Walmart Data Analysis

**Generic:**

Basic:

1. How many unique cities does the data have?

2. What is the most common payment method?

3. How many unique product lines does the data have?

4. What is the average rating across all transactions?

5. What is the total revenue across all transactions?

6. How many unique customer types does the data have?

7. What is the most common customer type?

8. What is the most common product line?

9. What is the distribution of payment methods across different regions?

10. What is the spatial distribution of ratings across different cities?

Medium:

1. What month had the largest COGS?

2. Which branch sold more products than the average product sold?

3. What is the average total amount spent by each gender?

4. What is the most common payment method by each product line?

5. What is the distribution of customer types in each branch?

6. What is the average total amount spent by each time of the day?

7. What is the distribution of payment methods across different branches?

8. What is the average unit price by each customer type?

9. What is the average total amount spent by each customer type per month?

10. What is the distribution of ratings by each product line per month?

Advanced:

1. Calculate COGS for each transaction.

2. Calculate VAT for each transaction.

3. Calculate total (gross sales) for each transaction.

4. Calculate gross profit (gross income) for each transaction.

5. Calculate gross margin percentage for each transaction.

6. What is the total revenue by month for each product line?

7. What is the average unit price by each customer type?

8. What is the average quantity sold by each customer type?

9. What is the average total amount spent by each customer type?

10. How does the average rating vary across different customer types?

Very Advanced:

1. What is the distribution of COGS across all transactions?

2. What is the distribution of VAT across all transactions?

3. What is the distribution of gross margin percentages across all transactions?

4. What is the distribution of gross incomes across all transactions?

5. How does the average total amount spent vary across different times of the day?

6. What is the distribution of product lines across different branches?

7. How does the average unit price vary across different product lines?

8. What is the average total amount spent by each gender per month?

9. How does the VAT collection vary across different customer types?

10. What is the average rating given by each customer type per month?

**Product Related:**

Basic:

1. What is the most selling product line?

2. What product line had the largest revenue?

3. What is the distribution of product lines sold in each city?

4. What is the distribution of product lines across different branches?

5. What is the most common product line by each customer type?

6. What is the most common product line by gender?

7. What is the average rating for each product line?

8. What is the distribution of ratings by each product line per month?

9. What is the distribution of product lines across different cities?

10. What is the distribution of product lines across different branches?

Medium:

1. Calculate the cost of goods sold (COGS) for each product line.

2. Calculate the VAT for each product line.

3. Calculate the total (gross sales) for each product line.

4. Calculate the gross profit (gross income) for each product line.

5. Calculate the gross margin percentage for each product line.

6. What is the average unit price for each product line?

7. What is the average quantity sold for each product line?

8. How does the average rating vary across different product lines?

9. What is the distribution of ratings by each product line?

10. Calculate the total revenue by month for each product line.

Advanced:

1. What is the distribution of gross margin percentages across different product lines?

2. What is the distribution of gross incomes across different product lines?

3. What is the average total amount spent by each product line per month?

4. How does the average unit price fluctuate over time for each product line?

5. How does the average quantity sold vary over time for each product line?

6. What is the distribution of product lines across different times of the day?

7. What is the distribution of product lines across different weekdays?

8. How does the average rating vary across different times of the day for each product line?

9. What is the distribution of product lines across different customer types?

10. How does the VAT collection vary across different product lines?

Very Advanced:

1. Calculate the total revenue by month for each product line.

2. Calculate the total revenue by city for each product line.

3. Calculate the total revenue by branch for each product line.

4. Calculate the total revenue by gender for each product line.

5. Calculate the total revenue by payment method for each product line.

6. Calculate the total revenue by time of the day for each product line.

7. Calculate the total revenue by weekday for each product line.

8. Identify trends in sales performance over time for each product line.

9. Identify seasonality patterns in sales for each product line.

10. Conduct a market basket analysis to identify frequently co-occurring product lines.

**Sales Analysis:**

Basic:

1. What is the total revenue by month?

2. How does the sales performance vary across different branches?

3. What is the distribution of sales across different days of the week?

4. What time of the day has the highest sales volume?

5. What is the average unit price by branch?

6. What is the average quantity sold by branch?

7. What is the average total amount spent by branch?

8. What is the distribution of sales across different times of the day?

9. How does the sales performance vary across different times of the day?

10. How does the average rating vary across different branches?

Medium:

1. What month had the largest COGS?

2. Which branch sold more products than the average product sold?

3. Number of sales made in each time of the day per weekday.

4. What is the distribution of product lines across different times of the day?

5. What is the distribution of sales across different weekdays?

6. What is the distribution of sales across different product lines?

7. What is the most common product line by each time of the day?

8. What is the distribution of sales by each product line per month?

9. What is the most common product line by each weekday?

10. What is the average rating given by each time of the day?

Advanced:

