Walmart Company

WALMART SALES REPORT

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ABOUT

We are analysing Walmart's sales data to identify high-performing branches and products, analyze the sales patterns of various products, and understand customer behavior. The primary objective is to enhance and optimize sales strategies. The dataset utilized in this project is sourced from the Kaggle Walmart Sales Forecasting Competition

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ANALYSIS LIST:

01 **Product Analysis:**

Perform an analysis on the data to gain insights into different product lines, determine the top-performing product lines, and identify areas aafor improvement in other product lines.

02 **Sales Analysis**

The objective of this analysis is to address the inquiry regarding the sales trends of the product. The outcomes of this analysis can assist in evaluating the efficiency of each applied sales strategy in the business and determining necessary modifications to increase sales.

03 **Customer Analysis**

This analysis is focused on identifying various customer segments, understanding purchasing trends, and evaluating the profitability associated with each of these customer segments.

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APPROACH USED:

01 Data Wrangling

During this initial phase, the data is examined to detect any NULL or missing values, and strategies for data replacement are implemented to address and substitute these values effectively.

- Build a database
- Create a table and insert the data.
- Select columns with null values in them. Null values are not present in our database because, in creating the tables, NOT NULL was specified for each field, effectively filtering out any null values.

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APPROACH USED:

02 Feature Engineering

This will help use generate some new columns from existing ones.

- Add a new column named time_of_day to give insight of sales in the Morning, Afternoon and Evening. This will help answer the question on which part of the day most sales are made.
- Add a new column named day_name that contains the extracted days of the week on which the given transaction took place (Mon, Tue, Wed, Thur, Fri). This will help answer the question on which week of the day each branch is busiest.
- Add a new column named month_name that contains the extracted months of the year on which the given transaction took place (Jan, Feb, Mar). Help determine which month of the year has the most sales and profit.

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APPROACH USED:

03

Exploratory Data Analysis (EDA)

Conducting exploratory data analysis is essential to address the project's listed questions and objectives.

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---------- Feature Engineering ----------

```sql
SELECT time,
(CASE
    WHEN `time` BETWEEN "00:00:00" AND "12:00:00" THEN "Morning"
    WHEN `time` BETWEEN "12:01:00" AND "16:00:00" THEN "Afternoon"
    ELSE "Evening"
END) AS time_of_day
FROM sales;

ALTER TABLE sales ADD COLUMN time_of_day VARCHAR(20);

UPDATE sales
SET time_of_day = (
    CASE
        WHEN `time` BETWEEN "00:00:00" AND "12:00:00" THEN "Morning"
        WHEN `time` BETWEEN "12:01:00" AND "16:00:00" THEN "Afternoon"
        ELSE "Evening"
    END
);
```

```sql
SELECT date,
MONTHNAME(date) AS month_name
FROM sales;

ALTER TABLE sales ADD COLUMN month_name VARCHAR(10);

UPDATE sales
SET month_name = MONTHNAME(date);
```

```sql
SELECT date,
DAYNAME(date) AS day_name
FROM sales;

ALTER TABLE sales ADD COLUMN day_name VARCHAR(10);

UPDATE sales
SET day_name = DAYNAME(date);
```

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----------Exploratory Data Analysis (EDA)----------

Generic Questions

```
-- How many distinct cities are present in the dataset?

select distinct city from walmart_sales
```

	city
▶	Yangon
	Naypyitaw
	Mandalay

```
-- 2.In which city is each branch situated?

select distinct branch, city from walmart_sales
```

branch	city
A	Yangon
C	Naypyitaw
B	Mandalay

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----------Exploratory Data Analysis (EDA)----------

Product Analysis

```
-- 1.How many distinct product lines are there in the dataset?

select count(distinct product_line)as product_count from walma
```

	product_count
▶	6

```
-- 2.What is the most common payment method?

SELECT payment, count(payment) as common_payment_method
from walmart_sales
group by payment
```

	payment	common_payment_
▶	Ewallet	345

```
-- 3.What is the most selling product line?

select product_line, count(product_line) as most_selling
from walmart_sales
group by Product_line
order by most_selling desc limit 1
```

	product_line	most_selling
▶	Fashion accessories	178

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----------Exploratory Data Analysis (EDA)----------

