Product Sales & Customer Behavior Analysis

Uncovering sales trends and buyer patterns through SQL & Tableau

PostgreSQL + Tableau

Swipe 👉 to explore sales and customer trends

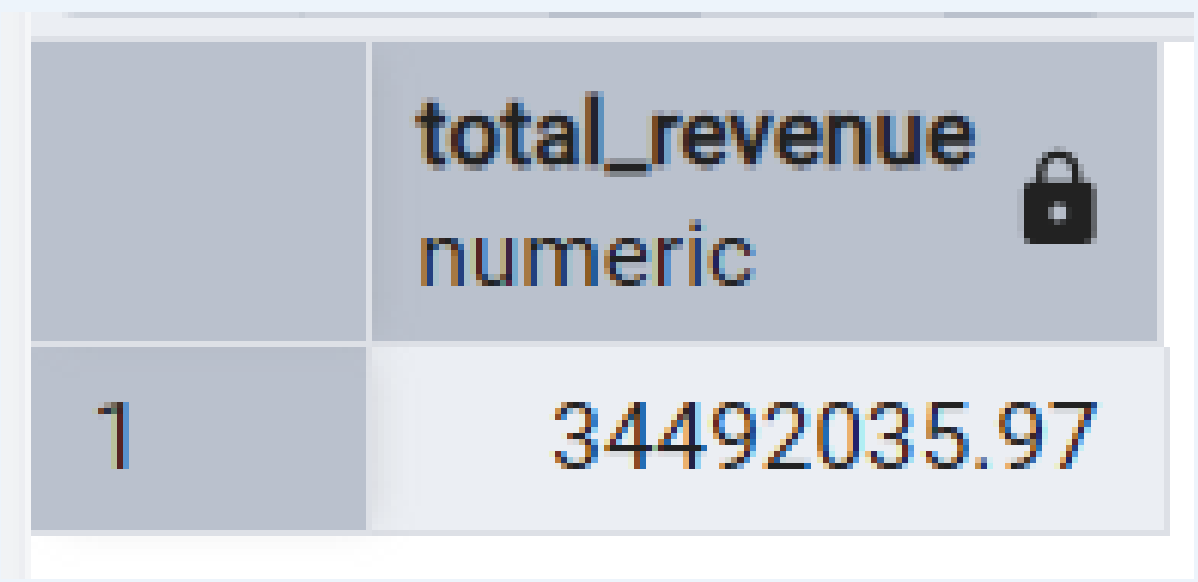
Business Question 1:

How much total revenue was generated ?

SQL Query:

```
select sum(sales) as Total_Revenue
from sales_data_final;
```

Result:



	total_revenue numeric
1	34492035.97

Insight:

The dataset recorded a total revenue of $34,492K, reflecting the overall sales performance across all products, customers, and locations.

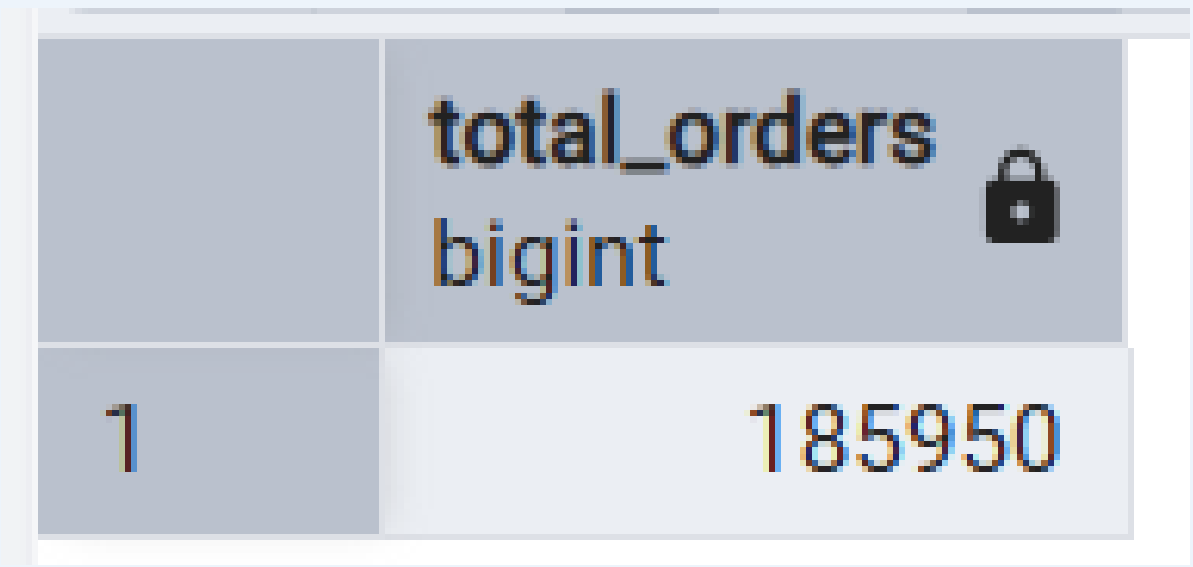
Business Question 2:

How many total orders were placed during the entire period covered in the dataset?

