# SQL QUERIES FOR PHASE 3

## 0.Imported data Validation

```
SELECT
    COUNT(*) AS Total_Rows,
    MIN(Sales) AS Min_Sales,
    MAX(Sales) AS Max_Sales,
    MIN(Profit) AS Min_Profit,
    MAX(Profit) AS Max_Profit,
    MIN(Profit_Margin) AS Min_Margin,
    MAX(Profit_Margin) AS Max_Margin
FROM Superstore;
```

## 1. General Statistics (replicating Google Sheets summary)

```
SELECT
    SUM(Sales) AS Total_Sales,
    SUM(Profit) AS Total_Profit,
    SUM(Quantity) AS Total_Quantity,
    COUNT(*) AS Total_Orders
FROM Superstore;
```

## 2. Top Products by Profit Per Unit

```
SELECT TOP 5
    Product_Name,
    SUM(Profit) / SUM(Quantity) AS Profit_Per_Unit
FROM Superstore
GROUP BY Product_Name
ORDER BY Profit_Per_Unit DESC;
```

## 3. Top Products by Total Profit

```
SELECT TOP 5
    Product_Name,
    SUM(Profit) AS Total_Profit
FROM Superstore
GROUP BY Product_Name
ORDER BY Total_Profit DESC;
```

## 4. Discount Impact (0–10%, 10–20%, 20–30%, 30–50%, 50%+)

```
WITH b AS (
  SELECT *,
    CASE
      WHEN Discount BETWEEN 0 AND 0.10 THEN '0-10%'
      WHEN Discount > 0.10 AND Discount <= 0.20 THEN '10-20%'
      WHEN Discount > 0.20 AND Discount <= 0.30 THEN '20-30%'
      WHEN Discount > 0.30 AND Discount <= 0.50 THEN '30-50%'
      ELSE '>50%' END AS disc_bucket
  FROM Superstore
)
SELECT disc_bucket, SUM(Sales) sales, SUM(Profit) profit, AVG(Profit_Margin) avg_margin,
COUNT(*) orders
FROM b
GROUP BY disc_bucket
ORDER BY disc_bucket;
```

## 5. Shipping Period Profitability (best shipping periods)

```
SELECT
    Shipping_Period,
    SUM(Profit) AS Total_Profit,
    COUNT(*) AS Number_Of_Orders
FROM Superstore
GROUP BY Shipping_Period
ORDER BY Total_Profit DESC;
```

## 6. Annual Sales and Profit Trends (2011–2014)

```
SELECT
    YEAR(Order_Date) AS Year,
    SUM(Sales) AS Total_Sales,
    SUM(Profit) AS Total_Profit
FROM Superstore
GROUP BY YEAR(Order_Date)
ORDER BY Year;
```

## 7. Category-Level Discount & Profitability

```
SELECT
    Category,
    AVG(Discount) AS Avg_Discount,
    AVG(Profit_Margin) AS Avg_Profit_Margin,
    SUM(Sales) AS Total_Sales,
    SUM(Profit) AS Total_Profit
FROM Superstore
GROUP BY Category
ORDER BY Avg_Profit_Margin DESC;
```

## 8. Profit Distribution (Q1, Median, Q3)

```
SELECT DISTINCT
    PERCENTILE_CONT(0.5) WITHIN GROUP (ORDER BY Profit) OVER () AS median_profit,
    PERCENTILE_CONT(0.25) WITHIN GROUP (ORDER BY Profit) OVER () AS q1,
    PERCENTILE_CONT(0.75) WITHIN GROUP (ORDER BY Profit) OVER () AS q3
FROM SSS;
```

## 9. Top 10 Orders with Profit > 1000 (validation query)

```
SELECT TOP 10 *
FROM Superstore
WHERE Profit > 1000
ORDER BY Profit DESC;
```

# 10. Most Profitable Regions / Locations

```
SELECT
    Location,
    SUM(Sales) AS Total_Sales,
    SUM(Profit) AS Total_Profit
FROM Superstore
GROUP BY Location
ORDER BY Total_Profit DESC;
```