## **Tools Used**

* **Software**: Jupyter Notebook
* **Python Packages**:
  + **Pandas**: For data manipulation and analysis.
  + **Matplotlib**: For data visualization (bar charts, pie charts).

## **Objectives Completed**

1. Find top 5 highest scorers
2. Find what teams attempted the most and least free throws per game
3. Find the top 5 players who had the most statistical impact on defense (BLks+STLs)
4. Find top 5 players who had the most point production (ASTs+PTSs)
5. Find the age distribution of all players (2023)

## **Insights Discovered**

* **Free Throw Attempts**: Teams with the most aggressive playing styles (driving to the basket) were found to have more free throw attempts, while others focused on outside shooting.
* **Defensive Standouts**: The players excelling in steals and blocks were pinpointed, revealing the most impactful defensive players.
* **Player Contributions**: By looking at assists + points, we identified well-rounded players who contribute significantly in both scoring and playmaking.
* **Age Distribution**: The NBA is predominantly made up of younger players, with a sizable portion in the 22-27 and 28-32 age ranges. Older players (37+) form a small group, showing that the NBA is a league focused on youth and athleticism.

## **Recommendations**

* **For Teams**: Consider investing in youth development, as the majority of impactful players are between 22-32 years old. Teams in need of a playmaker or defensive boost should target players with high assists + points and steals + blocks metrics.
* **For Scouting**: Focus on identifying players who contribute on defense and offensive.
* **For Improving Team Strategy**: Teams should assess their free throw attempts and 3-point attempts. Teams with fewer free throws may need to adopt a more aggressive style of play or work on drawing fouls in the paint.

## **Future Work**

* **Look into Contribution to Team**: Further analysis of how various stats affect overall player performance could provide insights into the factors that contribute to success.
* **Team Strategy and Efficiency**: Investigating the relationship between team metrics and overall team success.