WALMART SALES ANALYSIS WITH SQL

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Data Analyst Internship

DATASET

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Invoice_ID	Branch	City	Customer_type	Gender	Product_line	Unit_price	Quantity	Tax_5%	Total	Date	Time	Payment	cogs	gross_margin_perce	gross_income	Rating
2	750-67-84	A	Yangon	Member	Female	Health and beauty	74.69	7	26.1415	548.9715	05-01-2019	13:08:00	Ewallet	522.83	4.761904762	26.1415	9.1
3	226-31-30	C	Naypyitaw	Normal	Female	Electronic accessories	15.28	5	3.82	80.22	08-03-2019	10:29:00	Cash	76.4	4.761904762	3.82	9.6
4	631-41-31	A	Yangon	Normal	Male	Home and lifestyle	46.33	7	16.2155	340.5255	03-03-2019	13:23:00	Credit card	324.31	4.761904762	16.2155	7.4
5	123-19-11	A	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	27-01-2019	20:33:00	Ewallet	465.76	4.761904762	23.288	8.4
6	373-73-79	A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	08-02-2019	10:37:00	Ewallet	604.17	4.761904762	30.2085	5.3
7	699-14-30	C	Naypyitaw	Normal	Male	Electronic accessories	85.39	7	29.8865	627.6165	25-03-2019	18:30:00	Ewallet	597.73	4.761904762	29.8865	4.1
8	355-53-59	A	Yangon	Member	Female	Electronic accessories	68.84	6	20.652	433.692	25-02-2019	14:36:00	Ewallet	413.04	4.761904762	20.652	5.8
9	315-22-56	C	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	24-02-2019	11:38:00	Ewallet	735.6	4.761904762	36.78	8
10	665-32-91	A	Yangon	Member	Female	Health and beauty	36.26	2	3.626	76.146	10-01-2019	17:15:00	Credit card	72.52	4.761904762	3.626	7.2
11	692-92-55	B	Mandalay	Member	Female	Food and beverages	54.84	3	8.226	172.746	20-02-2019	13:27:00	Credit card	164.52	4.761904762	8.226	5.9
12	351-62-08	B	Mandalay	Member	Female	Fashion accessories	14.48	4	2.896	60.816	06-02-2019	18:07:00	Ewallet	57.92	4.761904762	2.896	4.5
13	529-56-39	B	Mandalay	Member	Male	Electronic accessories	25.51	4	5.102	107.142	09-03-2019	17:03:00	Cash	102.04	4.761904762	5.102	6.8
14	365-64-05	A	Yangon	Normal	Female	Electronic accessories	46.95	5	11.7375	246.4875	12-02-2019	10:25:00	Ewallet	234.75	4.761904762	11.7375	7.1
15	252-56-26	A	Yangon	Normal	Male	Food and beverages	43.19	10	21.595	453.495	07-02-2019	16:48:00	Ewallet	431.9	4.761904762	21.595	8.2
16	829-34-39	A	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	29-03-2019	19:21:00	Cash	713.8	4.761904762	35.69	5.7
17	299-46-18	B	Mandalay	Member	Female	Sports and travel	93.72	6	28.116	590.436	15-01-2019	16:19:00	Cash	562.32	4.761904762	28.116	4.5
18	656-95-93	A	Yangon	Member	Female	Health and beauty	68.93	7	24.1255	506.6355	11-03-2019	11:03:00	Credit card	482.51	4.761904762	24.1255	4.6
19	765-26-69	A	Yangon	Normal	Male	Sports and travel	72.61	6	21.783	457.443	01-01-2019	10:39:00	Credit card	435.66	4.761904762	21.783	6.9
20	329-62-15	A	Yangon	Normal	Male	Food and beverages	54.67	3	8.2005	172.2105	21-01-2019	18:00:00	Credit card	164.01	4.761904762	8.2005	8.6
21	319-50-33	B	Mandalay	Normal	Female	Home and lifestyle	40.3	2	4.03	84.63	11-03-2019	15:30:00	Ewallet	80.6	4.761904762	4.03	4.4
22	300-71-46	C	Naypyitaw	Member	Male	Electronic accessories	86.04	5	21.51	451.71	25-02-2019	11:24:00	Ewallet	430.2	4.761904762	21.51	4.8
23	371-85-57	B	Mandalay	Normal	Male	Health and beauty	87.98	3	13.197	277.137	05-03-2019	10:40:00	Ewallet	263.94	4.761904762	13.197	5.1
24	273-16-66	B	Mandalay	Normal	Male	Home and lifestyle	33.2	2	3.32	69.72	15-03-2019	12:20:00	Credit card	66.4	4.761904762	3.32	4.4
25	636-48-82	A	Yangon	Normal	Male	Electronic accessories	34.56	5	8.64	181.44	17-02-2019	11:15:00	Ewallet	172.8	4.761904762	8.64	9.9
26	549-59-13	A	Yangon	Member	Male	Sports and travel	88.63	3	13.2945	279.1845	02-03-2019	17:36:00	Ewallet	265.89	4.761904762	13.2945	6
27	227-03-50	A	Yangon	Member	Female	Home and lifestyle	52.59	8	21.036	441.756	22-03-2019	19:20:00	Credit card	420.72	4.761904762	21.036	8.5
28	649-29-67	B	Mandalay	Normal	Male	Fashion accessories	33.52	1	1.676	35.196	08-02-2019	15:31:00	Cash	33.52	4.761904762	1.676	6.7
29	189-17-42	A	Yangon	Normal	Female	Fashion accessories	87.67	2	8.767	184.107	10-03-2019	12:17:00	Credit card	175.34	4.761904762	8.767	7.7

