A Report on

DBMS PROJECT

Topic name: Olympics Games 2020 Database

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PROJECT DESCRIPTION

Introduction

The Olympic Games is the world's most prestigious and celebrated international multi-sport event, featuring athletes from all over the world. The event is held every four years, and the next edition will take place in 2026.

- The Olympic Games 2020 Database Project aims to design a database system to manage and organize the data related to the event. The database will be used to store information about athletes, countries, events, venues, records, medals, and sports, among other things.

- This project will provide a comprehensive and integrated system to manage the data and provide accurate and relevant information to the users. The system will be designed to provide accurate, up-to-date information about athletes, countries, events, venues, records, medals, and sports, among other things. The system will also be designed to provide customized reports and analysis to the users, allowing them to analyze and understand the data in more detail.

- The database will be designed using the entity-relationship (ER) model, which is a data model used to represent the relationships between different entities in a database system.

Motivation

- Interest in sports: Being a fan of the Olympics or sports in general, we find it engaging to work with data related to the Games. We could use the database to explore trends and patterns across different sports, countries, and time periods, or to analyze the performance of specific athletes or teams.

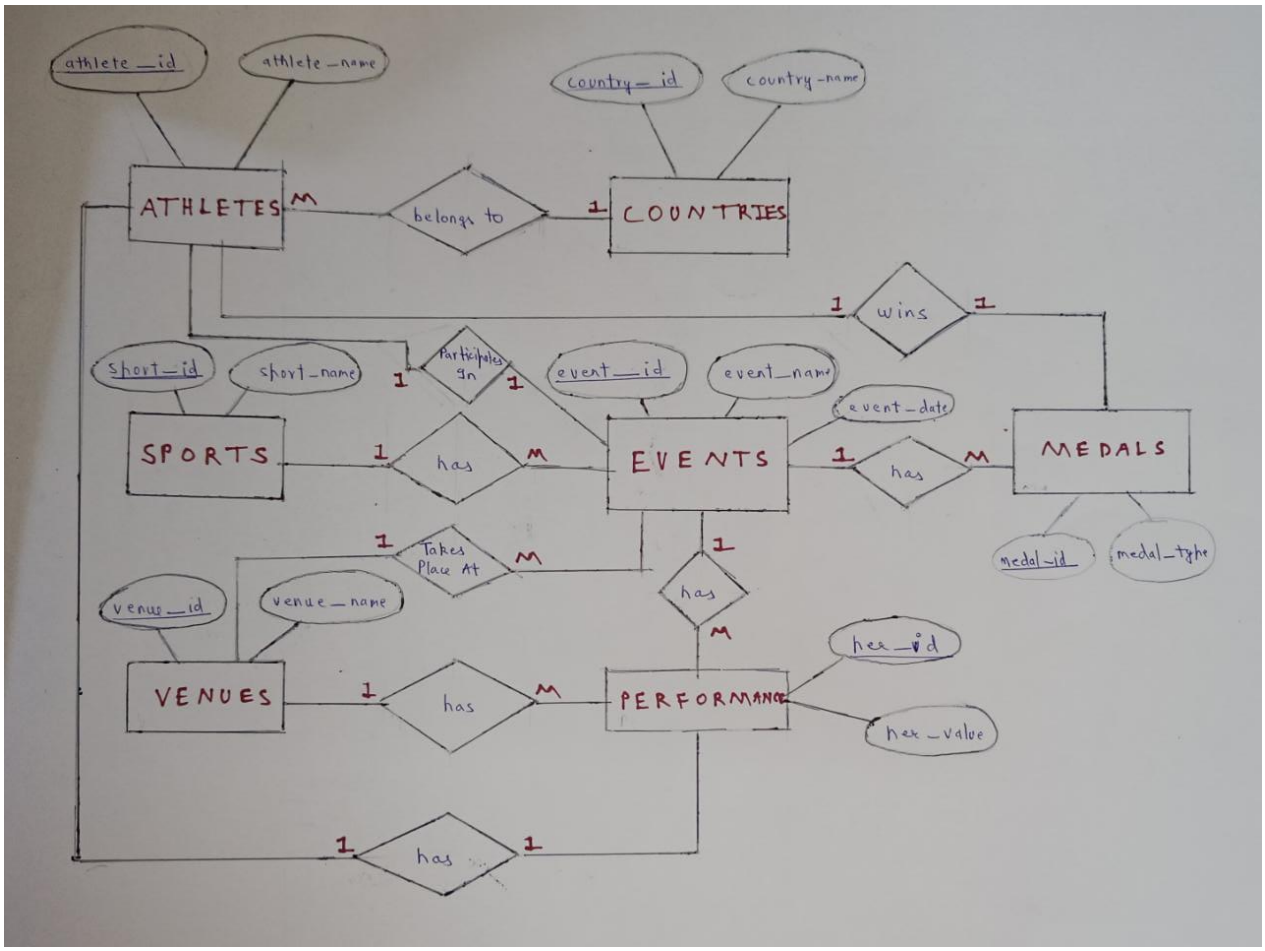
- Academic research: Interested in analyzing the Olympics database to explore questions about the impact of the Games on host cities, the economics of sports, or the role of sports in society.

