

Project Title:

**Complex Engineering Activity (CEA)**

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# Dataset

**Baseball(Bigquery-public-data.baseball)**

# Dataset Overview:

This public data includes pitch-by-pitch data for Major League Baseball (MLB) games in 2016. This dataset contains the following tables: games\_wide (every pitch, steal, or lineup event for each at bat in the 2016 regular season), games\_post\_wide(every pitch, steal, or lineup event for each at-bat in the 2016 post season), and schedules ( the schedule for every team in the regular season). The schemas for the games\_wide and games\_post\_wide tables are identical. With this data we can effectively replay a game and rebuild basic statistics for players and teams.

# Dataset Information:

* **Dataset ID:** bigquery-public-data.baseball
* **Created:** Oct 18, 2016, 10:08:24 PM UTC+5
* **Default table expiration:** Never
* **Last modified:** Sep 20, 2022, 12:42:20 PM UTC+5
* **Data location:** US
* **Update frequency**: Historic (none)
* **Dataset source:** SportRadar
* **Default rounding mode**: ROUNDING\_MODE\_UNSPECIFIED
* **Case insensitive**: false

# Dataset Structure:

This dataset has organized into three tables:

* + **games\_post\_wide.**
  + **games\_wide.**
  + **schedules.**
* **Tables Features:**

1. **Games\_post\_wide:**

* **Table ID:** bigquery-public-data.baseball.games\_post\_wide
* **Primary Key:** gameid
* **Foreign Key:** gameid+seasonid
* **Number of rows:** 8,676
* **Total logical bytes:** 20.53 MB
* **Total physical bytes**: 338.76 KB

1. **Games\_wide:**
   * + **Table ID**: bigquery-public-data.baseball.games\_wide
     + **Primary key:** gameid
     + **Foreign key**: gameid+seasoned
     + **Number of rows:** 761,618
     + **Total logical bytes:** 1.76 GB
     + **Total physical bytes:** 32.22 MB
2. **Schedules:**
   * **Table ID** : bigquery-public-data.baseball.schedules
   * **Primary key:** gameid
   * **Foreign key:** homeTeamid+awayTeamid
   * **Number of rows:** 2,431
   * **Total logical bytes**: 569.15 KB
   * **Total physical bytes:** 80 KB

* **Questions Regarding BigQuery Dataset:**

Exploring a baseball dataset in BigQuery and applying machine learning involves asking questions that uncover insights about player performance, team dynamics, and game outcomes.

**Player Performance:**

* Which players had the highest batting average in the 2016 season?
* What is the distribution of home runs hit by players?
* Are there correlations between player statistics (e.g., batting average, on-base percentage)?

**Team Performance:**

* Which teams had the best win-loss records during the regular season?
* Is there a correlation between team statistics and overall success?

**Game Dynamics:**

* What is the average duration of a baseball game?
* How do day/night games compare in terms of scores and durations?
* Are there particular innings where more runs are scored?

**Temporal Analysis:**

* Analyze performance trends over the course of the season.
* Identify any patterns or anomalies in player or team performance over time.

# References

1. https://console.cloud.google.com/bigquery?p=bigquery-public-data&d=baseball&page=dataset&project=invertible-now-398616&ws=!1m13!1m3!3m2!1sbigquery-public-data!2sbaseball!1m4!4m3!1sbigquery-public-data!2sbaseball!3sgames\_post\_wide!1m3!3m2!1sbigquery-public-data!2saustin\_bikeshare