

Databases & SQL for Analysts

3.7: Joining Tables of Data

1/

The screenshot shows a SQL query editor interface. At the top, there's a toolbar with various icons. Below it, a tab bar with 'Query' selected, followed by 'Query History'. The main area contains a numbered SQL query:

```
1  SELECT D.country,
2      COUNT(*) AS total_customers
3  FROM customer A
4
5  INNER JOIN address B ON A.address_id = B.address_id
6  INNER JOIN city C ON B.city_id = C.city_id
7  INNER JOIN country D ON C.country_id = D.country_id
8  GROUP BY D.country
9  ORDER BY total_customers DESC
10 LIMIT 10
```

Below the query, there are tabs for 'Data Output', 'Messages', and 'Notifications'. The 'Data Output' tab is selected, showing a table with two columns: 'country' and 'total_customers'. The data is as follows:

	country character varying (50)	total_customers bigint
1	India	60
2	China	53
3	United States	36
4	Japan	31
5	Mexico	30
6	Brazil	28
7	Russian Federation	28
8	Philippines	20
9	Turkey	15
10	Indonesia	14

At the bottom, there's a large text area containing the same SQL query for reference.

I joined the tables customer > address > city > country to get each customer's country. Then I used COUNT() to count the number of customers per country, and GROUP BY to group the results. Finally, I sorted them with ORDER BY and limited the output to 10 to show only the top 10 countries with the most customers.

2/

```
1  SELECT C.city,
2      D.country,
3      COUNT(*) AS total_customers
4  FROM customer A
5  INNER JOIN address B ON A.address_id = B.address_id
6  INNER JOIN city C ON B.city_id = C.city_id
7  INNER JOIN country D ON C.country_id = D.country_id
8  WHERE D.country IN
9      ('India','China','United States','Japan', 'Mexico','Brazil',
10     'Russian Federation','Philippines','Turkey', 'Indonesia')
11
12    GROUP BY C.city, D.country
13    ORDER BY total_customers DESC
14    LIMIT 10
```

Data Output Messages Notifications

	city character varying (50)	country character varying (50)	total_customers bigint
2	Atlixco	Mexico	1
3	Xintai	China	1
4	Adoni	India	1
5	Dhule (Dhulia)	India	1
6	Kurashiki	Japan	1
7	Pingxiang	China	1
8	Sivas	Turkey	1
9	Celaya	Mexico	1
10	So Leopoldo	Brazil	1

Total rows: 10 Query complete 00:00:00.059

```
SELECT C.city,
       D.country,
       COUNT(*) AS total_customers
  FROM customer A
 INNER JOIN address B ON A.address_id = B.address_id
 INNER JOIN city C ON B.city_id = C.city_id
 INNER JOIN country D ON C.country_id = D.country_id
 WHERE D.country IN
 ('India','China','United States','Japan', 'Mexico','Brazil',
 'Russian Federation','Philippines','Turkey', 'Indonesia')
 GROUP BY C.city, D.country
 ORDER BY total_customers DESC
 LIMIT 10
```

I joined the tables customer >address > city >country to connect each customer to their city and country. Then I used COUNT(*) to calculate the number of customers per city, grouped the results with GROUP BY, and sorted them in descending order with ORDER BY. Finally, I limited the output to 10 to show only the top 10 cities in those countries.

3/

Query Query History

```
1 SELECT
2     B.first_name,
3     B.last_name,
4     B.customer_id,
5     D.city,
6     E.country,
7         SUM(A.amount) AS total_amount
8 FROM payment A
9 INNER JOIN customer B ON A.customer_id = B.customer_id
10 INNER JOIN address C ON B.address_id = C.address_id
11 INNER JOIN city D ON C.city_id = D.city_id
12 INNER JOIN country E ON D.country_id = E.country_id
13 WHERE D.city IN
14     ('Aurora',
15     'Atlixco',
16     'Xintai',
17     'Adoni',
18     'Dhule (Dhulia)').
```

Data Output Messages Notifications

Showing rows: 1 to 5

	first_name character varying (45)	last_name character varying (45)	customer_id integer	city character varying (50)	country character varying (50)	total_amount numeric
1	Sara	Perry	84	Atlixco	Mexico	128.70
2	Gabriel	Harder	518	Sivas	Turkey	108.75
3	Sergio	Stanfield	587	Celaya	Mexico	102.76
4	Clinton	Buford	537	Aurora	United States	98.76
5	Adam	Gooch	367	Adoni	India	97.80

Total rows: 5 | Query complete 00:00:00.052

```
SELECT
B.first_name,
B.last_name,
B.customer_id,
D.city,
E.country,
SUM(A.amount) AS total_amount
FROM payment A
INNER JOIN customer B ON A.customer_id = B.customer_id
INNER JOIN address C ON B.address_id = C.address_id
INNER JOIN city D ON C.city_id = D.city_id
INNER JOIN country E ON D.country_id = E.country_id
WHERE D.city IN
('Aurora',
'Atlixco',
'Xintai',
'Adoni',
'Dhule (Dhulia)',
'Kurashiki',
'Pingxiang',
'Sivas',
'Celaya',
'So Leopoldo')
```

```
GROUP BY D.city, E.country,  
B.first_name,  
B.last_name,  
B.customer_id  
  
ORDER BY total_amount DESC  
  
LIMIT 5
```

I joined the tables payment > customer >address > city > country to get each client's location. Then I used SUM(amount) to calculate the total paid by each client, and GROUP BY to group by client, city, and country. I added a WHERE IN clause to limit the results to the selected cities. Finally, I sorted the total with ORDER BY and limited the output to 5 to show the top 5 clients who paid the most in those cities.