- Overall, the Olympics database can be a rich and rewarding topic for a project, with applications in a wide range of fields and contexts.

Objectives

1. To design a database system that can effectively store, manage, and retrieve data related to the Olympic Games.
2. To analyze the existing methods for designing Olympic Databases.
3. To design the ER diagram of Olympic Games.
4. To design the Relational Schema of Olympic Games.
5. To implement the Olympic Database using SQL.

E-R DIAGRAM


athlete_id
athlete_name
country_id
country_name
ATHLETES
M
belongs to
1
COUNTRIES
1
wins
1
sport_id
sport_name
1
Participates In
1
event_id
event_name
event_date
SPORTS
1
has
M
EVENTS
1
has
M
MEDALS
medal_id
medal_type
1
Takes Place At
M
1
has
M
venue_id
venue_name
per_id
VENUES
1
has
M
PERFORMANCE
per_value
1
has
1

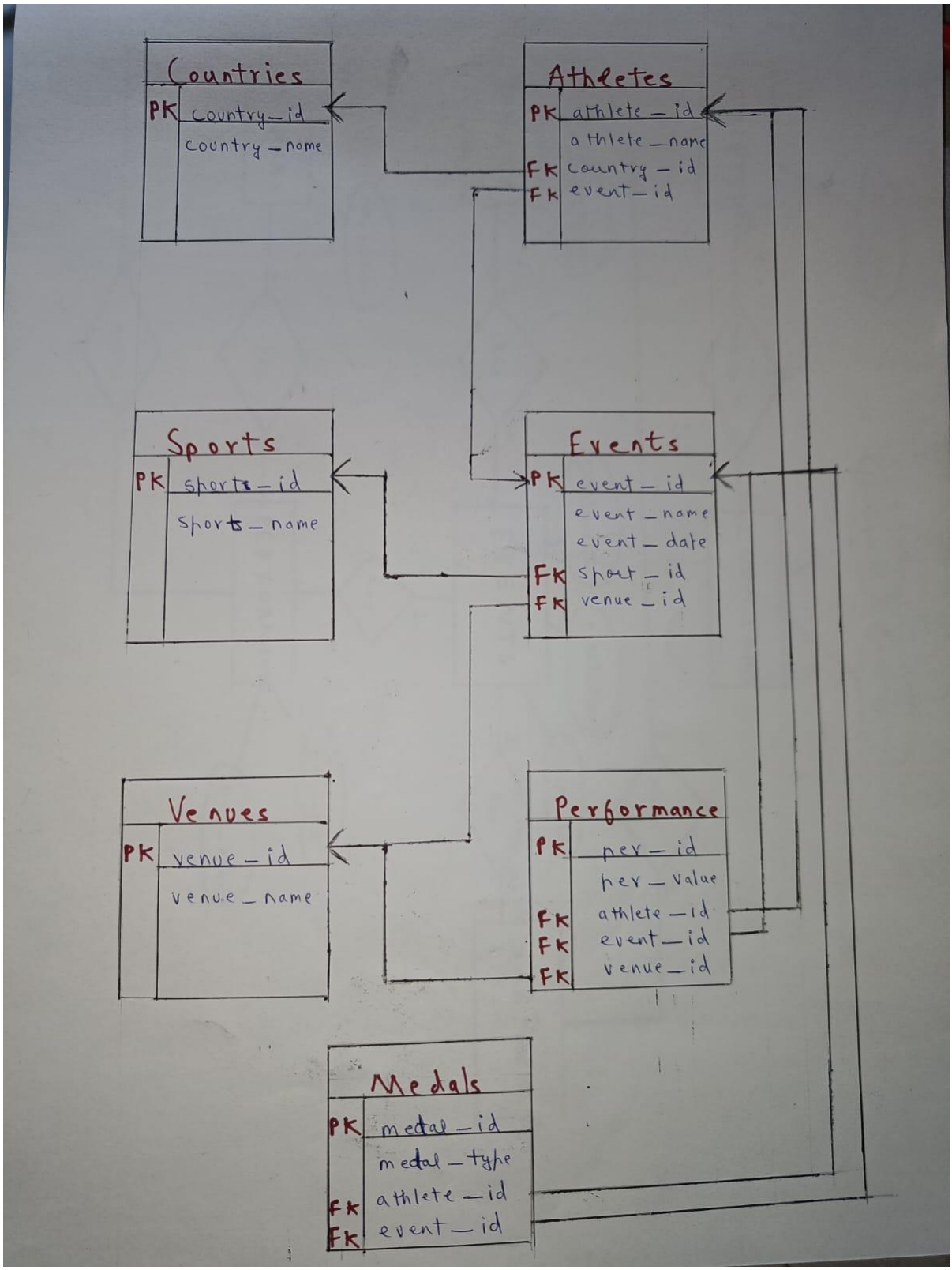
Entities

1) Athlete: This table will contain information about the athletes participating in the Olympic Games 2020, including their name , unique ID and the event they are participating in.
2) Country: This table will contain information about the countries participating in the Olympic Games 2020, including their name unique ID.
3) Events: This table will contain information about the events in the Olympic Games 2020, including the name of the event, the date and unique ID.
4) Venue: This table will contain information about the venues hosting the Olympic Games 2020, including the name and unique ID.
5) Performance: This table will contain information about the records set during the Olympic Games 2020, including the records made and unique ID.
6) Medals: This table will contain information about the medals awarded during the Olympic Games 2020, including the medal won and unique ID.
7) Sports: This table will contain information about the different sports featured in the Olympic Games 2020, including the name and unique ID.

