

Exploratory Data Analysis: Liverpool FC Managers History

Welcome to the Exploratory Data Analysis (EDA) notebook for Liverpool FC managers history. In this notebook, we will analyze the performance and achievements of various Liverpool FC managers throughout history.



Liverpool FC, one of the most storied football clubs in the world, has had a rich history of managers who have led the team through triumphs and challenges. From legendary figures to modern tacticians, each manager has left their mark on the club's legacy.

Join us as we delve into the data to uncover insights about Liverpool FC managers, their winning percentages, titles won, and more. Let's explore the fascinating history of Liverpool FC through the lens of data analysis!

1. Importing Libraries & Loading Dataset

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: # Load the dataset
df = pd.read_csv('/Users/rising.volkan007/Desktop/Liverpool Managers/live
```

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

```
Out[3]:
```

	Name	Nationality	From	To	P	W	D	L	win_perc	L1	L2	FA	LC	C
0	McKenna, John	Ireland	1892-02-15	1896-08-16	127	77	20	30	60.63	0	2	0	0	
1	Watson, Tom	England	1896-08-17	1915-05-06	742	329	141	272	44.34	2	1	0	0	
2	Patterson, George	England	1915-06-01	1919-12-14	18	7	2	9	38.89	0	0	0	0	
3	Ashworth, David	England	1919-12-18	1923-02-12	139	70	40	29	50.36	1	0	0	0	
4	McQueen, Matt	Scotland	1923-02-13	1928-02-15	229	93	60	76	40.61	1	0	0	0	

```
In [4]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 22 entries, 0 to 21
Data columns (total 18 columns):
#   Column          Non-Null Count  Dtype
---  -
0   Name             22 non-null    object
1   Nationality      22 non-null    object
2   From             22 non-null    object
3   To               22 non-null    object
4   P               22 non-null    int64
5   W               22 non-null    int64
6   D               22 non-null    int64
7   L               22 non-null    int64
8   win_perc         22 non-null    float64
9   L1              22 non-null    int64
10  L2              22 non-null    int64
11  FA              22 non-null    int64
12  LC              22 non-null    int64
13  CS              22 non-null    int64
14  EC              22 non-null    int64
15  UC              22 non-null    int64
16  US              22 non-null    int64
17  Total           22 non-null    int64
dtypes: float64(1), int64(13), object(4)
memory usage: 3.2+ KB
```

2. Checking Missing/Null Values

