

Overview:

Our database idea is to create a relational database for the National Football League. Our database will be used to track the statistics, status, and biographical information of each player in the NFL. This tool will be useful for avid NFL fans, especially for fans who engage in Fantasy Football, a game played over the course of the football season where players create a team of players across the league, receiving points based on the performance of the players they select.

Purpose:

What makes our relational database unique from existing statistics repositories such as ESPN and football reference is that our database will allow for specific queries to be performed, which is not admissible on existing sites. For example, if I search “NFL players with at least 6 receiving touchdowns in 2022 season”, I will not receive a list of player names with the proper criteria, but rather a comprehensive data table of the receiving statistics for all NFL players, which can be sorted from least to greatest.

Design plan:

- There are 32 teams in the NFL, split into 8 divisions.
- Each team has a sub-team of players in Offense, Defense, and Special Teams.
 - It may be easier to only keep statistics and class data for each player on Offense (excluding offensive linemen), and have 32 “Defense/Special Teams” entities, where the general stats of the defense and special teams units as a whole are considered
- Within each sub-team, players are designated a primary position that determines the role they play during a game, as well as the types of statistics that are tracked for the player.
 - Potential challenge: not every player plays one specific position, may need to account for players who are emergency quarterbacks (Taysom Hill), or alternate between wide receiver and running back (i.e. Austin Ekler, Christian McCaffery)

- Some players have statistics that are not common for their position (McCaffery has some passing yards as a running back, Brady has receiving yards as a quarterback)
- Multiple players are named to a position on a team, so along with the super-class of “Wide Receiver,” “Quarterback”, “Tight End”, there is a hierarchy of players who are eligible to start at each position, referred to as “first, second ... string quarterback”
- We will record the statistical information for each player on Offense, such as their passing/receiving/rushing yards and touchdowns.
 - Additional information for each player could be added, such as each player’s biographical informational and NFL combine statistics
 - § Biographical information can include: hometown, DOB, age, years in NFL, year and team drafted, height, weight, number, injury status
 - § NFL combine statistics can include: 40 yard dash time, vertical leap height, broad jump distance
- Can include important information for each team as well
 - Offensive coordinator, Defensive coordinator, Head Coach, general manager
 - Team record
 - Latest year in playoffs

Entity/Relationship Outline:

Entities underlined; relationship italicized.

- Offensive, Defense, Specials Teams *play under* Franchises (NFL teams)
- Players *play* positions
 - Subclasses for positions entity (position specific stats):
 - § QB
 - § RB

§ WR

§ TE

§ Kicker

§ Defense/Special Teams

- Players play for Offense/Defense/Special teams
- Coordinators coordinate Offense/Defense/Special teams
- Head Coaches coach for Franchises

Entities:

- Franchise
 - Players
 - Player positions
 - Quarterback
 - Wide Receiver
 - Running back
 - Tight End
 - Kicker
 - Defense/Special Teams
 - Coaches
 - Coach Positions

Underlying design questions:

- Is it enough to include just in-game statistics and biographical information?
 - Would NFL combine statistics be excessive?
- Better to represent all players in the NFL, or just all players on Offense?
 - If all players, would it be better to just represent the players from one franchise?
 - a. Offense: QB, RB, WR, TE, OLM
 - b. Defense: Linebacker, Defensive back, DLM
 - c. Special: PK, Punter, special teams

- To what extent do we need to populate the database?

Web Front-end Option:

- Ability for user to query information about players “player who have X passing/rushing/receiving yards/TDs”
- Ability to compare the statistics/data sets for players, franchises
- Ability to select players to build mock-fantasy team (pick 1 QB, 2 RB, 3 WR, 1 TE, 1 Defense, 1 Kicker)

Contingency Plan Options:

- Make database for one NFL team (do not need to consider different franchises)
- Only track stats for 2022 NFL season
- Treat Defense and Special Teams players as one team-specific entity