

**MINI PROJECT REPORT**

**DATABASE MANAGEMENT SYSTEM**

**Birla Vishvakarma Mahavidyalaya**

**Engineering College, Vallabh Vidyanagar**

PROJECT TITLE :

**KABADDI MANAGEMENT SYSTEM**

By

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1. Introduction

This project presents a database management system for managing kabaddi data, including details about players, teams, seasons, matches, and statistics. The system is designed to efficiently manage and retrieve data related to kabaddi matches, teams, and players, as well as to provide comprehensive statistics and information about team performances across seasons.

2.Functional Requirement

* Entities

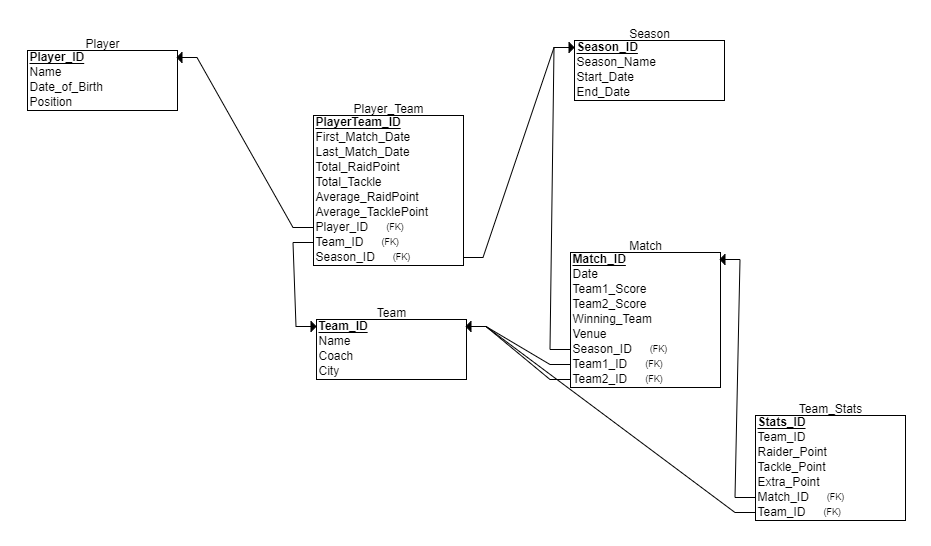
1. **Player**
   * Attributes:
     + Player\_ID (Primary Key)
     + Name
     + Date\_of\_Birth
     + Position
2. **Team**
   * Attributes:
     + Team\_ID (Primary Key)
     + Name
     + Coach
     + City
3. **Season**
   * Attributes:
     + Season\_ID (Primary Key)
     + Season\_Name
     + Start\_Date
     + End\_Date
4. **Match**
   * Attributes:
     + Match\_ID (Primary Key)
     + Date
     + Team1\_Score
     + Team2\_Score
     + Winning\_Team
     + Venue
     + Season\_ID (Foreign Key to Season)
     + Team1\_ID (Foreign Key to Team)
     + Team2\_ID (Foreign Key to Team)
5. **Team\_Stats**
   * Attributes:
     + Stats\_ID (Primary Key)
     + Team\_ID (Foreign Key to Team)
     + Raider\_Point
     + Tackle\_Point
     + Extra\_Point
     + Match\_ID (Foreign Key to Match)
6. **Player\_Team**
   * Attributes:
     + PlayerTeam\_ID (Primary Key)
     + First\_Match\_Date
     + Last\_Match\_Date
     + Total\_RaidPoint
     + Total\_Tackle
     + Average\_RaidPoint
     + Average\_TacklePoint
     + Player\_ID (Foreign Key to Player)
     + Team\_ID (Foreign Key to Team)
     + Season\_ID (Foreign Key to Season)

**Relationships:**

1. **Player and Team:**
   * Many-to-Many relationship through the Player\_Team table.
   * A player can belong to many teams, and a team can have many players over different seasons.
2. **Team and Match:**
   * One-to-Many relationship between Team and Match.
   * Each match involves two teams (Team1\_ID and Team2\_ID), and a team can participate in many matches.
3. **Match and Season:**
   * Many-to-One relationship from Match to Season.
   * Each match is part of a season, while a season can have many matches.
4. **Team and Team\_Stats:**
   * One-to-Many relationship between Team and Team\_Stats.
   * Each team has statistics for each match.
5. **Player\_Team and Season:**
   * Many-to-One relationship between Player\_Team and Season.
   * A player’s participation in a team is tied to a specific season.

