*** copy and paste into your own github account
***the hashtags create the subtitles in github

# Team Name

71552 Group 4

# Team Members

Ashleigh Myers @ashleigh-myers
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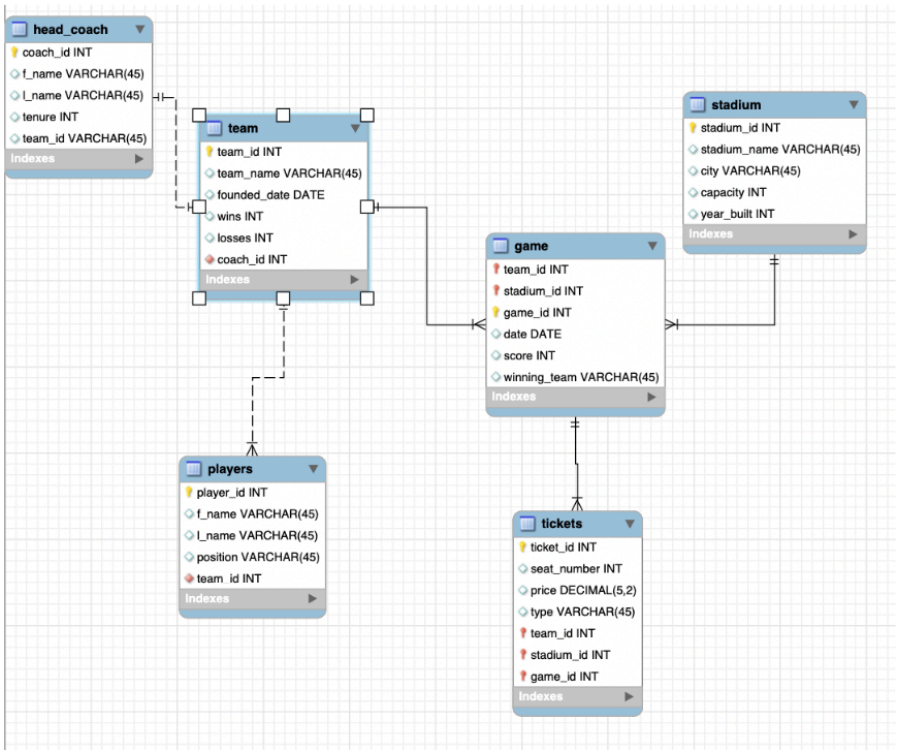
**add your name and github username here

# Problem Description

Our NFL database was created as a representation of a database that would aid the leaders or administrators of the football league to make critical, impactful decisions about the league, and facilitate management. It is comprised of key categories of information including the stadium, game, team, players, head coach, and tickets. The NFL is one of the biggest players in a huge sports and entertainment industry, and there is a huge amount of data that needs to be organized, managed, and utilized. Sports leagues constantly undergo change in response to unfair treatment of players, exploitation of rules by players and teams, or changing tastes of consumers. With our database, the league managers and its committees can interpret information to make informed decisions for the integrity, sustainability, and profitability of the league, along with handling the tasks they are responsible for, including creating or changing rules, approving ownership changes, training game officials, integrating technology, ensuring competitive balance, and maintaining legitimacy and entertainment of the game.

# Data Model

** explain data model- ashleigh




# Data Dictionary

## 1. Game

| # | Field | Sch... | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | team_id | ha... | game | INT | binary | 11 |
| 2 | stadium_id | ha... | game | INT | binary | 11 |
| 3 | game_id | ha... | game | INT | binary | 11 |
| 4 | date | ha... | game | DATE | binary | 10 |
| 5 | score | ha... | game | INT | binary | 11 |
| 6 | winning_team | ha... | game | VARCHAR | utf8mb4 | 45 |

## 2. Head Coaches

| # | Field | Schema | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | coach_id | ha_group4_crn715... | head_coach | INT | binary | 11 |
| 2 | f_name | ha_group4_crn715... | head_coach | VARCHAR | utf8mb4 | 45 |
| 3 | l_name | ha_group4_crn715... | head_coach | VARCHAR | utf8mb4 | 45 |
| 4 | tenure | ha_group4_crn715... | head_coach | INT | binary | 11 |
| 5 | team_id | ha_group4_crn715... | head_coach | VARCHAR | utf8mb4 | 45 |

