# Fall 2022 Data Science Intern Challenge

Please complete the following questions, and provide your thought process/work. You can attach your work in a text file, link, etc. on the application page. Please ensure answers are easily visible for reviewers!

**Question 1:** Given some sample data, write a program to answer the following: [click here to access the required data set](https://docs.google.com/spreadsheets/d/16i38oonuX1y1g7C_UAmiK9GkY7cS-64DfiDMNiR41LM/edit#gid=0)

On Shopify, we have exactly 100 sneaker shops, and each of these shops sells only one model of shoe. We want to do some analysis of the average order value (AOV). When we look at orders data over a 30 day window, we naively calculate an AOV of $3145.13. Given that we know these shops are selling sneakers, a relatively affordable item, something seems wrong with our analysis.

1. Think about what could be going wrong with our calculation. Think about a better way to evaluate this data.
2. What metric would you report for this dataset?
3. What is its value?

**Question 2:** For this question you’ll need to use SQL. [Follow this link](https://www.w3schools.com/SQL/TRYSQL.ASP?FILENAME=TRYSQL_SELECT_ALL) to access the data set required for the challenge. Please use queries to answer the following questions. Paste your queries along with your final numerical answers below.

1. How many orders were shipped by Speedy Express in total?

Ans: 54

SELECT s.ShipperName,s.ShipperID, COUNT(OrderID) AS total\_orders FROM [Orders] AS o

INNER JOIN Shippers AS s

ON s.ShipperID = o.ShipperID

WHERE s.ShipperID = 1

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1. What is the last name of the employee with the most orders?

Ans: Peacock, 40 orders.

SELECT e.LastName, COUNT(OrderID) AS total\_orders FROM [Orders] AS o

INNER JOIN Employees AS e

ON o.EmployeeID = e.Employeeid

GROUP BY 1

ORDER BY 2 DESC

Graphical user interface, text, application

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1. What product was ordered the most by customers in Germany?

Ans:

WITH temp AS(SELECT Orders.OrderID, Customers.Country, OrderDetails.Quantity, Products.ProductName

FROM Orders, OrderDetails

INNERJOIN Customers ON Orders.CustomerID=Customers.CustomerID

INNERJOIN Products ON OrderDetails.ProductID=Products.ProductID

WHERE Country='Germany'),

temp2 AS(SELECT ProductName, Quantity, COUNT(\*) as 'Orders'

FROM temp

GROUP BY ProductName

ORDER BY 3 DESC)

SELECT ProductName,Quantity\*Orders AS total

FROM temp2

ORDER BY 2 DESC

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