A diagram of a company

Description automatically generated 3.ER Diagram

4.Relational Diagram

5.Normalization

**Table Player**

* Player\_ID → Name, Date\_of\_Birth, Position  
  (The Player\_ID uniquely determines the player’s name, date of birth, and position.)
* 1NF: The table is in 1NF because each attribute contains atomic values and there are no repeating groups.
* 2NF: It is in 2NF because the non-key attributes are fully functionally dependent on the primary key .
* 3NF: It is in 3NF because there are no transitive
* BCNF: It is also in BCNF since the only functional dependency is on the primary key.

Highest Normal Form: BCNF

**Candidate Key:**

* **Player\_ID** is the only candidate key since it uniquely identifies each row in the table.

**Table Team**

* Team\_ID → Name, Coach, City  
  (The Team\_ID uniquely determines the team’s name, coach, and city.)

**Candidate Key:**

* **Team\_ID** is the only candidate key as it uniquely identifies each row in the table.
* **1NF**: The table is in **1NF** as it has atomic values, and each row is unique.
* **2NF**: It is in **2NF** because all non-key attributes are fully dependent on the primary key.
* **3NF**: There are no transitive, so it is in **3NF**.
* **BCNF**: The table also satisfies **BCNF** because the primary key is the only determinant for the functional dependencies.

**Highest Normal Form: BCNF**

**Table Season**

* Season\_ID → Season\_Name, Start\_Date, End\_Date  
  (The Season\_ID uniquely determines the season's name, start date, and end date.)
* **1NF**: The table is in **1NF** as it contains atomic values, and each record is unique.
* **2NF**: It is in **2NF** because all non-key attributes are fully dependent on the primary key.
* **3NF**: There are no transitive dependencies, so it is in **3NF**.
* **BCNF**: The table is also in **BCNF**, as all functional dependencies depend on the primary key.

**Highest Normal Form: BCNF**

**Candidate Key:**

* **Season\_ID** is the only candidate key since it uniquely identifies each season.

**Table Match**

* **Match\_ID → Date, Team1\_Score, Team2\_Score, Winning\_Team, Venue, Season\_ID, Team1\_ID, Team2\_ID**
* **1NF**: The table is in **1NF** because all values are atomic, and there are no repeating groups.
* **2NF**: It is in **2NF** because all non-key attributes are fully dependent on the primary key.
* **3NF**: There are no transitive dependencies, so it is in **3NF**.
* **BCNF**: The table is in **BCNF** as the only determinant is the primary key.

**Highest Normal Form: BCNF**

**Candidate Keys:**

* **Match\_ID**

**uniquely identify each match.**

**Table Team\_Stats**

* **Stats\_ID → Team\_ID, Raider\_Point, Tackle\_Point, Extra\_Point, Match\_ID**
* **1NF**: The table is in **1NF** as all attributes are atomic, and there are no repeating groups.
* **2NF**: It is in **2NF** because all non-key attributes are fully dependent on the primary key.
* **3NF**: There are no transitive dependencies, so it is in **3NF**.
* **BCNF**: The table is in **BCNF** because the primary key is the only determinant.

