

ONLINE ORDERS DETAILS

MYSQL PROJECT DESCRIPTION

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Objective:

The objective of this project was to collect data from an online database and to cover each step of creating a data repository inside MySQL Workbench.

After creating a data repository, next step was to apply functions like basic aggregation, where, group by, having, Subqueries, CTEs and Window functions to find insights like

- Total Orders
- Total Revenue
- Orders and Revenue by Payment Method
- Top 3 Products by Sales Revenue
- Orders with Total Price > Average
- Products with Unit Price > Average
- Top-Selling Product by Revenue
- Countries with Revenue < Max Country Revenue
- Total Revenue per Product (CTE)
- Rank Products by Revenue (Window)
- Order Value vs Overall Average (Window)

Tools:

- MySQL
- Powerpoint (for project description)

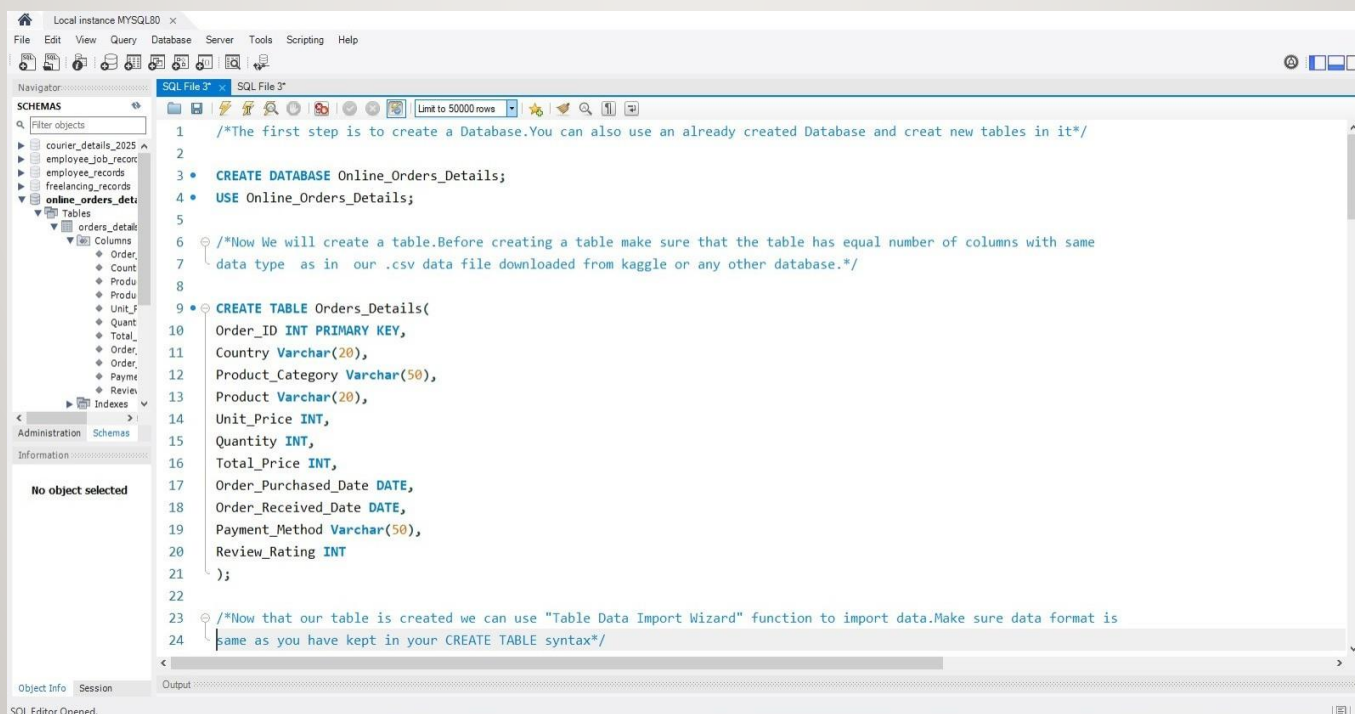
Creating Database and Data table:

The first step in this project is to create a database. We can also use an already created database and add a new table in it.

```
CREATE DATABASE Online_Orders_Details;  
USE Online_Orders_Details;
```

The next step is to create a table inside our database. Before creating a table make sure that the table has equal number of columns with same data type as in our .csv data file downloaded from kaggle or any other database.

```
CREATE TABLE Orders_Details  
(Order_ID INT PRIMARY KEY,  
Country Varchar(20),  
Product_Category Varchar(50),  
Product Varchar(20),  
Unit_Price INT,  
Quantity INT,  
Total_Price INT,  
Order_Purchased_Date DATE,  
Order_Received_Date DATE,  
Payment_Method Varchar(50),  
Review_Rating INT);
```

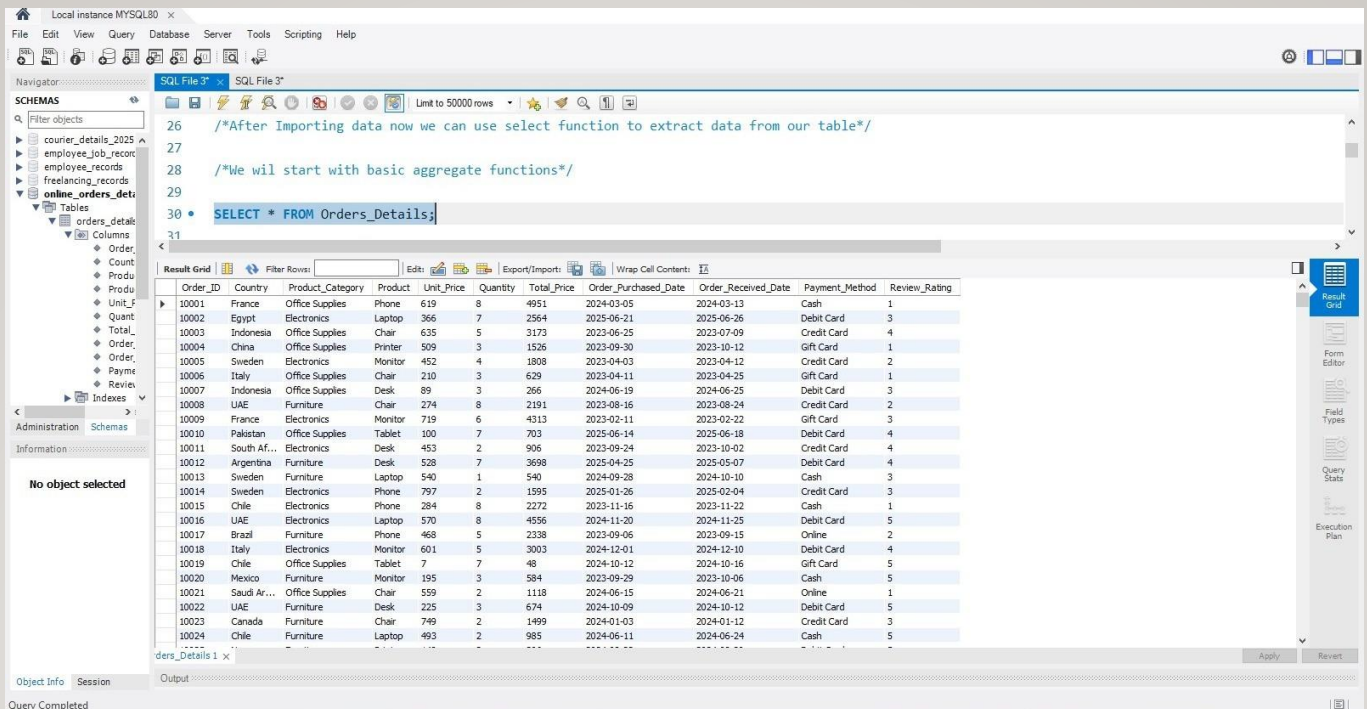


Now that our table is created we can use "Table Data Import Wizard" function to import data. Make sure data format is same as you have kept in your CREATE TABLE syntax

Preview Data:

In the following step we will use **SELECT** query to preview our entire data table containing all the entries in each column.

