

RETAIL SALES ANALYSIS USING SQL

Check Total Records

```
SELECT count(*) FROM retail_analysis.retail_data;
```

#Check for NULL or missing Values in particular column the dataset.

```
SELECT * FROM retail_data  
WHERE transaction_id IS NULL  
OR sale_date IS NULL  
OR sale_time IS NULL  
OR customer_id IS NULL  
OR gender IS NULL  
OR age IS NULL  
OR cogs IS NULL  
OR total_sale IS NULL  
OR category IS NULL  
OR price_per_unit IS NULL  
OR quantity IS NULL;
```

#If any null value find you can delete it.

```
DELETE FROM retail_data  
WHERE transaction_id IS NULL  
OR sale_date IS NULL  
OR sale_time IS NULL  
OR customer_id IS NULL  
OR gender IS NULL  
OR age IS NULL  
OR cogs IS NULL  
OR total_sale IS NULL  
OR category IS NULL  
OR price_per_unit IS NULL
```

OR quantity IS NULL;

Question 1- Total revenue generated by each product category.

```
SELECT category, SUM(total_sale) AS total_revenue
FROM retail_data
GROUP BY category
ORDER BY total_revenue DESC;
```

Question 2 - Gender contributing the most to sales revenue.

```
SELECT gender, SUM(total_sale) AS total_revenue
FROM retail_data
GROUP BY gender
ORDER BY total_revenue DESC;
```

Question 3 - Seasonal trends in sales.

```
SELECT MONTHNAME(sale_date) AS month, SUM(total_sale) AS total_revenue
FROM retail_data
GROUP BY month
ORDER BY total_revenue DESC;
```

Question 4 - What is the total sales revenue for each date?

```
SELECT sale_date, SUM(total_sale) AS total_revenue
FROM retail_data
GROUP BY sale_date
ORDER BY sale_date;
```

Question 5 - Top 5 customers based on highest total sales.

```
SELECT customer_id, SUM(total_sale) AS total_sales
FROM retail_data
GROUP BY customer_id
ORDER BY total_sales DESC
LIMIT 5;
```

Question 6 - Most profitable product category in terms of revenue and COGS .

```
SELECT category, SUM(total_sale - cogs) AS total_profit
FROM retail_data
GROUP BY category
ORDER BY total_profit DESC;
```

Question 7- What is the total sales revenue for each month?

```
SELECT DATE_FORMAT(sale_date, '%Y-%m') AS Month, SUM(total_sale) AS MonthlyRevenue
FROM retail_data
GROUP BY Month
ORDER BY Month;
```

Question 8 - Write a SQL query to retrieve all columns for sales made on '2022-11-05'.

```
SELECT * FROM retail_data
WHERE sale_date = '2022-11-05';
```

Question 9 - What are the total sales by different age groups?

```
SELECT
CASE
    WHEN age BETWEEN 18 AND 24 THEN '18-24'
    WHEN age BETWEEN 25 AND 34 THEN '25-34'
    WHEN age BETWEEN 35 AND 44 THEN '35-44'
    WHEN age BETWEEN 45 AND 54 THEN '45-54'
    WHEN age >= 55 THEN '55+'
END AS age_group,
SUM(total_sale) AS total_sales
FROM retail_data
GROUP BY age_group
ORDER BY total_sales DESC;
```

Question 10 - Write a SQL query to find the total number of transactions (transaction_id) made by each gender in each category.

```
SELECT gender, category,  
       COUNT (transactions_id) AS total_transactions  
FROM   retail_data  
GROUP BY gender, category  
ORDER BY gender, category;
```

Question 11- Write a SQL query to find all transactions where the total_sale is greater than 1000.

```
SELECT *  
FROM retail_data  
WHERE total_sale > 1000;
```

Question 12- Write a SQL query to find the average age of customers who purchased items from the 'Beauty' category.

```
SELECT AVG(age) AS average_age  
FROM retail_data  
WHERE category = 'Beauty';
```