**Highest Normal Form: BCNF**

**Candidate Keys:**

* **Stats\_ID**

**uniquely identify each team's statistics for a match.**

**Table Player\_Team**

* **PlayerTeam\_ID → First\_Match\_Date, Last\_Match\_Date, Total\_RaidPoint, Total\_Tackle, Average\_RaidPoint, Average\_TacklePoint, Player\_ID, Team\_ID, Season\_ID**
* **1NF**: The table is in **1NF** since it contains atomic values, and there are no repeating groups.
* **2NF**: The table is in **2NF** because all non-key attributes are fully dependent on the primary key.
* **3NF**: There are no transitive dependencies, so the table is in **3NF**.
* **BCNF**: The table is in **BCNF** because the only determinant is the primary key **Highest Normal Form: BCNF**
* **Candidate Keys:**
* **PlayerTeam\_ID**

**Both keys uniquely identify a player's participation in a specific team during a season.**

1. **Schema In pgAdmin**

**CREATE TABLE Player**

**(**

**Player\_ID INT NOT NULL,**

**Name VARCHAR(100) NOT NULL,**

**Date\_of\_Birth DATE NOT NULL,**

**Position VARCHAR(50) NOT NULL,**

**PRIMARY KEY (Player\_ID)**

**);**

**-- Insert data into Player table**

**INSERT INTO Player (Player\_ID, Name, Date\_of\_Birth, Position)**

**VALUES (1, 'Ajay Thakur', '1986-05-01', 'Raider'),**

**(2, 'Pardeep Narwal', '1997-02-16', 'Raider'),**

**(3, 'Manjeet Chhillar', '1986-08-18', 'All-Rounder');**

**(4, 'Rahul Chaudhari', '1993-06-16', 'Raider'),**

**(5, 'Surjeet Singh', '1990-08-10', 'Defender'),**

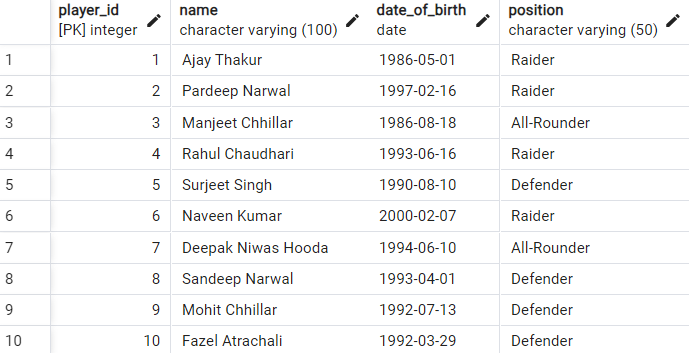
**(6, 'Naveen Kumar', '2000-02-07', 'Raider'),**

**(7, 'Deepak Niwas Hooda', '1994-06-10', 'All-Rounder'),**

**(8, 'Sandeep Narwal', '1993-04-01', 'Defender'),**

**(9, 'Mohit Chhillar', '1992-07-13', 'Defender'),**

**(10, 'Fazel Atrachali', '1992-03-29', 'Defender');**



CREATE TABLE Team

( Team\_ID INT NOT NULL,

Name VARCHAR(100) NOT NULL,

Coach VARHAR(100) NOT NULL,

City VARCHAR(100) NOT NULL,

PRIMARY KEY (Team\_ID));

-- Insert data into Team table

INSERT INTO Team (Team\_ID, Name, Coach, City)

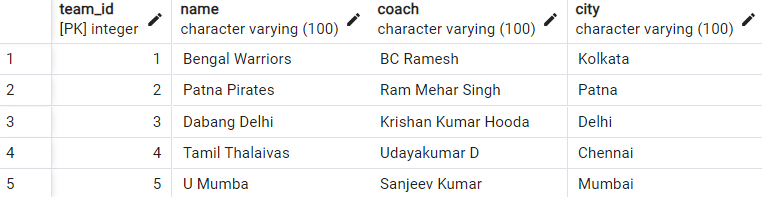
VALUES (1, 'Bengal Warriors', 'BC Ramesh', 'Kolkata'),

(2, 'Patna Pirates', 'Ram Mehar Singh', 'Patna'),

(3, 'Dabang Delhi', 'Krishan Kumar Hooda', 'Delhi'),

(4, 'Tamil Thalaivas', 'Udayakumar D', 'Chennai'),

(5, 'U Mumba', 'Sanjeev Kumar', 'Mumbai');



CREATE TABLE Season

(

Season\_ID INT NOT NULL,

Season\_Name VARCHAR(50) NOT NULL,

Start\_Date DATE NOT NULL,

End\_Date DATE NOT NULL,

PRIMARY KEY (Season\_ID)

);

