

# Sorting and Grouping data

Querying Data assignment sql\* SQL File 8\* SQL File 9 SQL File 5\* x

Limit to 1000 rows

```
1  ##create table
2  CREATE TABLE Country (
3      Id INT PRIMARY KEY,
4      Country_name VARCHAR(100),
5      Population INT,
6      Area INT
7  );
8
9  CREATE TABLE Persons (
10     Id INT PRIMARY KEY,
11     Fname VARCHAR(100),
12     Lname VARCHAR(100),
13     Population INT,
14     Rating DECIMAL(3,2),
15     Country_Id INT,
16     Country_name VARCHAR(100),
17     FOREIGN KEY (Country_Id) REFERENCES Country(Id)
18 );
```

Output

Action Output

#	Time	Action	Message
1	22:11:43	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Pop...	Error Code: 1824. Failed to open
2	22:14:09	cCREATE TABLE Country ( Id INT PRIMARY KEY, Country_name VARCHAR(100), Population INT, Area ...	0 row(s) affected
3	22:14:44	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Pop...	0 row(s) affected

2.

Querying Data assignment sql\* SQL File 8\* SQL File 9 SQL File 5\* x

Limit to 1000 rows

```
61  ## Insert two new rows to Persons with Lname NULL, then count Lname:
62
63  INSERT INTO Persons (Id, Fname, Lname, Population, Rating, Country_Id, Country_name) VALUES
64  (11, 'Alice', NULL, 6000, 4.5, 2, 'India'),
65  (12, 'Bob', NULL, 4000, 3.7, 3, 'China');
66
67  SELECT COUNT(Lname) AS CountOfLname FROM Persons WHERE Lname IS NOT NULL;
```

Result Grid

CountOfLname
8

Result 6 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
6	22:17:18	SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
7	22:18:32	SELECT CONCAT(Fname, ' ', Lname) AS FullName FROM Persons LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
8	22:49:11	SELECT COUNT(DISTINCT Country_name) AS UniqueCountries FROM Persons LIMIT 0, 1000	1 row(s) returned	0.015 sec / 0.000 sec
9	22:50:21	SELECT MAX(Population) AS MaxPopulation FROM Country LIMIT 0, 1000	1 row(s) returned	0.016 sec / 0.000 sec
10	22:51:24	SELECT MIN(Population) AS MinPopulation FROM Persons LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
11	22:53:44	SELECT COUNT(Lname) AS CountOfLname FROM Persons WHERE Lname IS NOT NULL LIMIT 0, 1000	1 row(s) returned	0.016 sec / 0.000 sec

3.

verifying Data assignment.sql SQL File 0 SQL File 1 SQL File 2

Limit to 1000 rows

```
40 (8, 'Jordan', NULL, 12000, 2.9, 5, 'Nigeria'),
41 (9, 'Taylor', 'Wilson', 80000, 4.8, 1, 'USA'),
42 (10, 'Sam', 'Anderson', 55000, 3.9, 6, 'Russia');
43
44 ##First three characters of Country_name from Country table:
45
46 • SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstThreeChars
USA
Ind
Chi
Bra
Nig
Rus
Mex
Jap
Ger
UK

Result 1 x

Output

Action Output

#	Time	Action	Message
1	22:11:43	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Po...	Error Code: 1824. Failed to open the referenced table 'country'
2	22:14:09	CREATE TABLE Country ( Id INT PRIMARY KEY, Country_name VARCHAR(100), Population INT, Are...	0 row(s) affected
3	22:14:44	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Po...	0 row(s) affected
4	22:15:59	INSERT INTO Country (Id, Country_name, Population, Area) VALUES (1, 'USA', 331002651, 9833517), (2, 'India', ...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
5	22:16:02	INSERT INTO Persons (Id, Fname, Lname, Population, Rating, Country_Id, Country_name) VALUES (1, 'John', 'D...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
6	22:17:18	SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country LIMIT 0, 1000	10 row(s) returned

Limit to 1000 rows

