



## **Entities**

- NOC
  - The NOC, which stands for National Olympic Committee, refers to the country being represented in the Olympics. There are cases where the NOC is not the country name, like the Refugee Olympic Team.
  - Attributes are the NOCName, its ranking in total medals won, its weighted ranking, its number of gold, silver, and bronze medals, and its total medals won.
- Discipline
  - The discipline refers to the sport being played. There are often different entries for men's and women's competitions.
  - Attributes are the discName, the number of females and males in that discipline, and the total number of players in that discipline.
- Coach
  - The coaches of the Olympics are uniquely identified by their name. There isn't a clear way to tell from the dataset the athlete(s) or team(s) a coach is associated with. However, the coach is associated with a discipline, NOC, and event.
- Athlete
  - An athlete is uniquely identified by their name. There isn't a clear way to link an athlete with their team(s) or coach(es). However, athletes are related to NOC's and their discipline.
- Team
  - A team is uniquely identified by its NOC and the discipline it is involved in, as well as the teamName and event. Here, teamName is often just the country name, but in some cases, it is a pair of people who are listed as the teamName and multiple pairs can represent the same country for a discipline, like Beach Volleyball or Table Tennis.

## **Relationships**

- Nationality
  - This relationship connects athlete and NOC / Country. An athlete needs to be a representative a country or the olympics committee so we created this relation to show that.
  - The relationship is one-to-many. An athlete needs to have exactly one NOC, but an NOC can have one or many athletes associated with it.
  - Cardinality: exactly one to many
- Works For
  - This relationship connects coach and NOC / Country. Like athlete, a coach needs to work for a country (NOC) or olympics committee (NOC) so we made this relation.
  - This relationship is one-to-many. A coach can only work for one NOC, but an NOC can have many coaches working for it.
  - Cardinality: exactly one to many
- Specialization
  - A coach can specialize in one sport so we created this relationship to show that.
  - This relationship is also one-to-many. A coach specializes in exactly one discipline and a discipline can be associated with one or many coaches.
  - Cardinality: exactly one to many
- Compete
  - This relationship highlights how teams compete in disciplines.
  - This relationship is one-to-many. A team competes in exactly one discipline, and multiple teams compete in one discipline.
  - Cardinality: exactly one to many
- Participate
  - This relationship connects an NOC with the disciplines they participate in.
  - This relationship is many-to-many. An NOC can participate in at least one discipline, and one or many NOCs participate in the same discipline.
  - Cardinality: many to many
- Plays
  - This relationship connects the sport with the athlete playing it.
  - This relationship is one-to-many. We've assumed that an athlete can only play exactly one sport, and a sport can be played by one or many athletes.
  - Cardinality: exactly one to many
- Belongs To
  - This relationship connects the team with the NOC it belongs to. Because the team is only uniquely identified with respect to its NOC, we made it a weak entity.
  - This relationship is one-to-many. A team must belong to exactly one NOC, and an NOC can have zero or multiple teams.
  - Cardinality: exactly one to many

## **Relational Schema:**

```
NOC(  
    NOCName: varChar(225)[PK],  
    ranking: INT,  
    weightedRanking: INT,  
    goldMedalCount:INT,  
    silverMedalCount:INT,  
    bronzeMedalCount:INT,  
    totalMedalCount:INT  
)  
Coach(  
    coachName: varChar(225)[PK],  
    event: varChar(225),  
    NOCName: varChar(225)[FK to NOC],  
    discName: varChar(225)[FK to Discipline]  
)  
Athlete(  
    athleteName: varChar(225)[PK],  
    NOCName: varChar(225)[FK to NOC],  
    discName: varChar(225)[FK to Discipline]  
)  
Discipline(  
    discName: varChar(225)[PK],  
    femalePlayerCount: INT,  
    malePlayerCount: INT,  
    totalPlayerCount: INT  
)  
Participate(  
    NOCName: varChar(225)[PK][FK to NOC],  
    discName: varChar(225)[PK][FK to Discipline],  
)  
Team(  
    teamName: varChar(225)[PK]  
    event: varChar(225)[PK],  
    NOCName: varChar(225)[PK][FK to NOC],  
    discName: varChar(225)[PK][FK to Discipline]  
)
```