Introduction

In this project, we investigate the public dataset, ncaa_basketball, by applying fundamental SQL commands in Big Query of the Google Cloud Platform (GCP) to explore the glory of Duke MBB.

There are many tables in this dataset, and we would like to use the "mbb_players_games_sr" to help us understand Duke players' average point per game (PPG). There are four steps to achieve this target, which are listed in the next section.

Implementation

Step 1: calculate a Duke player's total scored points in his college career with below command:

```
(
select mb.full_name, count(mb.game_id) as player_game_played
from `bigquery-public-data.ncaa_basketball.mbb_players_games_sr` mb
where mb.played = true and mb.team_market = "Duke"
group by mb.full_name
order by player_game_played desc
) mb1
```

Step 2: calculate a Duke player's total attended games in his college career with below command:

```
(
select mb.full_name, sum(mb.points) as player_total_points
from `bigquery-public-data.ncaa_basketball.mbb_players_games_sr` mb
where mb.played = true and mb.team_market = "Duke"
group by mb.full_name
order by player_total_points desc
) mb1
```

Step 3: join the two tables above based on player's name with below command:

```
(
select mb1.full_name, mb1.player_game_played, mb2.player_total_points
```

```
    from (
        ...
    ) mb1
    join (
        ...
    ) mb2
    on mb1.full_name = mb2.full_name
    ) mb3
```

Step 4: calculate the average point per game of each Duke player with below command:
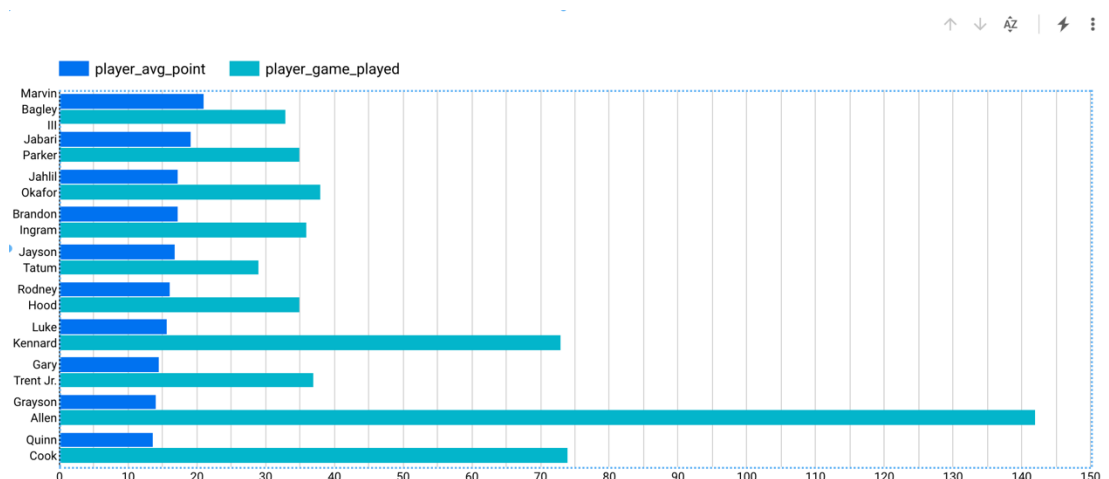
```
select mb3.full_name,
round(mb3.player_total_points/mb3.player_game_played,1) as player_avg_point
from (
    ...
) mb3
order by player_avg_point desc;
```

Summary

The partial result of the SQL query, the players with higher average PPG, is displayed as the below screenshots. We can find out that many of them turn out entering NBA, and some even become all-stars; Most of these talented players tend to play only one year of college basketball, about 35 games, and then they join NBA draft; Only Luke Kennard, Quinn Cook, and Grayson Allen played more than one season, and the last one even completed the his college degree, which is rare for NBA players.

Appendix

Complete SQL command:

```sql
select mb3.full_name,
round(mb3.player_total_points/mb3.player_game_played,1) as player_avg_point
from (
    select mb1.full_name, mb1.player_game_played, mb2.player_total_points
    from (
        select mb.full_name, count(mb.game_id) as player_game_played
        from `bigquery-public-data.ncaa_basketball.mbb_players_games_sr` mb
        where mb.played = true and mb.team_market = "Duke"
        group by mb.full_name
        order by player_game_played desc
        ) mb1
    join (
        select mb.full_name, sum(mb.points) as player_total_points
        from `bigquery-public-data.ncaa_basketball.mbb_players_games_sr` mb
        where mb.played = true and mb.team_market = "Duke"
        group by mb.full_name
        order by player_total_points desc
        ) mb2
    on mb1.full_name = mb2.full_name
) mb3
order by player_avg_point desc;
```