DATASET

The Dataset consists of following columns :

- **Invoice_ID :** Unique identifier for each invoice.
- **Branch :** Branch of the store where the sale took place.
- **City :** City where the store branch is located.
- **Customer_type :** Type of Customer.
- **Gender :** Gender of the Customer.
- **Product_line :** Category of the product sold.
- **Unit_price :** Price per unit of the product.
- **Quantity :** Quantity of the product sold.
- **Tax_5% :** Tax applied on the sale.
- **Total :** Total amount of the sale.
- **Date :** Date of the transaction.
- **Time :** Time of the transaction.
- **Payment :** Payment method used.
- **Cogs :** Cost of goods sold.
- **Gross_margin_percentage :** Gross margin percentage.
- **Gross_income :** Gross income from the sale.
- **Rating :** Customer rating for the purchase.

QUESTIONS

1. Retrieve all columns for sales made in a specific branch (e.g., Branch 'A').
2. Find the total sales for each product line.
3. List all sales transactions where the payment method was 'Cash'.
4. Calculate the total gross income generated in each city.
5. Find the average rating given by customers in each branch.
6. Determine the total quantity of each product line sold.
7. List the top 5 products by unit price.
8. Find sales transactions with a gross income greater than 30.
9. Retrieve sales transactions that occurred on weekends.
10. Calculate the total sales and gross income for each month.
11. Find the number of sales transactions that occurred after 6 PM.
12. List the sales transactions that have a higher total than the average total of all transactions.
13. Calculate the cumulative gross income for each branch by date.
14. Find the total cogs for each customer type in each city.

