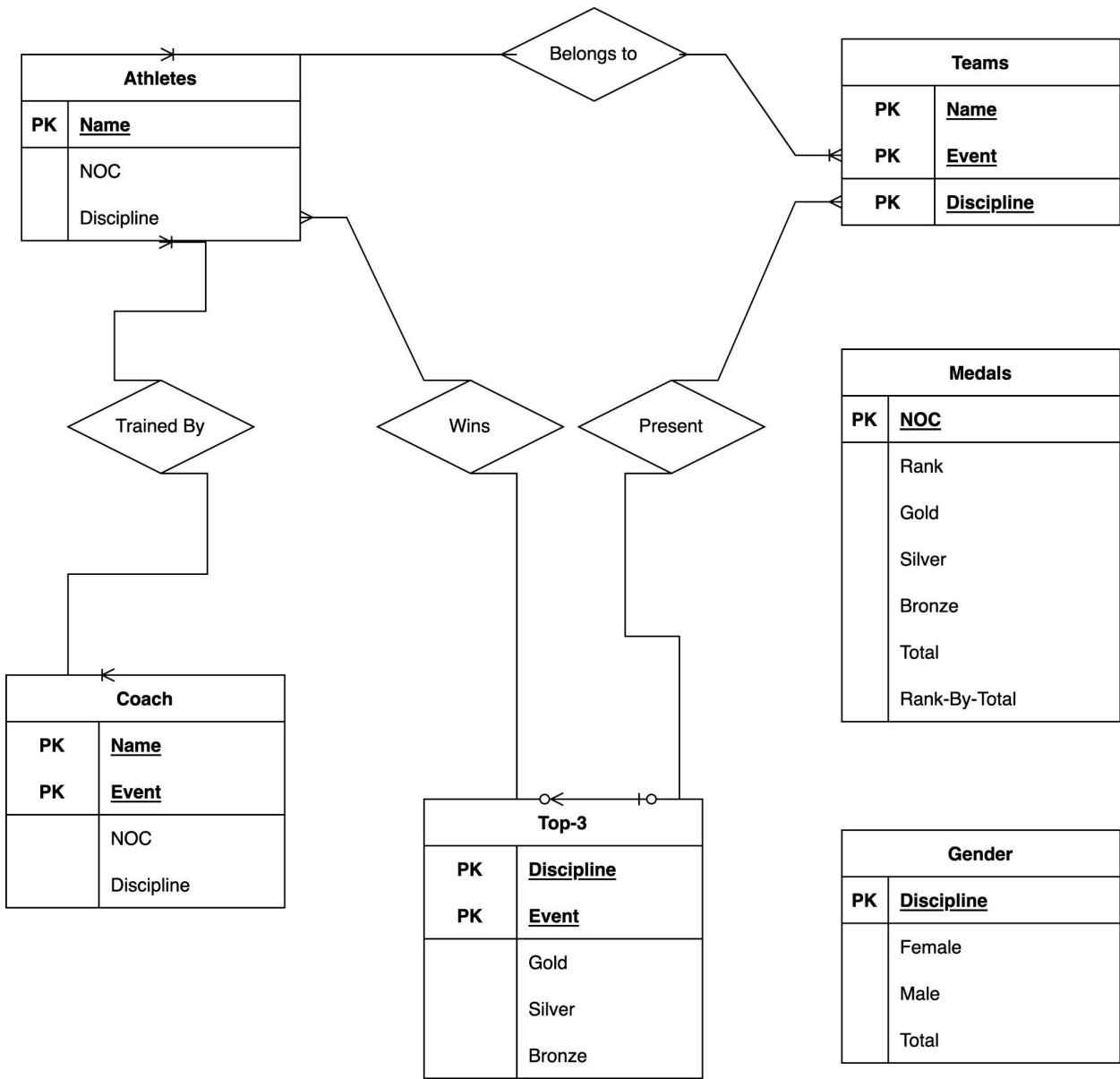


**Title: Tokyo Olympics 2020: Unveiling the Data Behind the Games**  
**ER-DIAGRAM / RELATIONAL SCHEMA**

**ER-DIAGRAM**



## RELATIONAL SCHEMA

### Athletes(

**Name** : VARCHAR(150)[PK],

**NOC** : VARCHAR(150) [FK to (Teams.NOC, Medals.NOC, Coach.NOC)],

**Discipline** : VARCHAR(150)

);

### Teams(

**Name** : VARCHAR(150)[PK],

**Event** : VARCHAR(150)[PK],

**Discipline** : VARCHAR(150) [PK]

);

### Medals(

**NOC** : VARCHAR(150) [PK],

**Rank** : INT,

**Gold** : INT,

**Silver** : INT,

**Bronze** : INT,

**Total** : INT,

**Rank-By-Total** : INT

);

