Exercise 3.8

Step 1: Find the average amount paid by the top 5 customers.

**SELECT AVG(total\_amount\_paid) AS average**

**FROM**

**(**

**SELECT**

**customer.customer\_id,**

**customer.first\_name,**

**customer.last\_name,**

**city.city,**

**SUM(payment.amount) AS total\_amount\_paid**

**FROM**

**customer**

**JOIN**

**payment ON customer.customer\_id = payment.customer\_id**

**JOIN**

**address ON customer.address\_id = address.address\_id**

**JOIN**

**city ON address.city\_id = city.city\_id**

**WHERE**

**city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule(Dhulia)',**

**'Kurashiki', 'Pingxiang', 'Sivas', 'Celaya', 'So Leopoldo')**

**GROUP BY**

**customer.customer\_id,**

**customer.first\_name,**

**customer.last\_name,**

**city.city**

**ORDER BY**

**total\_amount\_paid DESC**

**LIMIT**

**5**

**)**

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**Step 2: Find out how many of the top 5 customers you identified in step 1 are based within each country.**

Your final output should include 3 columns:

* “country”
* “all\_customer\_count” with the total number of customers in each country
* “top\_customer\_count” showing how many of the top 5 customers live in each country

**SELECT**

**country.country,**

**COUNT(DISTINCT customer.customer\_id) AS all\_customer\_count,**

**COUNT(DISTINCT top\_5\_customers.customer\_id) AS top\_customer\_count**

**FROM customer**

**JOIN address ON customer.address\_id = address.address\_id**

**JOIN city ON address.city\_id = city.city\_id**

**JOIN country ON city.country\_id = country.country\_id**

**LEFT JOIN**

**(SELECT**

**customer.customer\_id,**

**customer.first\_name,**

**customer.last\_name,**

**city.city,**

**country.country,**

**SUM(payment.amount) AS total\_amount\_paid**

**FROM**

**customer**

**JOIN**

**payment ON customer.customer\_id = payment.customer\_id**

**JOIN**

**address ON customer.address\_id = address.address\_id**

**JOIN**

**city ON address.city\_id = city.city\_id**

**JOIN country ON city.country\_id = country.country\_id**

**WHERE**

**city IN ('Aurora', 'Atlixco', 'Xintai', 'Adoni', 'Dhule(Dhulia)',**

**'Kurashiki', 'Pingxiang', 'Sivas', 'Celaya', 'So Leopoldo')**

**GROUP BY**

**customer.customer\_id,**

**customer.first\_name,**

**customer.last\_name,**

**city.city,**

**country.country**

**ORDER BY**

**total\_amount\_paid DESC**

**LIMIT**

**5) AS top\_5\_customers**

**ON customer.customer\_id = top\_5\_customers.customer\_id**

**GROUP BY country.country**

**ORDER BY all\_customer\_count DESC**

**LIMIT 10;**

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1. **Write 1 to 2 short paragraphs on the following:**
   * **Do you think steps 1 and 2 could be done without using subqueries?**
     1. Although I do not know how to do it yet in SQL, I do think there should be a more efficient way to do steps 1 and 2 without subqueries. A brief subquery is not too difficult, but when they get long and complicated it is difficult to read and follow exactly what is happening in the query. However, the subqueries do ensure that the information being pulled about the customers is always up to date as new data is entered into the system.
   * **When do you think subqueries are useful?**
     1. I think subqueries are useful when there is information across many tables that need to be referenced to get the information needed. It’s also useful to make sure the information being retrieved is always up to date.