Retrieve all columns for sales made in a specific branch (e.g., Branch 'A')

```sql
-- 1.Retrieve all columns for sales made in a specific branch(Ex: branch 'A')-------

select branch,round(sum(total),2) as tot_sale_branch from walmartdataa
group by branch;
```

Result Grid | Filter Rov

branch	tot_sale_branch
A	106200.37
C	110568.71
B	106197.67

Find the total sales for each product line

```sql
-- 2. Find the total sales for each product line. ------------------------------

select product_line,round(sum(total),2) as total_sales from walmartdataa
group by product_line;
```

Result Grid | Filter Rows:

product_line	total_sales
Health and beauty	49193.74
Electronic accessories	54337.53
Home and lifestyle	53861.91
Sports and travel	55122.83
Food and beverages	56144.84
Fashion accessories	54305.9

List all sales transactions where the payment method was 'Cash'

```sql
-- 3. List all sales transactions where the payment method was "Cash" ------------

select * from walmartdataa
where payment="cash";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Gender	Product_line	Unit_price	Quantity	Tax_5%	Total	Date	Time	Payment	cogs
Female	Electronic accessories	15.28	5	3.82	80.22	2019-03-08	10:29:00	Cash	76.4
Male	Electronic accessories	25.51	4	5.102	107.142	2019-03-09	17:03:00	Cash	102.04
Female	Health and beauty	71.38	10	35.69	749.49	2019-03-29	19:21:00	Cash	713.8
Female	Sports and travel	93.72	6	28.116	590.436	2019-01-15	16:19:00	Cash	562.32
Male	Fashion accessories	33.52	1	1.676	35.196	2019-02-08	15:31:00	Cash	33.52
Female	Food and beverages	88.36	5	22.09	463.89	2019-01-25	19:48:00	Cash	441.8
Male	Health and beauty	24.89	9	11.2005	235.2105	2019-03-15	15:36:00	Cash	224.01
Male	Sports and travel	78.07	9	35.1315	737.7615	2019-01-28	12:43:00	Cash	702.63

Calculate the total gross income generated in each city

```sql
-- 4. Calculate the total gross income generated in each city -----------------

Select City,round(sum(gross_income),2) as total_gross_income from walmartdataa
group by city;
```

Result Grid | Filter Rows:

City	total_gross_income
Yangon	5057.16
Naypyitaw	5265.18
Mandalay	5057.03

Find the average rating given by customers in each branch.

```sql
-- 5. Find the average rating given by cutomers in each branch ---------------------

Select branch,round(avg(Rating),2) as avg_rating from walmartdataa
group by branch;
```

Result Grid

branch	avg_rating
A	7.03
C	7.07
B	6.82

Determine the total quantity of each product line sold

```sql
-- 6.  Determine the total quantity of each product line sold. ----------------------

select product_line,sum(quantity) as total_quantity from walmartdataa
group by product_line;
```

Result Grid | Filter Rows:

product_line	total_quantity
Health and beauty	854
Electronic accessories	971
Home and lifestyle	911
Sports and travel	920
Food and beverages	952
Fashion accessories	902

List the top 5 products by unit price

```sql
-- 7. List the top 5 products by unit price-------------------------------

select product_line,unit_price from walmartdataa
order by unit_price desc limit 5;
```

Result Grid | Filter Rows:

product_line	unit_price
Health and beauty	99.96
Sports and travel	99.96
Home and lifestyle	99.92
Fashion accessories	99.89
Health and beauty	99.83

Find sales transactions with a gross income greater than 30

```
-- 8. Find sales transactions with a gross income greater than 30. ------------

select invoice_id,gross_income,total from walmartdataa
where gross_income > 30;
```

Result Grid | Filter Rows:

invoice_id	gross_income	total
373-73-7910	30.2085	634.3785
315-22-5665	36.78	772.38
829-34-3910	35.69	749.49
149-71-6266	35.1315	737.7615
640-49-2076	33.512	703.752
228-96-1411	39.48	829.08
574-22-5561	41.315	867.615
326-78-5178	31.99	671.79
399-46-5918	34.392	722.232

Retrieve sales transactions that occurred on weekends