1. Calculate COGS for each transaction.

2. Calculate VAT for each transaction.

3. Calculate total (gross sales) for each transaction.

4. Calculate gross profit (gross income) for each transaction.

5. Calculate gross margin percentage for each transaction.

6. How does the average total amount spent vary across different times of the day?

7. What is the distribution of sales across different payment methods?

8. What is the distribution of sales across different cities?

9. How does the average rating vary across different times of the day for each branch?

10. What is the distribution of sales across different customer types?

Very Advanced:

1. Calculate the total revenue by month for each branch.

2. Calculate the total revenue by month for each time of the day.

3. Calculate the total revenue by weekday for each branch.

4. Calculate the total revenue by weekday for each time of the day.

5. Identify trends in sales performance over time for each branch.

6. Identify seasonality patterns in sales for each branch.

7. Conduct a regression analysis to predict future sales.

8. Identify outliers in sales data and investigate potential causes.

9. Conduct a market basket analysis to identify frequently co-occurring products.

10. Analyze the impact of promotions or marketing campaigns on sales performance.

**Customer Analysis:**

Basic:

1. Which customer type brings the most revenue?

2. What is the average quantity purchased by each customer type?

3. What is the average unit price paid by each customer type?

4. What is the average total amount spent by each gender?

5. What is the spatial distribution of ratings across different branches?

6. What is the average rating given by each branch?

7. What is the distribution of customer types in each branch?

8. What is the average total amount spent by each time of the day?

9. What is the distribution of payment methods across different branches?

10. What is the most common customer type by each product line?

Medium:

1. How does the sales performance vary across different customer types?

2. What is the average rating given by each customer type per month?

3. What is the average total amount spent by each customer type per month?

4. How does the average rating vary across different genders?

5. What is the distribution of ratings by each customer type?

6. What is the distribution of ratings by each gender?

7. What is the average total amount spent by each gender per month?

8. How does the VAT collection vary across different customer types?

9. What is the distribution of customer types in each city?

10. How does the average total amount spent vary across different customer types?

Advanced:

1. Identify high-value customers based on total amount spent.

2. Classify customers into different segments using clustering algorithms.

3. Analyze the characteristics of each customer segment.

4. Develop targeted marketing strategies for each customer segment.

5. Calculate the customer lifetime value (CLV) for each customer segment.

6. Determine the most profitable customer segments.

7. Identify trends and patterns in the purchasing behavior of each customer segment.

8. Compare the retention rates of different customer segments.

9. Evaluate the effectiveness of marketing campaigns for each customer segment.

10. Conduct a regression analysis to predict future customer behavior.

Very Advanced:

1. Calculate the total revenue by month for each customer type.

2. Calculate the total revenue by city for each customer type.

3. Calculate the total revenue by branch for each customer type.

4. Calculate the total revenue by gender for each customer type.

5. Calculate the total revenue by payment method for each customer type.

6. Calculate the total revenue by time of the day for each customer type.

7. Calculate the total revenue by weekday for each customer type.

8. Identify trends in purchasing behavior over time for each customer type.

9. Identify seasonality patterns in purchasing behavior for each customer type.

10. Conduct a market basket analysis to identify frequently co-occurring customer types.

**Revenue and Profit Calculations:**

Basic:

1. Calculate COGS for each transaction.

2. Calculate VAT for each transaction.

3. Calculate total (gross sales) for each transaction.

4. Calculate gross profit (gross income) for each transaction.

5. Calculate gross margin percentage for each transaction.

6. What is the distribution of COGS across all transactions?

7. What is the distribution of VAT across all transactions?

8. What is the distribution of gross margin percentages across all transactions?

9. What is the distribution of gross incomes across all transactions?

10. What is the distribution of total revenue across all transactions?

Medium:

1. Calculate the total revenue by month.

2. Calculate the total revenue by city.

3. Calculate the total revenue by branch.

4. Calculate the total revenue by gender.

5. Calculate the total revenue by payment method.

6. Calculate the total revenue by time of the day.

7. Calculate the total revenue by weekday.

8. Calculate the average COGS for each product line.

9. Calculate the average VAT for each product line.

10. Calculate the average gross margin percentage for each product line.

Advanced:

1. Calculate the total revenue by month for each product line.

2. Calculate the total revenue by city for each product line.

3. Calculate the total revenue by branch for each product line.

4. Calculate the total revenue by gender for each product line.

5. Calculate the total revenue by payment method for each product line.

6. Calculate the total revenue by time of the day for each product line.

7. Calculate the total revenue by weekday for each product line.

8. Calculate the average COGS for each customer type.

9. Calculate the average VAT for each customer type.

10. Calculate the average gross margin percentage for each customer type.

Very Advanced:

1. Calculate the total revenue by month for each customer type.

2. Calculate the total revenue by city for each customer type.

3. Calculate the total revenue by branch for each customer type.

4. Calculate the total revenue by gender for each customer type.

5. Calculate the total revenue by payment method for each customer type.

6. Calculate the total revenue by time of the day for each customer type.

7. Calculate the total revenue by weekday for each customer type.

8. Calculate the average COGS for each time of the day.

9. Calculate the average VAT for each time of the day.

10. Calculate the average gross margin percentage for each time of the day.