SQL Query:

```
select count(order_id) as Total_Orders
from sales_data_final;
```

Result:



	total_orders bigint
1	185950

Insight:

A total of 185,950 orders were recorded, indicating the volume of customer purchase activity across all time periods and locations.

Business Question 3:

Which cities were involved in customer purchases across the dataset?

SQL Query:

```
select distinct city
from sales_data_final;
```

Result:

	city text
1	Atlanta
2	Austin
3	Boston
4	Dallas
5	Los Angeles
6	New York City
7	Portland
8	San Francisco
9	Seattle

Business Question 4:

Which months generated the highest revenue overall?

SQL Query:

```
select month, sum(sales) as Total_Sales
from sales_data_final
group by month
order by Total_Sales desc
limit 5;
```

Result:

	month integer	total_sales numeric
1	12	4613443.34
2	10	3736726.88
3	4	3390670.24
4	11	3199603.20
5	5	3152606.75

Insight:

Sales peaked during the holiday season, with December generating the highest revenue overall, indicating strong year-end consumer spending trends.

Business Question 5:

Which cities brought in the highest revenue?

SQL Query:

```
select city, sum(sales) as Total_Revenue
from sales_data_final
group by city
order by Total_Revenue desc;
```

Result:

	city text	total_revenue numeric
1	San Francisco	8262203.91
2	Los Angeles	5452570.80
3	New York City	4664317.43
4	Boston	3661642.01
5	Atlanta	2795498.58
6	Dallas	2767975.40
7	Seattle	2747755.48
8	Portland	2320490.61
9	Austin	1819581.75

Insight:

San Francisco topped the list in revenue contribution, followed closely by Los Angeles and New York, making them key markets for business growth.

Business Question 6:

During which hours of the day do customers spend the most?

SQL Query:

```
select hour as peak_hours, sum(sales) as
Total_sales
from sales_data_final
group by hour
order by total_sales desc
limit 5;
```

Result:

	peak_hours integer	total_sales numeric
1	19	2412938.54
2	12	2316821.34
3	11	2300610.24
4	20	2281716.24
5	18	2219348.30

Insight:

The highest spending occurred between 11 AM and 8 PM, suggesting that late morning to evening hours are peak business hours. This insight can help optimize staffing and promotions.

Business Question 7:

Which cities generate the most revenue during the peak hours of the day?

SQL Query:

```
with peak_hours as(
 select hour
 from sales_data_final
 group by hour
 order by sum(sales) desc
 limit 5
)
select city as peak_performing_cities,
sum(sales) as Total_Revenue
from sales_data_final
where hour in
(select hour from peak_hours)
group by city
order by Total_revenue desc
limit 5;
```

Result:

	peak_performing_cities text	total_revenue numeric
1	San Francisco	2793595.33
2	Los Angeles	1811647.40
3	New York City	1564044.01
4	Boston	1251425.58
5	Atlanta	918216.37

Insight:

Cities like San Francisco, Los Angeles, and New York consistently drive the highest revenue during the most active shopping hours (peak hours). This insight can be used for targeted marketing and logistics planning during high-traffic periods.

Business Question 8:

Which cities have the highest average order value (AOV)?

SQL Query:

```
with order_totals as (
  select order_id, city, sum(sales) as
order_total
  from sales_data_final
  group by order_id, city
)
select city, ROUND(avg(order_total), 2) as
average_order_value
from order_totals
group by city
order by average_order_value desc;
```

Result:

	city text	average_order_value numeric
1	Atlanta	196.13
2	New York City	195.59
3	Seattle	194.61
4	Dallas	194.38
5	Portland	193.70
6	San Francisco	192.60
7	Boston	191.79
8	Austin	191.35
9	Los Angeles	191.33

Insight:

Atlanta leads with the highest average order value of $196.13, followed closely by New York City and Seattle.
This suggests customers in these cities tend to make larger-value purchases per transaction, which can inform premium product targeting and regional pricing strategies.

Business Question 9:

Which product generates the highest revenue in each city?