```sql
alter table walmartdataa
add day_name varchar(20);

update walmartdataa
set day_name=dayname(date) ;
```

```sql
-- 9. Retrieve sales transactions that occurred on weekends ------

select invoice_id,day_name,total from walmartdataa
where day_name in ('Saturday','Sunday');
```

Result Grid | Filter Rows:

invoice_id	day_name	total
750-67-8428	Saturday	548.9715
631-41-3108	Sunday	340.5255
123-19-1176	Sunday	489.048
315-22-5665	Sunday	772.38
529-56-3974	Saturday	107.142
636-48-8204	Sunday	181.44
549-59-1358	Saturday	279.1845
189-17-4241	Sunday	184.107
129-29-8530	Sunday	328.755

Calculate the total sales and gross income for each month

```sql
alter table walmartdataa
add month_name varchar(20);

update walmartdataa
set month_name = monthname(date);
```

```sql
-- 10. Calculate the total sales and gross income for each month -------------

Select month_name,round(sum(total),2) as tot_salefor_month,
round(sum(gross_income),2) as total_gross
from walmartdataa group by month_name;
```

Result Grid | Filter Rows:

month_name	tot_salefor_month	total_gross
January	116291.87	5537.71
March	109455.51	5212.17
February	97219.37	4629.49

Find the number of sales transactions that occurred after 6 PM

```sql
-- 11. Find the number of sales transactions that occurred after 6 PM. ------------

select count(invoice_id) as no_of_transactions_after6PM from walmartdataa
where time between "18:00:00" and "23:59:59";
```

Result Grid | Filter Rows:

	no_of_transactions_after6PM
▶	281

List the sales transactions that have a higher total than the average total of all transactions

```
-- 12. List the sales transactions that have a higher total than the
-- avearge total of all transactions----

select invoice_id,total from walmartdataa
where total >= (select avg(total) from walmartdataa);
```

Result Grid | Filter

invoice_id	total
750-67-8428	548.9715
631-41-3108	340.5255
123-19-1176	489.048
373-73-7910	634.3785
699-14-3026	627.6165
355-53-5943	433.692
315-22-5665	772.38
252-56-2699	453.495
829-34-3910	749.49

Calculate the cumulative gross income for each branch by date

```sql
-- 13. Calculate the cumulative gross income for each branch by date. --------

SELECT Date,Branch,SUM(gross_income) AS cumulative_gross_income
FROM WalmartDataa
GROUP BY Date, Branch
ORDER BY Date, Branch;
```

Result Grid | Filter Rows:

Date	Branch	cumulative_gross_income
2019-01-01	A	112.92
2019-01-01	B	73.176
2019-01-01	C	39.864999999999995
2019-01-02	A	14.6215
2019-01-02	B	55.3715
2019-01-02	C	22.65
2019-01-03	A	44.6385
2019-01-03	B	48.414
2019-01-03	C	5.906000000000001

Find the total cogs for each customer type in each city

```sql
-- 14. Find the total cogs for each customer type in each city. ----------------