Relationship

1) Athletes belongs to a country. (M-1)
2) An Athlete has a Performance. (1-1)
3) An Athlete wins a Medal. (1-1)
4) An Athlete participates in Event. (1-1)
5) Sport has many Events. (1-M)
6) Event has many Performances. (1-M)
7) Event has many Medals. (1-M)
8) Events takes place at Venue.(M-1)
9) Venue has many Performances. (1-M)

RELATIONAL SCHEMA DIAGRAM



DESCRIPTION

1) The Countries table contains information about countries participating in the Olympics, such as the country ID and name.
2) The Athletes table contains information about the athletes participating in the Olympics, such as athlete ID, name, the event they are participating in and the country they represent. The country_id and event_id column in this table is a foreign key referencing the Countries and Events table respectively.
3) The Sports table contains information about the sports played in the Olympics, such as sport ID and name.
4) The Events table contains information about the events taking place in the Olympics, such as event ID, name, date, the venue and the sport it belongs to. The sport_id and venue_id column in this table is a foreign key referencing the Sports and Venue Table respectively.
5) The Venues table contains information about the venues where the Olympic events take place, such as venue ID and name.
6) The Performance table contains information about the performance of the athletes in the respective events , such as performance ID, value The event_id , venue_id , athlete_id column in this table is a foreign key referencing the Events , Venues , Athletes table respectively.
7) The Medals table contains information about the medals won by the athletes in the respective events , such as medal ID and medal type. The event_id and athlete_id column in this table is a foreign key referencing the Events and Athletes Table respectively.