SELECT * FROM Orders_Details;



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following code:

```
26 /*After Importing data now we can use select function to extract data from our table*/
27
28 /*We will start with basic aggregate functions*/
29
30 * SELECT * FROM Orders_Details;
```

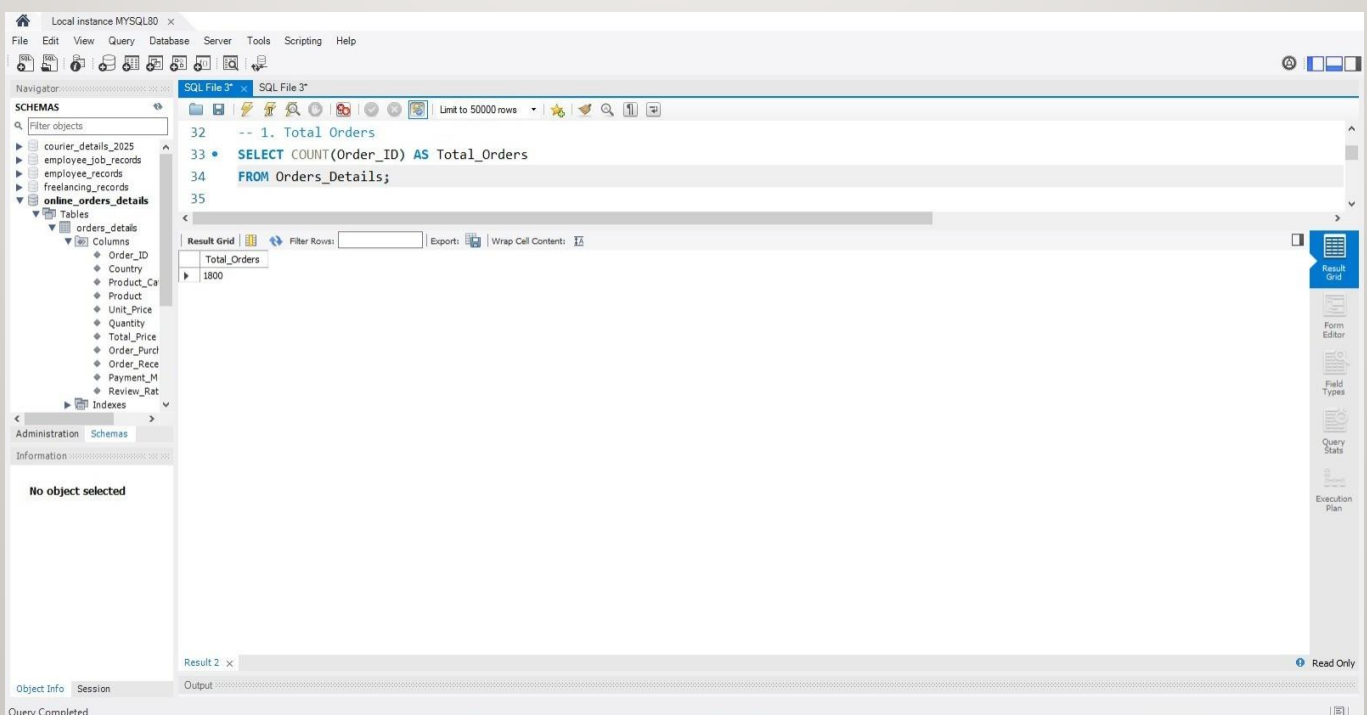
The result grid displays the following data:

Order_ID	Country	Product_Category	Product	Unit_Price	Quantity	Total_Price	Order_Purchased_Date	Order_Received_Date	Payment_Method	Review_Rating
10001	France	Office Supplies	Phone	619	8	4951	2024-03-05	2024-03-13	Cash	1
10002	Egypt	Electronics	Laptop	366	7	2564	2025-06-21	2025-06-26	Debit Card	3
10003	Indonesia	Office Supplies	Chair	635	5	3173	2023-06-25	2023-07-09	Credit Card	4
10004	China	Office Supplies	Printer	509	3	1526	2023-09-30	2023-10-12	Gift Card	1
10005	Sweden	Electronics	Monitor	452	4	1808	2023-04-03	2023-04-12	Credit Card	2
10006	Italy	Office Supplies	Chair	210	3	639	2023-04-11	2023-04-25	Gift Card	1
10007	Indonesia	Office Supplies	Desk	89	3	266	2024-06-19	2024-06-25	Debit Card	3
10008	UAE	Furniture	Chair	274	8	2191	2023-08-16	2023-08-24	Credit Card	2
10009	France	Electronics	Monitor	719	6	4313	2023-02-11	2023-02-22	Gift Card	3
10010	Pakistan	Office Supplies	Tablet	100	7	703	2025-06-14	2025-06-18	Debit Card	4
10011	South Afr...	Electronics	Desk	453	2	906	2023-09-24	2023-10-02	Credit Card	4
10012	Argentina	Furniture	Desk	528	7	3698	2025-04-25	2025-05-07	Debit Card	4
10013	Sweden	Furniture	Laptop	540	1	540	2024-09-28	2024-10-10	Cash	3
10014	Sweden	Electronics	Phone	797	2	1595	2025-01-26	2025-02-04	Credit Card	3
10015	Chile	Electronics	Phone	284	8	2272	2023-11-16	2023-11-22	Cash	1
10016	UAE	Electronics	Laptop	570	8	4556	2024-11-20	2024-11-25	Debit Card	5
10017	Brazil	Furniture	Phone	468	5	2338	2023-09-06	2023-09-15	Online	2
10018	Italy	Electronics	Monitor	601	5	3003	2024-12-01	2024-12-10	Debit Card	4
10019	Chile	Office Supplies	Tablet	7	7	48	2024-10-12	2024-10-16	Gift Card	5
10020	Mexico	Furniture	Monitor	195	3	584	2023-09-29	2023-10-06	Cash	5
10021	Saudi Ar...	Office Supplies	Chair	559	2	1118	2024-06-15	2024-06-21	Online	1
10022	UAE	Furniture	Desk	225	3	674	2024-10-09	2024-10-12	Debit Card	5
10023	Canada	Furniture	Chair	749	2	1499	2024-01-03	2024-01-12	Credit Card	3
10024	Chile	Furniture	Laptop	493	2	986	2024-06-11	2024-06-24	Cash	5

Total Orders:

In order to calculate the total number of orders placed we will use following query.