## 3. Players

| # | Field | Schema | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | player_id | ha_group4_crn715... | players | INT | binary | 11 |
| 2 | f_name | ha_group4_crn715... | players | VARCHAR | utf8mb4 | 45 |
| 3 | l_name | ha_group4_crn715... | players | VARCHAR | utf8mb4 | 45 |
| 4 | position | ha_group4_crn715... | players | VARCHAR | utf8mb4 | 45 |
| 5 | team_id | ha_group4_crn715... | players | INT | binary | 11 |

## 4. Stadium

| # | Field | Schema | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | stadium_id | ha_group4_crn715... | stadium | INT | binary | 11 |
| 2 | stadium_name | ha_group4_crn715... | stadium | VARCHAR | utf8mb4 | 45 |
| 3 | city | ha_group4_crn715... | stadium | VARCHAR | utf8mb4 | 45 |
| 4 | capacity | ha_group4_crn715... | stadium | INT | binary | 11 |
| 5 | year_built | ha_group4_crn715... | stadium | INT | binary | 11 |

## 5. Team

| # | Field | Schema | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | team_id | ha_group4_crn715... | team | INT | binary | 11 |
| 2 | team_name | ha_group4_crn715... | team | VARCHAR | utf8mb4 | 45 |
| 3 | founded_date | ha_group4_crn715... | team | DATE | binary | 10 |
| 4 | wins | ha_group4_crn715... | team | INT | binary | 11 |
| 5 | losses | ha_group4_crn715... | team | INT | binary | 11 |
| 6 | coach_id | ha_group4_crn715... | team | INT | binary | 11 |

## 6. Tickets

| # | Field | Schema | Table | Type | Character Set | Display Size |
|---|---|---|---|---|---|---|
| 1 | ticket_id | ha_group4_crn715... | tickets | INT | binary | 11 |
| 2 | seat_number | ha_group4_crn715... | tickets | INT | binary | 11 |
| 3 | price | ha_group4_crn715... | tickets | DECIMAL | binary | 7 |
| 4 | type | ha_group4_crn715... | tickets | VARCHAR | utf8mb4 | 45 |
| 5 | team_id | ha_group4_crn715... | tickets | INT | binary | 11 |
| 6 | stadium_id | ha_group4_crn715... | tickets | INT | binary | 11 |
| 7 | game_id | ha_group4_crn715... | tickets | INT | binary | 11 |

# Queries

** explain each query and why they are important to managers, basically what was on the slides but in paragraph form, include a screenshot of the query and output from SQL

1. Get Coaches of Teams with Above Average Wins- Ashleigh

```
SELECT f_name, l_name, team_name, wins
FROM head_coach
JOIN team
ON head_coach.team_id = team.team_id
WHERE team.wins >
( SELECT AVG(wins)
FROM team );
```

| f_name | l_name | team_name | wins |
|---|---|---|---|
| Andy | Reid | Kansas City Chiefs | 14 |
| Mike | Tomlin | Pittsburgh Steelers | 12 |
| Kyle | Shanahan | San Francisco 49ers | 13 |
| John | Harbaugh | Baltimore Ravens | 11 |
| Matt | LaFleur | Green Bay Packers | 11 |

- This query selects the coach's name, team name, and number of wins by joining the team and head coach table and selecting the coaches with wins above the average of other teams. This query is important to managers in the NFL for a variety of reasons. This can help evaluate the coaches' performance compared to their peers. This can be helpful when considering awards, brand deals/commercials, and hiring and recruitment. These high-performing coaches may be people that are more deserving of awards and certain brand deals. When other teams want to recruit coaches this may be a good way to find ones that are already preforming well at their current teams.

