

COMP306 HW2
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Question 1)

```
[(base) sarpcagankelleci@Sarp-MBP ~ % mysql -u root -p < /Users/sarpcagankelleci/Desktop/FALL24/COMP306/HW/HW2/world.sql
Enter password:
[(base) sarpcagankelleci@Sarp-MBP ~ % mysql -u root -p
```

Enter password:

Welcome to the MySQL monitor. Commands end with ; or \g.

Your MySQL connection id is 19

Server version: 9.1.0 MySQL Community Server - GPL

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

```
mysql> SHOW DATABASES;
```

Database
information_schema
mysql
performance_schema
sys
world

5 rows in set (0.01 sec)

```
mysql> USE world;
```

Reading table information for completion of table and column names

You can turn off this feature to get a quicker startup with -A

Database changed

```
mysql> SHOW TABLES;
```

Tables_in_world
city
country
countrylanguage

3 rows in set (0.00 sec)

Question 2)

A) `mysql> SELECT`
`-> country.Code AS CountryCode,`
`-> country.Name AS CountryName,`
`-> city.Name AS CityName,`
`-> city.Population AS CityPopulation`
`-> FROM`
`-> city`
`-> JOIN`
`-> country ON city.CountryCode = country.Code`
`-> WHERE`
`-> country.LifeExpectancy > 75`
`-> AND country.Population < 1000000`
`-> ORDER BY`
`-> city.Population ASC;`

CountryCode	CountryName	CityName	CityPopulation
AIA	Anguilla	The Valley	595
AIA	Anguilla	South Hill	961
GUM	Guam	Agaña	1139
BMU	Bermuda	Hamilton	1200
MCO	Monaco	Monaco-Ville	1234
SHN	Saint Helena	Jamestown	1500
BMU	Bermuda	Saint George	1800
MSR	Montserrat	Plymouth	2000
SMR	San Marino	San Marino	2294
ASM	American Samoa	Fagatogo	2323
SMR	San Marino	Serravalle	4802
LIE	Liechtenstein	Vaduz	5043
ASM	American Samoa	Tafuna	5200
LIE	Liechtenstein	Schaan	5346
SPM	Saint Pierre and Miquelon	Saint-Pierre	5808
MLT	Malta	Valletta	7073
VGB	Virgin Islands, British	Road Town	8000
MNP	Northern Mariana Islands	Garapan	9200
GUM	Guam	Tamuning	9500
GLP	Guadeloupe	Basse-Terre	12433
VIR	Virgin Islands, U.S.	Charlotte Amalie	13000
MCO	Monaco	Monte-Carlo	13154
FRO	Faroe Islands	Tórshavn	14542
CYM	Cayman Islands	George Town	19600
AND	Andorra	Andorra la Vella	21189
MLT	Malta	Birkirkara	21445
GIB	Gibraltar	Gibraltar	27025
ABW	Aruba	Oranjestad	29034
GUF	French Guiana	Cayenne	50699
GLP	Guadeloupe	Les Abymes	62947
LUX	Luxembourg	Luxembourg [Luxemburg/Lëtzebuerg]	80700
MTQ	Martinique	Fort-de-France	94050
ISL	Iceland	Reykjavik	109184
CYP	Cyprus	Limassol	154400
CYP	Cyprus	Nicosia	195000
MAC	Macao	Macao	437500

36 rows in set (0.00 sec)

B) mysql> SELECT
 -> country.Code AS CountryCode,
 -> city.Name AS CityName
 -> FROM
 -> city
 -> JOIN
 -> country ON city.CountryCode = country.Code
 -> JOIN
 -> countrylanguage ON country.Code = countrylanguage.CountryCode
 -> WHERE
 -> city.Population < 90000
 -> AND countrylanguage.Language = 'German'
 -> AND countrylanguage.Percentage > 1;

CountryCode	CityName
CAN	Kelowna
CAN	Barrie
DEU	Velbert
DEU	Esslingen am Neckar
LIE	Schaan
LIE	Vaduz
LUX	Luxembourg [Luxemburg/Lëtzebuerg]