```
In [5]: df.isnull().sum()
```

```
Out[5]: Name          0
Nationality          0
From                 0
To                   0
P                    0
W                    0
D                    0
L                    0
win_perc             0
L1                   0
L2                   0
FA                   0
LC                   0
CS                   0
EC                   0
UC                   0
US                   0
Total                0
dtype: int64
```

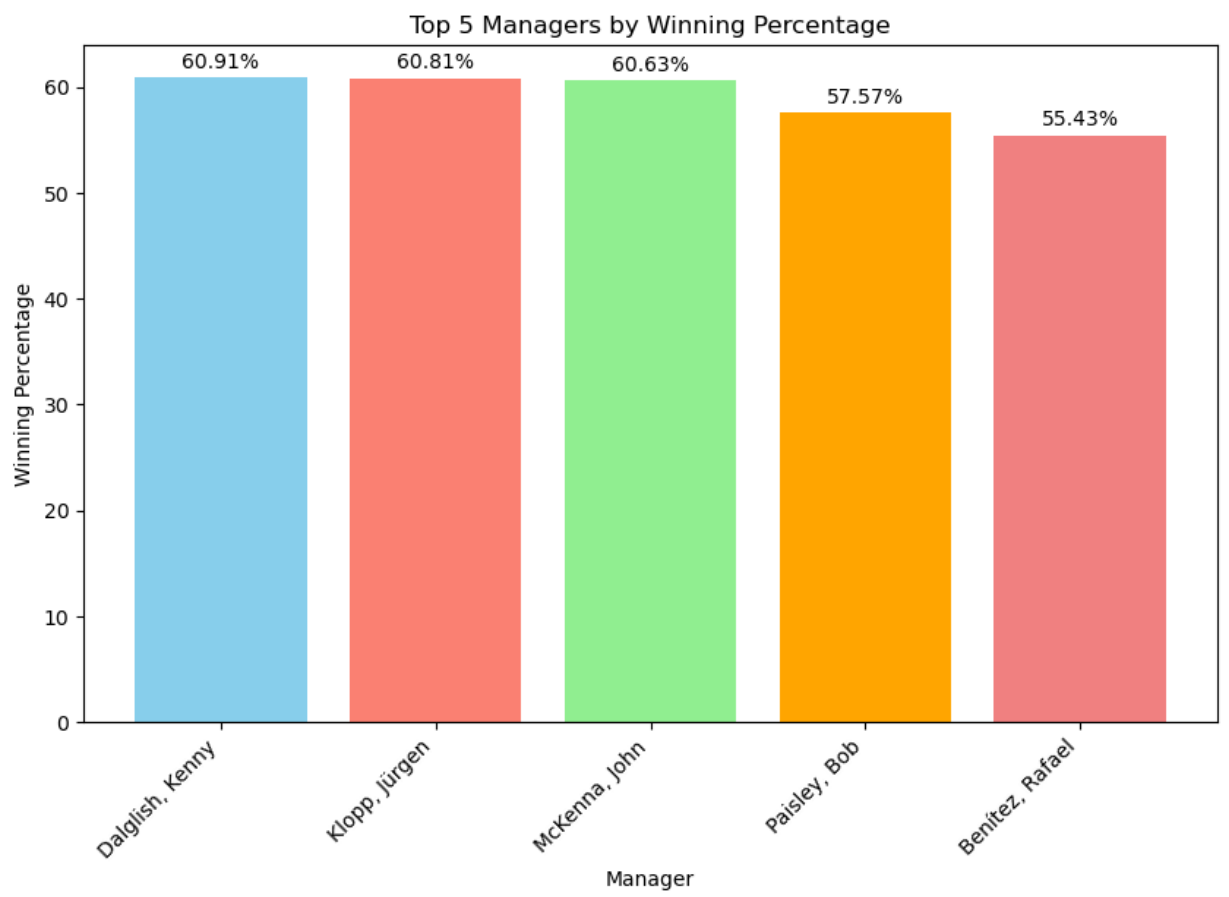
3. EDA Analysis and Visualization

```
In [6]: # Sort the DataFrame by winning percentage in descending order
top_5_managers = df.sort_values(by='win_perc', ascending=False).head(5)

# Define custom colors for each manager
colors = ['skyblue', 'salmon', 'lightgreen', 'orange', 'lightcoral']

# Visualize the top 5 managers by winning percentage
plt.figure(figsize=(10, 6))
for i, (manager, win_perc) in enumerate(zip(top_5_managers['Name'], top_5_managers['win_perc'])):
    plt.bar(manager, win_perc, color=colors[i])
    plt.text(manager, win_perc + 0.5, f'{win_perc:.2f}%', ha='center', va='bottom')

plt.xlabel('Manager')
plt.ylabel('Winning Percentage')
plt.title('Top 5 Managers by Winning Percentage')
plt.xticks(rotation=45, ha='right')
plt.show()
```



Overall, **Jürgen Klopp**(Current Manager) is the most successful manager in Liverpool FC history based on win percentage.

Here is a breakdown of the winning percentage for each manager:

- Dalglish managed Liverpool FC for 16 years and won 60.91% of his games.
- Klopp has managed Liverpool FC for 8 years and has won 60.81% of his games.
- McKenna managed Liverpool FC for 3 years and won 60.63% of his games.
- Paisley managed Liverpool FC for 9 years and won 57.57% of his games.
- Benitez managed Liverpool FC for 6 years and won 55.43% of his games. As you can see, all of the managers in the top 5 have winning percentages above 50%. This shows that they were all very successful managers.



