NFLite

CSE 111 - Final

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Football Analytics - Project Description

- Goal
  - A lightweight web application that organizes and lists football statistics for NFL teams, divisions, and players across games
  - Allows user to quickly pull data on any group/player and view trends
- Main Features
  - View team, division, player, game data
  - Perform quick/advanced searches on database with ease
  - See relationships among games, players, teams, and stats

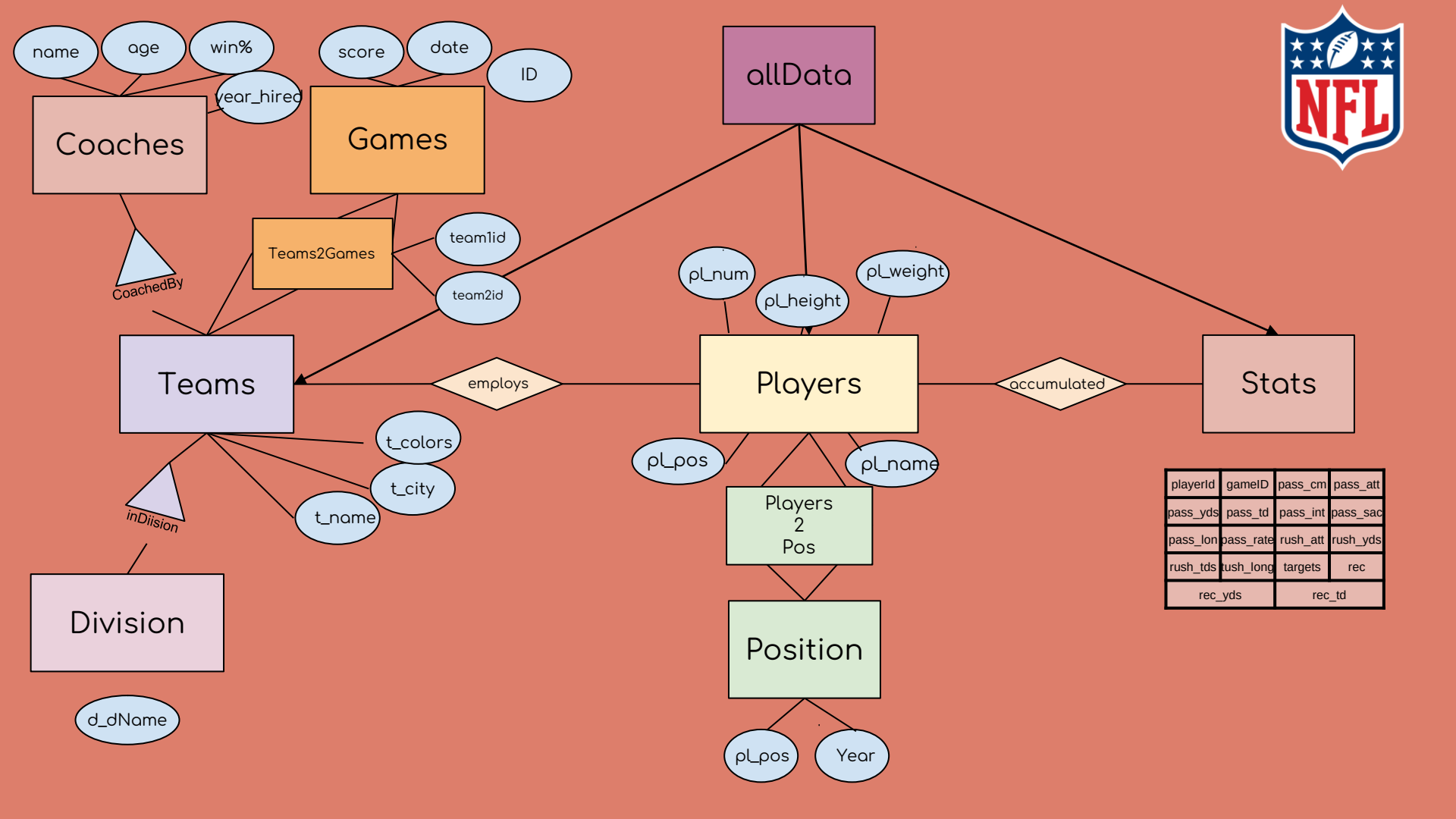
System Overview + Implementation Details

- **Web Application**
  - Built in Flask, Python, SQLAlchemy
  - Simple to use, both of us have familiarity
  - Wanted to keep it contained in Python
- **Database built in SQLite**
  - Handled through SQLAlchemy and traditional Python SQLite tools
    - Makes it significantly easier to implement queries
    - Better for diagnosing issues

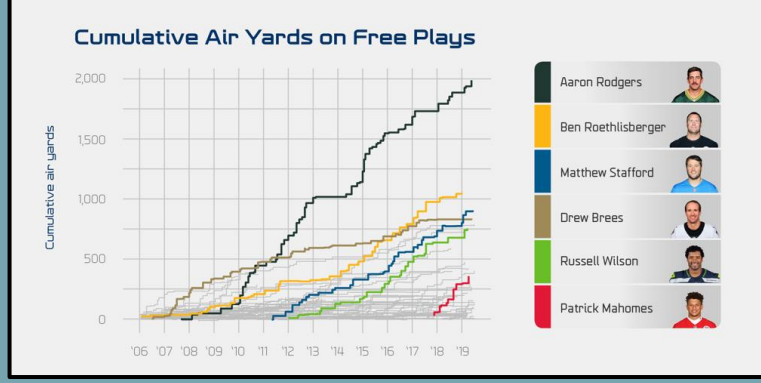
UML + System Diagram

Players	Coaches	Teams	Games	teams2Games
PlayerNum PlayerHeigh PlayerWeight PlayerPos PlayerName	CoachAge winPercentage	t_city t_TeamName TeamColors	home_score vis_score date	Team1 Team2 Score date

Divisions	Stats	Position	players2Pos	addData
d_dname	playerId gameID pass_cm pass_att pass_yds pass_td ….	Pos_ID Pos_name	PlayerName PosID	All Data


name
age
win%
year_hired
Coaches
score
date
ID
Games
allData
CoachedBy
Teams2Games
team1id
team2id
pl_num
pl_height
pl_weight
Teams
employs
Players
accumulated
Stats
t_colors
t_city
t_name
pl_pos
pl_name
inDiision
Players
2
Pos
Division
Position
d_dName
pl_pos
Year
playerId
gameID
pass_cm
pass_att
pass_yds
pass_td
pass_int
pass_sac
pass_lon
pass_rate
rush_att
rush_yds
rush_tds
rush_long
targets
rec
rec_yds
rec_td

Use-Cases



1. User wants to pull stats of a certain player
    a. User can scale the statistical information by years, seasons, or games
    b. User can compare to other players of same position or team
2. User wants to pull team stats
    a. Pull stats of entire team in an ordered list
    b. See stats of a team in a certain year/season or game
    c. Compare to other teams based on a condition
3. User can produce a list of active players for a given game/team
    a. Pull all stats of a team, player, or coach through games

Demo