2. Games with scores above teams average- Palak

```
3    SELECT game_id, date, score, winning_team
4    FROM game
5    WHERE game.score > (
6    SELECT AVG(score)
7    FROM game
8    WHERE game.team_id = game.team_id);
9
10
```

| game_id | date | score | winning_team |
|---|---|---|---|
| 1 | 2025-09-10 | 35 | Kansas City Chiefs |
| 3 | 2025-09-20 | 28 | Los Angeles Rams |
| 5 | 2025-10-01 | 31 | San Francisco 49ers |
| 6 | 2025-10-05 | 27 | Baltimore Ravens |
| 7 | 2025-10-12 | 30 | Philadelphia Eagles |
| 10 | 2025-10-30 | 29 | Green Bay Packers |

- It selects the game_id, date, score, and winning_team from the game table. It only includes games where the score is greater than the team's average score.This subquery shows the average score for all games played by that team. The outer query then compares each game's score to the average calculated by the subquery. If the game's score is above the average, it gets included in the result set. This query highlights games where a team performed better than usual, based on their scoring average. It helps in identifying high-performance games and understanding when a team exceeded expectations. Managers can use this information for analyzing games where the team scored above their average helps evaluate performance trends, highlighting peaks and consistency over time. By examining these high-scoring games, managers can identify key success factors, such as effective play strategies or player combinations that contribute to superior results. This insight supports game planning and strategic adjustments, allowing teams to refine their approach for upcoming matches. Additionally, it enables a deeper analysis of player impact, helping managers assess the influence of specific players or play-calling decisions on scoring performance. Furthermore, comparing these high-scoring games against opponents' performance trends offers valuable competitive benchmarking, revealing strengths to leverage and weaknesses to address.

3. Query 3 lists the highest revenue games, along with the date, winning team, and the city of the game, by ticket sales/revenue in descending order.- Daniel

```sql
SELECT game.game_id, date, winning_team, city, total_revenue
FROM game
JOIN (
SELECT game_id, SUM(price) AS total_revenue
FROM tickets
GROUP BY game_id )
AS `revenue` ON game.game_id = revenue.game_id
JOIN stadium ON game.stadium_id = stadium.stadium_id
ORDER BY total_revenue DESC;
```

100% 47:9

Result Grid Filter Rows: Search Export:

| game_id | date | winning_team | city | total_revenue |
|---|---|---|---|---|
| 4 | 2025-09-25 | Pittsburgh Steelers | Kansas City | 150.00 |
| 10 | 2025-10-30 | Green Bay Packers | Baltimore | 130.00 |
| 1 | 2025-09-10 | Kansas City Chiefs | Inglewood | 120.00 |
| 7 | 2025-10-12 | Philadelphia Eagles | Denver | 110.00 |
| 6 | 2025-10-05 | Baltimore Ravens | Santa Clara | 95.00 |
| 2 | 2025-09-15 | New England Patriots | Arlington | 90.00 |
| 9 | 2025-10-25 | Jacksonville Jaguars | Atlanta | 85.00 |
| 5 | 2025-10-01 | San Francisco 49ers | Tampa | 80.00 |
| 3 | 2025-09-20 | Los Angeles Rams | Green Bay | 75.00 |
| 8 | 2025-10-18 | Denver Broncos | Seattle | 70.00 |

To a league manager, the above query results would be useful to evaluate sources of funding, find out what teams or locations encourage engagement, and determine which teams and matchups to advertise and sell broadcast rights to for national TV. Furthermore, the query can be used to help create the season schedule, set appropriate ticket prices, and tailor local marketing strategies in ways that maximize viewership.

4. Teams with stadium capacity above average- Shraeyas

```sql
SELECT team.team_name, stadium.stadium_name, stadium.capacity
FROM team
JOIN stadium
ON team.team_id = stadium.stadium_id
WHERE stadium.capacity >
( SELECT AVG(capacity)
FROM stadium );
```

| team_name | stadium_name | capacity |
|---|---|---|
| New England Patriots | AT&T Stadium | 80000 |
| Los Angeles Rams | Lambeau Field | 81441 |
| Pittsburgh Steelers | Arrowhead Stadium | 76416 |
| Philadelphia Eagles | Empower Field at Mile High | 76125 |

- The information from this query displays the team name, stadium name, and the stadium capacity of the stadium where the capacity of each stadium is greater than the average capacity of all the stadiums. This would be important to managers because they would be able to tell how to set the price of tickets depending on the amount of customers. Thinking even further, they can determine where to host the Super Bowl as the popularity of the stadium and/or game can also be determined from this information.

