**TDI SQL WEEK 6**

**Introduction**

**Welcome to SQL week 6!**

This week, we are focusing on advanced SQL topics, specifically on CASE statements, VIEWS (creating, modifying, and dropping), and advanced SQL queries involving Window Functions and Common Table Expressions (CTEs). To help you practice and master these concepts, we have prepared a set of questions based on a dataset containing employee information.

**PART A**

LINK1: <https://youtu.be/Twusw__OzA8?si=q1PEdkirJoRyvezi>

LINK2: <https://youtu.be/mf_IFI3I7to?si=_Ue5LUfPfS_Quybs>

LINK3: <https://youtu.be/ZaFMM-vNlvc?si=gtQ5CaXfGr_7g881>

LINK4: <https://youtu.be/QNfnuK-1YYY?si=XN2o24Z8XWa_7BNh>

LINK5: <https://youtu.be/Ww71knvhQ-s?si=GPaXp9O4AhH75J2I>

Link6**:** <https://youtu.be/vncBSUNb4NA?si=rgxEKuCAsWbQIyi->

**PART B**

**Questions:**

1. Create a query to categorize orders based on the `Profit` column:

- 'Loss' for profits less than 0

- 'Low Profit' for profits between 0 and 100

- 'High Profit' for profits greater than 100

2. Write a query to display the `Customer Name` along with a flag indicating if their order quantity is 'High' (Quantity > 10) or 'Low' (Quantity <= 10).

3. Create a query to classify orders based on the `Ship Mode`:

- 'Fast' for 'First Class'

- 'Standard' for 'Standard Class'

4. Write a query to show the `Sales` along with a message indicating if the sales are 'Above Average' or 'Below Average', considering the average sales of all orders.

**Views:**

1. Create a view named ‘sales\_summary’ that shows the total sales, quantity, and profit for each region.
2. Modify the ‘sales\_summary’ view to include the category and subcategory columns.
3. Drop the ‘sales\_summary’ view.
4. Create a view named ‘customer sales’ that shows the total sales and profit for each customer.
5. Modify the ‘customer sales’ view to include the city and state columns.
6. Create a view named ‘product\_sales’ that shows the total sales and profit for each product category and subcategory.

**Advanced SQL queries**

1. Write a query to find the top 3 customers with the highest total sales.
2. Write a query to find the total sales and profit for each region, including only orders with a specific ship mode.
3. Write a query to find the average sales and profit for each category and subcategory.
4. Write a query to find the top 3 products with the highest total sales and profit.

**Window functions**

1. Write a query to find the running total of sales for each order
2. Write a query to find the average sales and profit for each region including a running total.
3. Write a query to find the total sales and profit for each product category and sub category including a running total.

**Common Table Expressions (CTEs)**

1. Write a query to find the total sales and profit for each region using a CTE to calculate the running total.
2. Write a query to find the top 3 customers with the highest total sales, using a CTE to calculate the ranking.
3. Write a query to find the average sales for each category and subcategory using a CTE to calculate the running average.
4. Write a query to find the total sales and profit for each customer using a CTE to calculate the running total.
5. Write a query to find the total sales and profit for each region using a CTE to calculate the running total and including only orders within a specific year and month.

**PART C**

**SUBMISSION MODE**

You are expected to submit your assignment a week after it was given, with this, Submission starts from Friday by 7am Nigerian time to Saturday by 3pm Nigerian time.

This submission will be done either on Twitter or LinkedIn, you can choose either of the two to submit your assignment or you can submit on both platforms. You would take a screenshot of your work Answers, you can add a write up if you want.

For twitter Submission, you would tag:

1. The TDI Official page @TDataInitiative
2. Annie @ DabereNnamani
3. Jacob@JacobAjala
4. The project coordinator @The\_Jonathaan
5. Tag @SQLServer
6. Use the #TDI

For LinkedIn Submission, you would tag:

1. TDI page @TheData Initiative
2. Annie @ Anne Nnamani

**PART D**

**CORRECTION CLASS**

Correction Classes, holds every Saturday, 4pm-6pm Nigerian time.

Venue: The TDI official Discord page or a google meet link will be sent.