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CS195  
Project #1  
October 22, 2022  
NBA database

i) The dataset chosen for this project was a set for NBA data. This data is on players, teams and games from 1946 to 2021. I chose this data set because I know NBA information and am well versed in the data and types of queries one would want.

ii) This dataset was from kaggle, <https://www.kaggle.com/datasets/wyattowalsh/basketball>

### Which Official has officiated the most games?

```
select count(official_ID) as games_officiated, First_Name, last_name as ct FROM  
Game_Officials GROUP BY OFFICIAL_ID ORDER BY games_officiated DESC
```

	games_officiated	FIRST_NAME	ct
1	1150	Marc	Davis
2	1147	Scott	Foster
3	1135	Tom	Washington
4	1123	Zach	Zarba
5	1120	Tony	Brothers
6	1117	Ed	Malloy
7	1108	Derrick	Collins
8	1103	Ken	Mauer
9	1102	Courtney	Kirkland
10	1097	Michael	Smith
11	1084	Leon	Wood
12	1082	James	Capers

If you need to choose officials to officiate the championship game(a very important game) you can use this query to figure out who the most experienced ones are.

**List the players that have been in the NBA for the most years from most to least**

```
select DISPLAY_FIRST_LAST, (To_year - FROM_year) as years_played FROM  
Player_attributes ORDER BY years_played DESC
```

	DISPLAY_FIRST_LAST	years_played
1	Ernie Barrett	55
2	Andrew Gaze	24
3	Kevin Willis	22
4	Vince Carter	21
5	Mark Jones	21
6	Kevin Garnett	20
7	Dirk Nowitzki	20
8	Robert Parish	20
9	Kareem Abdul-Jabbar	19
10	Kobe Bryant	19
11	Bob Cousy	19
12	Jamal Crawford	19

If you want to know who the oldest players in the NBA are, this would be a perfect queue. You could want this for various reasons. If you want to see what players are able to stay in shape and fit for a long time and want to learn their secrets. In addition you could see who will be retiring soon.

**Which 3 teams have won the most home games, and how many games? Provide the official team name and count of home games won.**

```
SELECT team.full_name, count(WL_HOME = "W") as ct FROM game INNER JOIN team ON team.id = game.team_id_Home WHERE WL_HOME = "W" GROUP BY TEAM_ID_HOME order by ct DESC LIMIT 3
```

	full_name	ct
1	Boston Celtics	2092
2	Los Angeles Lakers	2077
3	Philadelphia 76ers	1858

If you want to know the most dominant home teams this query would help. If you wanted to know top team rivalries or top teams overall this would help. For news headlines of stats this could be helpful.

**How many games have the Boston Celtics Won?**

```
SELECT team_name_home, (ct_home+ct_away) as Wins FROM  
(SELECT team_name_Home, count(WL_HOME = "W") as ct_home FROM game WHERE  
WL_HOME = "W" AND HOME_TEAM_ID = "1610612738" GROUP BY TEAM_ID_HOME)  
JOIN  
(SELECT count(WL_HOME = "L") as ct_away FROM game WHERE WL_HOME = "L" AND  
TEAM_ID_AWAY = "1610612738" GROUP BY TEAM_ID_AWAY);
```

	team_name_Home	Wins
1	Boston Celtics	3465

If you want to know how many wins a specific team has this query would help. In this case the team the boston celtics are being looked up.

### Display the points, assists and rebounds averaged by all number 1 draft picks

SELECT DISPLAY\_FIRST\_LAST, PTS, AST, REB FROM player\_attributes INNER JOIN draft  
ON draft.idPlayer = player\_attributes.ID WHERE Draft\_Number = "1" group by  
DISPLAY\_FIRST\_LAST order by PTS DESC

	DISPLAY_FIRST_LAST	PTS	AST	REB
65	Greg Oden	8.0	0.5	6.2
66	Kwame Brown	6.6	0.9	5.5
67	Dwight Howard	6.6	0.8	8.2
68	Larue Martin	5.3	0.7	4.6
69	Mark Workman	4.9	0.6	2.9
70	Anthony Bennett	4.4	0.5	3.1

This query is good to see if top number 1 picks were worth the choice. Does the person perform up the caliber of a number 1 pick or were they a bust. Teams can use this information to help in future draft picks.