7 rows in set (0.05 sec)

Question 3)

A)

```
mysql> SELECT
-> country.Name AS CountryName,
-> city.Name AS CapitalCity
-> FROM
-> country
-> JOIN
-> city ON country.Capital = city.ID
-> WHERE
-> country.Code IN (
->     SELECT DISTINCT CountryCode
->     FROM countrylanguage
->     GROUP BY CountryCode
->     HAVING COUNT(Language) < 10
-> )
-> AND country.Name REGEXP '^[SPADE]';
```

CountryName	CapitalCity
Aruba	Oranjestad
Afghanistan	Kabul
Angola	Luanda
Anguilla	The Valley
Albania	Tirana
Andorra	Andorra la Vella
Argentina	Buenos Aires
Armenia	Yerevan
American Samoa	Fagatogo
Antigua and Barbuda	Saint John's
Australia	Canberra
Austria	Wien
Azerbaijan	Baku
Switzerland	Bern
Djibouti	Djibouti
Dominica	Roseau
Denmark	København
Dominican Republic	Santo Domingo de Guzmán
Algeria	Alger
Ecuador	Quito
Egypt	Cairo
Eritrea	Asmara
Spain	Madrid
Estonia	Tallinn
Ethiopia	Addis Abeba
Equatorial Guinea	Malabo
Saint Kitts and Nevis	Basseterre
South Korea	Seoul
Saint Lucia	Castries
Sri Lanka	Colombo
Pakistan	Islamabad
Panama	Ciudad de Panamá
Pitcairn	Adamstown
Peru	Lima
Palau	Koror
Papua New Guinea	Port Moresby
Poland	Warszawa
Puerto Rico	San Juan
Portugal	Lisboa
Paraguay	Asunción
Palestine	Gaza
Saudi Arabia	Riyadh
Senegal	Dakar
Singapore	Singapore
Saint Helena	Jamestown
Svalbard and Jan Mayen	Longyearbyen
Solomon Islands	Honiara
Sierra Leone	Freetown
El Salvador	San Salvador
San Marino	San Marino
Somalia	Mogadishu
Saint Pierre and Miquelon	Saint-Pierre
Sao Tome and Principe	São Tomé
Suriname	Paramaribo
Slovakia	Bratislava
Slovenia	Ljubljana
Sweden	Stockholm
Swaziland	Mbabane
Seychelles	Victoria
Syria	Damascus
East Timor	Dili
Saint Vincent and the Grenadines	Kingstown
Samoa	Apia

B)

```
mysql> SELECT
->     country.Name AS CountryName,
->     COUNT(city.ID) AS NumberOfCities
-> FROM
->     city
-> JOIN
->     country ON city.CountryCode = country.Code
-> GROUP BY
->     country.Name
-> HAVING
->     COUNT(city.ID) > 30
-> ORDER BY
->     NumberOfCities DESC;
```

CountryName	NumberOfCities
China	363
India	341
United States	274
Brazil	250
Japan	248
Russian Federation	189
Mexico	173
Philippines	136
Germany	93
Indonesia	85
United Kingdom	81
South Korea	70
Iran	67
Nigeria	64
Turkey	62
Spain	59
Pakistan	59
Italy	58
Argentina	57
Ukraine	57
Canada	49
Poland	44
South Africa	44
Taiwan	42
Venezuela	41
France	40
Colombia	38
Egypt	37

28 rows in set (0.01 sec)

C)

```
mysql> SELECT
->     country.Name AS CountryName,
->     COUNT(DISTINCT countrylanguage.Language) AS TotalLanguages
-> FROM
->     country
-> JOIN
->     countrylanguage ON country.Code = countrylanguage.CountryCode
-> WHERE
->     countrylanguage.Language = 'Turkish'
->     AND country.GNP > 80000
-> GROUP BY
->     country.Name;
```

CountryName	TotalLanguages
Austria	1
Belgium	1
Denmark	1
France	1
Germany	1
Greece	1
Netherlands	1
Turkey	1

