# **Group Project Plan: NBA Player Stats Analysis**

# 1. Team Designations

• Team Lead: Ruilong Chen

- Coders:
  - Lejun Shen
  - Xian Wu
  - Zirui Chen
  - Ziqi Guo
  - Feiran Zhang

# 2. Data Set

• Selected Dataset: NBA Player Stats (as of March 7, 2025)

• Source: NBA 2025

• Data File: nba 2025-03-07.csv

• Data Dictionary: nba\_codebook.xlsx

# 3. Coding Elements and Responsibilities

Each coder is responsible for summarizing different aspects of the dataset. Below are the assigned tasks:

# 1. Overall Player Rankings & Performance Metrics (Ruilong Chen)

- Summarize the top-ranked players based on points per 36 minutes.
- Compare different positions (e.g., guards vs. forwards vs. centers) based on performance.

## 2. Shooting Efficiency Analysis (member 1)

- Examine field goal percentage, three-point percentage, and effective field goal percentage.
- Identify trends in shooting efficiency among different player positions.

### 3. Rebounding and Defensive Performance (member 2)

- Analyze total rebounds, offensive rebounds, and defensive rebounds.
- Compare defensive contributions using blocks and steals.

### 4. Playmaking & Turnovers (member 3)

- Evaluate assists per 36 minutes.
- Analyze turnover rates and their correlation with assists.

## 5. Foul & Free Throw Analysis (member 4)

- Assess the free throw percentage and attempts per player.
- Study the impact of personal fouls on player efficiency.

## 6. Comparing Team Contributions (member 5)

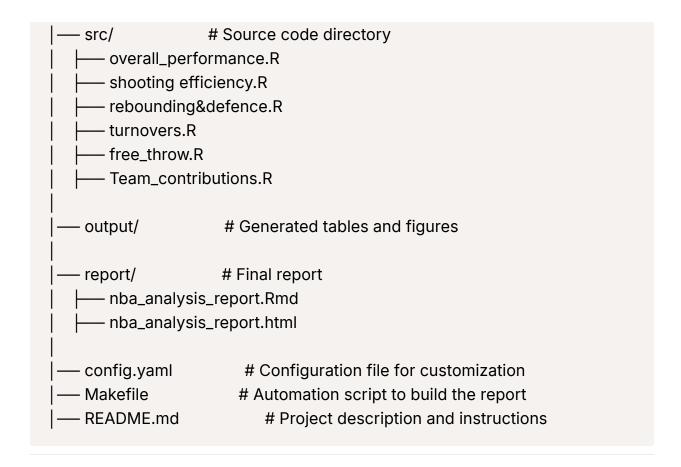
- Group players by team and analyze each team's statistical strengths.
- Identify teams with the highest-scoring or best-defensive players.

# 7. Report Compilation & Automation (Ruilong Chen)

- Compile all outputs into a final report.
- Ensure the report is generated automatically with the make command.

# 4. Project Organizational Structure

The project will be structured as follows:



# 5. Customization Elements

The project will be parameterized to allow users to customize their reports:

- The project will include a **config file** that allows customization of:
  - Player positions to focus on (e.g., guards, forwards, centers)
  - Time range for filtering player statistics (e.g., different dataset, age range)
  - Specific metrics to highlight in visualizations

# • Implementation:

- A config.yaml file will store user preferences.
- R scripts will read parameters from config.yaml to adjust analysis dynamically.
- The report will be regenerated automatically using make when parameters are changed.

# **6. Group Ground Rules**

To ensure smooth collaboration, our team agrees to the following ground rules:

### 1. Respect and Communication:

- All team members will respect each other's ideas and contributions.
- Weekly check-ins via WeChat to discuss progress and roadblocks.

#### 2. Code Submission and Review:

- All coders will submit their scripts at least one week before the final deadline.
- Pull requests should include meaningful descriptions.
- Code should be reviewed by at least one other member before merging.

#### 3. Version Control and Repository Management:

- The project will be managed on GitHub.
- The team lead (Ruilong Chen) will handle merges and resolve conflicts.
- Each coder will create branches for their tasks and submit pull requests.

#### 4. Final Report Compilation:

- The team lead is responsible for integrating all code outputs into the final report.
- All members will review the final report before submission.