SELECT COUNT(Order_ID) AS Total_Orders
FROM Orders_Details;



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following code:

```
32 -- 1. Total Orders
33 * SELECT COUNT(Order_ID) AS Total_Orders
34 FROM Orders_Details;
35
```

The result grid displays the following data:

Total_Orders
1800

Total Revenue

Calculate the total revenue generated from all orders.

```
SELECT SUM(Total_Price) AS Total_Revenue FROM Orders_Details;
```

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' pane displays a tree view of the database structure, including tables like 'courier_details_2025', 'employee_job_records', 'employee_records', 'freelancing_records', and 'online_orders_details'. The 'online_orders_details' table is selected, showing its columns: Order_ID, Country, Product_Category, Product, Unit_Price, Quantity, Total_Price, Order_Purchase, Order_Received, Payment_Method, and Review_Rating. The main editor window contains the following SQL code:

```
35
36 -- 2. Total Revenue
37 • SELECT SUM(Total_Price) AS Total_Revenue
38   FROM Orders_Details;
39
```

The 'Result Grid' at the bottom shows the output of the query:

Total_Revenue
3266658

The status bar at the bottom indicates 'Query Completed'.

Average Unit Price:

In this step we will calculate average unit price from our orders.

```
SELECT AVG(Unit_Price) AS Avg_Unit_Price
FROM Orders_Details;
```

The screenshot shows the MySQL Workbench interface. On the left, the 'SCHEMAS' pane displays a tree view of the database structure, including tables like 'courier_details_2025', 'employee_job_records', 'employee_records', 'freelancing_records', and 'online_orders_details'. The 'online_orders_details' table is selected, showing its columns: Order_ID, Country, Product_Category, Product, Unit_Price, Quantity, Total_Price, Order_Purchase, Order_Received, Payment_Method, and Review_Rating. The main editor window contains the following SQL code:

```
39
40 -- 3. Average Unit Price
41 • SELECT AVG(Unit_Price) AS Avg_Unit_Price
42   FROM Orders_Details;
43
```

The 'Result Grid' at the bottom shows the output of the query:

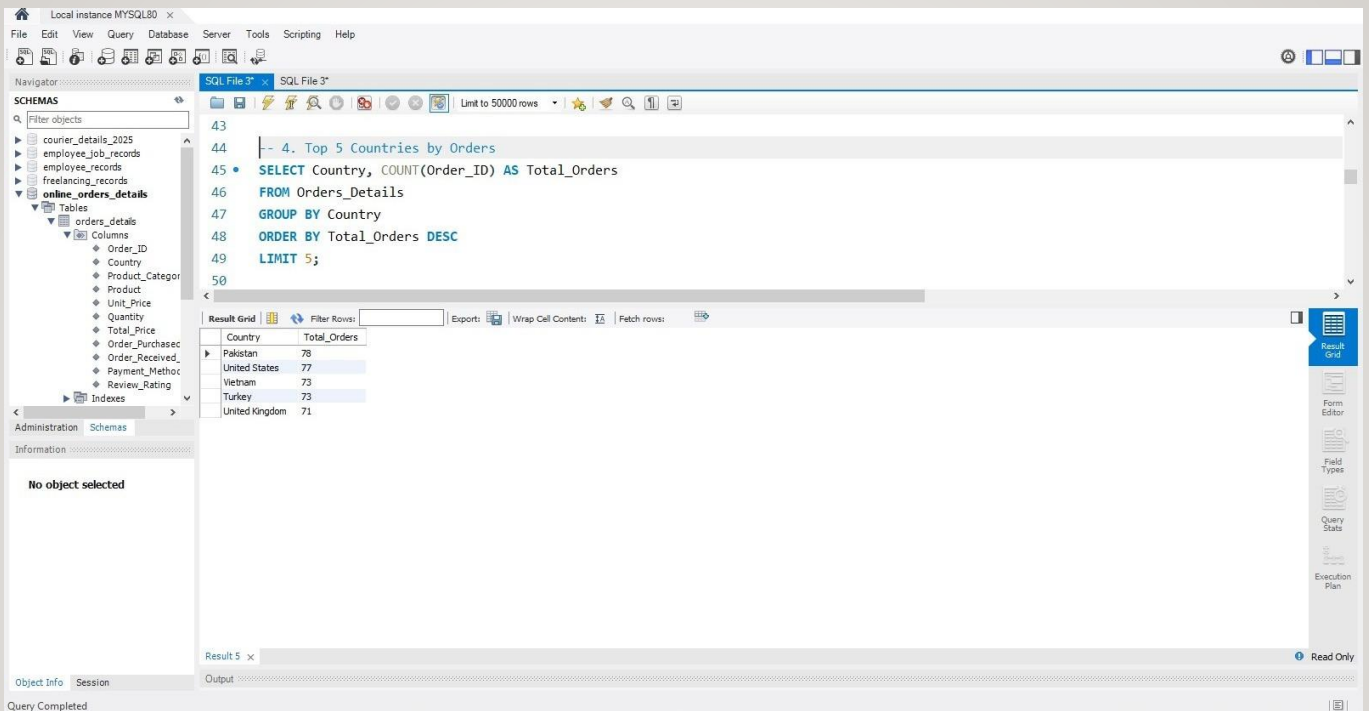
Avg_Unit_Price
395.7344

The status bar at the bottom indicates 'Query Completed'.

Top 5 Countries by Orders:

In this query we will find out top 5 countries with the most amount of orders placed. This query will employ Group by, Order by and Limit function for the first time in this project.

```
SELECT Country, COUNT(Order_ID) AS Total_Orders
FROM Orders_Details
GROUP BY Country
ORDER BY Total_Orders DESC
LIMIT 5;
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
-- 4. Top 5 Countries by Orders
SELECT Country, COUNT(Order_ID) AS Total_Orders
FROM Orders_Details
GROUP BY Country
ORDER BY Total_Orders DESC
LIMIT 5;
```

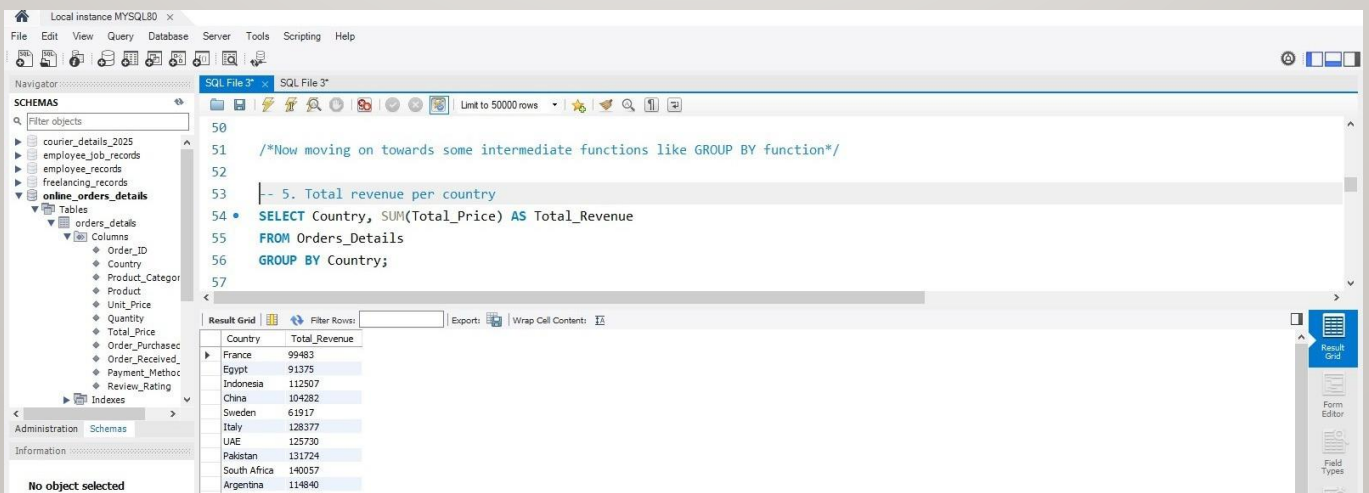
The Result Grid displays the following data:

Country	Total_Orders
Pakistan	78
United States	77
Vietnam	73
Turkey	73
United Kingdom	71

Total Revenue per Country:

In this step we will find out the total revenue made in each country.

```
SELECT Country, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Country;
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
/*Now moving on towards some intermediate functions like GROUP BY function*/
-- 5. Total revenue per country
SELECT Country, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Country;
```

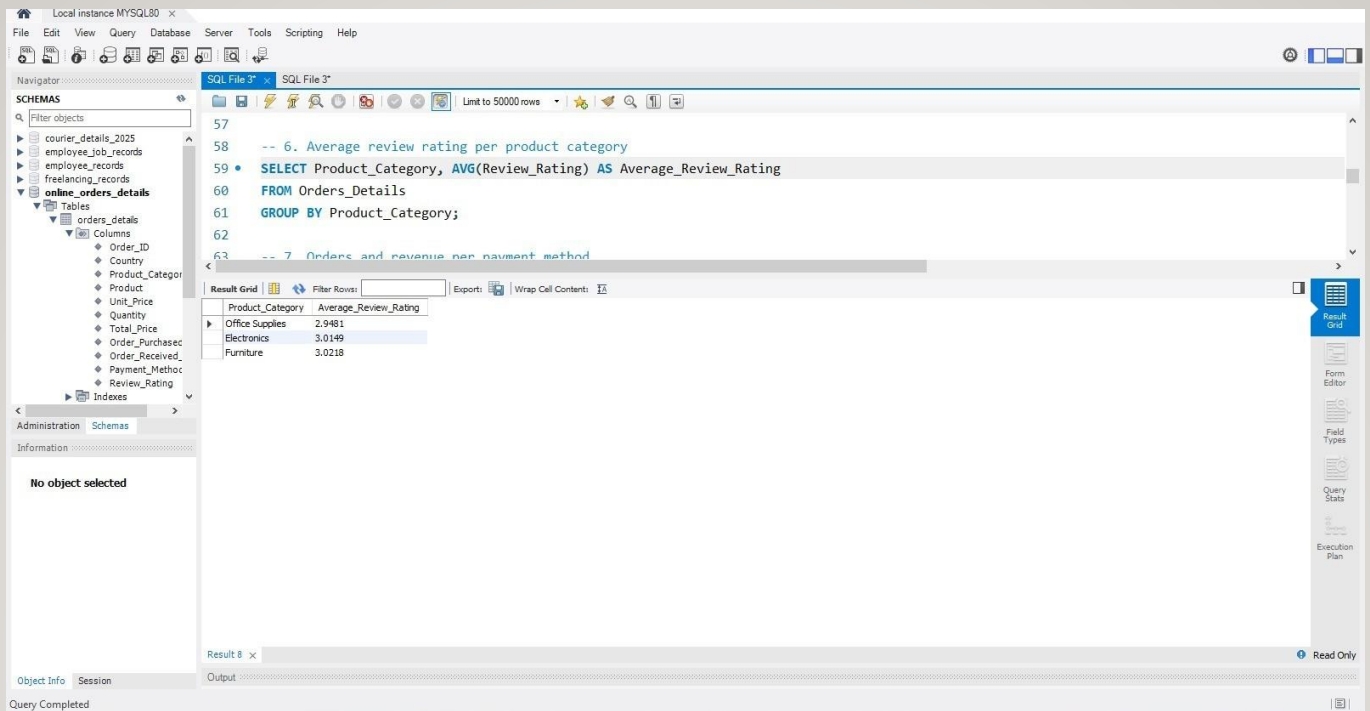
The Result Grid displays the following data:

Country	Total_Revenue
France	99483
Egypt	91375
Indonesia	112507
China	104282
Sweden	61917
Italy	128377
UAE	125730
Pakistan	131724
South Africa	140057
Argentina	114840

Average Review Rating by Product Category:

This query gives us average review rating for each product category.

```
SELECT Product_Category,AVG(Review_Rating) AS Average_Review_Rating
FROM Orders_Details
GROUP BY Product_Category;
```



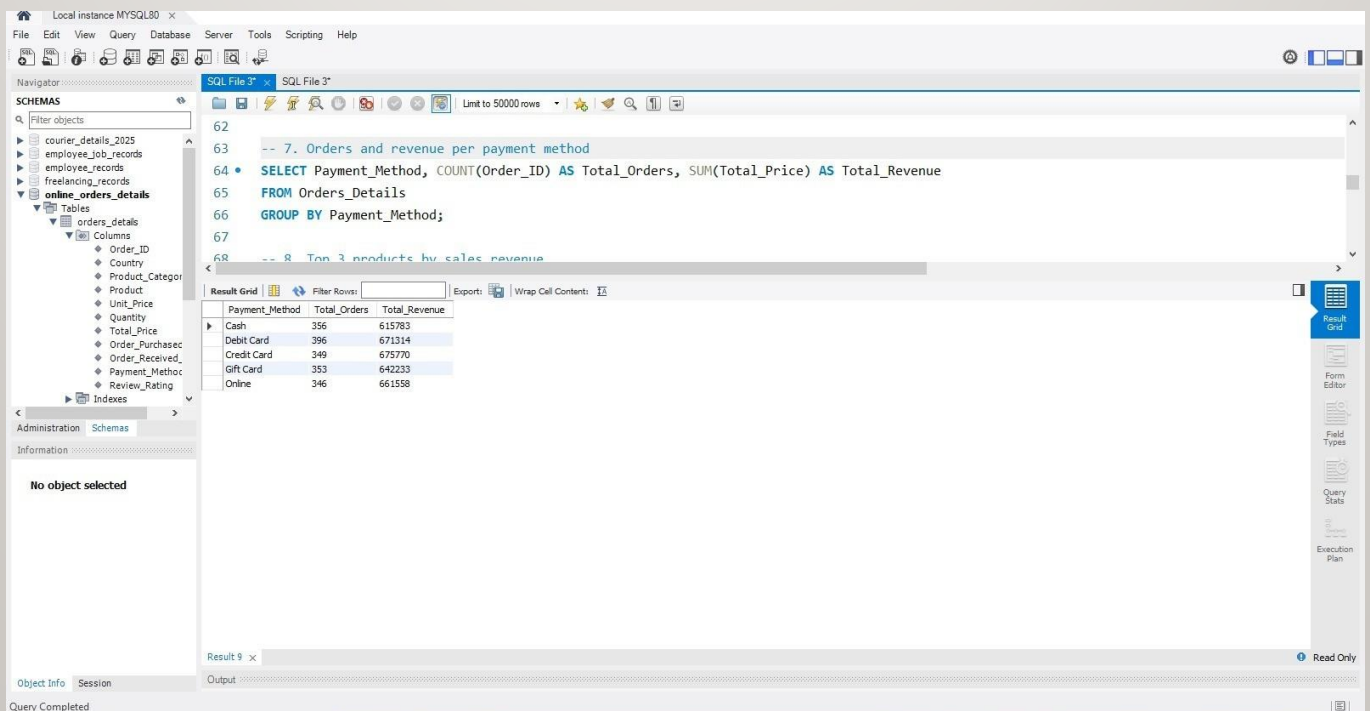
The screenshot shows the MySQL Workbench interface. The SQL Editor contains a query to calculate the average review rating by product category. The Results tab displays the output of this query.

