# Database Design Coursework

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## Scenario Topic Name

Basketball Team Management System

## Scenario (100 words maximum)

This database design is created for managing a basketball league's data, including teams, players, coaches, matches, and player statistics. It enables tracking of teams, their rosters, coaching assignments, match details, and player performance metrics. The system supports queries for identifying players’ stats across matches, historical coaching assignments, team match outcomes, and more. This provides league organizers with organized data for analyzing performance, tracking team compositions, and managing match scheduling efficiently.

## Example Queries

1. List all players on a specific team.  
2. Who was the highest-scoring player in a specific match?  
3. How many matches has a particular team won this season?  
4. Which coach has the most years of experience?  
5. List the total points scored by a player throughout the season.

## Entity Relationship Model

(Insert the exported jpg image of the ER model here)

A screenshot of a computer

Description automatically generated

## Relational Model Tables

### Table Name: Team

|  |  |
| --- | --- |
| Attribute | Data Type |
| Team\_ID | INT |
| Team\_Name | VARCHAR |
| City | VARCHAR |
| State | VARCHAR |
| Founded\_Year | DATE |
| Stadium\_ID | VARCHAR |

Keys:

* PRIMARY KEY (Team\_ID)

### Table Name: Player

|  |  |
| --- | --- |
| Attribute | Data Type |
| Player\_ID | VARCHAR |
| First\_Name | VARCHAR |
| Last\_Name | VARCHAR |
| Date\_of\_Birth | DATE |
| Position | VARCHAR |
| Height | INT |
| Weight | INT |
| Jersey\_Number | INT |
| Nationality | VARCHAR |
| Team\_ID | INT |

Keys:

* PRIMARY KEY (Player\_ID)
* FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID)

### Table Name: Coach

|  |  |
| --- | --- |
| Attribute | Data Type |
| Coach\_ID | INT |
| Role | VARCHAR |
| Experience\_Years | INT |
| Team\_ID | INT |

Keys:

* PRIMARY KEY (Coach\_ID)
* FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID)

### Table Name: Match

|  |  |
| --- | --- |
| Attribute | Data Type |
| Match\_ID | INT |
| Home\_Team\_ID | INT |
| Away\_Team\_ID | INT |
| Match\_Date | DATE |
| Match\_Time | TIME |
| Venue | VARCHAR |
| Results | VARCHAR |

Keys:

* PRIMARY KEY (Match\_ID)
* FOREIGN KEY (Home\_Team\_ID) REFERENCES Team(Team\_ID)
* FOREIGN KEY (Away\_Team\_ID) REFERENCES Team(Team\_ID)

### Table Name: Player\_Stats

|  |  |
| --- | --- |
| Attribute | Data Type |
| Stats\_ID | INT |
| Player\_ID | INT |
| Match\_ID | INT |
| Points | INT |
| Assists | INT |
| Rebounds | INT |
| Steals | INT |
| Blocks | INT |
| Minutes\_Played | INT |

Keys:

* PRIMARY KEY (Stats\_ID)
* FOREIGN KEY (Player\_ID) REFERENCES Player(Player\_ID)
* FOREIGN KEY (Match\_ID) REFERENCES Match(Match\_ID)

### Table Name: Coach\_Assignment

|  |  |
| --- | --- |
| Attribute | Data Type |
| Assignment\_ID | INT |
| Coach\_ID | INT |
| Team\_ID | INT |
| Start\_Date | DATE |
| End\_Date | DATE (nullable) |

Keys:

* PRIMARY KEY (Assignment\_ID)
* FOREIGN KEY (Coach\_ID) REFERENCES Coach(Coach\_ID)
* FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID)

### Table Name: Team\_Match (Bridge Table)

|  |  |
| --- | --- |
| Attribute | Data Type |
| TeamMatch\_ID | INT |
| Team\_ID | INT |
| Match\_ID | INT |

Keys:

* PRIMARY KEY (TeamMatch\_ID)
* FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID)
* FOREIGN KEY (Match\_ID) REFERENCES Match(Match\_ID)

## Marker’s Comments