

Taller 1: Fundamentos de BD con MySQL

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1. Creación de la tabla e inserción de datos

```
CREATE TABLE `tbl_actor` (  
  `actor_id` SMALLINT(5) unsigned NOT NULL AUTO_INCREMENT,  
  `first_name` VARCHAR(45) NOT NULL,  
  `last_name` VARCHAR(45) NOT NULL,  
  PRIMARY KEY (`actor_id`)  
);
```

```
mysql> insert into tbl_actor (first_name, last_name) values ("Anthony","Hopkins")  
-> ;  
Query OK, 1 row affected (0.00 sec)  
  
mysql> select * from tbl_actor  
-> ;  
+-----+-----+-----+  
| actor_id | first_name | last_name |  
+-----+-----+-----+  
|      1 | Anthony   | Hopkins   |  
+-----+-----+-----+  
1 row in set (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("John","Leguizamo");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Damián","Alcázar");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Alfred","Molina");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Leonor","Watling");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> select * from tbl_actor;  
+-----+-----+-----+  
| actor_id | first_name | last_name |  
+-----+-----+-----+  
|      1 | Anthony   | Hopkins   |  
|      2 | John      | Leguizamo |  
|      3 | Damián    | Alcázar   |  
|      4 | Alfred    | Molina    |  
|      5 | Leonor    | Watling   |  
+-----+-----+-----+  
5 rows in set (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Alvaro","Rodríguez");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Edgardo","Roman");  
Query OK, 1 row affected (0.00 sec)  
  
mysql> insert into tbl_actor (first_name, last_name) values ("Santiago","Londoño");  
Query OK, 1 row affected (0.00 sec)
```

2. Creación de la tabla para la relación muchos a muchos.

```
CREATE TABLE `tbl_participacion` (  
  `actor_id` SMALLINT(5) unsigned NOT NULL,  
  `titulo` VARCHAR(50) NOT NULL,  
  FOREIGN KEY (`actor_id`) REFERENCES tbl_actor(`actor_id`),  
  FOREIGN KEY (`titulo`) REFERENCES tbl_pelicula(`titulo`),  
  UNIQUE (`actor_id`,`titulo`)  
);
```

3. Consultas

A. Consulta para saber las películas en las que han participado los actores:

```
SELECT  
  ac.first_name,  
  ac.last_name,  
  p.titulo  
FROM  
  tbl_actor ac  
  INNER JOIN tbl_participacion p ON ac.actor_id = p.actor_id;
```

Resultado:

first_name	last_name	titulo
John	Leguizamo	Crónicas
Damián	Alcázar	Crónicas
Alfred	Molina	Crónicas
Leonor	Watling	Crónicas
Alvaro	Rodríguez	La historia del baúl rosado
Edgardo	Roman	La historia del baúl rosado
Santiago	Londoño	Rio Seco

7 rows in set (0.00 sec)

B. Consulta para saber el nombre de los actores que no han participado en películas registradas en la bd:

```
SELECT  
  ac.first_name,  
  ac.last_name  
FROM  
  tbl_actor ac  
  LEFT JOIN tbl_participacion p ON ac.actor_id = p.actor_id  
WHERE  
  p.titulo IS NULL;
```

Resultado:

```

+-----+-----+
| first_name | last_name |
+-----+-----+
| Anthony   | Hopkins   |
+-----+-----+
1 row in set (0.00 sec)

```

- C. Consulta para saber el nombre de los actores que participaron en la película "Crónicas":

```

SELECT
    ac.first_name,
    ac.last_name
FROM
    tbl_actor ac
    LEFT JOIN tbl_participacion p ON ac.actor_id = p.actor_id
WHERE
    p.titulo = "Crónicas";

```

```

+-----+-----+
| first_name | last_name |
+-----+-----+
| John       | Leguizamo |
| Damián     | Alcázar   |
| Alfred     | Molina    |
| Leonor     | Watling   |
+-----+-----+
4 rows in set (0.01 sec)

```

- D. Consulta para saber los actores que han participado en películas colombianas y la película en la que lo hicieron:

```

SELECT
    ac.first_name,
    ac.last_name,
    p.titulo,
    pais.nombre
FROM
    tbl_actor ac
    INNER JOIN tbl_participacion p ON ac.actor_id = p.actor_id
    INNER JOIN tbl_pelicula pel ON p.titulo = pel.titulo
    INNER JOIN tbl_pais pais ON pel.id_pais_fk = pais.id_pais
WHERE
    pais.nombre = "Colombia";