Product_Category	Average_Review_Rating
Office Supplies	2.9481
Electronics	3.0149
Furniture	3.0218

Orders and Revenue by Payment Method:

Analyze orders and revenue grouped by payment method.

```
SELECT Payment_Method, COUNT(Order_ID) AS Total_Orders, SUM(Total_Price) AS Total_Revenue FROM
Orders_Details
GROUP BY Payment_Method;
```



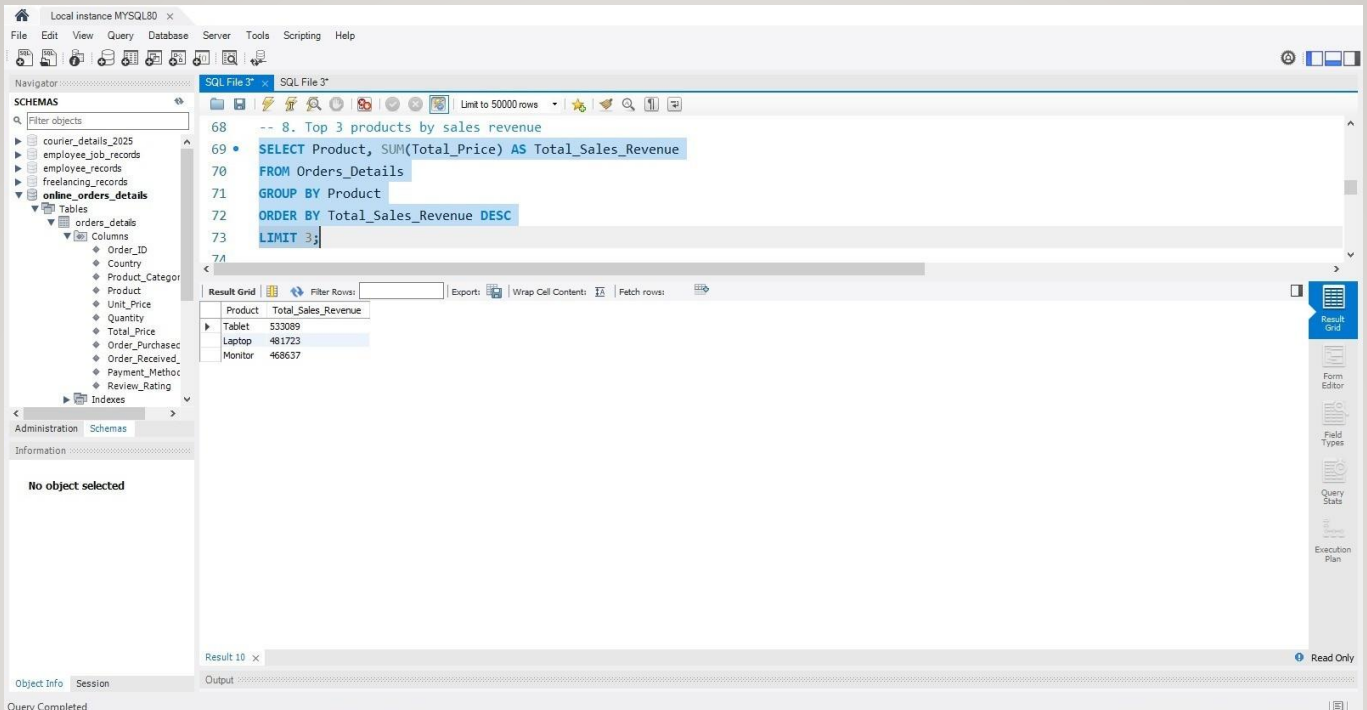
The screenshot shows the MySQL Workbench interface. The SQL Editor contains a query to analyze orders and revenue by payment method. The Results tab displays the output of this query.

Payment_Method	Total_Orders	Total_Revenue
Cash	356	615783
Debit Card	396	671314
Credit Card	349	675770
Gift Card	353	642233
Online	346	661558

Top 3 Products by Sales Revenue:

This query lists the top three products ranked by total sales revenue.

```
SELECT Product, SUM(Total_Price) AS Total_Sales_Revenue FROM Orders_Details  
GROUP BY Product  
ORDER BY Total_Sales_Revenue DESC LIMIT 3;
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
-- 8. Top 3 products by sales revenue  
SELECT Product, SUM(Total_Price) AS Total_Sales_Revenue  
FROM Orders_Details  
GROUP BY Product  
ORDER BY Total_Sales_Revenue DESC  
LIMIT 3;
```

The Results Grid shows the following data:

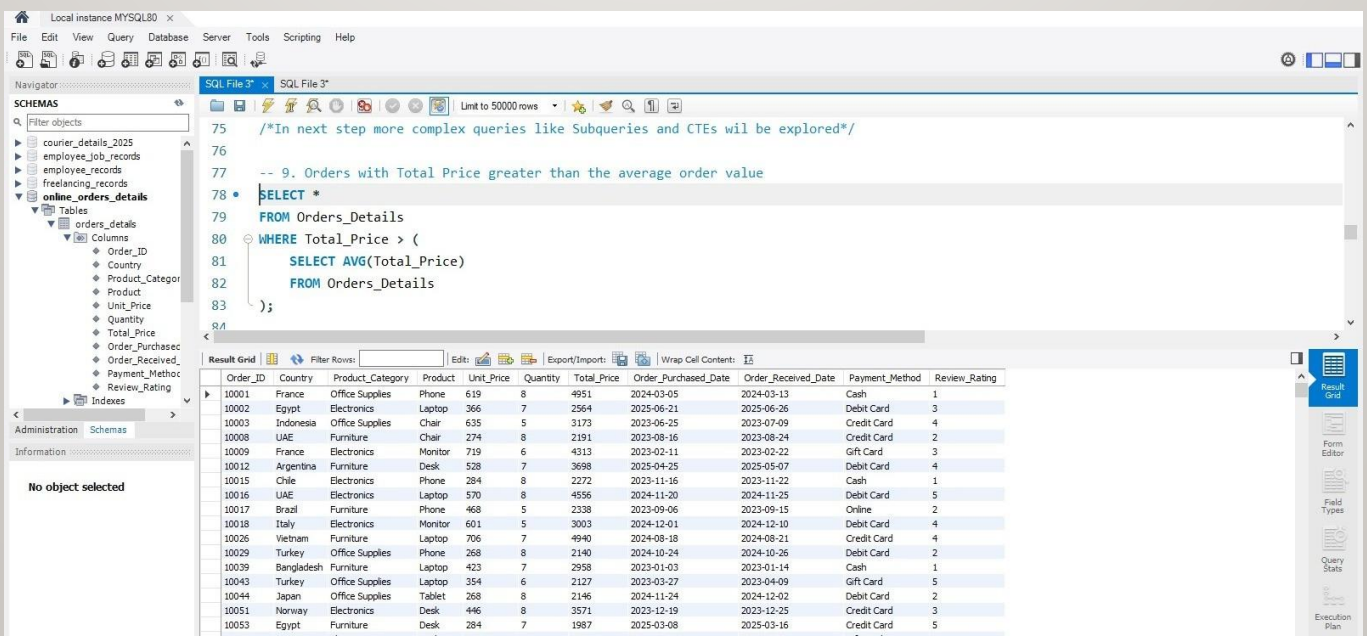
Product	Total_Sales_Revenue
Tablet	533089
Laptop	481723
Monitor	468637

Subqueries and CTEs

In next steps more complex queries like Subqueries and CTEs will be explored.