IMPLEMENTATION USING SQL

Table 1

```sql
CREATE TABLE Countries (
  country_id varchar(255) PRIMARY KEY,
  country_name VARCHAR(255) NOT NULL
);

INSERT INTO Countries VALUES ('US','USA');
INSERT INTO Countries VALUES ('JP', 'Japan');
INSERT INTO Countries VALUES ('CN' , 'China');
INSERT INTO Countries VALUES ('RU', 'Russia');
INSERT INTO Countries VALUES ('AU', 'Australia');
INSERT INTO Countries VALUES ('CA' ,'Canada');
INSERT INTO Countries VALUES ('FR', 'France');
INSERT INTO Countries VALUES ('GB', 'Great Britain');
INSERT INTO Countries VALUES ('DE', 'Germany');
INSERT INTO Countries VALUES ('IT', 'Italy');
INSERT INTO Countries VALUES ('BR', 'Brazil');
INSERT INTO Countries VALUES ('KR', 'South Korea');
```

Output

COUNTRY_ID	COUNTRY_NAME
US	USA
JP	Japan
CN	China
RU	Russia
AU	Australia
CA	Canada
FR	France
GB	Great Britain
DE	Germany
IT	Italy
BR	Brazil
KR	South Korea

Table 2

```sql
CREATE TABLE Athletes (
  athlete_id INT PRIMARY KEY,
  athlete_name VARCHAR(255) NOT NULL,
  country_id varchar(255),
  event_id float
);

INSERT INTO Athletes VALUES  (101, 'Simone Biles', 'US', 1.1);
INSERT INTO Athletes VALUES  (102, 'Katie Ledecky', 'US', 1.2);
INSERT INTO Athletes VALUES  (103, 'Caeleb Dressel', 'US', 1.1);
INSERT INTO Athletes VALUES  (104, 'Kosuke Hagino', 'JP', 4.1);
INSERT INTO Athletes VALUES  (105, 'Yui Ohashi', 'JP', 1.2);
INSERT INTO Athletes VALUES  (106, 'Zhang Yufei', 'CN',3.1);
INSERT INTO Athletes VALUES  (107, 'Li Fabin', 'CN',2.1);
INSERT INTO Athletes VALUES  (108, 'Anastasia Pavlyuchenkova', 'RU', 8.1);
INSERT INTO Athletes VALUES  (109, 'Evgeny Rylov', 'RU', 9.1);
INSERT INTO Athletes VALUES  (110, 'Ariarne Titmus', 'AU', 4.2);
INSERT INTO Athletes VALUES  (111, 'Emma McKeon', 'AU', 4.2);
INSERT INTO Athletes VALUES  (112, 'Maggie Mac Neil', 'CA', 6.1);
```

Output

ATHLETE_ID	ATHLETE_NAME	COUNTRY_ID	EVENT_ID
101	Simone Biles	US	1.1
102	Katie Ledecky	US	1.2
103	Caeleb Dressel	US	1.1
104	Kosuke Hagino	JP	4.1
105	Yui Ohashi	JP	1.2
106	Zhang Yufei	CN	3.1
107	Li Fabin	CN	2.1
108	Anastasia Pavlyuchenkova	RU	8.1
109	Evgeny Rylov	RU	9.1
110	Ariarne Titmus	AU	4.2
111	Emma McKeon	AU	4.2
112	Maggie Mac Neil	CA	6.1

Table 3

```sql
CREATE TABLE Sports (
    sport_id INT PRIMARY KEY,
    sport_name VARCHAR(255) NOT NULL
);

INSERT INTO Sports VALUES  (345, 'Swimming');
INSERT INTO Sports VALUES  (705, 'Gymnastics');
INSERT INTO Sports VALUES  (754, 'Diving');
INSERT INTO Sports VALUES  (908, 'Track and Field');
INSERT INTO Sports VALUES  (239, 'Cycling');
INSERT INTO Sports VALUES  (656, 'Basketball');
INSERT INTO Sports VALUES  (709, 'Soccer');
INSERT INTO Sports VALUES  (858, 'Volleyball');
INSERT INTO Sports VALUES  (939, 'Wrestling');
INSERT INTO Sports VALUES  (150, 'Weightlifting');
INSERT INTO Sports VALUES  (115, 'Fencing');
INSERT INTO Sports VALUES  (192, 'Boxing');

```

Output

SPORT_ID	SPORT_NAME
345	Swimming
705	Gymnastics
754	Diving
908	Track and Field
239	Cycling
656	Basketball
709	Soccer
858	Volleyball
939	Wrestling
150	Weightlifting
115	Fencing
192	Boxing

