 'first'
}).sort_values(by='Performance Score', ascending=False)

# Display top performers
top_3_players = top_players_grouped.head(3)
print("Top 3 Performers with Details:\n", top_3_players)
```

```
Top 3 Performers with Details:
                Performance Score       Match_No Innings            Team  \
Player_Name
Kuldeep yadav                 4.2        IPL2367       1  Delhi Capitals
Lalit yadav                   4.2        IPL2367       1  Delhi Capitals
1                             3.0  Rilee russouw       2               1

                       Position  Venue
Player_Name
Kuldeep yadav  Short mid wicket  Delhi
Lalit yadav         cover point  Delhi
1                             0     10
```

In [10]:
```
import seaborn as sns
import matplotlib.pyplot as plt
```

In [11]:
```
sns.barplot(x=top_3_players.index, y=top_3_players['Performance Score'], hue=top_3_
plt.title('Top 3 Players by Fielding Performance')
plt.xlabel('Player Name')
plt.ylabel('Performance Score')
plt.xticks(rotation=45)
plt.show()
```


Top 3 Players by Fielding Performance
Performance Score
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Kuldeep yadav
Lalit yadav
1
Player Name