



# NFL STATS PROJECT


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# Our Main Question

Although NFL teams often fluctuate in performance from season to season, are there particular teams that have consistently posted strong stats over the past 20 seasons (2003–2023)?

# CSV Dataset


We used a dataset from Kaggle that has stats based off each season of each NFL team from the last 20 years (2003–2023)

 NICK CANTALUPA · UPDATED 10 MONTHS AGO

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## NFL Team Data 2003-2023

Extensive NFL Regular Season team stats for the last 21 seasons, updated 2024



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### About Dataset


**Context**

I was interested in analyzing how NFL offenses have evolved over the modern era. I used [www.pro-football-reference.com](http://www.pro-football-reference.com) to find the data that I was interested in analyzing. I used Python BeautifulSoup4 and a selenium Webdriver to pull the html data from the website and load it into a DataFrame for analysis.

**Content**

There is currently data on 672 Teams across 21 seasons. The stats included are regarding team record, passing, rushing, penalties, turnovers, and more.

The file `team_stats_2003_2023.csv` contains 35 variables outlined below.

**Usability**   
10.00

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**Expected update frequency**  
Never

**Tags**

[Sports](#) [Data Analytics](#)

[Football](#) [Data Cleaning](#)

[Statistical Analysis](#)

# First Function

## 1st: View Overall Stats for **All Teams**:

- Users can select the specific type of statistic they wish to analyze.
- The program then displayed a bar chart, comparing each NFL team's cumulative performance in the selected category.
- The bar's were color coded to the NFL Team's brand, making the displays easier to interpret.

# Example of First Function

## The Statistics Available Are:

Win/Loss Ratio

Total Points Scored

Total Yards Gained

Touchdowns

Turnovers

Additional Statistics

# Second Function

## View Statistics for a **Specific Team**:

- This function allows the user to dive into detailed statistics for a specific NFL team during a chosen season between 2003 and 2023.
- Users begin by selecting the team and season they are interested in, and then they can choose from a variety of performance metrics to explore.

# Example of Second Function

## The Statistics Available Are:

1. Comparison of Wins
2. Comparison of Losses
3. Win/Loss Percentage
4. Points For
5. Points Against
6. Points Differential
7. Average Margin of Victory
8. Games Played
9. Offensive Yards Gained
10. Offensive Plays Ran
11. Yards Per Offense Play
12. Team Turnover Lost
13. Team Fumble Lost
14. First Downs Gained
15. Passes Completed
16. Pass Attempts
17. Passing Yards
18. Passing TDs
19. Interceptions Thrown
20. Net Yards Gained Per Pass Attempt
21. Passing First Downs Gained
22. Rushing Attempts
23. Rushing Yards
24. Rushing TDs
25. Rushing Yards Per Attempt
26. Rushing First Downs
27. Penalties Committed
28. Penalty Yards Committed
29. First Downs by Penalty
30. Percentage of Drives Ending in Score
31. Percentage of Drives Ending in Turnover
32. Expected Points Contributed by Offense
33. Tied Games

# Question Answer

Although there is nothing definitive, there are definite teams that have showed signs of retained success over many seasons. Some highlights include the Pittsburgh Steelers, the Philadelphia Eagles, and the New England Patriots. Our project was more focused on giving the user the tools to do their own research about whatever team they want to research.