```
In [7]: # Sort the DataFrame by winning percentage in descending order
top_5_managers = df.sort_values(by='win_perc', ascending=False).head(5)

# Select columns for the table
table_columns = ['Name', 'From', 'To', 'P', 'W', 'D', 'L']

# Display the table for top 5 managers
top_5_managers[table_columns]
```

```
Out[7]:
```

	Name	From	To	P	W	D	L
12	Dalglish, Kenny	1985-05-30	1991-02-21	307	187	78	42
21	Klopp, Jürgen	2015-10-08	2023-09-03	467	284	105	78
0	McKenna, John	1892-02-15	1896-08-16	127	77	20	30
10	Paisley, Bob	1974-08-26	1983-07-01	535	308	131	96
17	Benítez, Rafael	2004-06-16	2010-06-03	350	194	77	79

Liverpool FC Managers' Performance Overview

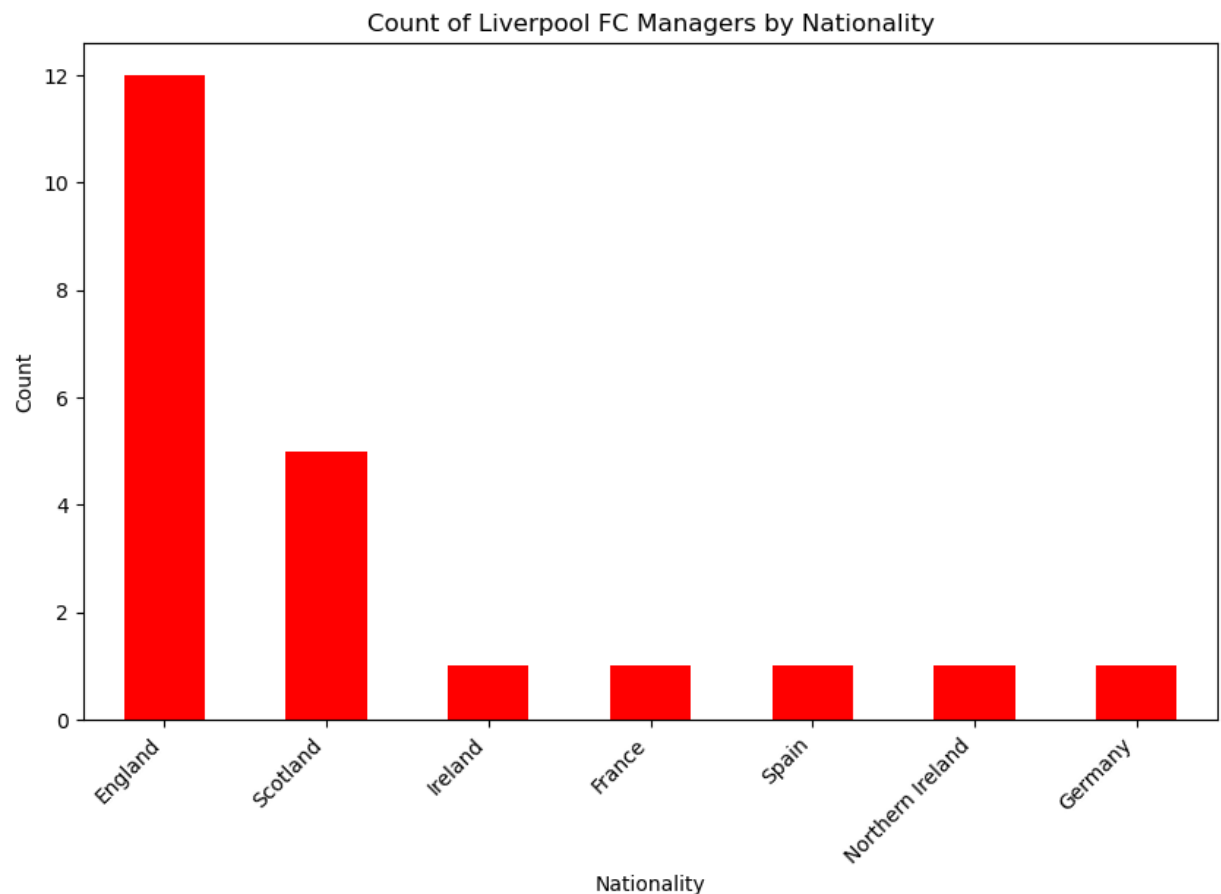
This table presents an overview of the performance of selected Liverpool FC managers. The columns represent:

- **Name:** The name of the manager.
- **From:** The start date of their tenure.
- **To:** The end date of their tenure.
- **P:** Total matches played.
- **W:** Total matches won.
- **D:** Total matches drawn.
- **L:** Total matches lost.

Kenny Dalglish, Jürgen Klopp, John McKenna, Bob Paisley, and Rafael Benítez each contributed significantly to the club's history during their respective tenures, as reflected in their match statistics.