```

6 • SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country;
7   ##Concatenate first name and last name from Persons table:
8
9 • SELECT CONCAT(Fname, ' ', Lname) AS FullName FROM Persons;
0   ##Count unique country names from Persons table:
1
2 • SELECT COUNT(DISTINCT Country_name) AS UniqueCountries FROM Persons;

```

sult Grid
Filter Rows:
Export:
Wrap Cell Content:

UniqueCountries
6

ult 3 x

put

Action Output

#	Time	Action	Message
3	22:14:44	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), ...	0 row(s) affected
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7	22:18:32	SELECT CONCAT(Fname, ' ', Lname) AS FullName FROM Persons LIMIT 0, 1000	10 row(s) returned
8	22:49:11	SELECT COUNT(DISTINCT Country_name) AS UniqueCountries FROM Persons LIMIT 0, 1000	1 row(s) returned

Querying Data assignment sql\*
 SQL File 8\*
 SQL File 9
 SQL File 5\* x

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14     Rating DECIMAL(3,2),
15     Country_Id INT,
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Output

Action Output

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✔ 2	22:14:09	CREATE TABLE Country ( Id INT PRIMARY KEY, Country_name VARCHAR(100), Population INT, Area ...	0 row(s) affected
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Querying Data assignment.sql SQL File 8 SQL File 9 SQL File 5

Limit to 1000 rows

```

20 • INSERT INTO Country (Id, Country_name, Population, Area) VALUES
21 (1, 'USA', 331002651, 9833517),
22 (2, 'India', 1380004385, 3287263),
23 (3, 'China', 1439323776, 9596961),
24 (4, 'Brazil', 212559417, 8515767),
25 (5, 'Nigeria', 206139589, 923768),
26 (6, 'Russia', 145912025, 17098242),
27 (7, 'Mexico', 128932753, 1964375),
28 (8, 'Japan', 126476461, 377975),
29 (9, 'Germany', 83783942, 357022),
30 (10, 'UK', 67886011, 243610);
31
32 • INSERT INTO Persons (Id, Fname, Lname, Population, Rating, Country_Id, Country_name) VALUES
33 (1, 'John', 'Doe', 100000, 4.5, 1, 'USA'),
34 (2, 'Jane', 'Smith', 50000, 3.8, 2, 'India'),
35 (3, 'Mike', 'Johnson', 20000, 4.0, 3, 'China'),
36 (4, 'Emily', 'Davis', 15000, 4.7, 1, 'USA'),
37 (5, 'Chris', 'Brown', 30000, 4.2, 2, 'India'),
38 (6, 'Pat', NULL, 25000, 3.5, 3, 'China'),
39 (7, 'Alex', 'Taylor', 70000, 4.1, 4, 'Brazil'),
40 (8, 'Jordan', NULL, 12000, 2.9, 5, 'Nigeria');

```

Output

Action Output

#	Time	Action	Message
1	22:11:43	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Pop...	Error Code: 1824. Failed to open the referenced table 'country'
2	22:14:09	CREATE TABLE Country ( Id INT PRIMARY KEY, Country_name VARCHAR(100), Population INT, Area ...	0 row(s) affected
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Querying Data assignment.sql SQL File 6 SQL File 7 SQL File 8

Limit to 1000 rows

```

40 (8, 'Jordan', NULL, 12000, 2.9, 5, 'Nigeria'),
41 (9, 'Taylor', 'Wilson', 80000, 4.8, 1, 'USA'),
42 (10, 'Sam', 'Anderson', 55000, 3.9, 6, 'Russia');
43
44 ##First three characters of Country_name from Country table:
45
46 • SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country;

```

Result Grid

FirstThreeChars
USA
Ind
Chi
Bra
Nig
Rus
Mex
Jap
Ger
UK

Result 1

Output

Action Output

#	Time	Action	Message
1	22:11:43	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Po...	Error Code: 1824. Failed to open the referenced table 'country'
2	22:14:09	CREATE TABLE Country ( Id INT PRIMARY KEY, Country_name VARCHAR(100), Population INT, Are...	0 row(s) affected
3	22:14:44	CREATE TABLE Persons ( Id INT PRIMARY KEY, Fname VARCHAR(100), Lname VARCHAR(100), Po...	0 row(s) affected
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5	22:16:02	INSERT INTO Persons (Id, Fname, Lname, Population, Rating, Country_Id, Country_name) VALUES (1, 'John', 'D...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
6	22:17:18	SELECT SUBSTRING(Country_name, 1, 3) AS FirstThreeChars FROM Country LIMIT 0, 1000	10 row(s) returned

Querying Data assignment sql\*
 SQL File 8\*
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 SQL File 5\*

Limit to 1000 rows