Orders with Total Price greater than the average order value:

```
SELECT *  
FROM Orders_Details  
WHERE Total_Price > (  
    SELECT AVG(Total_Price)  
    FROM Orders_Details);
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
/*In next step more complex queries like Subqueries and CTEs will be explored*/  
-- 9. Orders with Total Price greater than the average order value  
SELECT *  
FROM Orders_Details  
WHERE Total_Price > (  
    SELECT AVG(Total_Price)  
    FROM Orders_Details  
);
```

The Results Grid shows the following data:

Order_ID	Country	Product_Category	Product	Unit_Price	Quantity	Total_Price	Order_Purchased_Date	Order_Received_Date	Payment_Method	Review_Rating
10001	France	Office Supplies	Phone	619	8	4951	2024-03-05	2024-03-13	Cash	1
10002	Egypt	Electronics	Laptop	366	7	2564	2025-06-21	2025-06-26	Debit Card	3
10003	Indonesia	Office Supplies	Chair	635	5	3173	2023-06-25	2023-07-09	Credit Card	4
10008	UAE	Furniture	Chair	274	8	2191	2023-08-16	2023-08-24	Credit Card	2
10009	France	Electronics	Monitor	719	6	4313	2023-02-11	2023-02-22	Gift Card	3
10012	Argentina	Furniture	Desk	528	7	3698	2025-04-25	2025-05-07	Debit Card	4
10015	Chile	Electronics	Phone	284	8	2272	2023-11-16	2023-11-22	Cash	1
10016	UAE	Electronics	Laptop	570	8	4556	2024-11-20	2024-11-25	Debit Card	5
10017	Brazil	Furniture	Phone	468	5	2338	2023-09-06	2023-09-15	Online	2
10018	Italy	Electronics	Monitor	601	5	3003	2024-12-01	2024-12-10	Debit Card	4
10026	Vietnam	Furniture	Laptop	706	7	4940	2024-08-18	2024-08-21	Credit Card	4
10029	Turkey	Office Supplies	Phone	268	8	2140	2024-10-24	2024-10-26	Debit Card	2
10039	Bangladesh	Furniture	Laptop	423	7	2958	2023-01-03	2023-01-14	Cash	1
10043	Turkey	Office Supplies	Laptop	354	6	2127	2023-03-27	2023-04-09	Gift Card	5
10044	Japan	Office Supplies	Tablet	268	8	2146	2024-11-24	2024-12-02	Debit Card	2
10051	Norway	Electronics	Desk	446	8	3571	2023-12-19	2023-12-25	Credit Card	3
10053	Egypt	Furniture	Desk	284	7	1987	2025-03-08	2025-03-16	Credit Card	5

Products with Unit Price greater than the average Unit Price:

```
SELECT Product, Unit_Price
FROM Orders_Details
WHERE Unit_Price > (
    SELECT AVG(Unit_Price)
    FROM Orders_Details
);
```

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
-- 10. Products with Unit Price greater than the average Unit Price
SELECT Product, Unit_Price
FROM Orders_Details
WHERE Unit_Price > (
    SELECT AVG(Unit_Price)
    FROM Orders_Details
);
```

The Results Grid displays the following data:

Product	Unit_Price
Phone	619
Chair	635
Printer	509
Monitor	452
Monitor	719
Desk	453
Desk	528
Laptop	540
Phone	797
Laptop	570
Phone	468
Monitor	601
Chair	559
Chair	749
Laptop	493
Laptop	706
Laptop	584
Monitor	756
Laptop	478
Laptop	562

Top-selling product by revenue (highest Total_Revenue):

```
SELECT Product, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Product
ORDER BY Total_Revenue DESC
LIMIT 1;
```

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
-- 11. Top-selling product by revenue (highest Total_Revenue)
SELECT Product, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Product
ORDER BY Total_Revenue DESC
LIMIT 1;
```

The Results Grid displays the following data:

Product	Total_Revenue
Tablet	533089

Show Countries with Revenue less than the Maximum Country Revenue:

```
SELECT Country, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Country
HAVING Total_Revenue < (
    SELECT MAX(Total_Revenue)
    FROM (
        SELECT Country, SUM(Total_Price) AS
        Total_Revenue FROM Orders_Details
        GROUP BY Country
    ) AS X
```

The screenshot shows the MySQL Workbench interface. The SQL Editor contains a query to find countries with revenue less than the maximum. The Results Grid shows the output of the query.

SQL Query:

```
-- 12. Countries with revenue less than the maximum country revenue
SELECT Country, SUM(Total_Price) AS Total_Revenue
FROM Orders_Details
GROUP BY Country
HAVING Total_Revenue < (
    SELECT MAX(Total_Revenue)
    FROM (
        SELECT Country, SUM(Total_Price) AS Total_Revenue
        FROM Orders_Details
        GROUP BY Country
    ) AS X
```

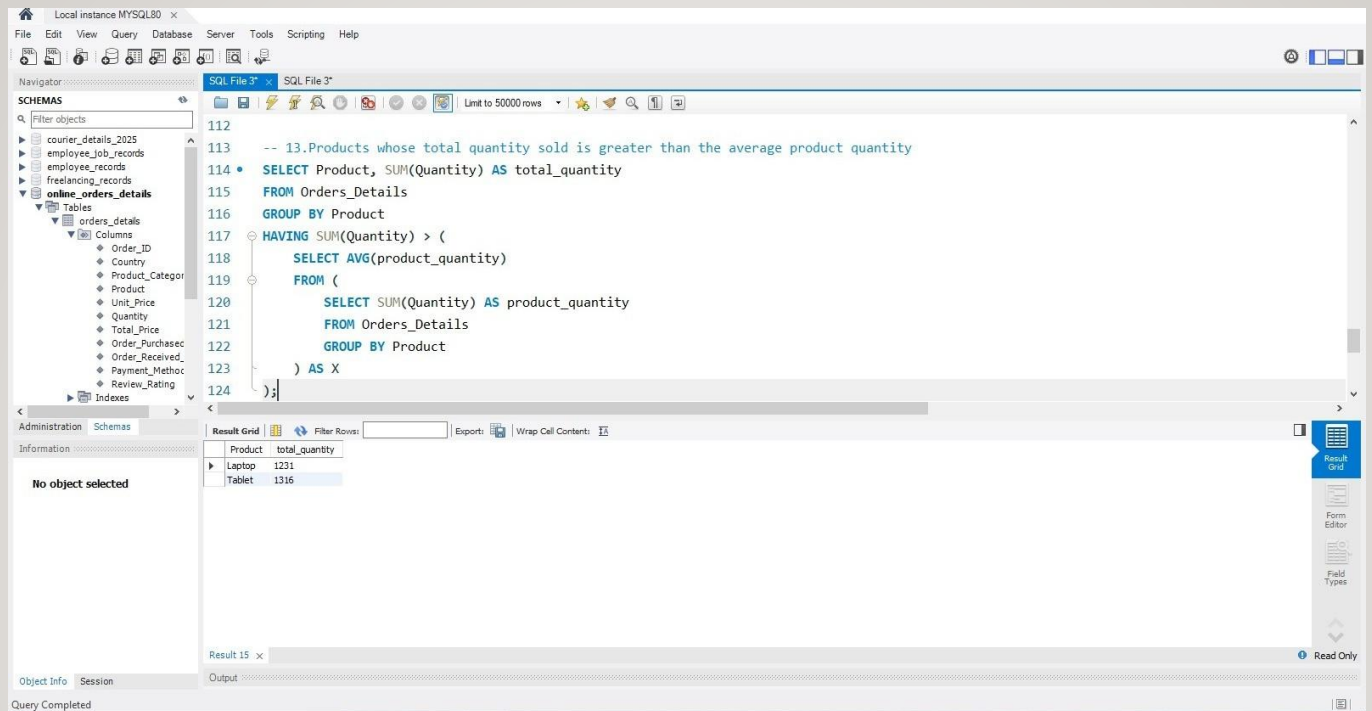
Result Grid:

