

Database Description

This database is designed to manage a sports league system by organizing and tracking data for players, teams, games, and leagues, as well as their associated performance metrics. It provides the foundation for scheduling, performance analysis, and decision-making for administrators, coaches, and analysts.

Entities and Their Descriptions

1. Player

a. Attributes:

- i. PlayerID (Primary Key): Unique identifier for each player.
- ii. FirstName and LastName: The player's name.
- iii. DateOfBirth: The player's birth date.
- iv. Height and Weight: The player's physical attributes.
- v. Position: The player's role on the team.

- b. **Purpose:** Stores essential personal and identifying details for players participating in the league.

2. Team

a. Attributes:

- i. TeamID (Primary Key): Unique identifier for each team.
- ii. TeamName: The team's name.
- iii. Coach: Name of the team's coach.
- iv. HomeCity: City where the team is based.

- b. **Purpose:** Represents the organizational structure for grouping players. Teams are linked to leagues and participate in games.

3. Game

a. Attributes:

- i. GameID (Primary Key): Unique identifier for each game.
- ii. Date: Date on which the game was played.
- iii. Location: Physical location of the game.
- iv. Time: Time the game was played.
- v. Weather: Descriptive weather conditions during the game.

- b. **Purpose:** Captures logistical details for games, serving as a connection point for player and team performances.

4. League

a. Attributes:

- i. LeagueID (Primary Key): Unique identifier for each league.
- ii. LeagueName: The name of the league.
- iii. Division: Classification of the league within the sports hierarchy.

- b. **Purpose:** Represents the overarching organization under which teams compete.

Relationships and Their Descriptions

1. PlaysFor

- a. **Description:** Links players to the teams they play for.
- b. **Cardinality:** N:1 (Each player can play for one team at a time, and each team can have many players).
- c. **Purpose:** Tracks the teams that players belong to.

2. ParticipatesIn

- a. **Description:** Connects teams to the games they participate in.
- b. **Cardinality:** N:N (Each team can participate in many games, and each game can involve many teams).
- c. **Attributes:**
 - i. **TeamScore:** Captures the score of each team in a game.
- d. **Purpose:** Tracks team participation in games and their scores.

3. PlaysIn

- a. **Description:** Links players to the games they play in.
- b. **Cardinality:** N:N (Each player can participate in many games, and each game can involve many players).
- c. **Attributes:**
 - i. **Touchdowns, Yards, Tackles, Interceptions:** Tracks player performance metrics for specific games.
- d. **Purpose:** Tracks player involvement in games and their performance.

4. Contains

- a. **Description:** Links leagues to the teams they contain.
- b. **Cardinality:** N:1 (Each team belongs to one league, and each league can have many teams).
- c. **Purpose:** Helps organize teams under specific leagues.

Intended Use

This database serves as a centralized system for managing sports league operations. Its primary functions include:

- 1. **Scheduling and Logistics:**
 - Organizing games and tracking details such as location, time, and weather.
- 2. **Performance Analysis:**
 - Monitoring individual player performance and team statistics for evaluation and strategy development.
- 3. **Decision Support:**
 - Providing data-driven insights to coaches and administrators for decision-making.
- 4. **Historical Records:**
 - Archiving details of games, players, and team success for future reference.

This design ensures efficient data storage, retrieval, and analysis, facilitating seamless management of a sports league system.

League

LeagueName	Division	<u>LeagueID</u>
------------	----------	-----------------

Team

TeamName	Coach	HomeCity	LeagueID	Wins	Losses	Draws	<u>TeamID</u>
----------	-------	----------	----------	------	--------	-------	---------------

Game

Date	Time	Location	Weather	<u>GameID</u>
------	------	----------	---------	---------------

Player

FirstName	LastName	DateOfBirth	Height	Weight	Position	TeamID	<u>PlayerID</u>
-----------	----------	-------------	--------	--------	----------	--------	-----------------

PLAYS_IN

Tackles	Interceptions	Touchdowns	Yards	<u>PlayerID</u>	<u>GameID</u>
---------	---------------	------------	-------	-----------------	---------------

PARTICIPATES_IN

TeamScore	<u>TeamID</u>	<u>GameID</u>
-----------	---------------	---------------