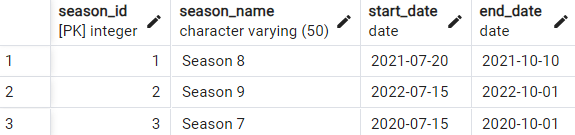
-- Insert data into Season table

INSERT INTO Season (Season\_ID, Season\_Name, Start\_Date, End\_Date)

VALUES (1, 'Season 8', '2021-07-20', '2021-10-10'),

(2, 'Season 9', '2022-07-15', '2022-10-01'),

(3, 'Season 7', '2020-07-15', '2020-10-01');



CREATE TABLE Match

(

Match\_ID INT NOT NULL,

Date DATE NOT NULL,

Team1\_Score INT NOT NULL,

Team2\_Score INT NOT NULL,

Winning\_Team INT NOT NULL,

Venue VARCHAR(100) NOT NULL,

Season\_ID INT NOT NULL,

Team1\_ID INT NOT NULL,

Team2\_ID INT NOT NULL,

PRIMARY KEY (Match\_ID),

FOREIGN KEY (Season\_ID) REFERENCES Season(Season\_ID),

FOREIGN KEY (Team1\_ID) REFERENCES Team(Team\_ID),

FOREIGN KEY (Team2\_ID) REFERENCES Team(Team\_ID)

);

-- Insert data into Match table

INSERT INTO "Match" (Match\_ID, Date, Team1\_Score, Team2\_Score, Winning\_Team, Venue, Season\_ID, Team1\_ID, Team2\_ID)

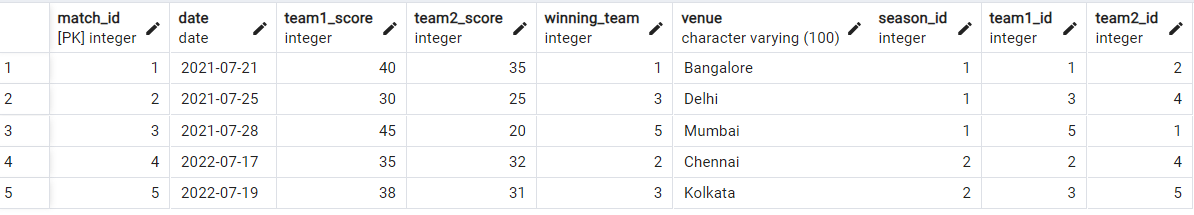
VALUES (1, '2021-07-21', 40, 35, 1, 'Bangalore', 1, 1, 2),

(2, '2021-07-25', 30, 25, 3, 'Delhi', 1, 3, 4),

(3, '2021-07-28', 45, 20, 5, 'Mumbai', 1, 5, 1),

(4, '2022-07-17', 35, 32, 2, 'Chennai', 2, 2, 4),

(5, '2022-07-19', 38, 31, 3, 'Kolkata', 2, 3, 5);



CREATE TABLE Team\_Stats

(

Stats\_ID INT NOT NULL,

Team\_ID INT NOT NULL,

Raider\_Point INT NOT NULL,

Tackle\_Point INT NOT NULL,

Extra\_Point INT NOT NULL,

Match\_ID INT NOT NULL,

PRIMARY KEY (Stats\_ID),

FOREIGN KEY (Match\_ID) REFERENCES "Match"(Match\_ID),

FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID)

);

-- Insert data into Team\_Stats table

INSERT INTO Team\_Stats (Stats\_ID, Team\_ID, Raider\_Point, Tackle\_Point, Extra\_Point, Match\_ID)

