**Project Proposal**

Title: Data Visualization of NFL Week 1

Team Members:

* Justin Nolan
* Darell Johnson
* Nathan Roller
* Ruby Bhatia

Project Description/Outline:

This project will focus on analyzing and visualizing data from all NFL Week 1 games. By leveraging data visualization tools, we aim to extract key insights from game logs, such as team performance, scoring trends, and team comparisons. Our project will provide an interactive platform that allows users to explore different aspects of the data through filters, charts, and tables.

Research Questions:

1. How do teams perform offensively and defensively in NFL Week 1 games? -RB
   1. Breakdown of points scored, yards gained, and turnovers.
2. What are tendencies for teams in specific down and distance situations? - NR
3. How do team statistics correlate with winning outcomes in Week 1 games? -JN
4. What are the conversion rates for possession downs (Short, 3 yards or less) What tendencies did you identify? (Run vs Pass, air yards) - DJ

Datasets to be Used:

2024 Week 1 Data - [play\_by\_play\_2024.csv](https://github.com/rollernathan/Project_3_Team_8/blob/main/nroller/data/play_by_play_2024.csv)

Potentially: 2023 Data - [play\_by\_play\_2023.csv](https://github.com/rollernathan/Project_3_Team_8/blob/main/nroller/data/play_by_play_2023.csv)

Rough Breakdown of Tasks:

1. Data Collection and Database Setup:
   1. Collect game log data from trusted sources.
   2. Set up a MongoDB or SQL database to house the data.
2. Data Cleaning and Preprocessing:
   1. Clean and normalize the data to ensure it is ready for analysis.
3. Data Analysis and Visualization Development:
   1. Develop initial visualizations
   2. Implement interactive features using D3.js and other libraries.
4. Ethical Considerations and Documentation
5. Final Integration and Testing:
   1. Test for usability and fix any bugs.
   2. Deploy the visualizations and ensure user-driven interactions function correctly.