### Top-3(

**Discipline** : VARCHAR(150) [PK][FK to Teams.Discipline],

**Event** : VARCHAR(150) [PK][FK to Teams.event],  
**Gold** : VARCHAR(150),  
**Silver** : VARCHAR(150),  
**Bronze** : VARCHAR(150)  
);

**Coach**(

**Name** : VARCHAR(150)[PK],  
**Event** : VARCHAR(150)[PK],  
**NOC** : VARCHAR(150),  
**Discipline** : VARCHAR(150)  
);

**Gender**(

**Discipline**: VARCHAR(150) [PK],  
**Female**:INT,  
**Male**:INT,  
**Total**: INT  
);

**Belongs-To**(

**Name** : VARCHAR(150)[PK][FK to Athletes.Name],  
**TeamName** : VARCHAR(150)[PK][FK to Teams.Name],  
**Event** : VARCHAR(150)[PK][FK to Teams.Event],  
**Discipline** : VARCHAR(150) [PK][FK to Teams.Discipline],  
);

**Trained-By**(

**Name** : VARCHAR(150)[PK][FK to Athletes.Name],  
**CoachName** : VARCHAR(150)[PK][FK to Coach.Name],  
**Event** : VARCHAR(150)[PK][FK to Coach.Event]

);

**Wins** (

**Name** : VARCHAR(150)[PK][FK to Athletes.Name],  
**Discipline** : VARCHAR(150) [PK][FK to Top-3.Discipline],  
**Event** : VARCHAR(150) [PK][FK to Top-3.Event],

);

### Description of Entities:

- **Athletes**
  - **Name** : Name of the Athlete
  - **NOC** : Country Name (National Olympic Committee)
  - **Discipline** : Sport (BasketBall, Athletics, Swimming, etc).
- **Teams**
  - **Name** : Country Name (National Olympic Committee)
  - **Event** : Sub-Division under Discipline (Discipline - Running; Event - 100m, 200m, 4x100m Relay, etc)
  - **Discipline** : Sport (BasketBall, Athletics, Swimming, etc)
- **Medals**
  - **NOC** : Country Name (National Olympic Committee)
  - **Rank** : Ranking of a country based on the number of Gold medals won
  - **Gold** : Number of Gold Medals won,
  - **Silver** : Number of Silver Medals won,
  - **Bronze** : Number of Bronze Medals won,
  - **Total** : Total Number of Medals,
  - **Rank-By-Total** : Rank of the country by the total number of medals won
- **Top-3**
  - **Discipline** : Sport (BasketBall, Athletics, Swimming, etc)

- **Event** : Sub-Division under Discipline (Discipline - Running; Event - 100m, 200m, 4x100m Relay, etc)
- **Gold** : Country that won the Gold medal
- **Silver** : Country that won the Silver medal
- **Bronze** : Country that won the Bronze medal
- **Coach**
  - **Name** : Name of the Coach
  - **Event** : Sub-Division under Discipline (Discipline - Running; Event - 100m, 200m, 4x100m Relay, etc)
  - **NOC** : Country Name (National Olympic Committee)
  - **Discipline** : Sport (BasketBall, Athletics, Swimming, etc)
- **Gender**
  - **Discipline** : Sport (BasketBall, Athletics, Swimming, etc)
  - **Female** : Total number of women participating in various events of the sport
  - **Male** : Total number of men participating in various events of the sport
  - **Total** : Total number of Athletes participating in the sport

### Description of Relation and Cardinality:

- **Trained-By**
  - Athletes are trained by 1 or many coaches (1..N).  
Eg. A football team is coached by multiple coaches.
  - Coaches can train 1 or many athletes (1..N).  
Eg. 100 m Running - Coach trains 1 athlete.  
Football Team - Coach trains multiple athletes.
- **Belongs-To**
  - An athlete can belong to one or more teams. Here teams consist of attributes of country, sport and event (1..N).  
Eg. An athlete can participate in 100m or 200m Running (Sport: Athletics, Event: 100m Running; 200m Running)
  - A team can consist of one or more athletes (1..N).  
Eg: Football Team consists of multiple athletes.
- **Wins**

- An athlete might or might not win. An athlete can also win multiple events(0..N).

Eg: An athlete might lose in 100m running.

An athlete can be in the top-3 in 100m running.

The same athlete can be in the top-3 on 200m running.

- Top-3 has at least 1 athlete each winning each of Gold, Silver and Bronze medals. It's precisely a 3..N relationship.

Eg: 3 athletes win 3 medals in 100m running.

Multiple athletes belonging to each team win 3 medals in Football.

- Present

- A team is identified by country, sport and event. A team might or might not be in the top-3 (0..1).
- The top-3 table has 3 teams for Gold, Silver and Bronze respectively (3).