# Lab 2 - Team-42

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**NFL Play Statistics Dataset (play-by-play dataset with participation)**
https://www.kaggle.com/toddsteussie/nfl-play-statistics-dataset-2004-to-present

**Data we have:**
1. Combine (combine participation from 19877 to present)
2. Draft (file concerning drafted players from 1977 to present)
3. Fumbles (player that was credited with fumbling the ball, indicator if overturned due to penalty)
4. Forced Fumbles (player that was credited as forcing another player to fumble the ball)
5. Game Participation (player-level game participation e.g. snap-count, by category: offense, defense, special teams)
6. Games (metadata about NFL game stats - season type, teams participating, location, distance traveled to game, final score, W/L)
7. Interceptions (player carrying ball after INT, including yards, def TD, boolean indicator on if INT was overturned)
8. Kick Returns (player participation and stats on kickoffs, punts, FG)
9. Kicks (player who kicked on a play.  Type of kick e.g. FG, P, kickoff.  Boolean on kick nullified by penalty)
10. Officials (official for each game and their role e.g. line judge, field judge, etc.)
11. Passes Defensed (player who defended a pass on the play)
12. Passers (player that was the passer on a pass play.  Includes pass plays that resulted in a sack)
13. Penalties (player credited with a penalty on the play.  Can have multiple players/penalties on a single play)
14. Players (List of players in the NFL.  Joins to combine, draft and team datasets, contains a unique identifier to identify the player)
15. Plays (List of all NFL plays.  Play description, category, players involved, game it occurred on)

16. QB Hits (identified player who hit the QB on a play)
17. Receivers (identify player targeted for a pass, whether or not they received it)
18. Rushers (identify player who carried the ball on a rushing play, along with associated statistics)
19. Sacks (player credited with a sack or half-sack on a play)
20. Tackles (player credit with a tackle on a play)

# *Platform:*

- Web Application (hosted on Django)

# *Programming Languages:*

- Python - via Django architecture

# Feature List (Questions of Interest):

***Important Features:***

1. Leaderboards - filterable by year, division, subdivision, team, overall NFL
   a. Teams
      i. Win/Loss
      ii. Points Scored
      iii. Passing
      iv. Rushing
      v. Receiving
      vi. Total Offense (passing + rushing + receiving)
      vii. Special Teams
      viii. Defense
         1. Sacks
         2. Interceptions
         3. Yards Allowed
         4. Points Allowed
   b. Individual (players)
      i. Passing
      ii. Rushing
         1. Handoffs
         2. Kick Returns

3. Punt Returns
   iii.   Receiving
   iv.   Total Offense (passing + rushing + receiving)
   v.   Defense
1. Tackles
2. Sacks
3. Interceptions
4. QB Hits
   vi.   Combine
  c.  Divisional Performance
     i.   AFC vs. NFC
1. East, West, North, South

***Implement if we have time, because it would be interesting to look at/need outside data:***

2. Correlating Individual Statistics to Wins/Losses
  a.  Plays Run
  b.  Game Time
  c.  Offense performance
  d.  Defensive Performance
  e.  Distance Traveled
  f.  Draft performance (players drafted in *x* round, etc.)
  g.  Combine performance (# players in top 10 of their position at combine)

3. Vegas betting lines vs. team performance