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Question 3 Data Model

Table Models below break down each table, the columns for it, and the relationships and show how I would store the data. For this data model I would use a relational database, specifically, PostgreSQL. PostgreSQL technically isn't strictly a RDBMS, it allows for Arrays, which is a great feature here that would make our lives easier for storing information like players on a team and such.

Games

id: varchar(50) (Primary Key)
status: enum
reference: varchar(30)
number: int
scheduled: date
attendance: int
utc_offset: int
entry_mode: varchar(20)
weather: varchar(75)
clock: varchar(5)
quarter: enum
summaryId: varchar(50) (Foreign Key to Game Summary Table)
statisticsId: varchar(50) (Foreign Key to Statistics Table)

Game Summaries (Join Table)

Id: varchar(50) (Primary Key)
seasonId: varchar(50) (Foreign Key to Season Table)
weekId: varchar(50) (Foreign Key to Week Table)
venueId: varchar(50) (Foreign Key to Venue Table)
home_team_gameinfo_id: varchar(50) (Foreign Key to Team Game Info Table)
away_team_gameinfo_id: varchar(50) (Foreign Key to Team Game Info Table)

Team Game Infos

Id: varchar(50) (Primary Key)
Team_id: varchar (Foreign key to Teams Table)
Used_timeout: int
Remaing_timeouts: int
Points: int
Game_id: varchar(50) (Foreign Key back to Game Summary Table)

Teams
Id: varchar(50) (Primary Key)
Name: varchar(50)
Market: varchar(50)
Alias: varchar(50)
Owner: varchar(50)
Head_coach: varchar(50)
Home_Venue_Id: varchar(50) (Foreign Key to Venue Table)
Players: Array of varchar(50) where each is a Foreign Key to a player in the Players Table

Seasons:
Id: varchar(50) (Primary Key)
Year: int
Type: enum
Name: varchar(50)
Weeks: Array of varchar(50) where each is a Foreign Key to the weeks from that season

Weeks:
Id: varchar(50) (Primary Key)
Sequence: enum
Title: varchar(50)
Season_id: varhar(50) (Foreign Key to Season Table)

Venues
Id: varchar(50) (Primary Key)
Name: varchar(50)
City: varchar(50)
State: varchar(20)
Zip: varchar(5)
Address: varchar(50)
Capacity: int
Surface: enum
Roof_type: enum

Statistics
Id: varchar(50) (Primary Key)
Home_team_stat_id: varchar(50) (Foreign Key To Team Game Stat Table)
Away_team_stat_id: varchar(50) (Foreign Key To Team Game State Table)

Team Game Stats

Id: varchar(50) (Primary Key)
Team_id: varchar(50) (Foreign Key to Team table)
Team_Summary_id: varchar(50) (Foreign Key to Team Game Summary Table)
Rushing_game_team_stats: varchar(50) (Foreign Key to Rushing Game Team Stats Table)
Receiving_game__team_stats: varcahr(50) (Foreign Key to Receiving Game Team Stats Table)
…
(Similar Id's for each possible team stat)
…

Team Game Summaries

Id: varchar(50) (Primary Key)
Avg_gain: float
Safeties: int
Turnovers: int
Play_count: int
Rush_plays: int
Total_Yards: int
Fumbles: int
Lost_fumbles: int
Penalties: int
Penalty_yards: int
Return_yards: int

Rushing Game Team Stats

Id: varchar(50) (Primary Key)
Team_id: varchar(50) (Foreign Key to Team Table)
Game_id: varchar(50) (Foreign Key to Game Table)
Avg_yards: float
Attempts: int
Touchdowns: int
Tlost: int
Tlost_yards: int
Yards: int
Longest: int
Longest_TD: int
RedZone_attemps: int
Players: Array (PostGres allows for Arrays) containing Player_Game_Stat Ids which are Foreign Keys to Player Game Stats Table

Receiving Game Team Stats

Id: varchar(50) (Primary Key)
Team_id: varchar(50) (Foreign Key to Team Table)
Game_id: varchar(50) (Foreign Key to Game Table)
Targets: int
Receptions: int
Avg_yards: float
Yards: int
Touchdowns: int
Yards_After_catch: flaot
Longest: int
Longest_TD: int
RedZone_targets: int
Air_Yards: int
Players: Array (PostGres allows for Arrays) containing Player_Game_Stat Ids which are Foreign Keys to Player Game Stats Table

…

(Remaining possible stats are very similar and have similar Tables)

…

Player_Game_Stats

Id: varchar(50) (Primary Key)
Player_Id: varchar(50) (Foreign Key to Players Table)
Game_Id: varchar(50) (Foreign Key to Games Table)
Player_Game_Rushing_Stats_Id: varchar(50) (Foreign Key To Player Rushing Stats Table)
Player_Game_Receiving_Stats_Id: varchar(50) (Foreign Key to Player Receiving State Table)
…
(Similar Ids for all possible player stats)
…

Player Game Rushing Stats

Id: varchar(50) (Primary Key)
Player_Id: varchar(50) (Foreign Key to Players Table)
Game_Id: varchar(50) (Foreign Key to Games Table)
Avg_yards: float
Attempts: int
Touchdowns: int
Yards: int
Longest: int
Longest_touchdown: float
Redzone_attempts: int
Tlost: int
Tlost_yards: int

Player Game Receiving Stats

Id: varchar(50) (Primary Key)
Player_Id: varchar(50) (Foreign Key to Players Table)
Game_Id: varchar(50) (Foreign Key to Games Table)
Receptions: int
Targets: int
Yards: int
Yards_after_catch: int
Avg_yards: float
Touchdowns: int
Longest: int
Longest_touchdown: int
Redzone_targets: int
Air_yards: int

...

(Remaining possible Player Stats are very similar and have similar Tables)

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Players

Id: varchar(50) Primary Key
First_name: varchar(50)
Last_name: varchar(50)
Jersey: int
Reference: varchar(50)
Position: enum
College: varchar(50)
HomeTown: varchar(50)
Height: varchar(50)
Weight: varchar(50)
YearDrafted: enum
TeamId: varchar(50) (Foreign Key to Teams Table)