SQL Query:

```
with product_sales_per_city as (
  select city, product, sum(sales) as
total_sales,
  row_number() over (partition by city
order by sum(sales) desc) as rn
  from sales_data_final
  group by city, product
)
select city, product, total_sales
from product_sales_per_city
where rn = 1
order by total_sales desc;
```

Result:

	city text	product text	total_sales numeric
1	San Francisco	Macbook Pro Laptop	1931200
2	Los Angeles	Macbook Pro Laptop	1276700
3	New York City	Macbook Pro Laptop	1116900
4	Boston	Macbook Pro Laptop	814300
5	Dallas	Macbook Pro Laptop	649400
6	Atlanta	Macbook Pro Laptop	644300
7	Seattle	Macbook Pro Laptop	605200
8	Portland	Macbook Pro Laptop	572900
9	Austin	Macbook Pro Laptop	426700

Insight:

MacBook Pro Laptop dominates as the highest revenue-generating product in every major city, with San Francisco alone contributing over $1.93 million in sales.

This insight highlights a strong city-wide preference for premium tech products, indicating potential for targeted marketing and inventory prioritization for high-end electronics.

Business Question 10:

How much does each city contribute to the company's total revenue?

SQL Query:

```
select city,
    round(sum(sales), 2) as total_sales,
    round(sum(sales) * 100.0 /
sum(sum(sales)) over(), 2) as
percent_contribution
from sales_data_final
group by city
order by percent_contribution desc;
```

Result:

	city text	total_sales numeric	percent_contribution numeric
1	San Francisco	8262203.91	23.95
2	Los Angeles	5452570.80	15.81
3	New York City	4664317.43	13.52
4	Boston	3661642.01	10.62
5	Atlanta	2795498.58	8.10
6	Dallas	2767975.40	8.02
7	Seattle	2747755.48	7.97
8	Portland	2320490.61	6.73
9	Austin	1819581.75	5.28

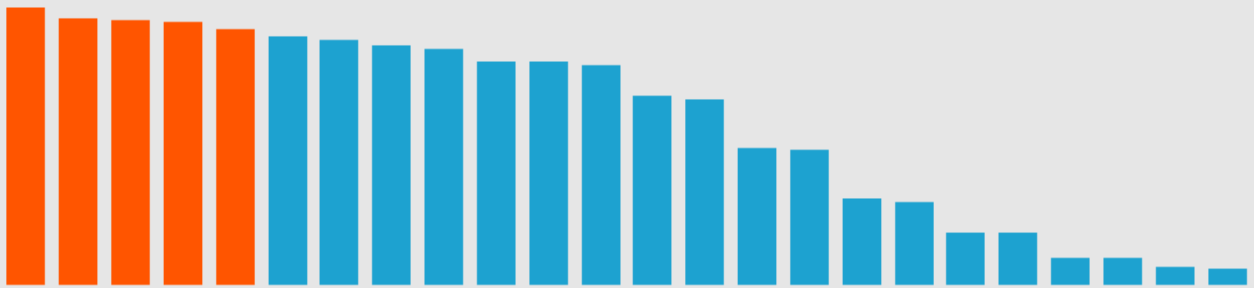
Insight:

San Francisco emerges as the top contributor, accounting for nearly 24% of the total sales, followed by Los Angeles (15.81%) and New York City (13.52%).
This distribution helps prioritize region-specific strategies, like targeted campaigns, inventory distribution, and localized promotions to optimize performance in high-contribution cities.

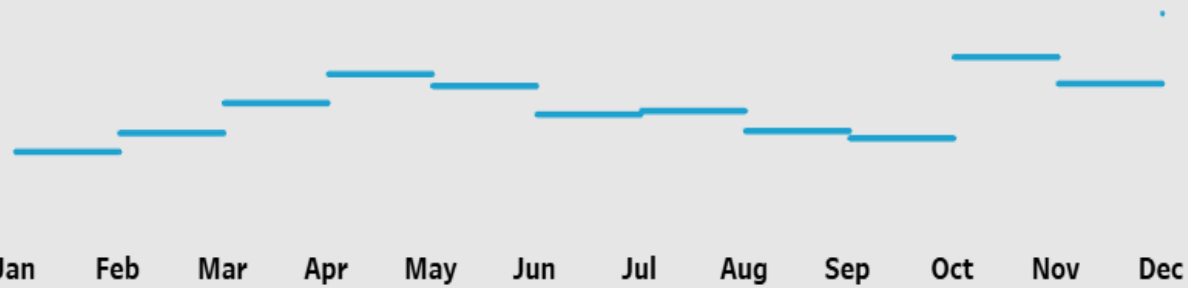
Product Sales & Customer Behavior Analysis Dashboard

Total Revenue	Total Orders	Average Order Value	Peak Hours	Top City by Sales	Top Selling Product
$34,492K	1,85,950	$193	11 AM to 8 PM	San Francisco	MacBook

