Alp Kural
ID: 71959
Computer Engineering
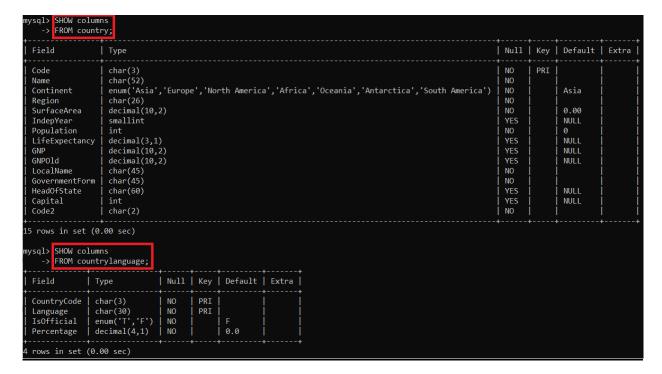
Comp 306 – Homework 2 Report

Question 1

```
C:\Program Files\MySQL\MySQL Server 8.0\bin>mysql -u root -p
Enter password: ***********
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.32 MySQL Community Server - GPL

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owners.

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

mysql> SOURCE C:/Users/alpku/Desktop/HW2/world.sql
```

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| sys                |
| testdb             |
| world              |
+--------------------+
6 rows in set (0.00 sec)

mysql> use world;
Database changed
mysql> show tables;
+-----------------+
| Tables_in_world |
+-----------------+
| city            |
| country         |
| countrylanguage |
+-----------------+
3 rows in set (0.00 sec)
```

Question 2

```
mysql> SHOW columns
    -> FROM city;
+-------------+----------+------+-----+---------+----------------+
| Field       | Type     | Null | Key | Default | Extra          |
+-------------+----------+------+-----+---------+----------------+
| ID          | int      | NO   | PRI | NULL    | auto_increment |
| Name        | char(35) | NO   |     |         |                |
| CountryCode | char(3)  | NO   | MUL |         |                |
| District    | char(20) | NO   |     |         |                |
| Population  | int      | NO   |     | 0       |                |
+-------------+----------+------+-----+---------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> SHOW columns
    -> FROM country;
+----------------+--------------------------------------------------------------------------------------+------+-----+---------+-------+
| Field          | Type                                                                                 | Null | Key | Default | Extra |
+----------------+--------------------------------------------------------------------------------------+------+-----+---------+-------+
| Code           | char(3)                                                                              | NO   | PRI |         |       |
| Name           | char(52)                                                                             | NO   |     |         |       |
| Continent      | enum('Asia','Europe','North America','Africa','Oceania','Antarctica','South America')| NO   |     | Asia    |       |
| Region         | char(26)                                                                             | NO   |     |         |       |
| SurfaceArea    | decimal(10,2)                                                                        | NO   |     | 0.00    |       |
| IndepYear      | smallint                                                                             | YES  |     | NULL    |       |
| Population     | int                                                                                  | NO   |     | 0       |       |
| LifeExpectancy | decimal(3,1)                                                                         | YES  |     | NULL    |       |
| GNP            | decimal(10,2)                                                                        | YES  |     | NULL    |       |
| GNPOld         | decimal(10,2)                                                                        | YES  |     | NULL    |       |
| LocalName      | char(45)                                                                             | NO   |     |         |       |
| GovernmentForm | char(45)                                                                             | NO   |     |         |       |
| HeadOfState    | char(60)                                                                             | YES  |     | NULL    |       |
| Capital        | int                                                                                  | YES  |     | NULL    |       |
| Code2          | char(2)                                                                              | NO   |     |         |       |
+----------------+--------------------------------------------------------------------------------------+------+-----+---------+-------+
15 rows in set (0.00 sec)

mysql> SHOW columns
    -> FROM countrylanguage;
+-------------+---------------+------+-----+---------+-------+
| Field       | Type          | Null | Key | Default | Extra |
+-------------+---------------+------+-----+---------+-------+
| CountryCode | char(3)       | NO   | PRI |         |       |
| Language    | char(30)      | NO   | PRI |         |       |
| IsOfficial  | enum('T','F') | NO   |     | F       |       |
| Percentage  | decimal(4,1)  | NO   |     | 0.0     |       |
+-------------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