Country	Total_Revenue
France	99483
Egypt	91375
Indonesia	112507
China	104282
Sweden	61917
Italy	128377
UAE	125730
Pakistan	131724
South Africa	140057
Argentina	114840
Chile	125248
Brazil	108623
Mexico	118390

Products with Total Quantity > Average:

Find products with total quantity sold greater than the average product quantity.

```
SELECT Product, SUM(Quantity) AS total_quantity FROM Orders_Details
GROUP BY Product
HAVING SUM(Quantity) > (
    SELECT AVG(product_quantity) FROM (
        SELECT SUM(Quantity) AS product_quantity FROM Orders_Details
        GROUP BY Product
    ) AS X
);
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
-- 13.Products whose total quantity sold is greater than the average product quantity
SELECT Product, SUM(Quantity) AS total_quantity
FROM Orders_Details
GROUP BY Product
HAVING SUM(Quantity) > (
    SELECT AVG(product_quantity)
FROM (
    SELECT SUM(Quantity) AS product_quantity
    FROM Orders_Details
    GROUP BY Product
) AS X
);
```

The Results Grid shows the following data:

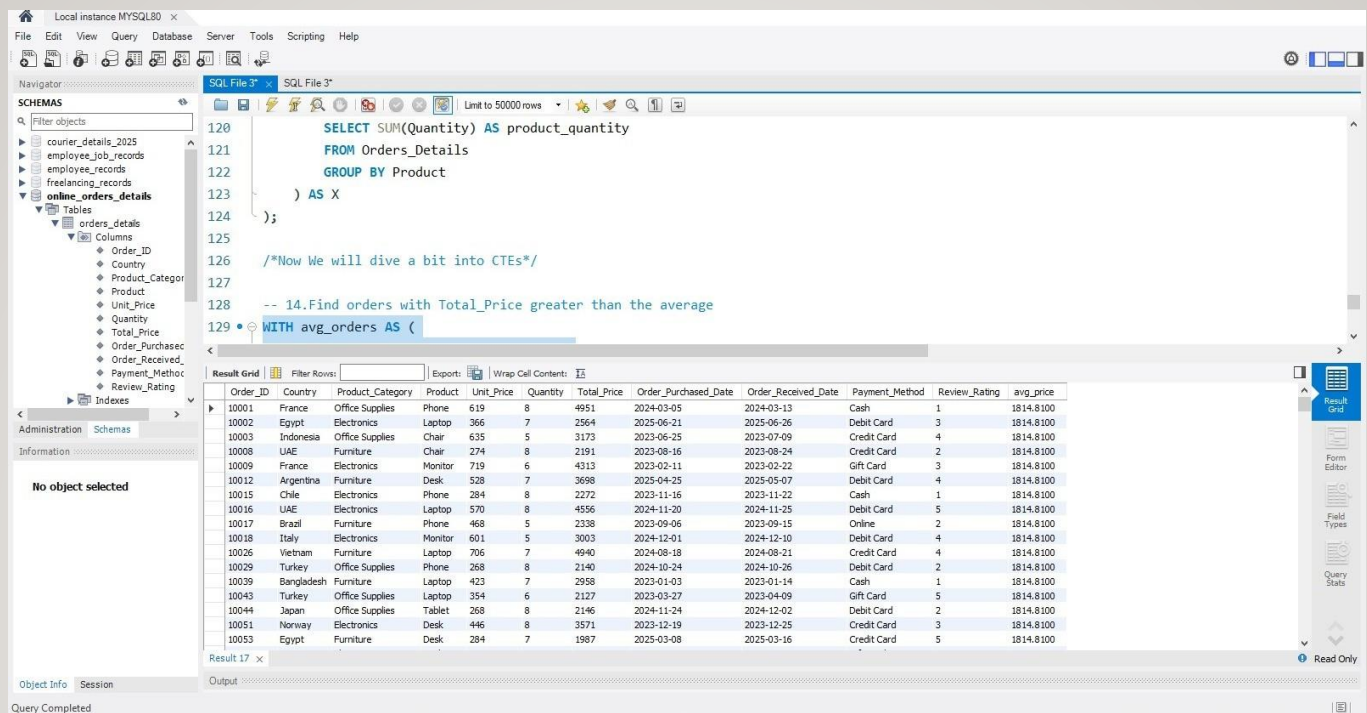
Product	total_quantity
Laptop	1231
Tablet	1316

The status bar at the bottom indicates "Query Completed".

Orders with Total Price > Average (CTE):

In this query we will use a CTE to select orders with a total price above the average.

```
WITH avg_orders AS (  
    SELECT AVG(Total_Price) AS avg_price FROM Orders_Details  
)  
SELECT *  
FROM Orders_Details, avg_orders WHERE Total_Price > avg_price;
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
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2282  
2283  
2284  
2285  
2286  
2287  

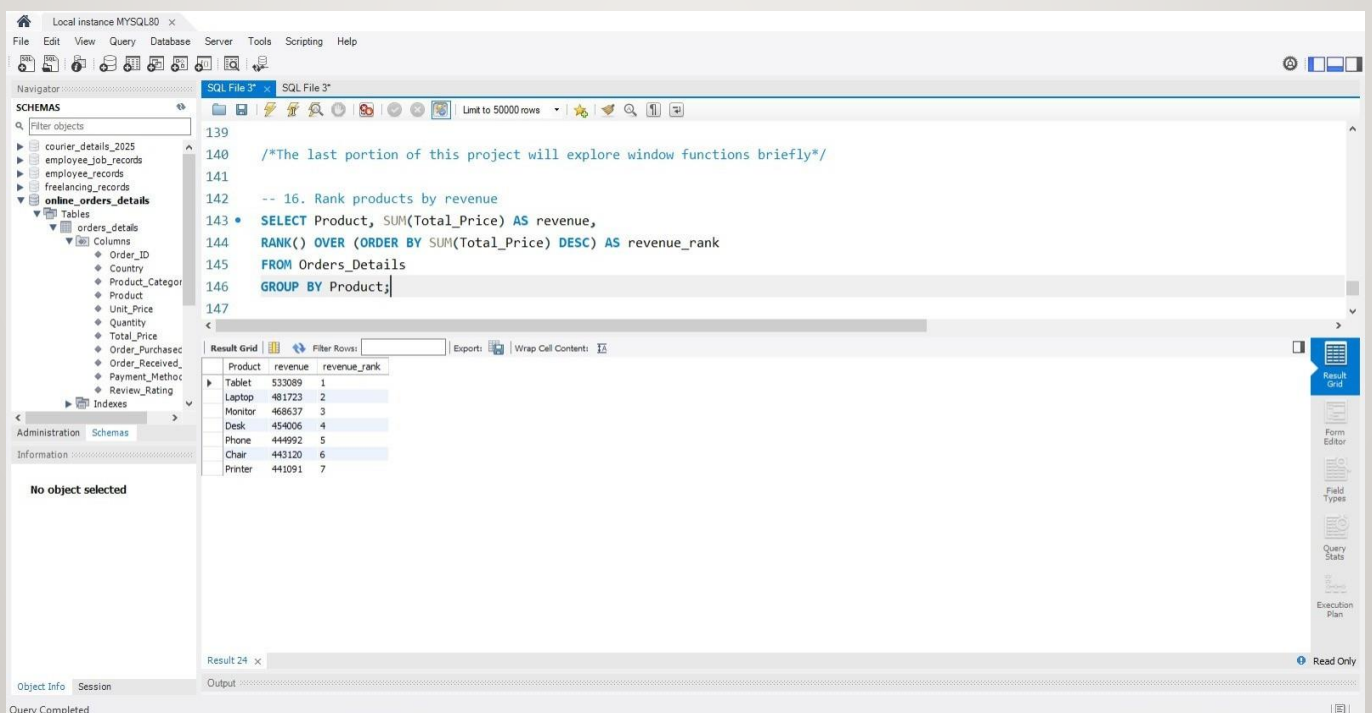
```


