1. A description of your project.

This project acquires NFL competition data from <https://data.world/alice-c/nfl/workspace/file?filename=Matches-2012-2015.csv>. Then, it filters the database to get the 2013/14 season, retains the team names and their scores while removing other data, and adds in two columns for the winner and loser.

2. A discussion of the method or methods involved.

We used three ranking methods

1. Colley Matrix Method: The only statistics used by this algorithm are the number of wins and losses, and the number of games played for each team assuming no ties. The method takes the win-loss record of each team, assigns them a numerical rating based on who they beat (or lost to), and ranks them according to that rating.
2. Massey: The Massey Method is a least squares method that predicts the point spread in a competition.
3. PageRank: PageRank method takes a directed network of participating teams where all games are represented with directed links. When team A wins against team B, a directed link from B to A is formed. A win against a highly valued team contributes highly to the winner’s own evaluation.

3. Analysis of the results, including explanation of the differences, if any.

We used three different ranking algorithms to sort the NFL teams from the 2013-2014 season. The first of the three, the Colley Matrix Method, yielded results quite different from both the Massey and the PageRank algorithms/methods. The primary difference between these methods is the consideration of the points scored by each team during the games. We see that there is a strong linear correlation between the rankings from the Colley Matrix Method and the number of games won by the team. On the other hand, the Massey Method – considering points scored – has a weaker correlation between the number of games won and the ranking in the league and is more strongly influenced by the points themselves. Strangely, the Google Page Rank Algorithm, while not considering the number of points scored, ranks teams in a very similar manner to that of the Massey Matrix Method. This phenomenon could be due to the Markov Chains utilized by the Page Rank Algorithm and its’ utilization of probabilities.