

Welcome! You are now in DataLab.

You successfully completed your project and are looking for some additional related challenges. This DataLab workbook contains the official solution from our curriculum staff, along with Additional Challenges at the bottom. If you would like a quick overview of DataLab, please refer to the help menu. You can easily share your project with your friends and colleagues when you're done.

Good luck with your additional challenges!

You're working for a company that sells motorcycle parts, and they've asked for some help in analyzing their sales data!

They operate three warehouses in the area, selling both retail and wholesale. They offer a variety of parts and accept credit cards, cash, and bank transfer as payment methods. However, each payment type incurs a different fee.

The board of directors wants to gain a better understanding of wholesale revenue by product line, and how this varies month-to-month and across warehouses. You have been tasked with calculating net revenue for each product line and grouping results by month and warehouse. The results should be filtered so that only "Wholesale" orders are included.

They have provided you with access to their database, which contains the following table called sales:

Sales

Column	Data type	Description			
order_number	VARCHAR	Unique order number.			
date	DATE	Date of the order, from June to August 2021.			
warehouse	VARCHAR	The warehouse that the order was made from— $[{\tt North}], [{\tt Central}], {\tt or} [{\tt West}].$			
client_type	VARCHAR	Whether the order was $ar{ t Retail}$ or $ar{ t Wholesale}$.			
product_line	VARCHAR	Type of product ordered.			
quantity	INT	Number of products ordered.			
unit_price	FLOAT	Price per product (dollars).			
total	FLOAT	Total price of the order (dollars).			
payment	VARCHAR	Payment method— Credit card, Transfer, or Cash.			
payment_fee	FLOAT	Percentage of total charged as a result of the payment method.			

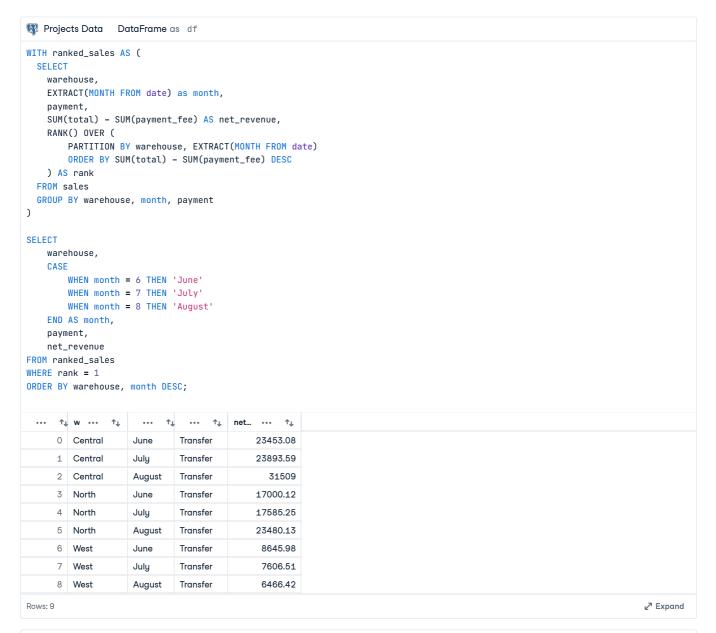
Your query output should be presented in the following format:

product_line	month	warehouse	net_revenue
product_one			
product_two			

```
DataFrame as revenue_by_product_line
Projects Data
-- Start coding here
SELECT product_line,
    CASE WHEN EXTRACT('month' from date) = 6 THEN 'June'
        WHEN EXTRACT('month' from date) = 7 THEN 'July'
        WHEN EXTRACT('month' from date) = 8 THEN 'August'
    END AS month,
    warehouse,
    SUM(total) - SUM(payment_fee) AS net_revenue
FROM sales
WHERE client_type = 'Wholesale'
GROUP BY product_line, warehouse, month
ORDER BY product_line, month, net_revenue DESC
                 ··· ↑↓ product_line
index
                                                                                                ••• ↑↓
                                                                                                         month
                                                                                                                                    wareho
                       0 Braking system
                                                                                                                                    Cent A
                                                                                                         August
                                                                                                                                    West
                       1 Braking system
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                       3 Braking system
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                      14 Electrical system
                                                                                                                                    West
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                      15 Electrical system
                                                                                                         June
                                                                                                                                    Cent_
Rows: 48
                                                                                                                               Expand
```

Extended Project below

The finance team is exploring ways to reduce transaction costs and improve profitability. They've asked you to determine the most profitable payment method for each warehouse in each month. Calculate the net revenue for each payment method, grouped by warehouse and month, and identify the top payment method for each combination.



The marketing team is planning a targeted campaign and wants to know the most popular product lines for retail and wholesale customers.

They have given you the task to find the top 3 most ordered product lines for each client type.

```
Projects Data DataFrame as d
WITH ranked AS (
SELECT
    client_type,
   product_line,
    SUM(quantity) AS num_of_orders,
   RANK() OVER (
       PARTITION BY client_type
       ORDER BY SUM(quantity) DESC
   ) AS rank
FROM sales
GROUP BY client_type, product_line
SELECT
   client_type,
   product_line,
   num_of_orders
FROM ranked
WHERE rank <= 3
 ··· ↑↓ clie... ··· ↑↓ product_line
                                       ••• ↑↓ num_o... ••• ↑↓
     0 Retail
                       Suspension & traction
                                                             1017
                       Electrical system
                                                              862
     1 Retail
     2 Retail
                       Braking system
                                                              862
     3 Wholesale
                       Braking system
                                                             1268
     4 Wholesale
                                                             1128
                       Suspension & traction
     5 Wholesale
                       Frame & body
                                                              932
Rows: 6

∠ Expand
```