```

Resultado:

first_name	last_name	titulo	nombre
Alvaro	Rodriguez	La historia del baúl rosado	Colombia
Edgardo	Roman	La historia del baúl rosado	Colombia
Santiago	Londoño	Rio Seco	Colombia

3 rows in set (0.00 sec)

4. Descargue una BD de internet y restaure la copia de seguridad a su servidor MySQL. Realice varias consultas SQL, explique sus consultas y pegue aquí la consulta y los resultados obtenidos (Por lo menos tres consultas distintas).

Base de datos seleccionada: World_x.sql

<https://jagonzalez.org/descargar-base-de-datos-de-prueba-para-mysql/>

A. Creación de la base de datos

```
C:\laragon\www>mysql -u root -p < F:\world_x-db\world_x-db\world_x.sql
Enter password:

C:\laragon\www>mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 5.7.33 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| peliculas_db |
| performance_schema |
| sakila |
| sys |
| world_x |
+-----+
7 rows in set (0.02 sec)
```

B. Exploración de la estructura de la base de datos.

Cmder

C:\> 1. www

```
mysql> use world_x
Database changed
mysql> show tables;
+-----+
| Tables_in_world_x |
+-----+
| city                |
| country             |
| countryinfo         |
| countrylanguage     |
+-----+
4 rows in set (0.01 sec)

mysql> describe city
-> ;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| ID         | int(11)   | NO   | PRI | NULL    | auto_increment |
| Name       | char(35)  | NO   |     |          |                |
| CountryCode | char(3)   | NO   |     |          |                |
| District   | char(20)  | NO   |     |          |                |
| Info       | json      | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

mysql> describe country;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| Code       | char(3)   | NO   | PRI |          |                |
| Name       | char(52)  | NO   |     |          |                |
| Capital    | int(11)   | YES  |     | NULL    |                |
| Code2      | char(2)   | NO   |     |          |                |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql> describe countryinfo;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra      |
+-----+-----+-----+-----+-----+-----+
| doc        | json      | YES  |     | NULL    |                |
| _id        | varbinary(32) | NO   | PRI | NULL    | STORED GENERATED |
+-----+-----+-----+-----+-----+-----+
```

5. Consultas

A. En qué países, más del 50% de la población no habla el el lenguaje oficial del país.

No en todos los países la mayoría de la población habla el lenguaje oficial del país, este es el caso de Aruba, donde la mayoría de las personas habla papiamento, que no es el lenguaje oficial del país. Es así, que sería interesante conocer en qué países no se habla el lenguaje oficial.

Consulta: SELECT Name as Country, Language, IsOfficial, Percentage FROM country C, countrylanguage CL WHERE C.Code = CL.CountryCode AND IsOfficial="F" AND Percentage > 50;

Resultado:

Country	Language	IsOfficial	Percentage
Aruba	Papiamento	F	76.7
Antigua and Barbuda	Creole English	F	95.7
Burkina Faso	Mossi	F	50.2
Bahamas	Creole English	F	89.7
Barbados	Bajan	F	95.1
Botswana	Tswana	F	75.5
Congo	Kongo	F	51.5
Cape Verde	Crioulo	F	100.0
Dominica	Creole English	F	100.0
Ghana	Akan	F	52.4
Guadeloupe	Creole French	F	95.0
Equatorial Guinea	Fang	F	84.8
Grenada	Creole English	F	100.0
French Guiana	Creole French	F	94.3
Guyana	Creole English	F	96.4
Hong Kong	Canton Chinese	F	88.7
Haiti	Haiti Creole	F	100.0
Jamaica	Creole English	F	94.2
Saint Kitts and Nevis	Creole English	F	100.0
Saint Lucia	Creole French	F	80.0
Macao	Canton Chinese	F	85.6
Mauritania	Hassaniya	F	81.7
Martinique	Creole French	F	96.6
Mauritius	Creole French	F	70.6
Namibia	Ovambo	F	50.7
Niger	Hausa	F	53.1
Papua New Guinea	Papuan Languages	F	78.1
Palestine	Arabic	F	95.9
Réunion	Creole French	F	91.5
Solomon Islands	Malenasian Languages	F	85.6
Sao Tome and Principe	Crioulo	F	86.3
Suriname	Sranantonga	F	81.0
Seychelles	Seselwa	F	91.3
Trinidad and Tobago	English	F	93.5
Taiwan	Min	F	66.7
Saint Vincent and the Grenadines	Creole English	F	99.1
Samoa	Samoa-English	F	52.0
Zimbabwe	Shona	F	72.1

B. Cuales son las ciudades y su población de un país en específico

Saber cuáles son las ciudades de un país en específico y su población puede ser útil para tener conocimiento sobre este país.