Part A

```
mysql> SELECT Name, GNP
    -> FROM country
    -> WHERE Continent = "Europe" AND IndepYear > 1930;
+------------------------+------------+
| Name                   | GNP        |
+------------------------+------------+
| Bosnia and Herzegovina |    2841.00 |
| Belarus                |   13714.00 |
| Czech Republic         |   55017.00 |
| Germany                | 2133367.00 |
| Estonia                |    5328.00 |
| Croatia                |   20208.00 |
| Iceland                |    8255.00 |
| Lithuania              |   10692.00 |
| Latvia                 |    6398.00 |
| Moldova                |    1579.00 |
| Macedonia              |    1694.00 |
| Malta                  |    3512.00 |
| Russian Federation     |  276608.00 |
| Slovakia               |   20594.00 |
| Slovenia               |   19756.00 |
| Ukraine                |   42168.00 |
+------------------------+------------+
16 rows in set (0.00 sec)
```

Part B

```
mysql> SELECT CountryCode, country.Name AS CountryName, city.Name AS CityName, city.Population AS CityPopulation
    -> FROM city, country
    -> WHERE LifeExpectancy > 75 AND country.Population < 1000000 AND CountryCode = Code;
```

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

```
36 rows in set (0.00 sec)
```

Part C

```
mysql> SELECT DISTINCT Language
    -> FROM countrylanguage, country
    -> WHERE SurfaceArea > 1000000 AND Percentage > 50 AND CountryCode = Code;
```

Language
Spanish
English
Portuguese
Chinese
Arabic
Greenlandic
Mongolian
Hassaniya
Hausa
Russian

```
10 rows in set (0.01 sec)
```

Part D

```
mysql> SELECT city.CountryCode, Name
    -> FROM city, countrylanguage
    -> WHERE Population < 90000 AND Language = "German" AND Percentage > 1 AND city.CountryCode = countrylanguage.CountryCode;
+-------------+--------------------------------+
| CountryCode | Name                           |
+-------------+--------------------------------+
| CAN         | Kelowna                        |
| CAN         | Barrie                         |
| DEU         | Velbert                        |
| DEU         | Esslingen am Neckar            |
| LIE         | Schaan                         |
| LIE         | Vaduz                          |
| LUX         | Luxembourg [Luxemburg/Lëtzebuerg] |
+-------------+--------------------------------+
7 rows in set (0.00 sec)
```

Question 3

Part A

```
mysql> CREATE TABLE restaurant (
    ->          ID INT NOT NULL,
    ->          Name VARCHAR(30) NOT NULL,
    ->          Type VARCHAR(30) NOT NULL,
    ->          Rating INT,
    ->          PRIMARY KEY (ID));
Query OK, 0 rows affected (0.03 sec)
```

Part B

```
mysql> INSERT INTO restaurant
    -> Values (1, "Alp Kural's Restaurant", "Turkish", 5);
Query OK, 1 row affected (0.02 sec)

mysql> SELECT *
    -> FROM restaurant;
+----+------------------------+---------+--------+
| ID | Name                   | Type    | Rating |
+----+------------------------+---------+--------+
|  1 | Alp Kural's Restaurant | Turkish |      5 |
+----+------------------------+---------+--------+
1 row in set (0.00 sec)
```

Part C

```
mysql> INSERT INTO restaurant
    -> Values (2, "El Taquito Loco", "Mexican", 4),
    ->         (3, "The Greek Taverna", "Greek", 5),
    ->         (4, "The Wok Inn", "Chinese", 3),
    ->         (5, "La Pizzeria Bella", "Italian", 4),
    ->         (6, "The Tap House", "Pub Food", 3),
    ->         (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);
Query OK, 10 rows affected (0.01 sec)
Records: 10  Duplicates: 0  Warnings: 0

mysql> SELECT *
    -> FROM restaurant;
+----+----------------------+--------------+--------+
| ID | Name                 | Type         | Rating |
+----+----------------------+--------------+--------+
|  1 | Alp Kural's Restaurant | Turkish    |      5 |
|  2 | El Taquito Loco      | Mexican      |      4 |
|  3 | The Greek Taverna    | Greek        |      5 |
|  4 | The Wok Inn          | Chinese      |      3 |
|  5 | La Pizzeria Bella    | Italian      |      4 |
|  6 | The Tap House        | Pub Food     |      3 |
|  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 |
+----+----------------------+--------------+--------+
11 rows in set (0.00 sec)
```