VALUES (1, 1, 20, 15, 5, 1),

(2, 2, 15, 10, 10, 1),

(3, 3, 18, 12, 5, 2),

(4, 4, 12, 8, 5, 2),

(5, 5, 22, 18, 5, 3),

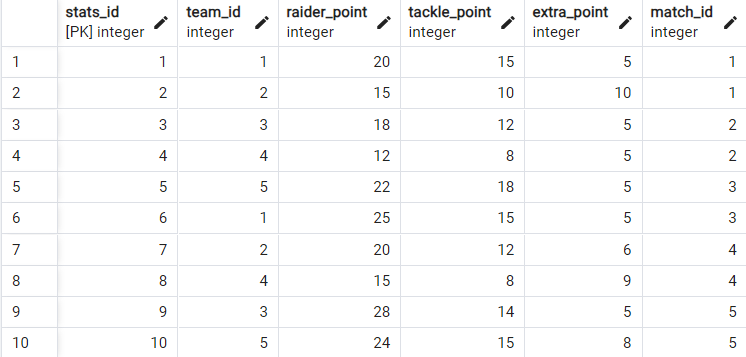
(6, 1, 25, 15, 5, 3),

(7, 2, 20, 12, 6, 4),

(8, 4, 15, 8, 9, 4),

(9, 3, 28, 14, 5, 5),

(10, 5, 24, 15, 8, 5);



CREATE TABLE Player\_Team

(

PlayerTeam\_ID INT NOT NULL,

First\_Match\_Date DATE NOT NULL,

Last\_Match\_Date DATE NOT NULL,

Total\_RaidPoint INT NOT NULL,

Total\_Tackle INT NOT NULL,

Average\_RaidPoint FLOAT NOT NULL,

Average\_TacklePoint FLOAT NOT NULL,

Player\_ID INT NOT NULL,

Team\_ID INT NOT NULL,

Season\_ID INT NOT NULL,

PRIMARY KEY (PlayerTeam\_ID),

FOREIGN KEY (Player\_ID) REFERENCES Player(Player\_ID),

FOREIGN KEY (Team\_ID) REFERENCES Team(Team\_ID),

FOREIGN KEY (Season\_ID) REFERENCES Season(Season\_ID)

);

-- Insert data into Player\_Team table

INSERT INTO Player\_Team (PlayerTeam\_ID, First\_Match\_Date, Last\_Match\_Date, Total\_RaidPoint, Total\_Tackle, Average\_RaidPoint, Average\_TacklePoint, Player\_ID, Team\_ID, Season\_ID)

VALUES (1, '2021-07-21', '2021-10-10', 150, 50, 7.5, 2.5, 1, 1, 1),

(2, '2021-07-21', '2021-10-10', 120, 40, 6.0, 2.0, 2, 2, 1),

(3, '2021-07-25', '2021-10-10', 110, 50, 5.5, 2.5, 3, 3, 1),

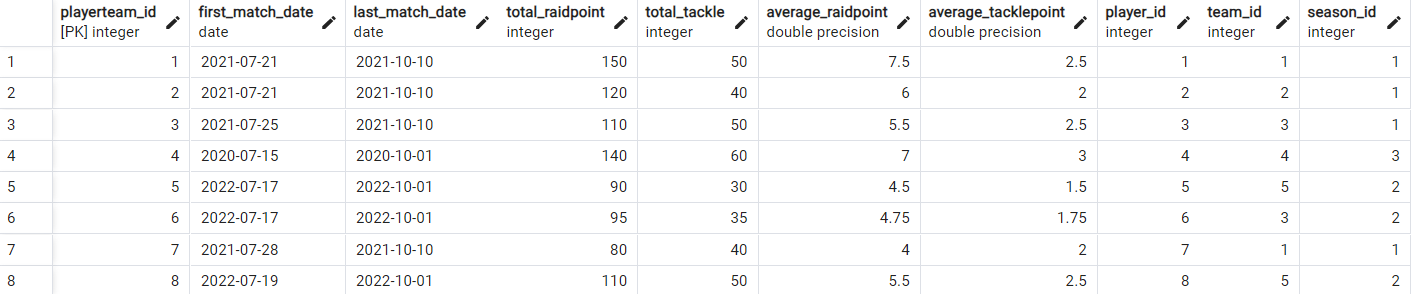
(4, '2020-07-15', '2020-10-01', 140, 60, 7.0, 3.0, 4, 4, 3),

(5, '2022-07-17', '2022-10-01', 90, 30, 4.5, 1.5, 5, 5, 2),

(6, '2022-07-17', '2022-10-01', 95, 35, 4.75, 1.75, 6, 3, 2),

(7, '2021-07-28', '2021-10-10', 80, 40, 4.0, 2.0, 7, 1, 1),

(8, '2022-07-19', '2022-10-01', 110, 50, 5.5, 2.5, 8, 5, 2);