```

73 • SELECT Population FROM Country LIMIT 3;
74
75 ##Print 3 random rows of countries:
76 • SELECT * FROM Country ORDER BY RAND() LIMIT 3;
77
78 ##List all persons ordered by rating in descending order:
79 • SELECT * FROM Persons ORDER BY Rating DESC;
80

```

**Result Grid**
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:

	Id	Fname	Lname	Population	Rating	Country_Id	Country_name
▶	9	Taylor	Wilson	80000	4.80	1	USA
4	Emily	Davis	15000	4.70	1	USA	
1	John	Doe	100000	4.50	1	USA	
5	Chris	Brown	30000	4.20	2	India	
7	Alex	Taylor	70000	4.10	4	Brazil	
3	Mike	Johnson	20000	4.00	3	China	
10	Sam	Anderson	55000	3.90	6	Russia	
2	Jane	Smith	50000	3.80	2	India	
6	Pat	NULL	25000	3.50	3	China	
8	Jordan	NULL	12000	2.90	5	Nigeria	
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Persons 10

Output

Action Output

#	Time	Action	Message
✓ 10	22:51:24	SELECT MIN(Population) AS MinPopulation FROM Persons LIMIT 0, 1000	1 row(s) returned
✓ 11	22:53:44	SELECT COUNT(Lname) AS CountOfLname FROM Persons WHERE Lname IS NOT NULL LIMIT 0, 1000	1 row(s) returned
✓ 12	22:54:33	SELECT COUNT(*) AS TotalRows FROM Persons LIMIT 0, 1000	1 row(s) returned
✓ 13	22:57:46	SELECT Population FROM Country LIMIT 3	3 row(s) returned
✓ 14	22:59:27	SELECT * FROM Country ORDER BY RAND() LIMIT 3	3 row(s) returned
✓ 15	23:01:44	SELECT * FROM Persons ORDER BY Rating DESC LIMIT 0, 1000	10 row(s) returned

```

91
92  ##Total number of persons and average rating for each country with more than 2 persons, ordered by average rating:
93  • SELECT Country_name, COUNT(*) AS TotalPersons, AVG(Rating) AS AverageRating
94  FROM Persons
95  GROUP BY Country_name
96  HAVING COUNT(*) > 2
97  ORDER BY AverageRating ASC;

```

Country_name	TotalPersons	AverageRating
USA	3	4.666667

result 13 x

Output

#	Time	Action	Message
13	22:57:46	SELECT Population FROM Country LIMIT 3	3 row(s) returned
14	22:59:27	SELECT * FROM Country ORDER BY RAND() LIMIT 3	3 row(s) returned
15	23:01:44	SELECT * FROM Persons ORDER BY Rating DESC LIMIT 0, 1000	10 row(s) returned
16	23:04:26	SELECT Country_name, SUM(Population) AS TotalPopulation FROM Persons GROUP BY Country_name LIMIT...	6 row(s) returned
17	23:05:21	SELECT Country_name, SUM(Population) AS TotalPopulation FROM Persons GROUP BY Country_name HA...	4 row(s) returned
18	23:07:07	SELECT Country_name, COUNT(*) AS TotalPersons, AVG(Rating) AS AverageRating FROM Persons GROUP ...	1 row(s) returned

## SUMMARY

### Tables

#### 1. Country

- Columns:
  - Id: Unique identifier
  - Country\_name: Name of the country
  - Population: Total population
  - Area: Total area (in sq km)

#### 2. Persons

- Columns:
  - Id: Unique identifier
  - Fname: First name
  - Lname: Last name (nullable)
  - Population: Population represented by the person
  - Rating: Rating on a scale of 0-5
  - Country\_Id: Foreign key referencing the Country table
  - Country\_name: Name of the associated country

## **SQL Operations**

- **Table Creation:** Create Country first, then Persons.
- **Data Insertion:** Insert sample data into both tables.
- **Queries:** Execute various SQL queries to:
  - Retrieve specific fields (like country names)
  - Concatenate names
  - Count unique countries and total populations
  - Find maximum and minimum populations
  - Analyze data based on ratings and grouping.

**This setup enables easy management and retrieval of information related to countries and their associated individuals.**