Product Analysis

```sql
-- 4.What is the total revenue by month?

select month_name, sum(total) as total_revenue
from walmart_sales
group by month_name
order by total_revenue desc
```

month_name	total_revenue
February	97219.3740
March	109455.5070
January	116291.8680

```sql
-- 5.Which month recorded the highest Cost of Goods Sold (COGS)?

select month_name, sum(cogs) as total_cogs from walmart_sales
group by month_name
order by total_cogs desc limit 1
```

month_name	total_cogs
January	110754.16

```sql
-- 6.Which product line generated the highest revenue?

select product_line, sum(total) as total_revenue from walmart_sales
group by Product_line
order by total_revenue desc
```

product_line	total_revenue
Food and beverages	56144.8440
Sports and travel	55122.8265
Electronic accessories	54337.5315
Fashion accessories	54305.8950
Home and lifestyle	53861.9130
Health and beauty	49193.7390

More Questions on GitHub

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----------Exploratory Data Analysis (EDA)----------

Sales Analysis

```sql
-- 1.Number of sales made in each time of the day per weekday

select day_name, time_of_day, count(*) from walmart_sales
group by day_name, time_of_day having day_name not in ('sunday', 'saturday')
```

day_name	time_of_day	count(*)
Friday	Morning	29
Monday	Evening	56
Monday	Afternoon	48
Thursday	Evening	56
Wednesday	Afternoon	61
Wednesday	Evening	60
Tuesday	Morning	36
Friday	Evening	52
Tuesday	Evening	69
Monday	Morning	21

```sql
-- 2.Identify the customer type that generates the highest revenue.

select customer_type, sum(total) as total_revenue from walmart_sales
group by Customer_type
order by total_revenue desc limit 1
```

customer_type	total_revenue
Member	164223.4440

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----------Exploratory Data Analysis (EDA)----------

Sales Analysis

```sql
-- 3.Which city has the largest tax percent/ VAT (Value Added Tax)?

select city, sum(vat) as total_vat from walmart_sales
group by city
order by total_vat desc limit 1
```

city	total_vat
Naypyitaw	5265.1765

```sql
-- 4.Which customer type pays the most in VAT?

select customer_type, sum(vat) as total_vat
from walmart_sales
group by Customer_type
order by total_vat desc
```

customer_type	total_vat
Member	7820.1640
Normal	7559.2050

More Questions on GitHub

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----------Exploratory Data Analysis (EDA)----------

Customer Analysis

```
-- 3.Which is the most common customer type?

select customer_type, count(customer_type) as common_customer
from walmart_sales
group by Customer_type
```

customer_type	common_custome
Member	501

```
-- which customer type buys the most

select customer_type, sum(total) as total_sales
from walmart_sales
group by Customer_type
order by total_sales desc limit 1
```

customer_type	total_sales
Member	164223.4440

```
-- which is the gender of the most of the customer?

select gender, count(*) as all_genders from walmart_sales
group by gender
order by all_genders desc limit 1
```

gender	all_genders
Female	501

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----------Exploratory Data Analysis (EDA)----------

Customer Analysis

```
-- .Which day of the week has the best average ratings per branch?

select branch, day_name, round(avg(rating),2) as average_rating
from walmart_sales
group by day_name,Branch order by average_rating desc
```

branch	day_name	average_rating
B	Monday	7.34
A	Friday	7.31
C	Friday	7.28
C	Saturday	7.23
A	Monday	7.10
A	Sunday	7.08
A	Tuesday	7.06
C	Wednesday	7.06
C	Monday	7.04
C	Sunday	7.03

```
-- what is the gender distribution per branch?

select branch, gender, count(gender) as gender_distribution
from walmart_sales group by Branch,Gender
order by branch
```

branch	gender	gender_distribution
A	Female	161
A	Male	179
B	Female	162
B	Male	170
C	Female	178
C	Male	150

More Questions on GitHub

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THANK YOU

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