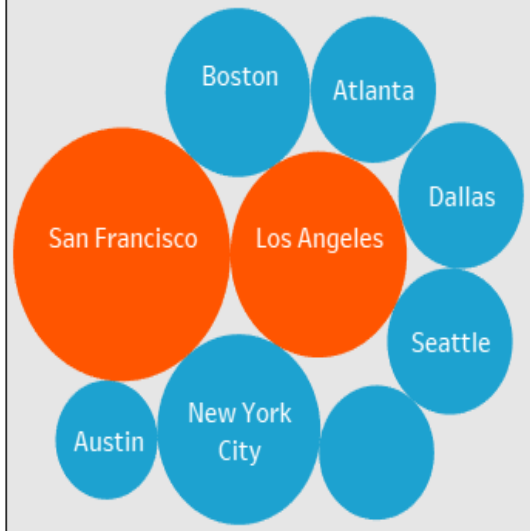
Hourly Purchase Pattern



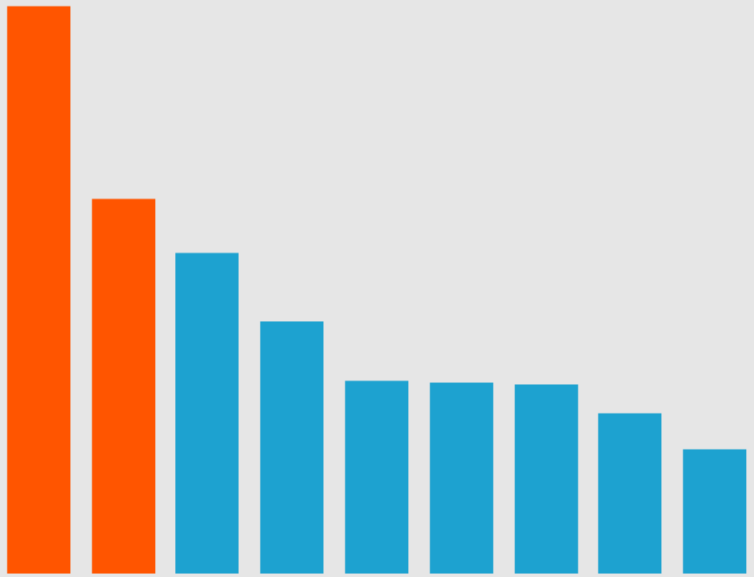
Monthly Sales Trend



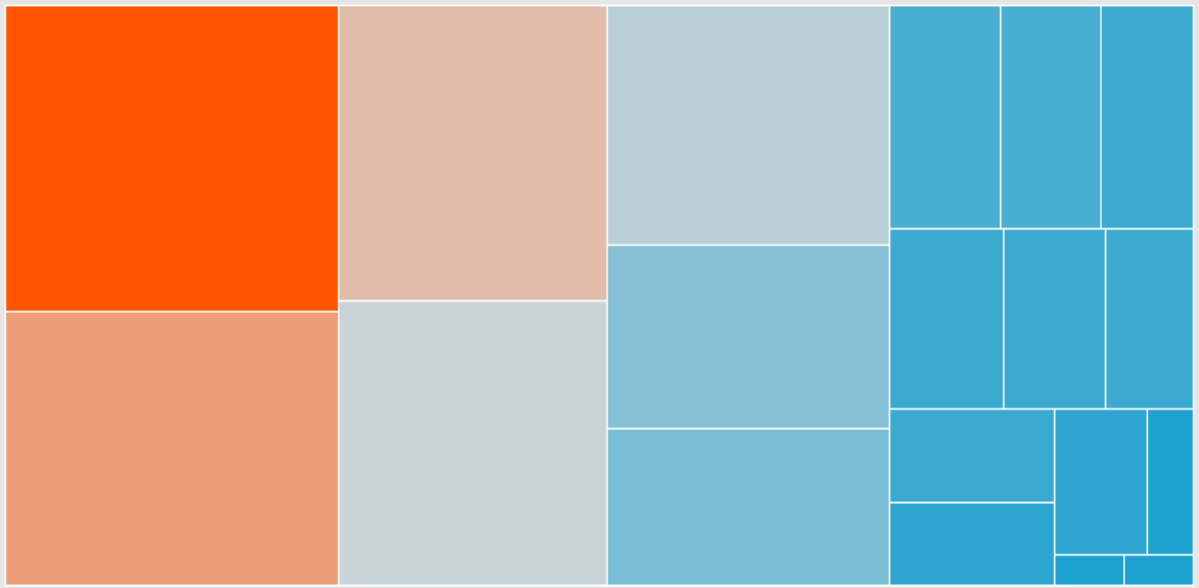
Sales by City with % Contribution



Busiest Cities During Peak Hours (11 AM to 8 PM)



Product-wise Quantity Ordered Analysis



🙌 Thanks for viewing!

💬 Your thoughts, suggestions, or feedback are most welcome!