**QUERY**

**1. Get All Matches Played by a Specific Team**

SELECT Match\_ID, Date, Team1\_Score, Team2\_Score

FROM Match

WHERE Team1\_ID = 1 OR Team2\_ID = 1;

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**2.Find Total Raider Points for a Team in a Match**

SELECT Raider\_Point

FROM Team\_Stats

WHERE Team\_ID = 1 AND Match\_ID = 1;

A screenshot of a computer

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**3.Find all teams that participated in matches where the venue was 'Kolkata Stadium'.**

SELECT Name

FROM Team

WHERE Team\_ID IN (

SELECT Team1\_ID

FROM Match

WHERE Venue = 'Kolkata Stadium'

);



**4.List Players Who Have Never Played in a Match**

SELECT Name

FROM Player

WHERE Player\_ID NOT IN (

SELECT DISTINCT Player\_ID

FROM Player\_Team

);

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**5.Find Teams That Have Not Won Any Match**

SELECT T.Name

FROM Team T

WHERE T.Team\_ID NOT IN (

SELECT M.Winning\_Team

FROM Match M

);

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**6.Find teams that have scored more than 30 points in every match they played.**

SELECT Name

FROM Team T

WHERE 30 < ALL (

SELECT M.Team1\_Score

FROM Match M

WHERE M.Team1\_ID = T.Team\_ID

);

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**7.Find players who played in the 2023 season.**

SELECT Name

FROM Player

WHERE Player\_ID IN (

SELECT Player\_ID

FROM Player\_Team

WHERE Season\_ID = (

SELECT Season\_ID FROM Season WHERE Season\_Name = '2023'

)

);

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**8.Find all players who have played in matches that took place in the 'Mumbai Stadium'.**

SELECT Name

FROM Player

WHERE Player\_ID IN (

SELECT Player\_ID

FROM Player\_Team

WHERE Team\_ID IN (

SELECT Team1\_ID FROM Match WHERE Venue = 'Mumbai Stadium'

UNION

SELECT Team2\_ID FROM Match WHERE Venue = 'Mumbai Stadium'

)

);

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**9.Find Player with the Most Total Raid Points**

SELECT P.Name, PT.Total\_RaidPoint, PT.Season\_ID, S.Season\_Name

FROM Player P

JOIN Player\_Team PT ON P.Player\_ID = PT.Player\_ID

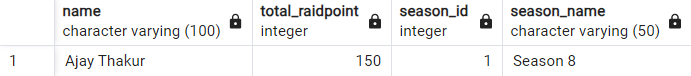
JOIN Season S ON PT.Season\_ID = S.Season\_ID

WHERE PT.Total\_RaidPoint = (

SELECT MAX(PT2.Total\_RaidPoint)

FROM Player\_Team PT2

);

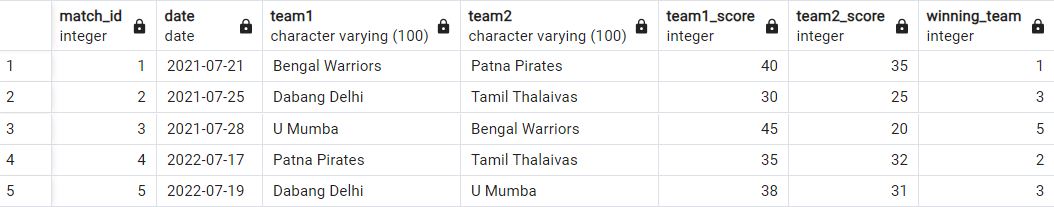


**10.Get all matches with team names**

SELECT M.Match\_ID, M.Date, T1.Name AS Team1, T2.Name AS Team2, M.Team1\_Score, M.Team2\_Score, M.Winning\_Team

FROM Match M

JOIN Team T1 ON M.Team1\_ID = T1.Team\_ID

JOIN Team T2 ON M.Team2\_ID = T2.Team\_ID;