Assignment 4: Becoming an Independent Data Scientist Example Solution

1   Region and Domain

State the region and the domain category that your data sets are about.

Ann Arbor, Michigan, United States
Sports and Athletics

2   Research Question

You must state a question about the domain category and region that you identified as being interesting.

How have the win percentages for the four major Detroit sports teams (The Detroit Pistons, The Red Wings, The Detroit Tigers, and The Detroit Lions) change over the last forty years?
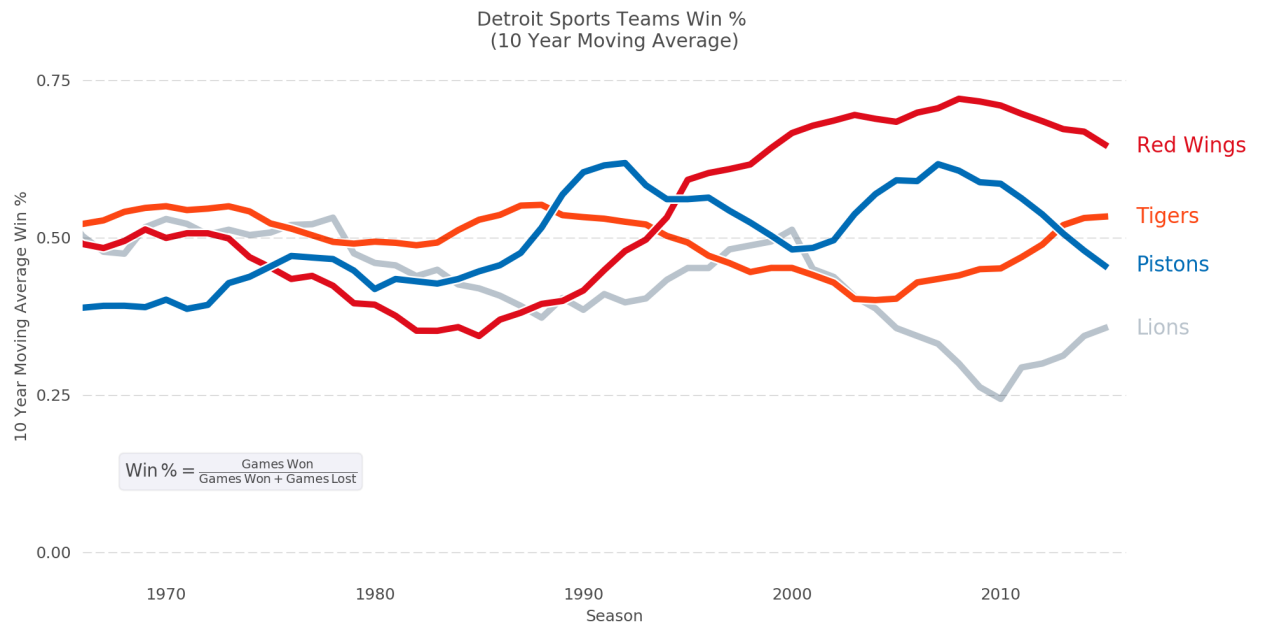
3   Links

You must provide at least two links to publicly accessible datasets. These could be links to files such as CSV or Excel files, or links to websites which might have data in tabular form, such as Wikipedia pages.

- https://en.wikipedia.org/wiki/List_of_Detroit_Pistons_seasons
- https://en.wikipedia.org/wiki/List_of_Detroit_Red_Wings_seasons
- https://en.wikipedia.org/wiki/List_of_Detroit_Tigers_seasons
- https://en.wikipedia.org/wiki/List_of_Detroit_Lions_seasons

4 Image

You must upload an image which addresses the research question you stated. In addition to addressing the question, this visual should follow Cairo's principles of truthfulness, functionality, beauty, and insightfulness.

Detroit Sports Teams Win %
(10 Year Moving Average)

$$\text{Win \%} = \frac{\text{Games Won}}{\text{Games Won} + \text{Games Lost}}$$

5 Discussion

You must contribute a short (1-2 paragraph) written justification of how your visualization addresses your stated research question.

This visualization was concerned with answering the question of how the win percentages of the four major Detroit sports teams (The Detroit Pistons, The Red Wings, The Detroit Tigers, and The Detroit Lions) have changed over the last 40 years. Wikipedia was scraped for data concerning wins and losses by season for each team. Any tie games were dropped from the analysis in order to provide a more level comparison between the sports. A 10 year moving average was plotted to help the reader identify any major trends in the team's win percentages.

The plot indicates years of high win percentage for The Detroit Pistons around 1990 and 2005, with periods of decline following both high points. The Detroit Red Wings' win percentage shows an increase in the 1990's and stays high through the early 2000's, with a downward trend in recent years. The Detroit Tiger's win percentage shows less variation than the other teams, hovering around 50%, with it's lowest win percentage in the early 2000's. The win percentage of the Detroit Lions shows low levels throughout the early 2000's, with an increase after 2010.