

StatSpot

ER Diagram

StatSpot will use 2 datasets -

1. 2021 Olympics in Tokyo -
<https://www.kaggle.com/datasets/arjunprasadsarkhel/2021-olympics-in-tokyo>
2. Football Data from Transfermarkt -
<https://www.kaggle.com/datasets/davidcariboo/player-scores?select=games.csv>

List of entities in our system -

1. Athlete
 - a. Description: Stores personal information about athletes
 - b. Assumptions: An athlete is assumed to play only one sport. Athletes can be trained by 0 or more coaches. An athlete represents their country. An athlete can compete in 0 or more tournaments. An athlete can win 0 or more medals in the tournaments. An athlete can sign for only one club.
2. Coach
 - a. Description: Stores the Coaches' personal information
 - b. Assumptions: A coach will train a minimum of 1 athlete. A coach is employed by at most one club (i.e. they can work independently).
3. Sport
 - a. Description: Stores information about a particular sport and how the sport is structured
 - b. Assumptions: A sport can be played by multiple athletes
4. Country
 - a. Description: Stores country name in order for each athlete to be associated with the country they represent.
 - b. Assumptions: A country can be represented by multiple athletes
5. Tournament
 - a. Description: Stores information about each tournament that athletes have played in.
 - b. Assumptions: A tournament should consist of 1 or more athletes. A tournament can award many medals. A tournament is each competition in a bigger competition like the olympics. The name attribute can be used to find the competition-tournament details.
6. Medals
 - a. Description: Contains a type of medal that will be awarded to the athlete that wins it in the tournament

- b. Assumptions: A medal can be won by only one athlete. A medal will be dependent on the tournament i.e. a medal cannot exist without a tournament which makes it a weak entity, A medal can be awarded by only 1 tournament
- 7. Club
 - a. Description: Stores information about each club and allows users to see different club stats like total market value.
 - b. Assumptions: One club can sign 1 or more athletes. A club employs 1 or more coaching staff. A club can be a part of many leagues at once (Example: Manchester United can play in the Premier League and the Champions League in the same season). A club participates in 1 or more games
- 8. League
 - a. Description: Stores information about different Leagues. Users can see which leagues their favorite clubs are a part of.
 - b. Assumptions: A league can have multiple clubs playing at once
- 9. Game
 - a. Description: Stores information about each game so that the user can see who played in each game as well as other game stats.
 - b. Assumptions: A game can be played by 2 or more clubs. A game can be subscribed by 0 or more users for updates.
- 10. User
 - a. Description: Contains information about the user of StatSpot including login information.
 - b. Assumptions: A user can subscribe to 0 or more games for updates in our subscription service. The subscription will cost a fee

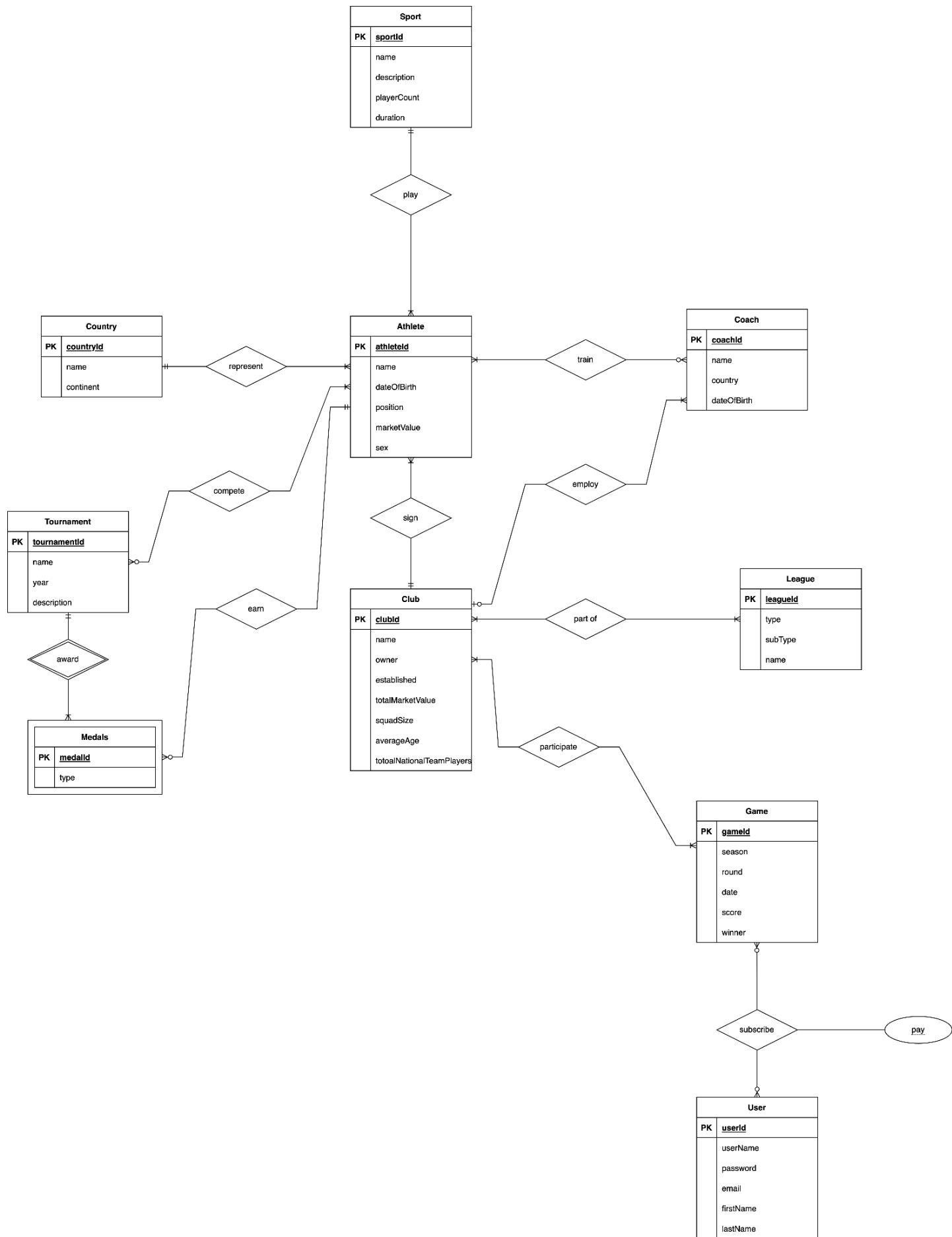
Note - If the ER diagram below is not clear please follow the draw.io link -

