

The NFL

By Gilberto, Brian, Parker, Colin

Case Study

When most people think of the NFL, they tend to think of the players scrambling around the field trying to score touchdowns. It seems very simple from the surface, but when you start thinking about it, there are many things that need to work together in order for your favorite football team to take the field on a Sunday afternoon. There are around 1,696 players in the NFL; each and everyone of those players are assigned to a team. There are 32 teams, and each team is assigned to one of two separate conferences. Each team also has an owner, who dictates what players he wants and manages the team as whole.

The purpose of our database is to store the statistics of teams and players in the NFL. Having these statistics in a database will allow for careful examination of different aspects of players and teams. Querying and data manipulation of these statistics and data will allow our group to gain insight and draw conclusions about various statistical aspects of the NFL. Data can be viewed all at once, sorted by division, or sorted by team. More precise data can be drawn from the player statistics data.

NFL Teams



NFL Players Stats

OFFENSE

- Passing Yards
- Rushing Yards
- Receiving TD's
- Rushing TD's
- Passing TD's
- Total Offensive Yards

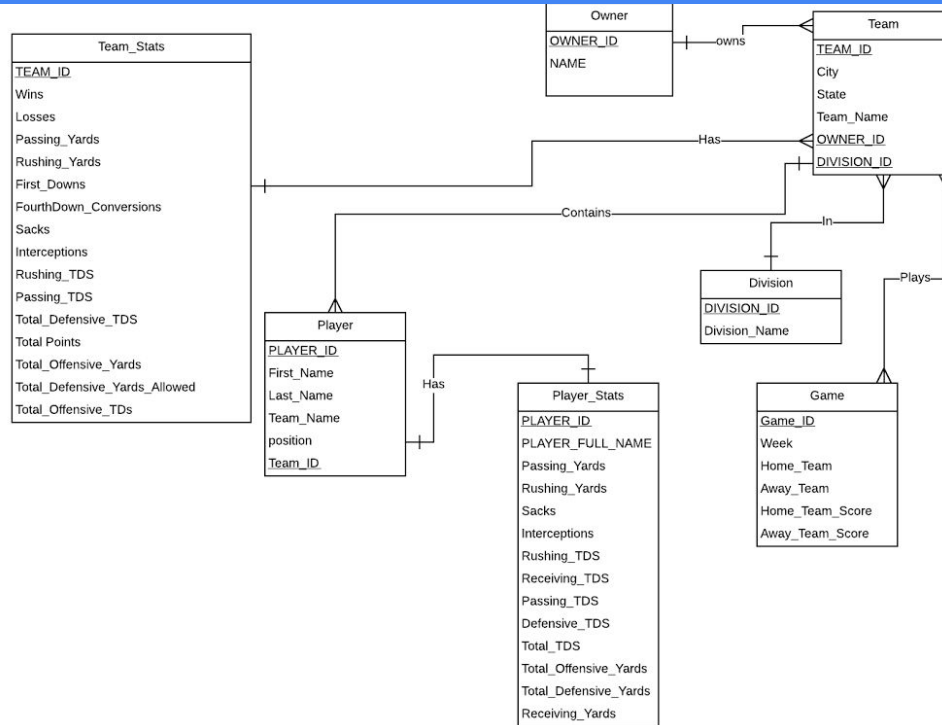
Touchdowns

- Total Touchdowns

DEFENSE

- Interceptions
- Sacks
- Defensive TD's
- Total Defensive Yards

ERD



Join of 4 Relations

*-- #1 Demonstrates a join of 4 relations.
-- This query evaluates top performing player's (Over 1000 total yards offense) tds scored and total offensive
-- yards compared to their corresponding team's total values. This shows us players that are exceptionally crucial to their team.*

```
SELECT a.TEAM_NAME, c.TOTAL_OFFENSIVE_TDS AS TOTAL_TEAM_TDS, c.TOTAL_OFFENSIVE_YARDS AS TOTAL_TEAM_YARDS,  
b.FIRST_NAME, b.LAST_NAME, b.POSITION, d.TOTAL_OFFENSIVE_YARDS, d.TOTAL_TDS  
FROM TEAM a, PLAYER b, TEAM_STATS c, PLAYER_STATS d  
WHERE a.TEAM_ID = b.TEAM_ID  
AND b.TEAM_ID = c.TEAM_ID  
AND b.PLAYER_ID = d.PLAYER_ID  
AND d.TOTAL_OFFENSIVE_YARDS > '1000'  
ORDER BY d.TOTAL_TDS DESC;
```