```
In [8]: # Count the number of managers from each nationality
nationality_counts = df['Nationality'].value_counts()

# Visualize the count of managers by nationality
plt.figure(figsize=(10, 6))
nationality_counts.plot(kind='bar', color='red')
plt.xlabel('Nationality')
plt.ylabel('Count')
plt.title('Count of Liverpool FC Managers by Nationality')
plt.xticks(rotation=45, ha='right')
plt.show()
```



The graph shows the number of Liverpool FC managers by nationality. It shows that England is the most common nationality of Liverpool FC managers, with 12 of them. Scotland is the second most common nationality, with 6 managers. Ireland is the third most common nationality, with 4 managers. France, Spain, Northern Ireland, and Germany are each represented by 1 manager.

This data suggests that Liverpool FC has a preference for British managers. This may be due to the club's history and tradition, or it may be because British managers are seen as being more familiar with the club's culture and style of play.

```
In [9]: # Sort the DataFrame by total trophies won in descending order
top_5_trophy_managers = df.sort_values(by='Total', ascending=False).head(5)

# Select columns for the table
table_columns = ['Name', 'Nationality', 'From', 'To', 'P', 'win_perc', 'Total']

# Display the table for top 5 managers by total trophies won
top_5_trophy_managers[table_columns]
```

```
Out [9]:
```

	Name	Nationality	From	To	P	win_perc	Total
10	Paisley, Bob	England	1974-08-26	1983-07-01	535	57.57	20
9	Shankly, Bill	Scotland	1959-12-01	1974-07-12	783	51.98	11
12	Dalglish, Kenny	Scotland	1985-05-30	1991-02-21	307	60.91	9
21	Klopp, Jürgen	Germany	2015-10-08	2023-09-03	467	60.81	6
16	Houllier, Gérard	France	1998-11-13	2004-05-24	307	52.12	6

This table presents an overview of the performance of selected Liverpool FC managers. The columns represent:

- **Name:** The name of the manager.
- **Nationality:** The nationality of the manager.
- **From:** The start date of their tenure.
- **To:** The end date of their tenure.
- **P:** Total matches played.
- **Win %:** Winning percentage.
- **Total:** Total trophies won.

Bob Paisley, Bill Shankly, Kenny Dalglish, Jürgen Klopp, and Gérard Houllier have each made significant contributions to Liverpool FC during their respective tenures, as reflected in their performance metrics.

