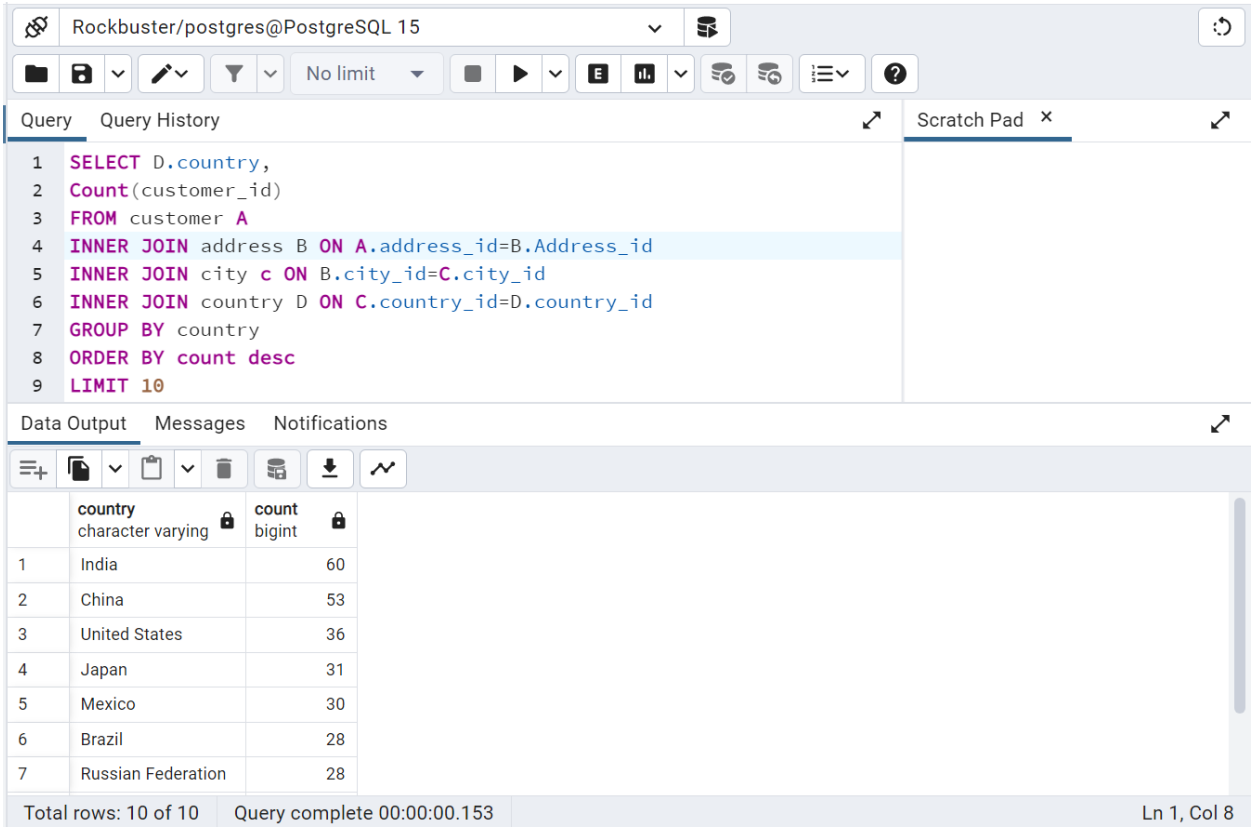
1.



In this question I have used inner join as it is most cost effective. I have used multiple joins in this query. Required tables aren't directly connected, so I had to join the country table with the customer table, the address table with the customer table, and city table with the address table finally the city table with the country table to get the relevant information.

I have used aggregate function count for customer table and I have used Group by and order by with the limit function.

2.

Query | Query History | Scratch Pad

```
1  SELECT D.country,C.city,
2  Count(customer_id)
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 country,city
8  ORDER BY count desc
9  LIMIT 10
```

Data Output | Messages | Notifications

	country character varying	city character varying	count bigint
1	United Kingdom	London	2
2	United States	Aurora	2
3	Spain	Santiago de Compostela	1
4	Japan	Iwaki	1
5	China	Shanwei	1
6	Morocco	Nador	1
7	China	Tianjin	1

Total rows: 10 of 10 | Query complete 00:00:00.146 | Ln 7, Col 22

This query is very similar to first question. I have also used inner join as it is most cost effective. I have used multiple joins in this query. Required tables aren't directly connected, so I had to join the country table with the customer table, the address table with the customer table, and city table with the address table finally the city table with the country table to get the relevant information.

I have also used two column in it one is from city table and another one from country table and grouped these two together.

3.

Query | Query History

```
1  SELECT A.customer_id,A.first_name,A.last_name,D.country,
2  C.city,SUM(E.amount) AS "total amount paid"
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  INNER JOIN payment E ON A.customer_id=E.customer_id
8  WHERE city IN ('London','Aurora','Vijayawada',
9                 'Maikop','Hoshiarpur','Nakhon Sawan',
10                'Bhimavaram','Nam Dinh','Liaocheng','Yinchung')
11 GROUP BY A.customer_id,first_name,last_name,country,city
12 ORDER BY "total amount paid" desc
13 LIMIT 5
```

Data Output | Messages | Notifications

	customer_id integer	first_name character varying	last_name character varying	country character varying	city character varying	total amount paid numeric
1	346	Arthur	Simpkins	Russian Federation	Maikop	145.70
2	390	Shawn	Heaton	Thailand	Nakhon Sawan	142.69
3	472	Greg	Robins	Vietnam	Nam Dinh	131.74
4	129	Carrie	Porter	China	Liaocheng	124.66
5	508	Milton	Howland	India	Vijayawada	121.77