Offensive Stats by Players

TEAM_NAME	TOTAL_TEAM_TDS	TOTAL_TEAM_YARDS	FIRST_NAME	LAST_NAME	POSITION	TOTAL_OFFENSIVE_YARDS	TOTAL_TDS
Packers	34	4323	Aaron	Rodgers	QB	3584	32
Saints	42	5114	Drew	Brees	QB	3932	32
Falcons	41	4944	Matt	Ryan	QB	3920	27
Titans	38	4587	Marcus	Mariota	QB	3308	27
Steelers	34	4402	Ben	Roethlisberger	QB	3056	26
Chargers	35	4413	Philip	Rivers	QB	3387	25
Raiders	38	4700	Derek	Carr	QB	3429	24
Colts	28	3876	Andrew	Luck	QB	3377	24
Cowboys	39	4748	Dak	Prescott	QB	3191	24
Bucaneers	30	4347	Jameis	Winston	QB	3291	24
Redskins	31	5023	Kirk	Cousins	QB	3860	23
Giants	27	3929	Eli	Manning	QB	3097	22
Jaguars	25	4009	Blake	Bortles	QB	3253	22
Lions	25	4047	Matthew	Stafford	QB	3402	21
Cardinals	32	4429	Carson	Palmer	QB	3265	18
Ravens	22	4172	Joe	Flacco	QB	3316	17
Bengals	26	4464	Andy	Dalton	QB	3537	17
Dolphins	28	3933	Ryan	Tannehill	QB	2944	17
Cardinals	32	4429	David	Johnson	RB	1709	15
Seahawks	26	4295	Russell	Wilson	QB	3345	14
Cowboys	39	4748	Ezekiel	Elliott	RB	1607	13

Self Join

```
--#2 Demonstrates a self join
-- This query evaluates teams that have more total offensive yards than defensive yards allowed and more wins than losses.
-- This query's results list the most dominate teams in the league.

SELECT
    a.TEAM_ID, b.TOTAL_OFFENSIVE_YARDS, b.TOTAL_DEFENSIVE_YARDS_ALLOWED, b.WINS, b.LOSSES
FROM
    TEAM_STATS a
JOIN
    TEAM_STATS b ON a.TEAM_ID = b.TEAM_ID AND b.TOTAL_OFFENSIVE_YARDS > b.TOTAL_DEFENSIVE_YARDS_ALLOWED AND b.WINS > b.LOSSES
ORDER BY b.WINS DESC;
```


Offense and Defense Yards

TEAM_ID	TOTAL_OFFENSIVE_YARDS	TOTAL_DEFENSIVE_YARDS_ALLOWED	WINS	LOSSES
DAL	4748	4302	11	1
NE	4650	4047	10	2
OAK	4700	4676	10	2
DEN	3917	3786	8	4
SEA	4295	3963	8	3
BAL	4172	3553	7	5
PIT	4402	4180	7	5
ATL	4944	4580	7	5
WSH	5023	4435	6	5

Union for Detroit Lions

*-- #3 Demonstrates a union
-- This query shows all home games the lions have played and the score of each one. The union adds all away games
-- the lions have played and again the scores of those games.*

```
SELECT
    HOME_TEAM_ID,
    HOME_TEAM_SCORE,
    AWAY_TEAM_ID,
    AWAY_TEAM_SCORE
FROM GAME
WHERE HOME_TEAM_ID = 'DET'
UNION ALL
SELECT
    HOME_TEAM_ID,
    HOME_TEAM_SCORE,
    AWAY_TEAM_ID,
    AWAY_TEAM_SCORE
FROM GAME
WHERE AWAY_TEAM_ID = 'DET';
```

Detroit Lions Schedule

HOME_TEAM_ID	HOME_TEAM_SCORE	AWAY_TEAM_ID	AWAY_TEAM_SCORE
DET	15	TEN	16
DET	24	PHI	23
DET	31	LA	28
DET	20	WSH	17
DET	26	JAX	19
DET	16	MIN	13
IND	35	DET	39
GB	34	DET	27
CHI	17	DET	14
HOU	20	DET	13
MIN	16	DET	22
NO	13	DET	28

Avg Total Td's of each offensive position

*#4/5 Demonstrates an AVG as well as a GROUP BY, HAVING, and ORDER BY in the same query.
— This query finds average total tds of each offensive position*

```
SELECT PLAYER.POSITION, AVG(PLAYER_STATS.TOTAL_TDS) AS AvgTDs
FROM PLAYER_STATS
INNER JOIN PLAYER
ON PLAYER_STATS.PLAYER_ID = PLAYER.PLAYER_ID
GROUP BY PLAYER.POSITION
HAVING PLAYER.POSITION IN('QB', 'RB', 'WR', 'TE')
ORDER BY AvgTDs DESC;
```

Avg TD's by Position

[illegible]

Query for NFC North

```
-- #6 Demonstrates Correlated Sub Query  
-- This query shows each team's wins, losses, total offensive yards, and total defensive yards  
-- in the Lions Division(NFC North).
```

```
SELECT TEAM.TEAM_NAME, TEAM_STATS.WINS, TEAM_STATS.LOSSES, TEAM_STATS.TOTAL_OFFENSIVE_YARDS,  
TEAM_STATS.TOTAL_DEFENSIVE_YARDS_ALLOWED  
FROM TEAM, TEAM_STATS  
WHERE TEAM.TEAM_ID = TEAM_STATS.TEAM_ID AND DIVISION_ID = (  
SELECT DIVISION_ID FROM DIVISION WHERE DIVISION_ID='06')  
ORDER BY TEAM_STATS.WINS DESC;
```

Stats for NFC North

TEAM_NAME	WINS	LOSSES	TOTAL_OFFENSIVE_YARDS	TOTAL_DEFENSIVE_YARDS_ALLOWED
Lions	8	4	4047	4257
Packers	6	6	4323	4166
Vikings	6	6	3562	3641
Bears	3	9	4178	3922