Abstract: My database is going to be based on the NBA. I am going to have a players table that will contain some of my favorite players to ever play each position.. Each player will have certain information about them like what team they played for when they were at their best, their jersey number at the time, what year they entered the league, and more. This will allow you to find certain groups of players based on whatever you are searching for and maybe even help you decide who you think is the best player of the bunch.

Business Rules:

1. Players should be assigned to one and only one position, but a position can be played by many players.
2. Players can have zero to many championship wins.
3. Every player can only be on one team at a time, but a team can have many different players.
4. A player should have one and only one jersey number at a time, but a certain jersey number can be used by many different players.
5. A player should have one and only one year that they entered the league, but a certain year can be assigned to many different players.

Queries:

1. List all the players that played center for the Los Angeles Lakers.
2. Which player has won the most championships?
3. List all the players with the jersey number 23.
4. Which player averaged the most points per game?
5. List the players in chronological order starting with the most recent to enter the league.

player (**playerID,** *teamID, *positionID, playerName**,** jerseyNum, entryYear, championshipWins, totalMVPAwards)

team (**teamID,** teamName, teamLocation)

position (**positionID,** positionName)

physicals (**physicalsID, ***playerID, *postionID, height, weight, wingspan)

stats (**statsID, ***playerID, careerPPG, careerRPG, careerAPG, careerSPG, careerBPG, careerTPG)

player

playerID	*teamID	*positionID	firstName	lastName	jerseyNum	entryYear	championshipWins	totalMVPAwards	dateModified
1	101	502	Michael	Jordan	23	1984	6	11	NULL
2	102	503	LeBron	James	23	2003	4	8	12-12-2023

team

teamID	teamName	teamLocation
101	Bulls	Chicago
102	Cavs	Cleveland

position

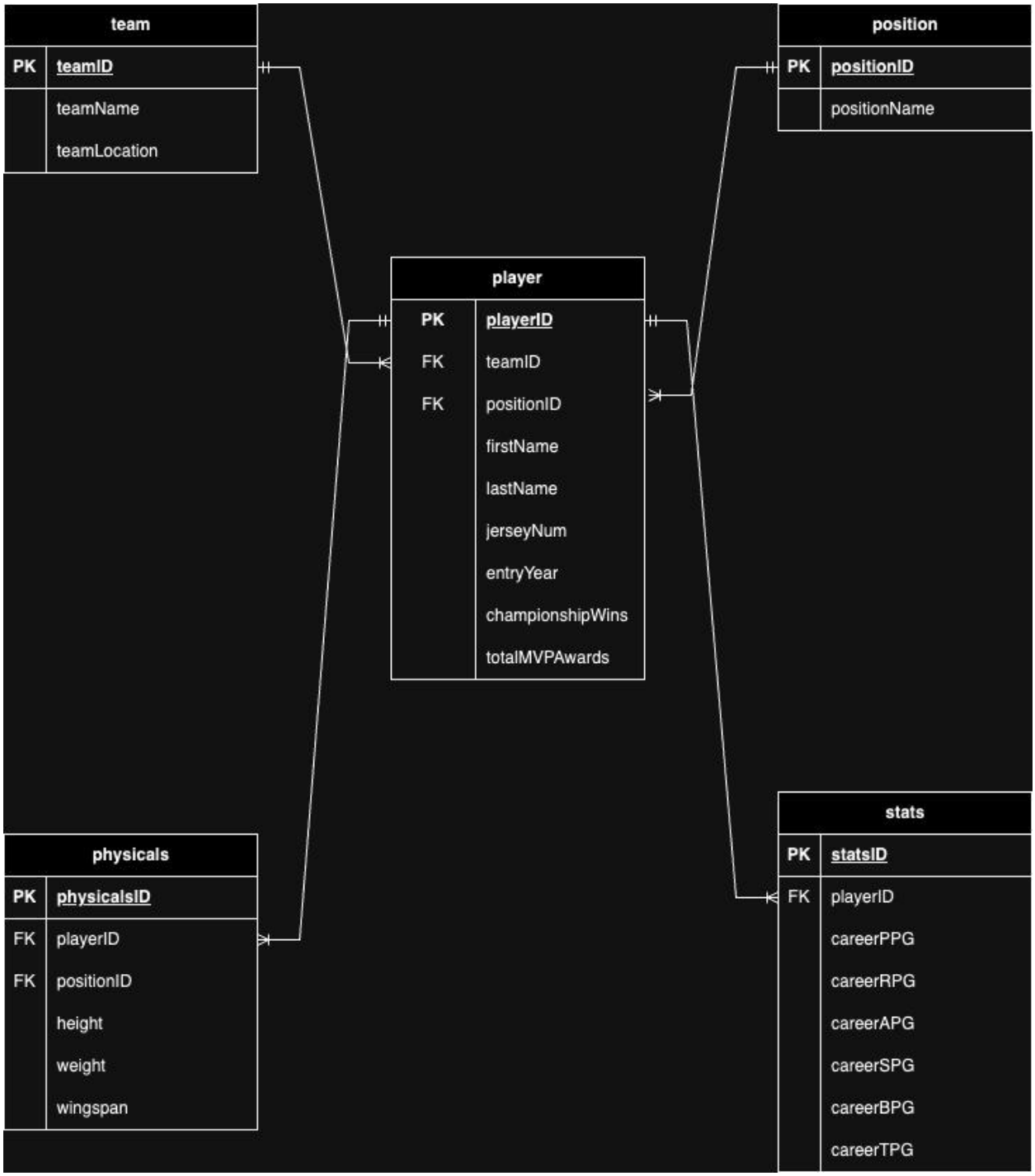
positionID	positionName
501	PG
502	SG
503	SF
504	PF
505	C