### What Team Won the most away games in 2005

```
select TEAM_NAME_HOME, count(WL_HOME = "W") as ct FROM game WHERE WL_HOME = "W" AND GAME_DATE LIKE "%2005%" GROUP BY TEAM_ID_HOME ORDER BY ct DESC LIMIT 1
```

	TEAM_NAME_HOME	ct
1	Miami Heat	41

This query could help for more specific research into how a specific team performed during a specific year. Further research could then be taken based on this query such as who was the coach, did they do well?

### Who is the highest paid player from each year?

```
SELECT slugSeason, nameTeam, namePlayer, max(value) FROM player_salary WHERE typeContractDetail = "Guaranteed" GROUP BY slugSeason ORDER BY slugSeason DESC
```

	slugSeason	nameTeam	namePlayer	max(value)
1	2024-25	Milwaukee Bucks	Giannis Antetokounmpo	48787676.0
2	2023-24	Milwaukee Bucks	Giannis Antetokounmpo	45640676.0
3	2022-23	Los Angeles Lakers	LeBron James	44474988.0
4	2021-22	Golden State Warriors	Stephen Curry	45780966.0
5	2020-21	Golden State Warriors	Stephen Curry	43006362.0

If you wanted to know who the top paid players are this would help. If you want to know the most valued players to a team this would help as well as who the top players are in the league.

### Compare teams salaries with the salaries of their highest paid player

```
SELECT team_salary.nameTeam, SUM("X2020-21" + "X2021-22" + "X2022-23" + "X2023-24")
as team_total_salary, max(value),namePlayer FROM team_salary INNER JOIN player_salary
ON player_salary.nameTeam = team_salary.nameTeam GROUP BY team_salary.nameTeam
ORDER BY team_total_salary DESC
```

	nameTeam	team_total_salary	max(value)	namePlayer
1	Milwaukee Bucks	23064312695.0	48787676.0	Giannis Antetokounmpo
2	Utah Jazz	22723296048.0	43827586.0	Rudy Gobert
3	Boston Celtics	21931777608.0	37653300.0	Kemba Walker
4	Philadelphia 76ers	21261839625.0	40338144.0	Ben Simmons
5	Golden State Warriors	19630005330.0	45780966.0	Stephen Curry
6	Brooklyn Nets	19453477142.0	47366760.0	James Harden
7	Minnesota Timberwolves	17749712168.0	36016200.0	KarlAnthony Towns
8	Los Angeles Lakers	16433887314.0	44474988.0	LeBron James
9	Portland Trail Blazers	16019137087.0	48787676.0	Damian Lillard

This query can show you how valuable each teams most valuable player is to them by how much cap space and money they use on them

### How many games were played each year?

```
Select SEASON, count(SEASON) as ct from game GROUP BY SEASON ORDER BY ct DESC
```

	SEASON	ct
1	2013	1286
2	2017	1234
3	2016	1231
4	2007	1231
5	2018	1230
6	2015	1230
7	2014	1230
8	2010	1230
9	2009	1230

This query can show the popularity of the NBA through the years by how many games were played. As well as how the structure of the NBA works by how many games are played. As you can see the number of games played has increased over the years.

### How many top 10 draft picks has each team gotten

```
SELECT nameTeam, count(numberPickOverall < 10) as ct FROM draft WHERE
numberPickOverall < 10 GROUP BY idTEam ORDER BY ct DESC
```

	nameTeam	ct
1	Sacramento Kings	109
2	New York Knicks	95
3	Golden State Warriors	93
4	Los Angeles Lakers	92
5	Boston Celtics	91
6	Atlanta Hawks	87
7	Philadelphia 76ers	81
8	Detroit Pistons	80
9	Baltimore Bullets	48

This query shows which teams have gotten the most favorable draft picks. As you can see see the Kings have gotten the most top ten picks but have clearly used them poorly as they have consistently been a bottom tier team.