Part D

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

mysql> SELECT *
    -> FROM restaurant
    -> WHERE Name = "The Vegan Kitchen";
+----+-------------------+-------+--------+
| ID | Name              | Type  | Rating |
+----+-------------------+-------+--------+
|  8 | The Vegan Kitchen | Vegan |      4 |
+----+-------------------+-------+--------+
1 row in set (0.00 sec)
```

Part E

```
mysql> DELETE FROM restaurant
    -> WHERE Name = "The Tap House";
Query OK, 1 row affected (0.02 sec)
```

```
mysql> SELECT *
    -> FROM Restaurant;
+----+------------------------+-------------+--------+
| ID | Name                   | Type        | Rating |
+----+------------------------+-------------+--------+
|  1 | Alp Kural's Restaurant | Turkish     |      5 |
|  2 | El Taquito Loco        | Mexican     |      4 |
|  3 | The Greek Taverna      | Greek       |      5 |
|  4 | The Wok Inn            | Chinese     |      3 |
|  5 | La Pizzeria Bella      | Italian     |      4 |
|  7 | Bao Bun House          | Asian Fusion|      4 |
|  8 | The Vegan Kitchen      | Vegan       |      4 |
|  9 | La Brasserie Belge     | Belgian     |      4 |
| 10 | The Smokestack BBQ     | Barbecue    |      4 |
| 11 | Sushi Island          | Japanese    |      3 |
+----+------------------------+-------------+--------+
10 rows in set (0.01 sec)
```

Question 4

Part A

```
mysql>   CREATE TABLE city_restaurant
    ->          (restaurantID INT NOT NULL,
    ->           cityID INT NOT NULL,
    ->           PRIMARY KEY (restaurantID, cityID),
    ->           FOREIGN KEY (restaurantID) REFERENCES restaurant(ID),
    ->           FOREIGN KEY (cityID) REFERENCES city(ID)
    ->           ON UPDATE CASCADE ON DELETE RESTRICT);
Query OK, 0 rows affected (0.03 sec)
```

Part B

```
mysql> SET GLOBAL local_infile=1;
Query OK, 0 rows affected (0.00 sec)

mysql> exit
Bye

C:\Program Files\MySQL\MySQL Server 8.0\bin>mysql --local-infile=1 -u root -p
Enter password: ***********
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 50
Server version: 8.0.32 MySQL Community Server - GPL

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

mysql> use world
Database changed
mysql> LOAD DATA LOCAL INFILE "C:/Users/alpku/Desktop/HW2/city_restaurant.txt"
    -> INTO TABLE city_restaurant;
Query OK, 21 rows affected (0.02 sec)
Records: 21  Deleted: 0  Skipped: 0  Warnings: 0
```

Part C

```
mysql> SELECT ID, Name
    -> FROM city, city_restaurant
    -> WHERE city.ID = city_restaurant.cityID
    -> GROUP BY ID, Name
    -> HAVING COUNT(*) > 1;
+------+------------+
| ID   | Name       |
+------+------------+
|  144 | Baku       |
|  459 | Liverpool  |
|  462 | Manchester |
| 3357 | Istanbul   |
+------+------------+
4 rows in set (0.00 sec)
```

Part D

```
mysql> SELECT restaurant.ID, restaurant.Name
    -> FROM restaurant, city_restaurant, city
    -> WHERE city.Name = "Manchester" AND restaurant.ID = city_restaurant.restaurantID AND city.ID = city_restaurant.cityID
    -> EXCEPT
    -> SELECT restaurant.ID, restaurant.Name
    -> FROM restaurant, city_restaurant, city
    -> WHERE city.Name = "Liverpool" AND restaurant.ID = city_restaurant.restaurantID AND city.ID = city_restaurant.cityID
    -> ;
+----+--------------------+
| ID | Name               |
+----+--------------------+
|  3 | The Greek Taverna  |
|  7 | Bao Bun House      |
|  8 | Vegan              |
|  9 | La Brasserie Belge |
+----+--------------------+
4 rows in set (0.00 sec)
```

Part E