Table 4

```sql
CREATE TABLE Events (
  event_id float PRIMARY KEY,
  event_name VARCHAR(255) NOT NULL,
  event_date varchar(255) Not Null,
  sport_id INT,
  venue_id varchar(255)
 );

INSERT INTO Events VALUES  (1.1, '100m Freestyle','2022-07-22', 345, 'T1');
INSERT INTO Events VALUES  (1.2, '200m Individual Medley','2022-07-23', 345,'T1');
INSERT INTO Events VALUES  (3.1, '10m Platform','2022-07-24', 754 ,'T1');
INSERT INTO Events VALUES  (4.1, '400m Hurdles','2022-07-25', 908,'T3');
INSERT INTO Events VALUES  (4.2, 'Road Race','2022-07-26', 239, 'T5');
INSERT INTO Events VALUES  (2.1, 'Team All-Around','2022-07-27', 705,'T6');
INSERT INTO Events VALUES  (8.1, 'Beach Volleyball','2022-07-28', 858, 'T7');
INSERT INTO Events VALUES  (9.1, 'Greco-Roman 85kg','2022-07-29', 939 ,'T8');
INSERT INTO Events VALUES  (10.1, 'Clean and Jerk', '2022-07-30', 150 ,'T8');
INSERT INTO Events VALUES  (11.1, 'Individual Epee','2022-07-31', 115 ,'T11');
INSERT INTO Events VALUES  (12.1, 'Heavyweight','2022-08-01', 192 , 'T10');
INSERT INTO Events VALUES  (6.1, '3x3 Basketball','2022-08-02', 656, 'T12');

```

Output

EVENT_ID	EVENT_NAME	EVENT_DATE	SPORT_ID	VENUE_ID
1.1	100m Freestyle	2022-07-22	345	T1
1.2	200m Individual Medley	2022-07-23	345	T1
3.1	10m Platform	2022-07-24	754	T1
4.1	400m Hurdles	2022-07-25	908	T3
4.2	Road Race	2022-07-26	239	T5
2.1	Team All-Around	2022-07-27	705	T6
8.1	Beach Volleyball	2022-07-28	858	T7
9.1	Greco-Roman 85kg	2022-07-29	939	T8
10.1	Clean and Jerk	2022-07-30	150	T8
11.1	Individual Epee	2022-07-31	115	T11
12.1	Heavyweight	2022-08-01	192	T10
6.1	3x3 Basketball	2022-08-02	656	T12

Table 5

```sql
CREATE TABLE Venues (
  venue_id varchar(255) PRIMARY KEY,
  venue_name VARCHAR(255) NOT NULL
);

INSERT INTO Venues VALUES  ('T1', 'Tokyo Aquatics Centre');
INSERT INTO Venues VALUES  ('T2', 'Ariake Gymnastics Centre');
INSERT INTO Venues VALUES  ('T3', 'Tokyo Stadium');
INSERT INTO Venues VALUES  ('T4', 'Izu Velodrome');
INSERT INTO Venues VALUES  ('T5', 'Ariake Urban Sports Park');
INSERT INTO Venues VALUES  ('T6', 'Saitama Super Arena');
INSERT INTO Venues VALUES  ('T7', 'International Stadium Yokohama');
INSERT INTO Venues VALUES  ('T8', 'Makuhari Messe Hall A');
INSERT INTO Venues VALUES  ('T9', 'Makuhari Messe Hall B');
INSERT INTO Venues VALUES  ('T10', 'Kokugikan Arena');
INSERT INTO Venues VALUES  ('T11', 'Musashino Forest Sport Plaza');
INSERT INTO Venues VALUES  ('T12', 'Olympic Stadium');
```

Output

VENUE_ID	VENUE_NAME
T1	Tokyo Aquatics Centre
T2	Ariake Gymnastics Centre
T3	Tokyo Stadium
T4	Izu Velodrome
T5	Ariake Urban Sports Park
T6	Saitama Super Arena
T7	International Stadium Yokohama
T8	Makuhari Messe Hall A
T9	Makuhari Messe Hall B
T10	Kokugikan Arena
T11	Musashino Forest Sport Plaza
T12	Olympic Stadium

