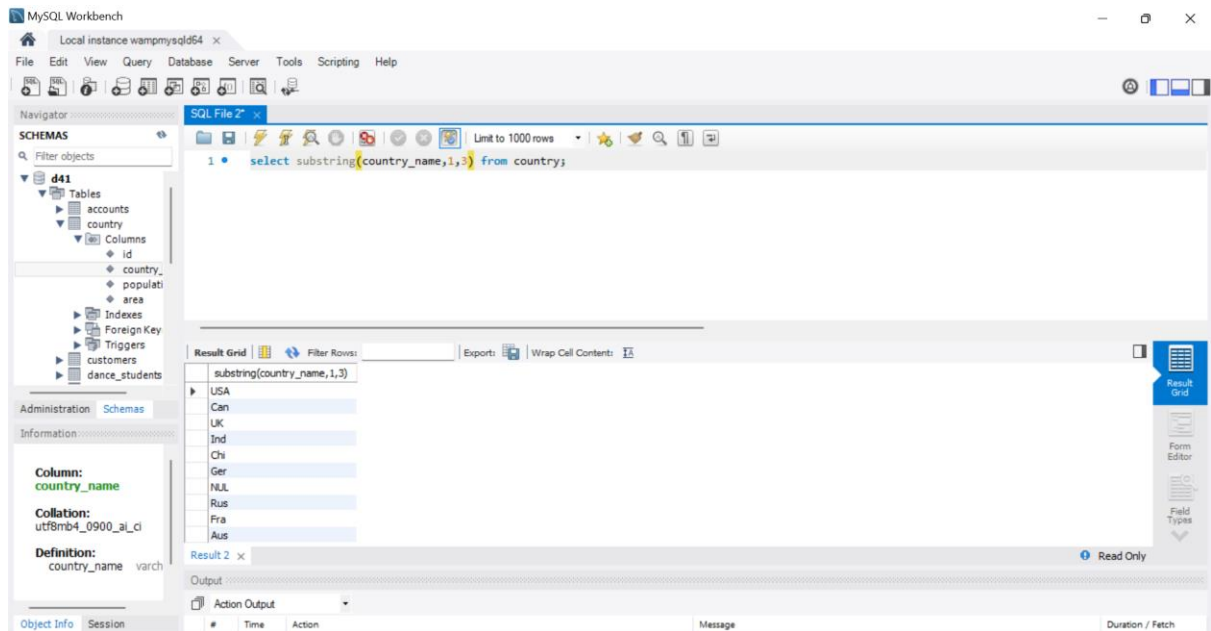


SORTING AND GROUPING DATA

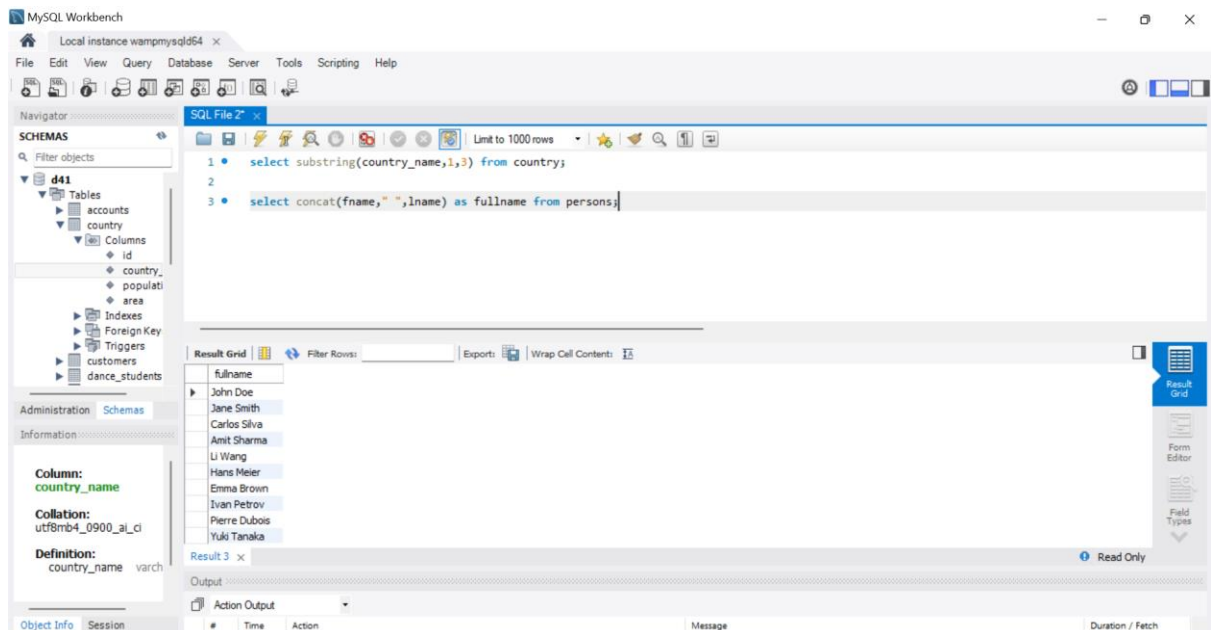
1. Write an SQL query to print the first three characters of Country_name from the Country table.