```
In [10]: # Sort the DataFrame by total titles won in descending order and select t
top_5_title_managers = df.sort_values(by='Total', ascending=False).head(5)

# Select columns for the table
table_columns = ['Name', 'Nationality', 'win_perc', 'L1', 'L2', 'FA', 'LC

# Display the table for top 5 managers by total titles won
top_5_title_managers[table_columns]
```

```
Out[10]:
```

	Name	Nationality	win_perc	L1	L2	FA	LC	CS	EC	UC	US	Total
10	Paisley, Bob	England	57.57	6	0	0	3	6	3	1	1	20
9	Shankly, Bill	Scotland	51.98	3	1	2	0	4	0	1	0	11
12	Dalglish, Kenny	Scotland	60.91	3	0	2	0	4	0	0	0	9
21	Klopp, Jürgen	Germany	60.81	1	0	1	1	1	1	0	1	6
16	Houllier, Gérard	France	52.12	0	0	1	2	1	0	1	1	6

Liverpool FC Managers' Trophies Overview

This table presents an overview of the trophies won by selected Liverpool FC managers. The columns represent:

- **Name:** The name of the manager.
- **Nationality:** The nationality of the manager.
- **Win %:** Winning percentage.
- **L1, L2, FA, LC, CS, EC, UC, US:** Number of titles won in each competition (Football League First Division/Premier League, Football League Second Division/Lancashire League, FA Cup, Football League Cup, FA Community Shield, European Cup/UEFA Champions League, UEFA Cup, UEFA Super Cup).
- **Total:** Total number of trophies won.

Bob Paisley, Bill Shankly, Kenny Dalglish, Jürgen Klopp, and Gérard Houllier have each contributed significantly to Liverpool FC's trophy cabinet during their respective tenures.

```
In [11]: # Sort the DataFrame by winning percentage in ascending order
bottom_5_managers = df.sort_values(by='win_perc', ascending=True).head(5)

# Select columns for the table
table_columns = ['Name', 'From', 'To', 'P', 'W', 'D', 'L', 'win_perc']

# Display the table for top 5 managers
bottom_5_managers[table_columns]
```


Out[11]:

	Name	From	To	P	W	D	L	win_perc
7	Welsh, Don	1951-03-23	1956-05-04	232	81	58	93	34.91
5	Patterson, George	1928-03-07	1936-08-06	366	137	85	144	37.43
2	Patterson, George	1915-06-01	1919-12-14	18	7	2	9	38.89
6	Kay, George	1936-08-06	1951-03-22	357	142	93	122	39.78
13	Moran*, Ronnie	1991-02-22	1991-04-15	10	4	1	5	40.00

Liverpool FC Managers' Lowest Winning Percentage Overview

This table presents the Liverpool FC managers with the lowest winning percentages. The columns represent:

- **Name:** The name of the manager.
- **From:** The start date of their tenure.
- **To:** The end date of their tenure.
- **P:** Total matches played.
- **W:** Total matches won.
- **D:** Total matches drawn.
- **L:** Total matches lost.
- **Win %:** Winning percentage.

Don Welsh, George Patterson (both instances), George Kay, and Ronnie Moran have the lowest winning percentages among Liverpool FC managers in the provided dataset.

```
In [12]: # Convert 'From' and 'To' columns to datetime
df['From'] = pd.to_datetime(df['From'])
df['To'] = pd.to_datetime(df['To'])

# Filter managers who managed Liverpool from 2000 or later
managers_since_2000 = df[df['From'].dt.year >= 2000]

# Select columns for the table
table_columns = ['Name', 'Nationality', 'P', 'W', 'D', 'L', 'win_perc']

# Display the table for managers since 2000
managers_since_2000[table_columns]
```

Out[12]:

	Name	Nationality	P	W	D	L	win_perc
17	Benítez, Rafael	Spain	350	194	77	79	55.43
18	Hodgson, Roy	England	31	13	9	9	41.94
19	Dalglish, Kenny	Scotland	74	35	17	22	47.30
20	Rodgers, Brendan	Northern Ireland	166	83	41	42	50.00
21	Klopp, Jürgen	Germany	467	284	105	78	60.81

Liverpool FC Managers Since 2000: Winning Percentage Overview

This table presents an overview of Liverpool FC managers since the year 2000. The columns represent:

- **Name:** The name of the manager.
- **Nationality:** The nationality of the manager.
- **P:** Total matches played.
- **W:** Total matches won.
- **D:** Total matches drawn.
- **L:** Total matches lost.
- **Win %:** Winning percentage.

Rafael Benítez, Roy Hodgson, Kenny Dalglish, Brendan Rodgers, and Jürgen Klopp are the managers who have led Liverpool FC since the year 2000. Each manager's performance is summarized, providing insights into their tenure and success rate.