Table 6

```
CREATE TABLE Performance (
  per_id INT PRIMARY KEY,
  athlete_id INT,
  event_id float,
  venue_id varchar(255),
  per_value varchar(255)
);

INSERT INTO Performance VALUES (001, 101, 1.1, 'T1', '52.95');
INSERT INTO Performance VALUES (002, 102, 1.2, 'T1', '2:08.36');
INSERT INTO Performance VALUES (003, 103, 1.1, 'T1', '47.02');
INSERT INTO Performance VALUES (004, 104, 4.1, 'T3', '48.33');
INSERT INTO Performance VALUES (005, 105, 1.2, 'T1', '2:08.52');
INSERT INTO Performance VALUES (006, 106, 3.1, 'T1', '390.81');
INSERT INTO Performance VALUES (007, 107, 2.1, 'T6', '172.52');
INSERT INTO Performance VALUES (008, 108, 8.1, 'T7', '2-0');
INSERT INTO Performance VALUES (009, 109, 9.1, 'T8', null);
INSERT INTO Performance VALUES (010, 110, 4.2, 'T5', '3:30:23');
INSERT INTO Performance VALUES (011, 111, 4.2, 'T5', '3:51:96');
INSERT INTO Performance VALUES (012, 112, 6.1, 'T12', null);

```

Output

PER_ID	ATHLETE_ID	EVENT_ID	VENUE_ID	PER_VALUE
1	101	1.1	T1	52.95
2	102	1.2	T1	2:08.36
3	103	1.1	T1	47.02
4	104	4.1	T3	48.33
5	105	1.2	T1	2:08.52
6	106	3.1	T1	390.81
7	107	2.1	T6	172.52
8	108	8.1	T7	2-0
9	109	9.1	T8	-
10	110	4.2	T5	3:30:23
11	111	4.2	T5	3:51:96
12	112	6.1	T12	-

Table 7

```sql
CREATE TABLE Medals (
  medal_id varchar(255) PRIMARY KEY,
  athlete_id int ,
  event_id float,
  medal_type VARCHAR(255) NOT NULL
);

INSERT INTO Medals VALUES  ('M1', 101, 1.1, 'Gold');
INSERT INTO Medals VALUES  ('M2', 102, 1.2, 'Silver');
INSERT INTO Medals VALUES  ('M3', 103, 1.1, 'Bronze');
INSERT INTO Medals VALUES  ('M4', 104, 4.1, 'Gold');
INSERT INTO Medals VALUES  ('M5', 105, 1.2, 'Silver');
INSERT INTO Medals VALUES  ('M6', 106, 3.1, 'Bronze');
INSERT INTO Medals VALUES  ('M7', 107, 2.1, 'Gold');
INSERT INTO Medals VALUES  ('M8', 108, 8.1, 'Silver');
INSERT INTO Medals VALUES  ('M9', 109, 9.1, 'Bronze');
INSERT INTO Medals VALUES  ('M10',' 110, 4.2, 'Gold');
INSERT INTO Medals VALUES  ('M11', 111, 4.2, 'Silver');
INSERT INTO Medals VALUES  ('M12', 112, 6.1, 'Bronze');
```

Output

MEDAL_ID	ATHLETE_ID	EVENT_ID	MEDAL_TYPE
M1	101	1.1	Gold
M2	102	1.2	Silver
M3	103	1.1	Bronze
M4	104	4.1	Gold
M5	105	1.2	Silver
M6	106	3.1	Bronze
M7	107	2.1	Gold
M8	108	8.1	Silver
M9	109	9.1	Bronze
M11	111	4.2	Silver
M12	112	6.1	Bronze

ALTER COMMANDS

```
alter table Athletes add constraint FK_country_id
foreign key(country_id) references Countries (country_id)

alter table Athletes add constraint FK_country_id2
foreign key(event_id) references Events (event_id)

alter table  Events add constraint FK_sport_id
foreign key(sport_id) references Sports(sport_id)

alter table  Events add constraint FK_venue_id
foreign key(venue_id) references Venues(venue_id)

alter table Performance add constraint FK_athlete_id
foreign key(athlete_id ) references Athletes(athlete_id )

alter table Performance add constraint FK_event_id
foreign key(event_id) references Events(event_id)

alter table Performance add constraint FK_venue_id2
foreign key(venue_id) references Venues(venue_id)
```

QUERIES

1) Retrieve all countries in alphabetical order.