```
mysql> SELECT DISTINCT restaurant.ID, restaurant.Name
    -> FROM restaurant, city_restaurant, city
    -> WHERE Population > 100000 AND restaurant.ID = city_restaurant.restaurantID AND city_restaurant.cityID = city.ID;
+----+-----------------------+
| ID | Name                  |
+----+-----------------------+
|  3 | The Greek Taverna     |
|  9 | La Brasserie Belge    |
|  1 | Alp Kural's Restaurant|
|  4 | The Wok Inn           |
|  5 | La Pizzeria Bella     |
|  7 | Bao Bun House         |
|  8 | Vegan                 |
+----+-----------------------+
7 rows in set (0.00 sec)
```

Part F

```
mysql> SELECT restaurant.ID, restaurant.Name
    -> FROM restaurant, city_restaurant, city, country
    -> WHERE country.Name = "Azerbaijan" AND restaurant.ID = city_restaurant.restaurantID AND city_restaurant.cityID = city.ID AND city.CountryCode = country.Code
    -> GROUP BY restaurant.ID, restaurant.Name
    -> HAVING COUNT(*) >= 2;
+----+------------------+
| ID | Name             |
+----+------------------+
|  3 | The Greek Taverna |
+----+------------------+
1 row in set (0.01 sec)
```

Part G

```
mysql> SELECT Name
    -> FROM country
    -> EXCEPT
    -> SELECT country.Name
    -> FROM city_restaurant, city, country
    -> WHERE city_restaurant.cityID = city.ID AND city.CountryCode = country.Code;
+------------------------------------------+
| Name                                     |
+------------------------------------------+
| Aruba                                    |
| Afghanistan                              |
| Angola                                   |
| Anguilla                                 |
| Albania                                  |
| Andorra                                  |
| Netherlands Antilles                     |
| United Arab Emirates                     |
| Argentina                                |
| Armenia                                  |
| American Samoa                           |
| Antarctica                               |
| French Southern territories              |
| Antigua and Barbuda                      |
| Australia                                |
| Austria                                  |
| Burundi                                  |
| Belgium                                  |
| Benin                                    |
| Burkina Faso                             |
| Bangladesh                               |
| Bulgaria                                 |
| Bahrain                                  |
| Bahamas                                  |
| Bosnia and Herzegovina                   |
| Belarus                                  |
| Belize                                   |
| Bermuda                                  |
| Bolivia                                  |
| Brazil                                   |
| Barbados                                 |
| Brunei                                   |
| Bhutan                                   |
| Bouvet Island                            |
| Botswana                                 |
| Central African Republic                 |
| Canada                                   |
| Cocos (Keeling) Islands                  |
| Switzerland                              |
| Chile                                    |
| China                                    |
```

```
| Côte d?Ivoire                            |
| Cameroon                                 |
| Congo, The Democratic Republic of the   |
| Congo                                    |
| Cook Islands                             |
| Colombia                                 |
| Comoros                                  |
| Cape Verde                               |
| Costa Rica                               |
| Cuba                                     |
| Christmas Island                         |
| Cayman Islands                           |
| Cyprus                                   |
| Czech Republic                           |
| Germany                                  |
| Djibouti                                 |
| Dominica                                 |
| Denmark                                  |
| Dominican Republic                       |
| Algeria                                  |
| Ecuador                                  |
| Eritrea                                  |
| Western Sahara                           |
| Spain                                    |
| Estonia                                  |
| Ethiopia                                 |
| Finland                                  |
| Fiji Islands                             |
| Falkland Islands                         |
| France                                   |
| Faroe Islands                            |
| Micronesia, Federated States of         |
| Gabon                                    |
| Georgia                                  |
| Ghana                                    |
| Gibraltar                                |
| Guinea                                   |
| Guadeloupe                               |
| Gambia                                   |
| Guinea-Bissau                            |
| Equatorial Guinea                        |
| Greece                                   |
| Grenada                                  |
| Greenland                                |
| Guatemala                                |
| French Guiana                            |
| Guam                                     |
| Guyana                                   |
```

