Team members: Tiffany Chen, Simon Gee, Hsu-Sheng (Johnson) Ko, Peter Leung, Susan Shang

**DATA SOURCES**

* **2017-2021 game results** <https://www.basketball-reference.com/leagues/NBA_2022.html>
* **Preseason Win Totals** <https://www.basketball-reference.com/leagues/NBA_2021_preseason_odds.html>
* **Historical Betting Odds**

<https://www.sportsbookreviewsonline.com/scoresoddsarchives/nba/nbaoddsarchives.htm?fbclid=IwAR3HlkEsMaXI3jRK-1fhNEj19DTD4h-wwKhh-UBYp3cZZG4jfsPsJth6Q7w>

* **Odds Shark (Used for Data Errors in Sports Book Reviews Online)**

<https://www.oddsshark.com/nba>

* **True NBA home- and road-court performance (Used for Home Court Advantage)**

https://www.vsin.com/true-nba-home--and-road-court-performance/

**Data Preparation**

* Code used to prepare game results and odds data can be found in:
  + Parse Odds Files.ipynb
  + merge season data.ipynb
  + calc\_win\_probs\_from\_odds.ipynb

**Data**

* Game and Preseason Data folder contains the game data we retrieved from Basketball Reference as well as the preseason odds
* Odds\_original\_csv folder contains the raw historical betting odds
* Odds\_parsed\_csv folder contains the historical betting odds after it is cleaned and run through Parse Odds Files.ipynb

**EDA**

* Code used to generate EDA plots:
  + Exploratory Data Analysis.ipynb
* EDA plots from Python
  + EDA.docx
* EDA Spreadsheets and Data
  + In folder Called EDA Spreadsheets and Data
  + Contains CSV for data outputted from Exploratory Data Analysis.ipynb
  + Contains XLSX for the charts created from the CSV files used in presentation
  + Spreadsheets are separated by year and contain information on the difference in wins from expected wins (ex.1718diffinwins.xlsx, diff\_in\_wins.xlsx, etc.), preseason odds to probabilities conversion (ex. 1718odds.xlsx), and average points scored per team per year (ex. 1718points.xlsx)

**ELO Model**

* Code used build and run the ELO model:
  + Elo Ratings.ipynb
  + Requires the following files in the same directory as the notebook:
    - 2017-18\_odds\_parsed.csv
    - 2018-19\_odds\_parsed.csv
    - 2020-21\_odds\_parsed.csv
    - preseason odds 2017-18.csv
    - preseason odds 2018-19.csv
    - preseason odds 2020-21.csv
* Results of betting with the ELO model:
  + nba\_betting\_2017-18.csv
  + nba\_betting\_2018-19.csv
  + nba\_betting\_2020-21.csv
* Preseason ELO rankings:
  + preseason\_elo\_2017-18.csv
  + preseason\_elo\_2018-19.csv
  + preseason\_elo\_2020-21.csv

**SRS Model**

* SRS Initial team ratings can be found in Seasons → Preseason Team Ratings
* Result of the static SRS model for 2020-2021
  + 2020-21\_static\_srs.xlsx
* Code used to build the rolling SRS model:
  + rolling\_srs.ipynb
* Results of therolling SRS model for each season are included in separate excel files
  + 2017-18\_rolling\_srs.xlsx
  + 2018-19\_rolling\_srs.xlsx
  + 2020-21\_rolling\_srs.xlsx

**Final Presentation**

* Our final presentation is presented in pdf version:
  + Final Presentation.pdf