SELECT * FROM Countries ORDER BY country_name;

COUNTRY_ID	COUNTRY_NAME
AU	Australia
BR	Brazil
CA	Canada
CN	China
FR	France
DE	Germany
GB	Great Britain
IT	Italy
JP	Japan
RU	Russia
KR	South Korea
US	USA

2) Retrieve all athletes and their corresponding countries.

SELECT Athletes.athlete_name, Countries.country_name FROM Athletes JOIN Countries ON Athletes.country_id = Countries.country_id;

ATHLETE_NAME	COUNTRY_NAME
Simone Biles	USA
Katie Ledecky	USA
Caeleb Dressel	USA
Kosuke Hagino	Japan
Yui Ohashi	Japan
Zhang Yufei	China
Li Fabin	China
Anastasia Pavlyuchenkova	Russia
Evgeny Rylov	Russia
Ariarne Titmus	Australia
Emma McKeon	Australia
Maggie Mac Neil	Canada

3)Retrieve all sports in descending order by sport name.

SELECT * FROM Sports ORDER BY sport_name DESC;

SPORT_ID	SPORT_NAME
939	Wrestling
150	Weightlifting
858	Volleyball
908	Track and Field
345	Swimming
709	Soccer
705	Gymnastics
115	Fencing
754	Diving
239	Cycling
192	Boxing
656	Basketball

4)Retrieve all athletes from the United States.

SELECT * FROM Athletes WHERE country_id = 'US';

ATHLETE_ID	ATHLETE_NAME	COUNTRY_ID
101	Simone Biles	US
102	Katie Ledecky	US
103	Caeleb Dressel	US

5)Retrieve the total number of athletes from each country.

SELECT Countries.country_name, COUNT(Athletes.athlete_id) as total_athletes FROM Countries JOIN Athletes ON Countries.country_id = Athletes.country_id GROUP BY Countries.country_name;

COUNTRY_NAME	TOTAL_ATHLETES
Japan	2
Russia	2
USA	3
Australia	2
China	2
Canada	1

6)Retrieve the events that take place on July 25th, 2022.

SELECT * FROM Events WHERE event_date = '2022-07-25';

EVENT_ID	EVENT_NAME	EVENT_DATE	SPORT_ID
4.1	400m Hurdles	2022-07-25	908

7)Retrieve all events that take place in the Tokyo Stadium.

SELECT Events.event_name FROM Events,Venues WHERE Venues.venue_name = 'Tokyo Stadium' and Events.venue_id = Venues.venue_id;

EVENT_NAME
400m Hurdles

8)Retrieve all athletes and the events they will participate in, sorted by event date.

SELECT Athletes.athlete_name, Events.event_name, Events.event_date FROM Athletes, Events where Athletes.event_id = Events.event_id ORDER BY Events.event_date;

ATHLETE_NAME	EVENT_NAME	EVENT_DATE
Simone Biles	100m Freestyle	2022-07-22
Caeleb Dressel	100m Freestyle	2022-07-22
Katie Ledecky	200m Individual Medley	2022-07-23
Yui Ohashi	200m Individual Medley	2022-07-23
Zhang Yufei	10m Platform	2022-07-24
Kosuke Hagino	400m Hurdles	2022-07-25
Ariarne Titmus	Road Race	2022-07-26
Emma McKeon	Road Race	2022-07-26
Li Fabin	Team All-Around	2022-07-27
Anastasia Pavlyuchenkova	Beach Volleyball	2022-07-28
Evgeny Rylov	Greco-Roman 85kg	2022-07-29
Maggie Mac Neil	3x3 Basketball	2022-08-02

9)Retrieve all events and their corresponding venues.

SELECT Events.event_name, Venues.venue_name FROM Events,Venues where Events.venue_id = Venues.venue_id;

EVENT_NAME	VENUE_NAME
100m Freestyle	Tokyo Aquatics Centre
200m Individual Medley	Tokyo Aquatics Centre
10m Platform	Tokyo Aquatics Centre
400m Hurdles	Tokyo Stadium
Road Race	Ariake Urban Sports Park
Team All-Around	Saitama Super Arena
Beach Volleyball	International Stadium Yokohama
Greco-Roman 85kg	Makuhari Messe Hall A
Clean and Jerk	Makuhari Messe Hall A
Heavyweight	Kokugikan Arena
Individual Epee	Musashino Forest Sport Plaza
3x3 Basketball	Olympic Stadium

10)Retrieve the total number of athletes from each country.