Consulta: Select CO.Name as Country, CI.Name as City, Info FROM country CO, city CI WHERE CO.Code = CI.CountryCode AND CO.Name = "Colombia";

Resultado:

Country	City	Info
Colombia	Santafé de Bogotá	{"Population": 6260862}
Colombia	Cali	{"Population": 2077386}
Colombia	Medellín	{"Population": 1861265}
Colombia	Barranquilla	{"Population": 1223260}
Colombia	Cartagena	{"Population": 805757}
Colombia	Cúcuta	{"Population": 606932}
Colombia	Bucaramanga	{"Population": 515555}
Colombia	Ibagué	{"Population": 393664}
Colombia	Pereira	{"Population": 381725}
Colombia	Santa Marta	{"Population": 359147}
Colombia	Manizales	{"Population": 337580}
Colombia	Bello	{"Population": 333470}
Colombia	Pasto	{"Population": 332396}
Colombia	Neiva	{"Population": 300052}
Colombia	Soledad	{"Population": 295058}
Colombia	Armenia	{"Population": 288977}
Colombia	Villavicencio	{"Population": 273140}
Colombia	Soacha	{"Population": 272058}
Colombia	Valledupar	{"Population": 263247}
Colombia	Montería	{"Population": 248245}
Colombia	Itagüí	{"Population": 228985}
Colombia	Palmira	{"Population": 226509}
Colombia	Buenaventura	{"Population": 224336}
Colombia	Floridablanca	{"Population": 221913}
Colombia	Sincelejo	{"Population": 220704}
Colombia	Popayán	{"Population": 200719}
Colombia	Barrancabermeja	{"Population": 178020}
Colombia	Dos Quebradas	{"Population": 159363}
Colombia	Tuluá	{"Population": 152488}
Colombia	Envigado	{"Population": 135848}
Colombia	Cartago	{"Population": 125884}
Colombia	Girardot	{"Population": 110963}
Colombia	Buga	{"Population": 110699}
Colombia	Tunja	{"Population": 109740}
Colombia	Florencia	{"Population": 108574}
Colombia	Maicao	{"Population": 108053}
Colombia	Sogamoso	{"Population": 107728}
Colombia	Giron	{"Population": 90688}

C. Cuál es la capital de los países que empiezan por “C” y a qué distrito pertenece.

Conocer la capital de algunos países y su distrito es de ayuda para futuras consultas.

Consulta: Select CO.Name as Country, CI.Name as City, District FROM country CO, city CI WHERE CO.Capital = CI.ID AND Co.Name LIKE 'C%';

Resultado:

Country	City	District
Central African Republic	Bangui	Bangui
Canada	Ottawa	Ontario
Cocos (Keeling) Islands	West Island	West Island
Chile	Santiago de Chile	Santiago
China	Peking	Peking
Côte d'Ivoire	Yamoussoukro	Yamoussoukro
Cameroon	Yaoundé	Centre
Congo, The Democratic Republic of the	Kinshasa	Kinshasa
Congo	Brazzaville	Brazzaville
Cook Islands	Avarua	Rarotonga
Colombia	Santafé de Bogotá	Santafé de Bogotá
Comoros	Moroni	Njazidja
Cape Verde	Praia	São Tiago
Costa Rica	San José	San José
Cuba	La Habana	La Habana
Christmas Island	Flying Fish Cove	?
Cayman Islands	George Town	Grand Cayman
Cyprus	Nicosia	Nicosia
Czech Republic	Praha	Hlavní mesto Praha
Croatia	Zagreb	Grad Zagreb
Cambodia	Phnom Penh	Phnom Penh
Chad	N'Djaména	Chari-Baguirmi