SELECT COUNT(Orders.ShipperID) AS Total, ShipperName

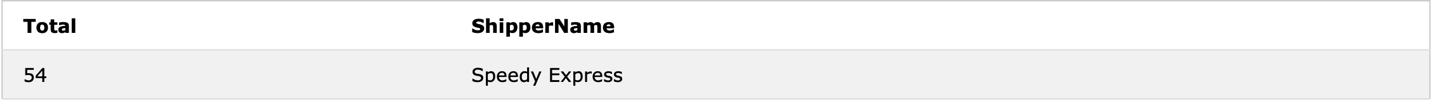
FROM Shippers

INNER JOIN Orders

ON Shippers.ShipperID=Orders.ShipperID

WHERE Orders.ShipperID = 1

GROUP BY ShipperName;



1. SELECT COUNT(\*) AS Total, Orders.EmployeeID, Employees.LastName

FROM Employees

INNER JOIN Orders

ON Employees.EmployeeID=Orders.EmployeeID

GROUP BY Orders.EmployeeID,Employees.LastName

HAVING COUNT(\*) =

(SELECT MAX(Total)

FROM

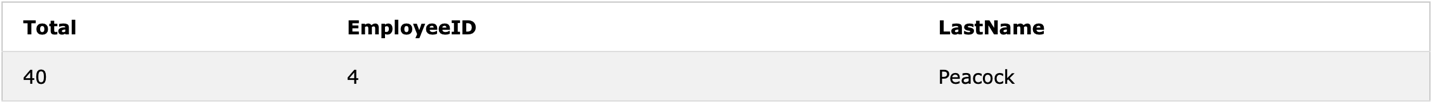
(SELECT COUNT(\*) AS Total, Orders.EmployeeID,Employees.LastName

FROM Employees

INNER JOIN Orders

ON Employees.EmployeeID=Orders.EmployeeID

GROUP BY Orders.EmployeeID,Employees.LastName));



SELECT OrderDetails.ProductID,SUM(Quantity) AS Total,ProductName

FROM (((Customers

INNER JOIN Orders ON Customers.CustomerID=Orders.CustomerID)

INNER JOIN OrderDetails ON Orders.OrderID = OrderDetails.OrderID)

INNER JOIN Products ON OrderDetails.ProductID = Products.ProductID)

WHERE Country = "Germany"

GROUP BY OrderDetails.ProductID, ProductName

HAVING SUM(Quantity) =

(SELECT MAX(Total)

FROM

(SELECT OrderDetails.ProductID,SUM(Quantity) AS Total,ProductName

FROM (((Customers

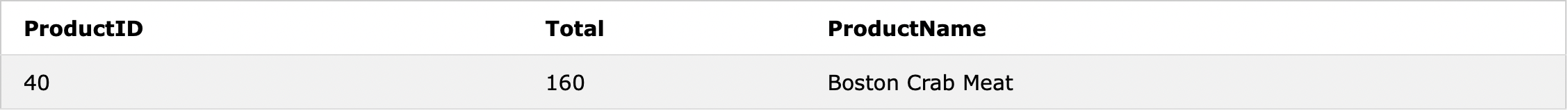
INNER JOIN Orders ON Customers.CustomerID=Orders.CustomerID)

INNER JOIN OrderDetails ON Orders.OrderID = OrderDetails.OrderID)

INNER JOIN Products ON OrderDetails.ProductID = Products.ProductID)

WHERE Country = "Germany"

GROUP BY OrderDetails.ProductID, ProductName));



For this question I would like to explain my answers a little differently showcasing my raw thought process from start to finish. All components will be answered.

I started off by understanding exactly what Average Order Value was. Google defines it as the Total Revenue/Number of Orders. To verify the $3145 number given in the question I used the SUM formula for the order amount column (SUM(orderAmount)) and then used the COUNT function to calculate the total number of orders. Dividing the total revenue by number of orders – it verified the method of getting the number of $3145.

Then I immediately sorted the Order Amount column by ascending order and hypothesized that the large numbers in the order amount column were the cause of the AOV being $3145. By having these extremely high outliers of revenue, it was pushing the average higher than that which makes sense. I noticed purely by looking at the data that the highest order amount after an order amount of $1760 was $25,725. I also noticed that some of the higher order amounts were also because these orders had a larger number of items in the order. Keeping this in mind I quickly understood that a more accurate measure to realize a shoe price was by finding the total revenue (SUM(OrderAmount)) and dividing this by the total number of items sold. This number was $15,725,640/43,936 = $357. This explains that the average revenue per item is $357. This number already seems more accurate than $3145 but I specifically wanted to preserve the formula for AOV (Revenue/Number of Orders) rather than providing average revenue per item sold. Therefore, I simply used this number as a benchmark.

After this I was genuinely curious to see what happened to the numbers if I deleted all the rows which had an order amount greater than $1,760. Although I know this isn’t the correct way to produce outliers, I just thought the discrepancy between $1760 and $25,725 was abnormally large. After deleting these numbers out of curiosity and Finding the AOV ($1,493,840/4937) = $302. This was the number I calculated. Now that I had these 2 numbers around the same ball park I needed to confirm my hypothesis by calculating outliers mathematically and then seeing what number I receive for AOV. I did this by calculating quartiles 1, 3 and Inter Quartile range as well as find the upper and lower fence. The results were that the outliers were above 730 and lower than -177. Of course order amounts cant be smaller than -177 so I focused on all the orders above 730. After deleting these rows I found the AOV to be $293. Since all these numbers are in close proximity to each other, I am satisfied by the number to be the average of these 3 measurements. 357+302+293/3 = $317. In conclusion if I were to guess my most accurate answer to find a decent average it would by $317.