SELECT Countries.country_name, COUNT(Athletes.athlete_id) as total_athletes FROM Countries,Athletes where Countries.country_id = Athletes.country_id GROUP BY Countries.country_name;

COUNTRY_NAME	TOTAL_ATHLETES
Russia	2
Japan	2
Australia	2
USA	3
China	2
Canada	1

11) Retrieve the names of all events that are taking place in the Saitama Super Arena and the names of their corresponding sports.

SELECT Events.event_name, Sports.sport_name FROM Events JOIN Sports ON Events.sport_id = Sports.sport_id JOIN Venues ON Events.venue_id = Venues.venue_id

WHERE Venues.venue_name = 'Saitama Super Arena';

EVENT_NAME	SPORT_NAME
Team All-Around	Gymnastics

12)Find the total number of events in each venue.

SELECT venue_name, COUNT(*) AS num_events FROM Events JOIN Venues ON Events.venue_id = Venues.venue_id GROUP BY venue_name;

VENUE_NAME	NUM_EVENTS
Saitama Super Arena	1
International Stadium Yokohama	1
Olympic Stadium	1
Tokyo Stadium	1
Kokugikan Arena	1
Tokyo Aquatics Centre	3
Makuhari Messe Hall A	2
Ariake Urban Sports Park	1
Musashino Forest Sport Plaza	1

13)Retrieve the names of all the athletes who participated in the "Basketball" or "Soccer" sport.

SELECT athlete_name FROM Athletes JOIN Events ON Athletes.event_id=Events.event_id JOIN Sports ON Events.sport_id=Sports.sport_id WHERE sport_name='Basketball' OR sport_name='Soccer';

ATHLETE_NAME
Maggie Mac Neil

14) Retrieve the athlete names and their corresponding event names for athletes from China.

SELECT athlete_name, event_name FROM Athletes JOIN Events ON Athletes.event_id=Events.event_id JOIN Countries ON Athletes.country_id=Countries.country_id WHERE country_name='China';

ATHLETE_NAME	EVENT_NAME
Zhang Yufei	10m Platform
Li Fabin	Team All-Around

15)Retrieve the athlete names and their corresponding event names where the event date is between '2022-07-25' and '2022-07-30'.

SELECT athlete_name, event_name FROM Athletes JOIN Events ON Athletes.event_id=Events.event_id WHERE event_date BETWEEN '2022-07-25' AND '2022-07-30';

ATHLETE_NAME	EVENT_NAME
Li Fabin	Team All-Around
Anastasia Pavlyuchenkova	Beach Volleyball
Evgeny Rylov	Greco-Roman 85kg
Ariarne Titmus	Road Race
Emma McKeon	Road Race
Kosuke Hagino	400m Hurdles

Conclusion

The database designed and implemented in this project provides a comprehensive solution for managing the data related to the athletes, countries, sports, events, and venues involved in the 2020 Tokyo Olympics. The database has been constructed with four main tables: Countries, Athletes, Sports, and Events, each containing their specific attributes and relationships with each other. The Venues table has also been added to provide further details about the event locations.

The Countries table holds data related to all the countries participating in the Olympics. Each country has been assigned a unique identifier, and their names have been stored in this table. The Athletes table contains information about all the athletes participating in the games, including their names, country of origin, and the events in which they will participate.

The Sports table stores information about the sports included in the games, including their unique identifiers and names. The Events table provides information about the specific events that will take place during the games, such as their unique identifiers, names, dates, and locations.

Finally, the Venues table contains data about the locations where the events will take place, including their unique identifiers and names.

The relationships between these tables are crucial to the functioning of the database, as they allow for efficient and accurate retrieval of data. For instance, the Athletes table has a foreign key reference to the Countries table, allowing for easy retrieval of an athlete's country of origin. Similarly, the Events table has foreign key references to the Sports and Venues tables, allowing for efficient queries regarding the sport and location of a specific event.

In conclusion, this database provides a well-structured and organized solution for managing the data related to the 2020 Tokyo Olympics. Its design allows for efficient retrieval and management of data, making it an excellent tool for anyone involved in organizing, managing, or reporting on the games.

References

LIVE SQL LINK - https://livesql.oracle.com/apex/livesql/s/oz1d0nkl847homughgfdbkjmz

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