

Introduction to Database Systems

Olympic Games



ÉCOLE POLYTECHNIQUE
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“The most important motivation for the research work that resulted in the relational model was the objective of providing a sharp and clear boundary between the logical and physical aspects of database management.”

— Edgar F. Codd, February 1982

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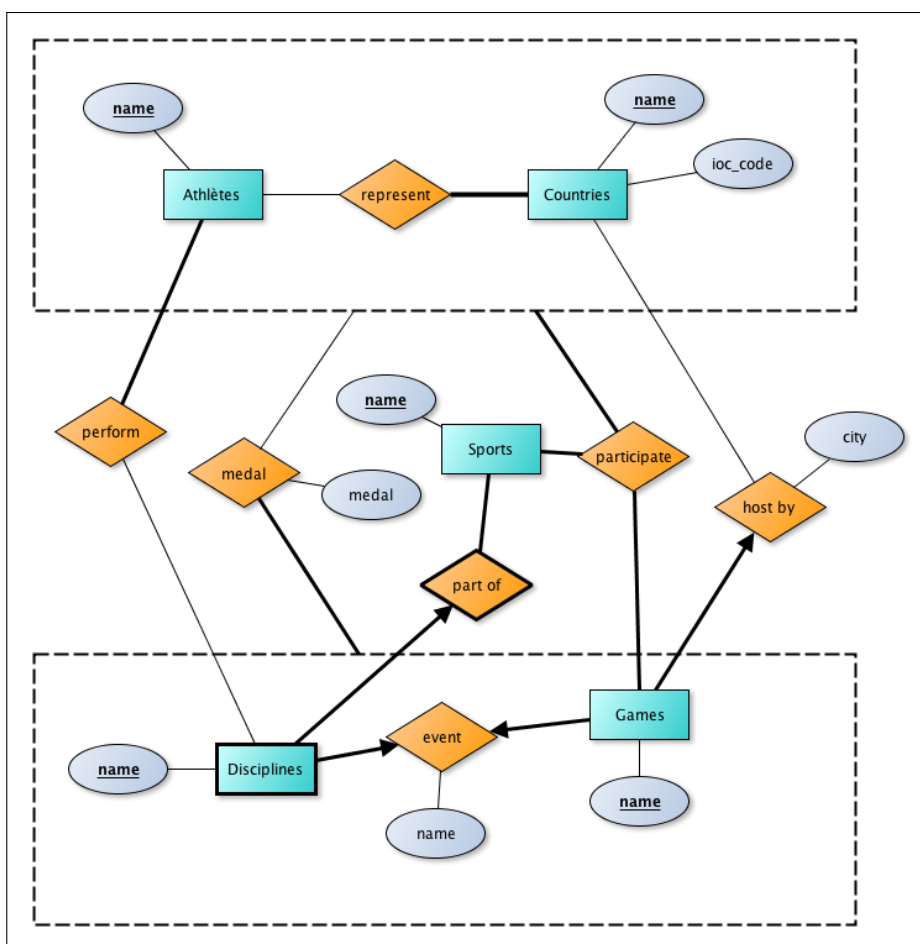
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Introduction

Bla bla bla

Entityrelationship model

Bla bla bla



Relational schema and constraints

Bla bla bla

SQL Data definition language statements

Bla bla bla

```

1  ## Sorry for the names guys. We surely will change them when
   ↳ implementing the DB.
2
3  ##### TABLES #####
4
5  # Note : Could not force the participation constraint to
   ↳ Disciplines.
6  CREATE TABLE Athletes (
7      name char(20),
8      PRIMARY KEY (name)
9  )
10
11 # Note : Could not force the participation constraint to Athletes.
12 CREATE TABLE Countries (
13     name char(20),
14     ioc_code char(6),
15     PRIMARY KEY (name)
16 )
17
18 # Note : Could not force the participation constraint to
   ↳ Disciplines.
19 CREATE TABLE Sports (
20     name char(20),
21     PRIMARY KEY (name)
22 )
23
24
25 CREATE TABLE Games (
26     name char(20),
27     host_country char(20) NOT NULL,
28     host_city char(20) NOT NULL,
29     number_of_countries integer(6),
30     number_of_athletes integer(6),
31     number_of_events integer(6),
32     PRIMARY KEY (name),
33     FOREIGN KEY (host_country) REFERENCES Countries (name)
34 )
35
36 CREATE TABLE Disciplines (
37     name char(20),

```

```

38     sport                char(20),
39     PRIMARY KEY (sport, name),
40     FOREIGN KEY (sport) REFERENCES Sports (name)
41         ON DELETE CASCADE
42 )
43
44 ##### RELATIONS #####
45
46 CREATE TABLE Athletes_represent_Countries (
47     athlete_name        char(20),
48     country_name        char(20),
49     PRIMARY KEY (athlete_name, country_name),
50     FOREIGN KEY (athlete_name) REFERENCES Athletes (name),
51     FOREIGN KEY (country_name) REFERENCES Countries (name)
52 )
53
54 CREATE TABLE Athletes_performs_Discipline (
55     athlete_name        char(20),
56     discipline_name      char(20),
57     PRIMARY KEY (athlete_name, discipline_name),
58     FOREIGN KEY (athlete_name) REFERENCES Athletes (name),
59     FOREIGN KEY (discipline_name) REFERENCES Disciplines (name)
60 )
61
62 CREATE TABLE Disciplines_event_Games (
63     name                char(20),
64     discipline          char(20),
65     games              char(20),
66     PRIMARY KEY (discipline, games),
67     FOREIGN KEY (discipline) REFERENCES Disciplines (name),
68     FOREIGN KEY (games) REFERENCES Games (name)
69 )
70
71 # Ternary relationship
72 CREATE TABLE Representant_participates_Sports_and_Games (
73     athlete            char(20),
74     country            char(20),
75     sport              char(20),
76     olympics          char(20),
77     PRIMARY KEY (athlete, country_name, sport, olympics),
78     FOREIGN KEY (athlete_name, country_name) REFERENCES
79         ↳Athletes_represent_Countries (athlete_name, country_name),
80     FOREIGN KEY (olympics) REFERENCES Games (name),
81     FOREIGN KEY (sport) REFERENCES Sports (name)
82 )
83 # Here event is a shortcut to table Disciplines_event_Games
84 # Note : There is no "event" field here.
85 CREATE TABLE Representant_medal_Event (
86     medalist          char(20),
87     country            char(20),
88     medal             char(20),
89     discipline_name    char(20),
90     olympics          char(20),
91     PRIMARY KEY (medalist, country, discipline_name, olympics),
92     FOREIGN KEY (medalist, country) REFERENCES
93         ↳Athletes_represent_Countries (athlete_name, country_name),
94     FOREIGN KEY (discipline_name, olympics) REFERENCES

```



```
94 |      ↳Disciplines_event_Games (discipline, games)  
   | )
```

Listing 4.1: Salut