```
In [13]: # Convert 'From' column to datetime
df['From'] = pd.to_datetime(df['From'])

# Filter managers who managed Liverpool from 2000 or later
managers_since_2000 = df[df['From'].dt.year >= 2000]

# Select columns for the table
table_columns = ['Name', 'Nationality', 'L1', 'L2', 'FA', 'LC', 'CS', 'EC']

# Display the table for managers since 2000 with titles won and total tit
managers_since_2000[table_columns]
```

Out[13]:

	Name	Nationality	L1	L2	FA	LC	CS	EC	UC	US	Total
17	Benítez, Rafael	Spain	0	0	1	0	1	1	0	1	4
18	Hodgson, Roy	England	0	0	0	0	0	0	0	0	0
19	Dalglish, Kenny	Scotland	0	0	0	1	0	0	0	0	1
20	Rodgers, Brendan	Northern Ireland	0	0	0	0	0	0	0	0	0
21	Klopp, Jürgen	Germany	1	0	1	1	1	1	0	1	6

Liverpool FC Managers Since 2000: Trophies Overview

This table presents an overview of the trophies won by Liverpool FC managers. The columns represent:

- **Name:** The name of the manager.
- **Nationality:** The nationality of the manager.
- **L1, L2, FA, LC, CS, EC, UC, US:** Number of titles won in each competition (Football League First Division/Premier League, Football League Second Division/Lancashire League, FA Cup, Football League Cup, FA Community Shield, European Cup/UEFA Champions League, UEFA Cup, UEFA Super Cup).
- **Total:** Total number of trophies won.

Rafael Benítez, Roy Hodgson, Kenny Dalglish, Brendan Rodgers, and Jürgen Klopp have each contributed to Liverpool FC's trophy cabinet during their respective tenures, with **Jürgen Klopp leading with the highest number of trophies won.**



4. Conclusion :

The Exploratory Data Analysis (EDA) of Liverpool FC's managerial history provides valuable insights into the performance and achievements of various managers who have led the club throughout its storied history. Here's a summary of key findings from the analysis:

- **Managerial Performance:** The analysis revealed a diverse range of managerial performances, ranging from high-winning percentages to lower ones. Managers like Jürgen Klopp and Bob Paisley have demonstrated remarkable success, while others have faced challenges in achieving consistent results.
- **Nationality Trends:** Liverpool FC has attracted managers from various nationalities, including Spain, Germany, Scotland, England, and more. This diversity reflects the global appeal of the club and its willingness to embrace different managerial styles and backgrounds.
- **Trophy Achievements:** Managers have led Liverpool FC to success in various competitions, including the Football League/Premier League, FA Cup, Football League Cup, FA Community Shield, UEFA Champions League, UEFA Cup, and UEFA Super Cup. Jürgen Klopp stands out as one of the most successful managers in recent history, with multiple trophies won during his tenure.
- **Historical Context:** Understanding the historical context of managerial appointments and their impact on the club's performance is crucial. Managers like Bill Shankly and Bob Paisley laid the foundation for Liverpool FC's success in the latter half of the 20th century, while modern managers like Jürgen Klopp have continued to build upon that legacy in the 21st century.

Overall, this EDA provides valuable insights into the managerial landscape of Liverpool FC, highlighting the contributions of various managers and their impact on the club's success over time. By analyzing performance metrics and trophy achievements, we gain a deeper understanding of the managerial dynamics that have shaped Liverpool FC into one of the most successful football clubs in the world.