8 rows in set (0.00 sec)

Question 4

A)

```
mysql> CREATE TABLE restaurant (
->     id INT PRIMARY KEY,
->     name VARCHAR(300) NOT NULL,
->     type_of_restaurant VARCHAR(100) NOT NULL,
->     rating INT NOT NULL
[ -> );
```

```
[mysql> SHOW TABLES;
```

Tables_in_world
city
country
countrylanguage
restaurant

4 rows in set (0.01 sec)

B)

```
mysql> INSERT INTO restaurant (id, name, type_of_restaurant, rating)
[ -> VALUES (1, 'Sarp Restaurant', 'Italian', 5);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO restaurant (id, name, type_of_restaurant, rating)
-> VALUES
-> (2, 'El Taquito Loco', 'Mexican', 4),
-> (3, 'The Greek Taverna', 'Greek', 1),
-> (4, 'The Wok Inn', 'Chinese', 2),
-> (5, 'La Pizzeria Bella', 'Italian', 4),
-> (6, 'The Tap House', 'Pub Food', 1),
-> (7, 'Bao Bun House', 'Asian Fusion', 4),
-> (8, 'The Vegan Kitchen', 'Barbecue', 4),
-> (9, 'La Brasserie Belge', 'Belgian', 4),
-> (10, 'The Smokestack BBQ', 'Barbecue', 4),
-> (11, 'Sushi Island', 'Japanese', 3),
-> (12, 'Smoke Master', 'BBQ', 2);
Query OK, 11 rows affected (0.01 sec)
Records: 11  Duplicates: 0  Warnings: 0
```

C)

```
mysql> UPDATE restaurant
-> SET type_of_restaurant = 'Vegan'
-> WHERE name = 'The Vegan Kitchen';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

D)

```
mysql> DELETE FROM restaurant
-> WHERE name LIKE '%House%';
Query OK, 2 rows affected (0.00 sec)
```

Question 5)

A)

```
mysql> CREATE TABLE city_restaurant (  
->     restaurant_ID INT,  
->     city_ID INT,  
->     PRIMARY KEY (restaurant_ID, city_ID),  
->     FOREIGN KEY (restaurant_ID) REFERENCES restaurant(id)  
->         ON UPDATE CASCADE  
->         ON DELETE RESTRICT,  
->     FOREIGN KEY (city_ID) REFERENCES city(id)  
->         ON UPDATE CASCADE  
->         ON DELETE RESTRICT  
-> );
```

Query OK, 0 rows affected (0.01 sec)

```
[mysql> SHOW TABLES
```

```
[    -> ;
```

```
+-----+  
| Tables_in_world |  
+-----+  
| city             |  
| city_restaurant |  
| country          |  
| countrylanguage |  
| restaurant       |  
+-----+
```

5 rows in set (0.00 sec)

B) Deleted rows with Restaurant ID=7, used local infile with opening it

```
mysql> LOAD DATA LOCAL INFILE '/Users/sarpcagankelleci/Desktop/FALL24/COMP306/HW/HW2/city_restaurant.txt'  
-> INTO TABLE city_restaurant  
-> FIELDS TERMINATED BY '\t'  
-> LINES TERMINATED BY '\n'  
-> (restaurant_ID, city_ID);
```

Query OK, 18 rows affected (0.01 sec)

Records: 18 Deleted: 0 Skipped: 0 Warnings: 0

C)

```
mysql> SELECT
->     city.ID AS CID,
->     city.Name AS CName
-> FROM
->     city
-> JOIN
->     city_restaurant ON city.ID = city_restaurant.city_ID
-> GROUP BY
->     city.ID, city.Name
-> HAVING
->     COUNT(city_restaurant.restaurant_ID) > 1;
+-----+-----+
| CID | CName      |
+-----+-----+
| 144 | Baku       |
| 459 | Liverpool  |
| 462 | Manchester |
| 3357| Istanbul   |
+-----+-----+
4 rows in set (0.01 sec)
```

D)