5. Players in teams with most wins- Zoe

```
select f_name, l_name, position, team_name
from players
join team
on players.team_id = team.team_id
where team.wins =
                (select max(wins)
                from team );
```

| f_name | l_name | position | team_name |
|---|---|---|---|
| Patrick | Mahomes | Quarterback | Kansas City Chiefs |
| Travis | Kelce | Tight End | Kansas City Chiefs |

This query retrieves the first name, last name, position, and team name of players who belong to the team with the most wins. This would be important for the NFL because it helps identify key players on the most successful team. Analysts and managers could use this information to study what makes the team successful, whether it be player performance, coaching strategies, or team composition. It could also be useful for marketing and promotional efforts because the league might want to highlight these top-performing players in advertising, media coverage, or award considerations.

6. Find players in a specific team- Ashleigh

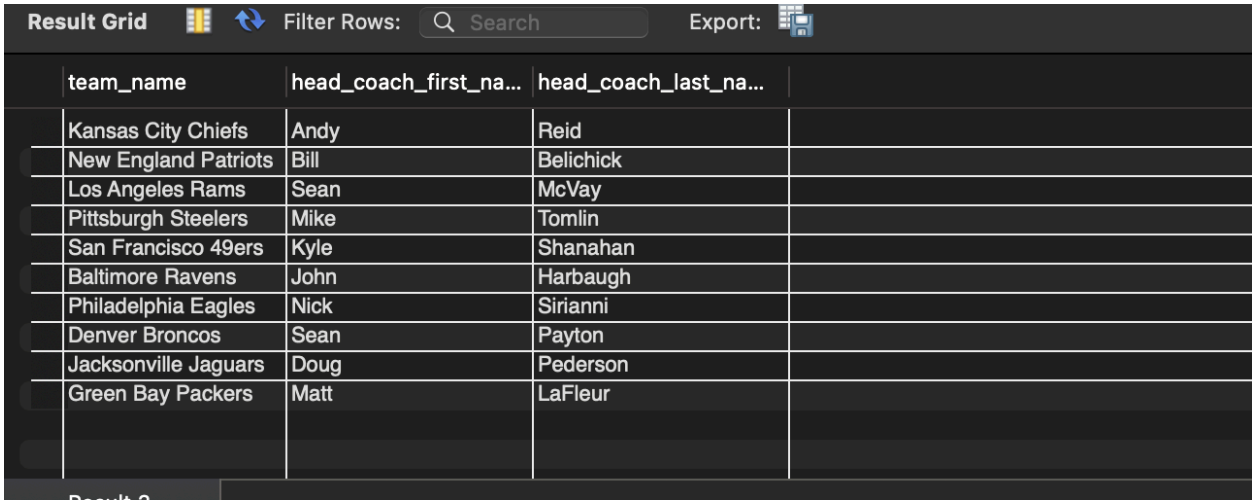
| f_name | l_name | position |
|---|---|---|
| Patrick | Mahomes | Quarterback |
| Travis | Kelce | Tight End |

```sql
SELECT f_name, l_name, position
FROM players
WHERE team_id = 1;
```

- This query selects the name and position of players from a specific team. You can adjust which team you are looking at by changing the team id number. Having the ability to quickly generate a list of players in a specific team can be very valuable to NFL managers. This is critical to roster management, helping managers decide which adjustments need to be made to rosters. This is also important for recruitment, teams can see which positions they need more players for as well as other teams can use this data for negotiations for potential trades.

7. Get head coach of each team- Palak

```sql
SELECT
    t.team_name,
    h.f_name AS head_coach_first_name,
    h.l_name AS head_coach_last_name
FROM
    team t
JOIN
    head_coach h ON t.coach_id = h.coach_id;
```




| team_name | head_coach_first_na... | head_coach_last_na... |
|---|---|---|
| Kansas City Chiefs | Andy | Reid |
| New England Patriots | Bill | Belichick |
| Los Angeles Rams | Sean | McVay |
| Pittsburgh Steelers | Mike | Tomlin |
| San Francisco 49ers | Kyle | Shanahan |
| Baltimore Ravens | John | Harbaugh |
| Philadelphia Eagles | Nick | Sirianni |
| Denver Broncos | Sean | Payton |
| Jacksonville Jaguars | Doug | Pederson |
| Green Bay Packers | Matt | LaFleur |

- This query finds the head coach for each team by connecting the team and head_coach tables using the coach_id. It shows the team name along with the coach's first and last name. This is useful for managers because it helps them quickly see who is leading each team. Knowing the head coach for every team makes it easier to track performance, make coaching decisions, and improve communication within the organization. It also helps in planning training, hiring new coaches, or making changes if needed.

