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Exercise 3.7

Question 1:

Query | Query History

```
1  SELECT D.country,
2  COUNT(customer_id) AS number_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 country
8  ORDER BY number_customers DESC
9  LIMIT 10
10
```

Data Output | Messages | Notifications

	country character varying (50)	number_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

1B: The first thing I did was look at my ERD tool to identify which tables and columns I needed to use for this query. I located 4 columns to use with matching records to give us the results needed. Customer A, Address B, City C, Country D. I limited the data to a count of 10 because we were only locating the top 10 countries of customers. Inner join seemed like the correct option to use here

Question 2:

Query | Query History

```
1  SELECT D.country,
2  C.city,
3  COUNT(customer_id) AS number_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 ('India', 'China', 'United States', 'Japan', 'Mexico', 'Brazil',
9   'Russian Federation', 'Philippines', 'Turkey', 'Indonesia')
10 GROUP BY country,
11 city
12 ORDER BY number_customers DESC
13 LIMIT 10
```

Data Output | Messages | Notifications

	country character varying (50)	city character varying (50)	number_customers bigint
1	United States	Aurora	2
2	Mexico	Acua	1
3	United States	Citrus Heights	1
4	Japan	Iwaki	1
5	India	Ambattur	1
6	China	Shanwei	1
7	Brazil	So Leopoldo	1
8	Russian Federation	Teboksary	1
9	China	Tianjin	1
10	Indonesia	Cianjur	1

2B: This one was similar to the first query in the way that we are still using the inner join function. The only changes made was that we used the top 10 countries to help in identifying the cities. Selecting the city along with the country and grouping led to the answer you see above.

Question 3:

Query | Query History

```
SELECT A.customer_id,
A.first_name,
A.last_name,
C.city,
D.country,
Sum(E.amount) AS total_amount_paid
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
INNER JOIN payment E ON A.customer_id = E.customer_id
WHERE C.city IN ('Aurora', 'So Leopoldo', 'Tianjin', 'Shanwei', 'Citrus
'Teboksary', 'Iwaki', 'Ambattur', 'Cianjur', 'Acua')
GROUP BY A.customer_id,
A.first_name,
A.last_name,
C.city,
D.country
ORDER BY total_amount_paid DESC
LIMIT 5
```

Data Output | Messages | Notifications

	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	225	Arlene	Harvey	Ambattur	India	111.76
2	424	Kyle	Spurlock	Shanwei	China	109.71
3	240	Marlene	Welch	Iwaki	Japan	106.77
4	486	Glen	Talbert	Acua	Mexico	100.77
5	537	Clinton	Buford	Aurora	United States	98.76

3B: For this query we had to add a bit more columns to it to make everything function correctly. The joining of the payment column, first and last name is what gave us our primary result. Keeping the same basic query as before really gave an outline of what to add into the new query above.