```
mysql> SELECT
->     restaurant.ID AS RID,
->     restaurant.Name AS RName
-> FROM
->     restaurant
-> JOIN
->     city_restaurant ON restaurant.ID = city_restaurant.restaurant_ID
-> JOIN
->     city ON city.ID = city_restaurant.city_ID
-> WHERE
->     city.Name = 'Manchester'
->     AND restaurant.ID NOT IN (
->         SELECT restaurant_ID
->         FROM city_restaurant
->         JOIN city ON city.ID = city_restaurant.city_ID
->         WHERE city.Name = 'Liverpool'
->     );
+-----+-----+
| RID | RName              |
+-----+-----+
| 3   | The Greek Taverna  |
| 8   | The Vegan Kitchen  |
| 9   | La Brasserie Belge |
+-----+-----+
3 rows in set (0.01 sec)
```

E) As we defined rating attribute as “integer from 1 to 5”, I added AND rating > 1 to ensure rating does not drop below 1. “The Greek Taverna” is not affected (because it has 1 rating). I am not sure whether the question wants us to pay attention to this concern. If not, removing AND rating > 1 would be sufficient to drop all restaurants’ ratings in Baku by 1.

```
mysql> UPDATE restaurant
-> SET rating = rating - 1
-> WHERE ID IN (
->     SELECT DISTINCT restaurant_ID
->     FROM city_restaurant
->     JOIN city ON city.ID = city_restaurant.city_ID
->     WHERE city.Name = 'Baku'
-> )
[ -> AND rating > 1;
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

F)

```
mysql> SELECT
-> restaurant.ID AS RID,
-> restaurant.Name AS RName
-> FROM
-> restaurant
-> JOIN
-> city_restaurant ON restaurant.ID = city_restaurant.restaurant_ID
-> JOIN
-> city ON city.ID = city_restaurant.city_ID
-> JOIN
-> country ON city.CountryCode = country.Code
-> WHERE
-> country.Name = 'Azerbaijan'
-> GROUP BY
-> restaurant.ID, restaurant.Name
-> HAVING
[ -> COUNT(DISTINCT city.ID) >= 2;
```

RID	RName
3	The Greek Taverna

1 row in set (0.01 sec)

G)

```
mysql> SELECT DISTINCT
->     country.Code AS CountryCode,
->     country.Name AS CountryName
-> FROM
->     country
-> LEFT JOIN
->     city ON country.Code = city.CountryCode
-> LEFT JOIN
->     city_restaurant ON city.ID = city_restaurant.city_ID
-> WHERE
->     country.Continent = 'Asia'
->     AND country.Region != 'Middle East'
->     AND country.Code NOT IN (
->         SELECT DISTINCT country.Code
->         FROM country
->         JOIN city ON country.Code = city.CountryCode
->         JOIN city_restaurant ON city.ID = city_restaurant.city_ID
->     );
```

CountryCode	CountryName
AFG	Afghanistan
BGD	Bangladesh
BRN	Brunei
BTN	Bhutan
CHN	China
HKG	Hong Kong
IDN	Indonesia
IND	India
IRN	Iran
KAZ	Kazakstan
KGZ	Kyrgyzstan
KHM	Cambodia
KOR	South Korea
LAO	Laos
LKA	Sri Lanka
MAC	Macao
MDV	Maldives
MMR	Myanmar
MNG	Mongolia
MYS	Malaysia
NPL	Nepal
PAK	Pakistan
PHL	Philippines
PRK	North Korea
SGP	Singapore
THA	Thailand
TJK	Tajikistan
TKM	Turkmenistan
TMP	East Timor
TWN	Taiwan
UZB	Uzbekistan
VNM	Vietnam

32 rows in set (0.01 sec)

6)

```
[mysql> exit;  
Bye  
(base) sarpcagankelleci@Sarp-MacBook-Pro ~ % mysqldump -u root -p world > ~/Desktop/world-export.sql  
[Enter password: ]
```