<https://drive.google.com/file/d/1URwDDGjuRTt4m366qcmi4SCme9J6FT-A/view?usp=sharing>

OR

View on drive -

<https://drive.google.com/file/d/1iYXhcm1Jx-3RyXscwAGovpVADrm1wVZu/view?usp=sharing>



Convert your conceptual database design (ER/UML) to the logical design (relational schema) -

Sport (
sportId : INT [PK],
name : VARCHAR(128),
description : VARCHAR(256),
playerCount : INT,
duration : REAL
)

Coach (
coachId : INT [PK],
name : VARCHAR(128),
country : VARCHAR(128),
dateOfBirth : DATE,
clubId : INT [FK to Club.clubId]
)

Athlete (
athleteId : INT [PK],
name : VARCHAR(128),
dateOfBirth : DATE,
position : VARCHAR(128),
marketValue : REAL,
sex : VARCHAR(12),
sportId : INT [FK to Sport.sportId],
countryId : INT [FK to Country.countryId],
clubId : INT [FK to Club.clubId]
)

League (
leagueId : INT [PK],
type : VARCHAR(128),
subType : VARCHAR(128),
name : VARCHAR(128)
)

Club (
clubId : INT [PK],
name : VARCHAR(128),
owner : VARCHAR(128),
established : INT,
totalMarketValue : REAL,
squadSize : INT,
averageAge : REAL,
totalNationalTeamPlayers : INT
)

Game (
gameId : INT [PK],
season : VARCHAR(128),
round : INT,
gameDate : DATE,
score : VARCHAR(12),
winner : VARCHAR(128)
)

User (
userId : INT [PK],
userName : VARCHAR(64),
password : VARCHAR(32),
email : VARCHAR(32),
firstName : VARCHAR(32),
lastName : VARCHAR(32)
)

Country (
countryId : INT [PK],
name : VARCHAR(32),
continent : VARCHAR(32)
)

Tournament (
tournamentId : INT [PK],
name : VARCHAR(32),
year : INT,
description : VARCHAR(256)
)

Many-to-Many relationships

Train (
athleteId : INT [PK] [FK to Athlete.athleteId],
coachId : INT [PK] [FK to Coach.coachId]
)

Compete (
tournamentId : INT [PK] [FK to Tournament.tournamentId],
athleteId : INT [PK] [FK to Athlete.athleteId]
)

PartOf (
clubId : INT [PK] [FK to Club.clubId],
leagueId : INT [PK] [FK to League.leagueId]
)

Participate (
clubId : INT [PK] [FK to Club.clubId],
gameId : INT [PK] [FK to Game.gameId]
)

Subscribe (
gameId : INT [PK] [FK to Game.gameId],
userId : INT [PK] [FK to User.userId],
pay
)

Weak Entity

Medals (
medalId : INT [PK],
tournamentId : INT [PK] [FK to Tournament.tournamentId] ON DELETE CASCADE,
type : VARCHAR(12),
athleteId : INT [FK to Athlete.athleteId]
)