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the query: `select substring(country_name,1,3) from country;`. The Results window displays the output of this query, showing the first three characters of country names from the 'country' table.

substring(country_name,1,3)
USA
Can
UK
Ind
Chi
Ger
NUL
Rus
Fra
Aus

2. Write an SQL query to concatenate first name and last name from Persons table.



The screenshot shows the MySQL Workbench interface with two queries in the SQL Editor. The first query is the same as in the previous screenshot. The second query is: `select concat(fname,"",lname) as fullname from persons;`. The Results window shows the output of both queries.

fullname
John Doe
Jane Smith
Carlos Silva
Amit Sharma
Li Wang
Hans Meier
Emma Brown
Ivan Petrov
Pierre Dubois
Yuki Tanaka

3. Write an SQL query to count the number of unique country names from Persons table.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains three queries:

```
1 select substring(country_name,1,3) from country;
2
3 select concat(fname," ",lname) as fullname from persons;
4
5 select count(distinct(country_name)) as count from persons;
6
```

The Results window shows the output of the third query:

count
10

The left sidebar shows the database schema with tables: accounts, country, and dance_students. The 'country' table is selected, showing columns: id, country_name, population, and area.

4. Write a query to print the maximum population from the Country table.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains four queries:

```
1 select substring(country_name,1,3) from country;
2
3 select concat(fname," ",lname) as fullname from persons;
4
5 select count(distinct(country_name)) as count from persons;
6
7 select max(population) as MaximumPopulation from country;
8
```

The Results window shows the output of the fourth query:

MaximumPopulation
1440000000

The left sidebar shows the database schema with tables: accounts, country, and dance_students. The 'country' table is selected, showing columns: id, country_name, population, and area.

5. Write a query to print the minimum population from Persons table.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
3 select concat(fname," ",lname) as fullname from persons;
4
5 select count(distinct(country_name)) as count from persons;
6
7 select max(population) as MaximumPopulation from country;
8
9 select min(population) as MinimumPopulation from persons;
10
```

The Result Grid shows the output of the last query:

MinimumPopulation
645000

The left sidebar shows the Schemas pane with the 'd41' database selected. The 'Persons' table is highlighted under the 'country' schema. The 'Columns' pane for 'Persons' shows the 'population' column with its definition: 'population int'.

6. Insert 2 new rows to the Persons table making the Lname NULL.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
11 insert into persons values(11,"Sam",null,2054000,4,11,"Italy");
12 insert into persons values(12,"Alex",null,3754000,3,12,"Morocco");
13
14 select count(lname) from persons;
15
```

The Result Grid shows the output of the last query:

count(lname)
10

The left sidebar shows the Schemas pane with the 'd41' database selected. The 'Persons' table is highlighted under the 'country' schema. The 'Columns' pane for 'Persons' shows the 'lname' column with its definition: 'lname varchar(30)'.

7. Write a query to find the number of rows in the Persons table.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
8
9 • select min(population) as MinimumPopulation from persons;
10 • select * from country;
11 • insert into persons values(11,"Sam",null,2054000,4,11,"Italy");
12 • insert into persons values(12,"Alex",null,3754000,3,12,"Morocco");
13
14 • select count(lname) from persons;
15 • select count(*) as TotalRows from persons;
```

The Result Grid shows the output of the last query:

TotalRows
12

The left sidebar shows the SCHEMAS pane with the 'persons' table selected. The 'Columns' pane shows the definition of the 'lname' column: **Column: lname**, **Collation: utf8mb4_0900_ai_ci**, **Definition: lname varchar(30)**.

8. Write an SQL query to show the population of the Country table for the first 3 rows. (Hint: Use LIMIT)

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
10 • select * from country;
11 • insert into persons values(11,"Sam",null,2054000,4,11,"Italy");
12 • insert into persons values(12,"Alex",null,3754000,3,12,"Morocco");
13
14 • select count(lname) from persons;
15 • select count(*) as TotalRows from persons;
16
17 • select population from country limit 3;
```

The Result Grid shows the output of the last query:

population
331000000
1800000
212000000

The left sidebar shows the SCHEMAS pane with the 'country' table selected. The 'Columns' pane shows the definition of the 'population' column: **Column: population**, **Definition: population int**.