```
| Hong Kong                              |
| Heard Island and McDonald Islands      |
| Honduras                               |
| Croatia                                |
| Haiti                                  |
| Hungary                                |
| Indonesia                              |
| India                                  |
| British Indian Ocean Territory         |
| Ireland                                |
| Iran                                   |
| Iraq                                   |
| Iceland                                |
| Israel                                 |
| Italy                                  |
| Jamaica                                |
| Kazakstan                              |
| Kenya                                  |
| Kyrgyzstan                             |
| Cambodia                               |
| Kiribati                               |
| Saint Kitts and Nevis                  |
| South Korea                            |
| Kuwait                                 |
| Laos                                   |
| Lebanon                                |
| Liberia                                |
| Libyan Arab Jamahiriya                 |
| Saint Lucia                            |
| Liechtenstein                          |
| Sri Lanka                              |
| Lesotho                                |
| Lithuania                              |
| Luxembourg                             |
| Latvia                                 |
| Macao                                  |
| Morocco                                |
| Monaco                                 |
| Moldova                                |
| Madagascar                             |
| Maldives                               |
| Mexico                                 |
| Marshall Islands                       |
| Macedonia                              |
| Mali                                   |
| Malta                                  |
| Myanmar                                |
| Mongolia                               |
```

```
| Moldova                    |
| Madagascar                 |
| Maldives                   |
| Mexico                     |
| Marshall Islands           |
| Macedonia                  |
| Mali                       |
| Malta                      |
| Myanmar                    |
| Mongolia                   |
| Northern Mariana Islands   |
| Mozambique                 |
| Mauritania                 |
| Montserrat                 |
| Martinique                 |
| Mauritius                  |
| Malawi                     |
| Malaysia                   |
| Mayotte                    |
| Namibia                    |
| New Caledonia              |
| Niger                      |
| Norfolk Island             |
| Nigeria                    |
| Nicaragua                  |
| Niue                       |
| Netherlands                |
| Norway                     |
| Nepal                      |
| Nauru                      |
| New Zealand                |
| Oman                       |
| Pakistan                   |
| Panama                     |
| Pitcairn                   |
| Peru                       |
| Philippines                |
| Palau                      |
| Papua New Guinea           |
| Poland                     |
| Puerto Rico                |
| North Korea                |
| Portugal                   |
| Paraguay                   |
| Palestine                  |
| French Polynesia           |
| Qatar                      |
| Réunion                    |
| Romania                    |
```

```
| Rwanda                                          |
| Saudi Arabia                                    |
| Sudan                                           |
| Senegal                                         |
| Singapore                                       |
| South Georgia and the South Sandwich Islands    |
| Saint Helena                                    |
| Svalbard and Jan Mayen                          |
| Solomon Islands                                 |
| Sierra Leone                                    |
| El Salvador                                      |
| San Marino                                      |
| Somalia                                         |
| Saint Pierre and Miquelon                       |
| Sao Tome and Principe                           |
| Suriname                                        |
| Slovakia                                        |
| Slovenia                                        |
| Sweden                                          |
| Swaziland                                       |
| Seychelles                                      |
| Syria                                           |
| Turks and Caicos Islands                        |
| Chad                                            |
| Togo                                            |
| Thailand                                        |
| Tajikistan                                      |
| Tokelau                                         |
| Turkmenistan                                    |
| East Timor                                      |
| Tonga                                           |
| Trinidad and Tobago                             |
| Tunisia                                         |
| Tuvalu                                          |
| Taiwan                                          |
| Tanzania                                        |
| Uganda                                          |
| Ukraine                                         |
| United States Minor Outlying Islands            |
| Uruguay                                         |
| Uzbekistan                                      |
| Holy See (Vatican City State)                   |
| Saint Vincent and the Grenadines                |
| Venezuela                                       |
| Virgin Islands, British                         |
| Virgin Islands, U.S.                            |
| Vietnam                                         |
| Vanuatu                                         |
```

```
| Wallis and Futuna                               |
| Samoa                                           |
| Yemen                                           |
| Yugoslavia                                      |
| South Africa                                    |
| Zambia                                          |
| Zimbabwe                                        |
+-------------------------------------------------+
231 rows in set (0.01 sec)
```

Question 5

```
C:\Program Files\MySQL\MySQL Server 8.0\bin>mysqldump -u root -p world > "C:/Users/alpku/Desktop/HW2/world-export.sql"
Enter password: ***********
```