8. Query 8 lists all players' names and their teams. -Daniel

```
13    SELECT players.f_name, players.l_name, team.team_name
14    FROM players
15    JOIN team ON players.team_id = team.team_id;
```

100% 46:15

Result Grid Filter Rows: Search Export:

| f_name | l_name | team_name |
|---|---|---|
| Patrick | Mahomes | Kansas City Chiefs |
| Travis | Kelce | Kansas City Chiefs |
| Mac | Jones | New England Patriots |
| Cooper | Kupp | Los Angeles Rams |
| T.J. | Watt | Pittsburgh Steelers |
| Deebo | Samuel | San Francisco 49ers |
| Lamar | Jackson | Baltimore Ravens |
| Jalen | Hurts | Philadelphia Eagles |
| Russell | Wilson | Denver Broncos |
| Aaron | Jones | Green Bay Packers |

This simple query provides all players' first and last names along with the team they play for. A league manager can use these findings to look up any player of interest and see which team they play for. Subsequently, the manager can create roster lists, conduct physical investigations or inspections at the desired team practice facility, manage trades and signings, track payroll, and connect performance metrics with a specific player and team.

9. List all games with stadium information- Shraeyas

```
20
21
22    SELECT game.game_id, game.date, game.score, stadium.stadium_name, stadium.city
23    FROM game
24    JOIN stadium ON game.stadium_id = stadium.stadium_id;
25
```

| game_id | date | score | stadium_name | city |
|---|---|---|---|---|
| 1 | 2025-09-10 | 35 | SoFi Stadium | Inglewood |
| 2 | 2025-09-15 | 21 | AT&T Stadium | Arlington |
| 3 | 2025-09-20 | 28 | Lambeau Field | Green Bay |
| 4 | 2025-09-25 | 24 | Arrowhead Stadium | Kansas City |
| 5 | 2025-10-01 | 31 | Raymond James Stadium | Tampa |
| 6 | 2025-10-05 | 27 | Levi's Stadium | Santa Clara |
| 7 | 2025-10-12 | 30 | Empower Field at Mile High | Denver |
| 8 | 2025-10-18 | 17 | CenturyLink Field | Seattle |
| 9 | 2025-10-25 | 22 | Mercedes-Benz Stadium | Atlanta |
| 10 | 2025-10-30 | 29 | M&T Bank Stadium | Baltimore |

- The information in this query displays the game ID, the date of the game, the score of the game, the stadium name, and the city the stadium is in. A manager can look at this data and determine where the higher scoring games took place. WIth this information, ticket prices can be adjusted and it can also show how much revenue/loss to expect in the future games based on the previous games.

10. Highest Revenue Games by Ticket Sales- Zoe

```
SELECT game.game_id, game.date, game.winning_team, stadium.city, total_revenue
FROM game
JOIN (
SELECT game_id, SUM(price) AS total_revenue
FROM tickets
GROUP BY game_id ) AS revenue ON game.game_id = revenue.game_id
JOIN stadium ON game.stadium_id = stadium.stadium_id
ORDER BY total_revenue DESC;
```

This query retrieves the game ID, date, winning team, stadium city, and total revenue generated from ticket sales for each game, ordering the results by total revenue in descending order. This would be important for the NFL because it helps identify the most profitable games, which could provide insights into factors that drive higher ticket sales. League officials, team owners, and marketers could use this information to analyze trends, such as which teams attract the most fans, which stadiums generate the most revenue, and which games are in the highest demand. This data could influence future scheduling decisions, ticket pricing strategies, and marketing efforts to maximize revenue. Additionally, it could help determine ideal locations for high-profile events like playoff games and the Super Bowl, ensuring the league maximizes profitability and fan engagement.

# Database Information
Put table here
Name of the database: ha_group4_crn71552