9. Write a query to print 3 random rows of countries. (Hint: Use rand() function and LIMIT)

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
12 • insert into persons values(12,"Alex",null,3754000,3,12,"Morocco");
13
14 • select count(lname) from persons;
15 • select count(*) as TotalRows from persons;
16
17 • select population from country limit 3;
18
19 • select country_name from country order by rand() limit 3;
```

The Result Grid shows the output of the last query:

country_name
USA
France
India

The left sidebar shows the Schemas pane with the 'persons' table selected. The 'Columns' pane shows the columns of the 'persons' table: id, fname, lname, population, rating, country_id, and country_name.

10. List all persons ordered by their rating in descending order.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
14 • select count(lname) from persons;
15 • select count(*) as TotalRows from persons;
16
17 • select population from country limit 3;
18
19 • select country_name from country order by rand() limit 3;
20
21 • select * from persons order by rating desc;
```

The Result Grid shows the output of the last query:

id	fname	lname	population	rating	country_id	country_name
2	Jane	Smith	1800000	5	2	Canada
4	Amit	Sharma	1390000000	5	4	India
7	Emma	Brown	25000000	5	7	NUL
10	Yuki	Tanaka	126000000	5	10	Australia
1	John	Doe	331000000	4	1	USA
5	Li	Wang	144000000	4	5	China
6	Hans	Meier	83000000	4	6	Germany
9	Pierre	Dubois	67000000	4	9	France
11	Sam		2054000	4	11	Italy
3	Carlos	Silva	212000000	3	3	UK

The left sidebar shows the Schemas pane with the 'persons' table selected. The 'Columns' pane shows the columns of the 'persons' table: id, fname, lname, population, rating, country_id, and country_name.

11. Find the total population for each country in the Persons table.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
16
17 • select population from country limit 3;
18
19 • select country_name from country order by rand() limit 3;
20
21 • select * from persons order by rating desc;
22
23 • select country_name, sum(population) as TotalPopulation from persons group by country_name;
```

The Result Grid displays the output of the last query, showing the total population for each country:

country_name	TotalPopulation
USA	331000000
Canada	38000000
UK	212000000
India	1390000000
China	1440000000
Germany	83000000
NULL	25000000
Russia	645000
France	67000000
Australia	126000000

12. Find countries in the Persons table with a total population greater than 50,000

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following queries:

```
20
21 • select * from persons order by rating desc;
22
23 • select country_name, sum(population) as TotalPopulation from persons group by country_name;
24
25 • select country_name from persons where population > 50000;
```

The Result Grid displays the output of the last query, showing the country names for which the total population is greater than 50,000:

country_name
USA
Canada
UK
India
China
Germany
NULL
Russia
France
Australia

13. List the total number of persons and average rating for each country, but only for countries with more than 2 persons, ordered by the average rating in ascending order.

The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' panel with a tree view of databases including 'music_students', 'orders', 'parent_name', 'participants', and 'persons'. The 'persons' database is selected, showing its columns: 'id', 'fname', 'lname', 'population', 'rating', 'country_id', and 'country_name'. The main editor window contains three SQL queries:

```
24 • select country_name,sum(population) as TotalPopulation from persons group by country_name;
25
26 • select country_name from persons where population>50000;
27
28 • select country_name,count(*) as persons,avg(rating) as AverageRating from persons
29   group by country_name having count(*)>2 order by AverageRating asc;
```

Below the queries, the 'Result Grid' shows a table with three columns: 'country_name', 'persons', and 'AverageRating'. The 'Output' panel at the bottom displays the execution log:

#	Time	Action	Message	Duration / Fetch
38	19:45:16	select country_name,count(*) as persons,avg(rating) as AverageRating from persons g...	0 row(s) returned	0.000 sec / 0.000 sec
39	19:45:01	insert into persons values(13,"John",null,1554000,3,13,"Morocco")	1 row(s) affected	0.000 sec
40	19:45:04	select country_name,count(*) as persons,avg(rating) as AverageRating from persons g...	0 row(s) returned	0.000 sec / 0.000 sec