Window Functions

Rank Products by Revenue:

In this query we will rank products based on revenue using a window function.

```
WITH product_sales AS (  
    SELECT Product, SUM(Total_Price) AS revenue  
    FROM Orders_Details  
    GROUP BY Product  
)  
SELECT Product, revenue,  
    RANK() OVER (ORDER BY revenue DESC) AS revenue_rank  
FROM product_sales;
```



The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```
139  
140 /*The last portion of this project will explore window functions briefly*/  
141  
142 -- 16. Rank products by revenue  
143 • SELECT Product, SUM(Total_Price) AS revenue,  
144     RANK() OVER (ORDER BY SUM(Total_Price) DESC) AS revenue_rank  
145     FROM Orders_Details  
146     GROUP BY Product;  
147
```

The Results window displays the following data:

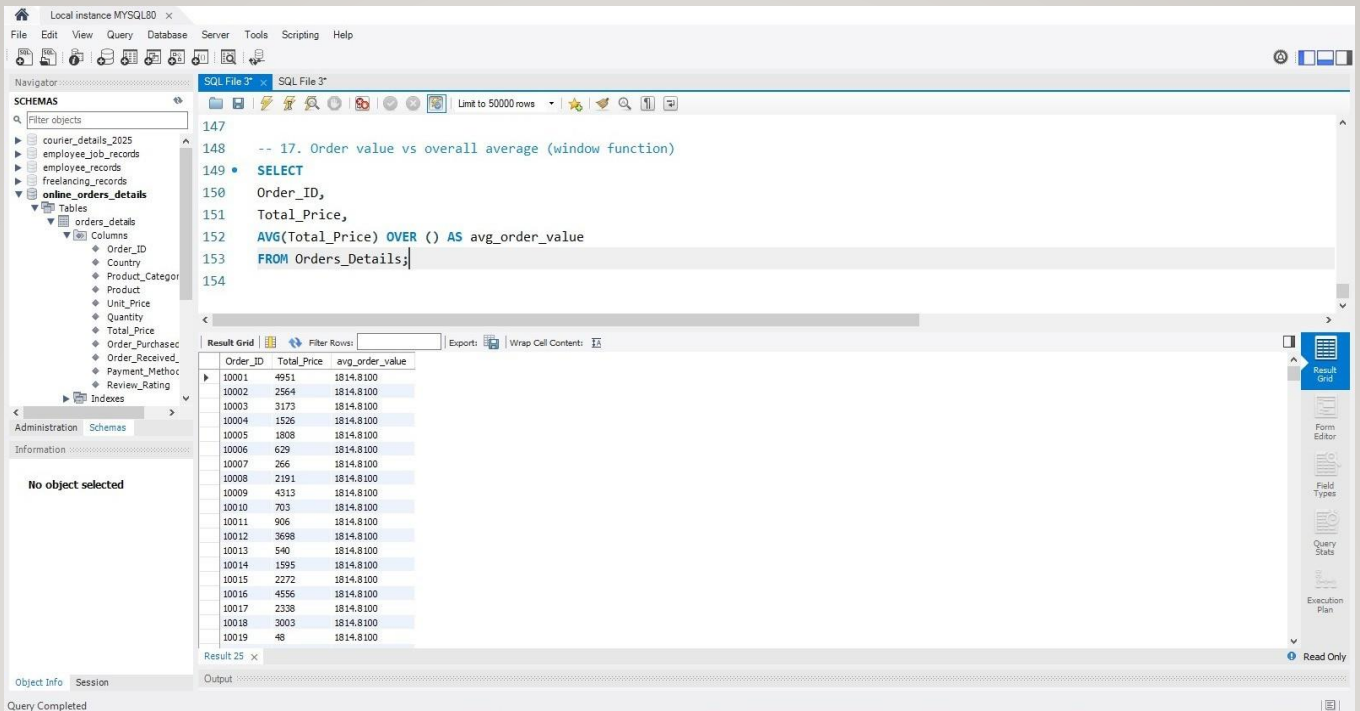
Product	revenue	revenue_rank
Tablet	533089	1
Laptop	481723	2
Monitor	468637	3
Desk	454006	4
Phone	444992	5
Chair	443120	6
Printer	441091	7

The interface also shows the Schemas pane on the left with the database structure, and the bottom status bar indicating "Query Completed".

Order Value vs Overall Average:

This query compares each order value against the overall average using a window function.

```
SELECT Order_ID,Total_Price,AVG(Total_Price) OVER () AS avg_order_value
FROM Orders_Details;
```



The screenshot displays the MySQL Workbench interface. The SQL Editor window contains the following query:

```
-- 17. Order value vs overall average (window function)
SELECT
  Order_ID,
  Total_Price,
  AVG(Total_Price) OVER () AS avg_order_value
FROM Orders_Details;
```

The Results window shows the output of the query as a table with 19 rows. The columns are Order_ID, Total_Price, and avg_order_value. The avg_order_value is constant for all rows, representing the overall average total price.

Order_ID	Total_Price	avg_order_value
10001	4951	1814.8100
10002	2564	1814.8100
10003	3173	1814.8100
10004	1526	1814.8100
10005	1808	1814.8100
10006	629	1814.8100
10007	266	1814.8100
10008	2191	1814.8100
10009	4313	1814.8100
10010	703	1814.8100
10011	906	1814.8100
10012	3698	1814.8100
10013	540	1814.8100
10014	1995	1814.8100
10015	2272	1814.8100
10016	4556	1814.8100
10017	2338	1814.8100
10018	3003	1814.8100
10019	48	1814.8100

For collaboration, feedback or suggestions regarding this project feel free to mail me at shahidabbas2104514@gmail.com