Blackwell Banneker Data Science Test

You are approached by the commissioner of the NBA, Adam Silver. Motivated by the growing international appeal of Basketball, the NBA have been re-evaluating the process through which the NBA champion is crowned each year, and would like to move to a setting in which teams across conferences play each other during the Playoffs. The NBA is comprised of two conferences, the Eastern and the Western conference. During the season, teams within and across conferences play each other, for a total of 83 +/- 1 game per season per team. Team records at the end of the season are used to select 8 teams from each conference that will compete in the Playoffs, and to rank/seed teams within a conference from the first seed to the eighth seed. The respective champions of the Eastern and Western conference Playoffs face each other in the NBA finals.

Rather than separating teams into Eastern and Western conference Playoffs, the NBA would like to divide the 16 top teams across the league into two pools of 8 teams that may contain teams from both conferences. The winner of each pool would then face off in the finals. The commissioner of the NBA would like you to:

1. Devise a static ranking algorithm that uses data from team matchups across the season to rank all NBA teams at the end of the season.
2. Devise a dynamic ranking algorithm that uses the same data to track the relative position of the teams after each game across the season. The motivation behind this algorithm is the NBA's desire to reward teams that improve throughout the season.
3. Divide the top 16 teams into two pools of 8 teams each, and propose first-round match-ups in each pool.

Deliverables

1. A Python script whose input is the year in which a given NBA season begins, and its output the data set of all the games and the final scores for that season organized in a schema of your choice.
2. A Python script whose input is the data set from Step 1. stored in a method of your choice (e.g. a `csv` or `json` file) and its output a static ranking of NBA teams at the end of a given season.
3. A Python script whose input is the data set from Step 1. stored in a method of your choice (e.g. a `csv` or `json` file) and its output a dynamic ranking of NBA teams at the end of a given season.
4. A short document that (a) describes your choice of schema from Step 1., (b) your algorithms from Steps 2. and 3., (c) specifies how to run your code, (d) specifies your proposed first-round match-ups, and (e) how many hours you spent on the Test.

Submission and Assessment

We ask that you add `blackwellbanneker` as a collaborator on a `git` repository you create with the contents from your solution to the test. We will use the following criteria to assess your performance on this Data Science test. In addition, these criteria will form the basis of phone or in-person interviews with Blackwell Banneker.

1. Choice of schema to store the NBA data set.
2. Choice and design of the algorithms for static and dynamic ranking.
3. Readability, reusability and proper testing of code.
4. Readability and organization of your submission.