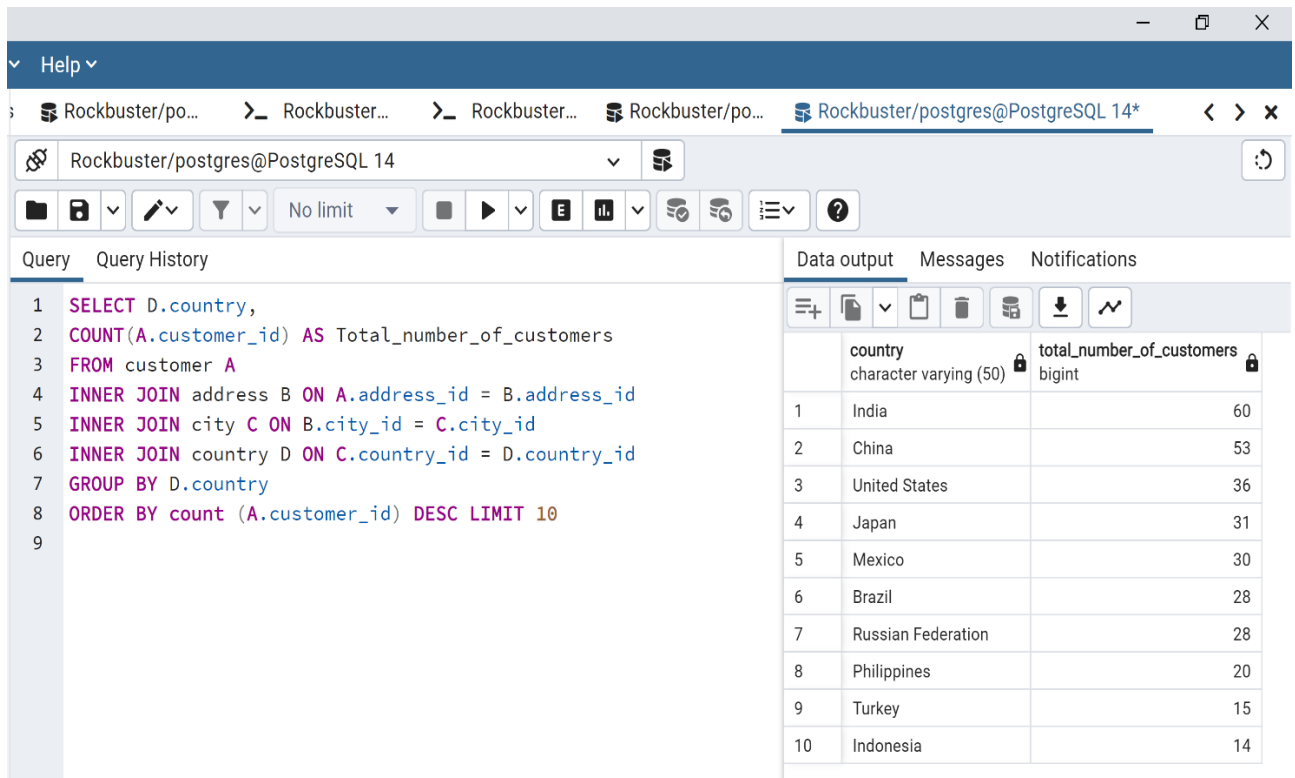


## 3.7: Joining Tables of Data

1. Write a query to find the top 10 countries for Rockbuster in terms of customer numbers.



The screenshot shows a PostgreSQL query editor interface. The query is as follows:

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

The results are displayed in a table with the following data:

	country character varying (50)	total_number_of_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

### How to approach this query :

Step 1. Identify tables: The tables required to know the top 10 countries in terms of the total number of customers are the customer and country tables. Thus, using the SELECT country and COUNT customer id. After identifying all the required tables, the next step would be to form the query thus, using the INNER JOIN function to join all the tables with the required information.

The final step is to GROUP the information according to the required data which is summing up the data for each country and using the ORDER BY COUNT to order by customers in the country by descending order. To limit the information to the required 10, use of the LIMIT function is needed.

- Write a query to find the top 10 cities within the top 10 countries identified in step 1.

```

1 SELECT C.city, D.country,
2 COUNT(A.customer_id) AS Total_number_of_customers FROM customer A
3 INNER JOIN address B ON A.address_id = B.address_id
4 INNER JOIN city C ON B.city_id = C.city_id INNER JOIN country D ON C.country_id = D.country_id
5 WHERE D.country IN ('India', 'China', 'United States', 'Japan', 'Mexico', 'Brazil', 'Russian Federation', 'Philippi
6 ORDER BY count (A.customer_id) DESC LIMIT 10
7

```

	city character varying (50)	country character varying (50)	total_number_of_customers bigint
1	Aurora	United States	2
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

Total rows: 10 of 10 Query complete 00:00:00.098 Ln 7, Col 1

After identifying and forming the query in Question 2 this query added the city table to the SELECT part of the query in order to know the top 10 cities within the top 10 countries. The WHERE and IN functions were used to specify which countries needed to be checked.

- A query to find the top 5 customers in the top 10 cities who have paid the highest total amounts to Rockbuster.

```

1 SELECT B.customer_id, B.first_name, B.last_name, D.city, E.country,
2 SUM(A.amount) AS Total_Amount_Paid FROM customer B
3 INNER JOIN payment A ON B.customer_id = A.customer_id
4 INNER JOIN address C ON B.address_id = C.address_id
5 INNER JOIN city D ON C.city_id = D.city_id
6 INNER JOIN country E ON D.country_id = E.country_id
7 WHERE D.city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule (Dhulia)', 'Kurashiki', 'Pingxiang', 'Sivas',
8 GROUP BY B.customer_id, B.first_name, B.last_name, D.city, E.country ORDER BY Total_Amount_Paid DESC
9 LIMIT 5
10

```

	customer_id integer	first_name character varying (45)	last_name character varying (45)	city character varying (50)	country character varying (50)	total_amount_paid numeric
1	84	Sara	Perry	Atlixco	Mexico	128.7
2	518	Gabriel	Harder	Sivas	Turkey	108.75
3	587	Sergio	Stanfield	Celaya	Mexico	102.76
4	537	Clinton	Buford	Aurora	United States	98.76
5	367	Adam	Gooch	Adoni	India	97.8

Total rows: 5 of 5 Query complete 00:00:00.079 Wednesday, 23 November 2022

-