1- Write SQL queries to calculate total sales, average order value, and highest-selling product from a sales database.

* **Total Sales**
  + **SELECT SUM(TotalDue) AS TotalSales**

FROM Sales.SalesOrderHeader;

* **Average Order Value**
  + SELECT AVG(TotalDue) AS AverageOrderValue
  + FROM Sales.SalesOrderHeader;
* **Highest-selling Product**
  + **SELECT ProductID,**

ProductName,

SUM(OrderQty) AS TotalQuantitySold

FROM Sales.SalesOrderDetail sod

JOIN Production.Product prod ON sod.ProductID = prod.ProductID

GROUP BY ProductID, ProductName

ORDER BY TotalQuantitySold DESC

LIMIT 1;

**2-** Analyze a customer database and identify the top 5% of customers based on their total purchase amount

SELECT customer\_id,

total\_purchase\_amount

FROM (

SELECT customer\_id,

SUM(order\_amount) AS total\_purchase\_amount,

NTILE(100) OVER (ORDER BY SUM(order\_amount) DESC) AS percentile

FROM orders

GROUP BY customer\_id

) AS percentile\_calculation

WHERE percentile <= 5;

**3-** Write a query to find the month with the highest revenue for a given year from an orders table

* SELECT YEAR(order\_date) AS order\_year,

MONTH(order\_date) AS order\_month,

SUM(order\_amount) AS total\_revenue

FROM orders

WHERE YEAR(order\_date) = :given\_year

GROUP BY YEAR(order\_date), MONTH(order\_date)

ORDER BY total\_revenue DESC

LIMIT 1;

4- Identify the top 10 products with the highest total sales revenue, including the product name, product category, and total revenue

SELECT p.product\_name,

pc.product\_category,

SUM(od.unit\_price \* od.quantity) AS total\_revenue

FROM order\_details od

JOIN products p ON od.product\_id = p.product\_id

JOIN product\_categories pc ON p.category\_id = pc.category\_id

GROUP BY p.product\_name, pc.product\_category

ORDER BY total\_revenue DESC

LIMIT 10;

5- Determine the average number of days it takes for orders to be shipped after they are placed, categorized by shipping method

SELECT shipping\_method,

AVG(DATEDIFF(shipped\_date, order\_date)) AS average\_shipping\_days

FROM orders

WHERE shipped\_date IS NOT NULL

GROUP BY shipping\_method;

6- How does sales performance vary across the product categories?

SELECT Prod\_Category, Total\_order, ROUND(Total\_revenue/Total\_order, 2) AS Average\_order\_value, Total\_revenue   
FROM (  
 SELECT(COUNT(DISTINCT SOH.SalesOrderID)) AS Total\_order, SUM(LineTotal) AS Total\_revenue,  
 PC.Name AS Prod\_Category  
 FROM Sales.SalesOrderHeader SOH  
 INNER JOIN Sales.SalesOrderDetail SOD  
 ON SOH.SalesOrderID = SOD.SalesOrderID  
 INNER JOIN Production.Product P  
 ON P.ProductID = SOD.ProductID  
 INNER JOIN Production.ProductSubcategory PSC   
 ON PSC.ProductSubcategoryID = P.ProductSubcategoryID  
 INNER JOIN Production.ProductCategory pc   
 ON PC.ProductCategoryID = PSC.ProductCategoryID  
 GROUP BY PC.Name) sub  
ORDER BY Total\_revenue DESC;

7-Which region generated the highest revenue?

SELECT ST.[Group] AS Region, SUM(SOH.Totaldue) AS Total\_sales  
FROM Sales.SalesTerritory ST  
INNER JOIN Sales.SalesOrderHeader SOH  
ON ST.TerritoryID = SOH.TerritoryID  
GROUP BY ST.[Group]  
ORDER BY total\_sales DESC;