select Customer_type,City,round(sum(cogs),2) as total_cogs from walmartdataa
group by Customer_type,City
order by city;
```

Result Grid | Filter Rows:

Customer_type	City	total_cogs
Member	Mandalay	51147.32
Normal	Mandalay	49993.32
Normal	Naypyitaw	51130.88
Member	Naypyitaw	54172.65
Member	Yangon	51083.31
Normal	Yangon	50059.9

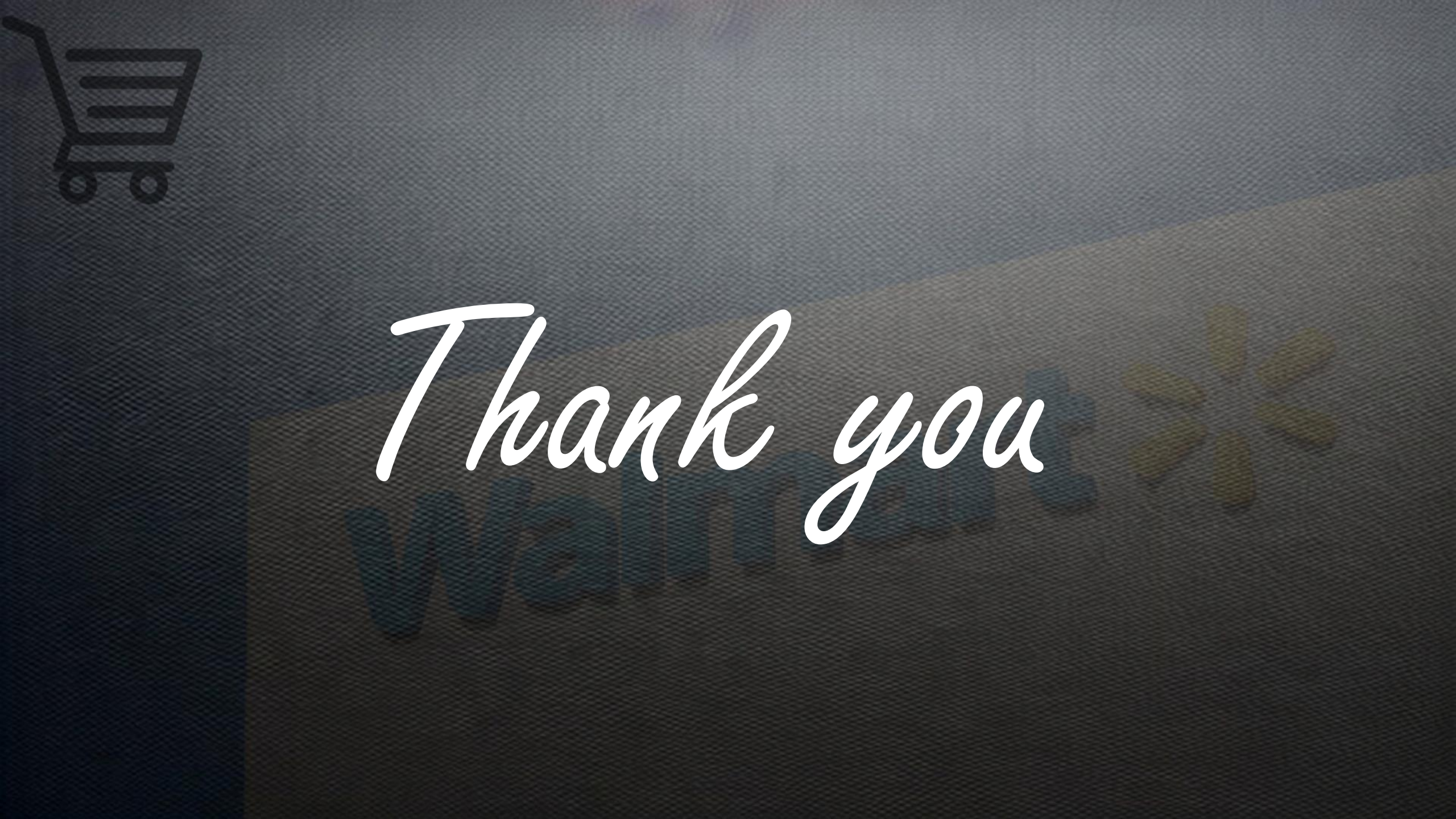
Key Findings

The Product with most number of sales	:	Food and beverages
Highest gross income for a city	:	Naypyidaw
Highest number of units sold for a product	:	Electronic accessories
The month with most number of sales	:	January
Branch having highest average rating	:	Branch ‘C’

Conclusion

The analysis of Walmart sales data using SQL provides valuable insights into the company's performance , trends, and customer behavior. By examining sales patterns across top performing branches, time periods and different products, it became evident which factors most significantly impact revenue. The findings can guide strategic decisions, such as optimizing inventory levels, tailoring marketing efforts and enhancing customer experience.

Ultimately, this analysis helps Walmart maintain its competitive edge by aligning business strategies with data-driven insights, leading to more informed decisions and improved profitability.


Thank you