physicals

physicalsID	*playerID	*positionID	height	weight	wingspan
701	1	502	78	216	83
702	2	503	81	250	84

stats

statsID	*playerID	careerPPG	careerRPG	careerAPG	careerSPG	careerBPG	careerTPG
1001	1	30.1	6.2	5.3	2.3	0.8	2.7
1002	2	27.2	7.5	7.3	1.5	0.8	3.5


team
PK
teamID
teamName
teamLocation
position
PK
positionID
positionName
player
PK
playerID
FK
teamID
FK
positionID
firstName
lastName
jerseyNum
entryYear
championshipWins
totalMVPAwards
physicals
PK
physicalsID
FK
playerID
FK
positionID
height
weight
wingspan
stats
PK
statsID
FK
playerID
careerPPG
careerRPG
careerAPG
careerSPG
careerBPG
careerTPG

```
CREATE VIEW PlayerStatsView AS
SELECT
    p.playerID,
    p.firstName,
    p.lastName,
    s.careerPPG,
    s.careerRPG,
    s.careerSPG
FROM
    player p
JOIN
    stats s ON p.playerID = s.playerID;
```

This view takes a few of the most important stats and puts them with the players full name using the playerID. This makes it easier for the user to see each player's name and match it with the main stats that they average.

```
CREATE VIEW PositionPhysicalsView AS
SELECT
    r.firstName,
    r.lastName,
    p.positionName,
    h.height,
    h.weight,
    h.wingspan
FROM
    position p
JOIN
    physicals h ON p.positionID = h.positionID
JOIN
    player r ON h.playerID = r.playerID;
```

This view combines 3 different tables to show the player's full name, what position they play, as well as their physical attributes (height, weight, and wingspan). This is helpful because the user sees all of the players that play a certain position next to each other and can then easily compare their sizes.

```
DELIMITER //

CREATE TRIGGER update_lastModified

BEFORE UPDATE ON player

FOR EACH ROW

BEGIN

   SET NEW.lastModified = CURRENT_TIMESTAMP;

END;

//

DELIMITER ;
```

I added a new column to the player table called lastModified to keep track of when something about a player has changed. This trigger is useful because when things change such as a player's jersey number or the total number of championships or MVP's they have, it is important to know when it happened. To test it out I updated LeBron's jersey number from 6 to 23, because he has gone back and forth between the two numbers a lot and he is currently wearing number 23 this season after wearing the number 6 in previous years.

```
SELECT player.firstName, player.lastName, team.teamName

FROM player

JOIN team ON player.teamID = team.teamID;
```

This query connects the player and team tables to get each player's first and last names and their respective teams.

```
SELECT player.positionID, player.totalMVPAwards, physicals.height, stats.careerPPG

FROM player

JOIN physicals ON player.playerID = physicals.playerID

JOIN stats ON player.playerID = stats.playerID;
```

This query joins 3 different tables and shows what position each player plays and their height along with how successful they were, considering total MVPs and their career PPG average.

```
SELECT MAX(careerPPG) AS max_PPG

FROM stats;
```

This query finds the maximum amount of career points per game scored out of every player listed in the database. The result is 30.1, which is Michael Jordan's average.

```
SELECT AVG(weight) AS averageWeight

FROM physicals;
```

This query finds the average weight of an NBA player, which turns out to be a little over 222 pounds. I found this interesting because it seems to be well over the typical weight of a regular person and it shows how much bigger most of these athletes really are.

```
SELECT firstName, lastName, positionID

FROM player

WHERE positionID = '501' OR positionID = '505';
```

This query lists all of the players that are either a point guard or a center. I chose to do this because it seemed like a lot of the best players from each franchise were one of these two positions. I also thought it would be interesting to see some potential pairings that would be a major problem for the rest of the league if they were on the same team.

```
SELECT lastName, jerseyNum

FROM player

WHERE jerseyNum BETWEEN 30 AND 35;
```

This query shows the back of each player's jersey that has a number between 30 and 35, including those two numbers. The reason I did this was to show how many great players wore a number in such a small range for some reason.

```
SELECT playerID, careerAPG

FROM stats

ORDER BY careerAPG DESC

LIMIT 5;
```

This query highlights the five players who averaged the most assists per game throughout their careers. It is no surprise to me that the list includes Magic, Stockton, Isiah, Kidd and Nash, all outstanding passers.

```
SELECT COUNT(*) AS number23

FROM player

WHERE jerseyNum = 23;
```

This query counts how many players wear the number 23. I think it would be useful because Jordan has influenced so many players to choose the number and it has to be one of the most common jersey numbers so it would be interesting to know the total, and you could easily compare it with any other jersey numbers.

```
SELECT position.positionName, COUNT(*) AS positionCount

FROM player

JOIN position ON player.positionID = position.positionID

GROUP BY position.positionName

ORDER BY FIELD(position.positionName, 'PG', 'SG', 'SF', 'PF', 'C');
```

This query shows the entire distribution of the positions that the players play. I used the order by field operation to put the positions in the right order that makes sense instead of just alphabetical order so that it is easier to look at and understand that the most frequent positions are on the ends.