E-commerce Sales Dashboard – AWS QuickSight Project

Project Overview

This project showcases an interactive e-commerce Sales Dashboard built using Amazon QuickSight. The dashboard provides insights into key business metrics like total revenue, profit, order distribution, delivery performance, and customer growth trends.

The data is stored in Amazon Redshift and a custom SQL dataset was created for transformation before visualizing in QuickSight.

Introduction to QuickSight

What it does & how it's useful:

Amazon QuickSight is a cloud-based tool that helps you create interactive dashboards and visual reports from your data. It connects to various sources like Excel files, Amazon Redshift, and databases, allowing you to analyze and visualize data easily.

With QuickSight, you can track key business metrics like sales, profit, and customer trends using charts and graphs. It's fast, cost-effective, and works well with other AWS services. You can also share your dashboards securely with others, making it useful for both personal projects and business reporting.

How I'm using it in this project:

In this project, I used Amazon QuickSight to build an interactive e-commerce dashboard that visualizes key business metrics like total revenue, profit, order status, customer sign-ups, and delivery performance.

I connected QuickSight to data stored in Amazon Redshift, created a custom SQL dataset by joining multiple tables (orders, products, customers, delivery logs), and then used calculated fields to derive important KPIs such as profit margin and average delivery time. QuickSight allowed me to design user-friendly charts and graphs, add filters for better analysis, and present the data in a clear, executive-level summary format.

Tech Stack

- Amazon Redshift – Data warehouse
- Amazon S3 – Storage for data import/export
- Amazon QuickSight – BI visualization
- Custom SQL – Data transformation
- CSV Files – Source data

Data Model

The project uses the following tables:

Table Name	Description
Orders	Contains order-level sales data
Customers	Customer info with location, signup
Products	Product category and pricing
Delivery_logs	Shipment dates and delivery times

Dashboard Design

Sections:

1. Executive Summary
2. Sales Trends
3. Category Performance
4. Customer Insights
5. Delivery Performance
6. Geographic Profitability

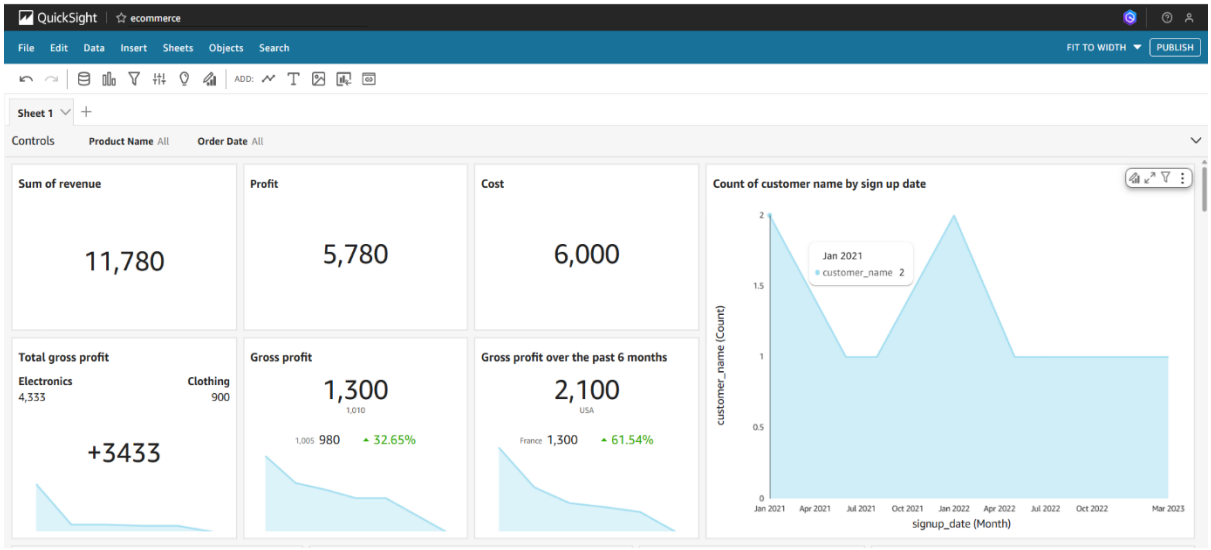
Key KPIs & Visuals

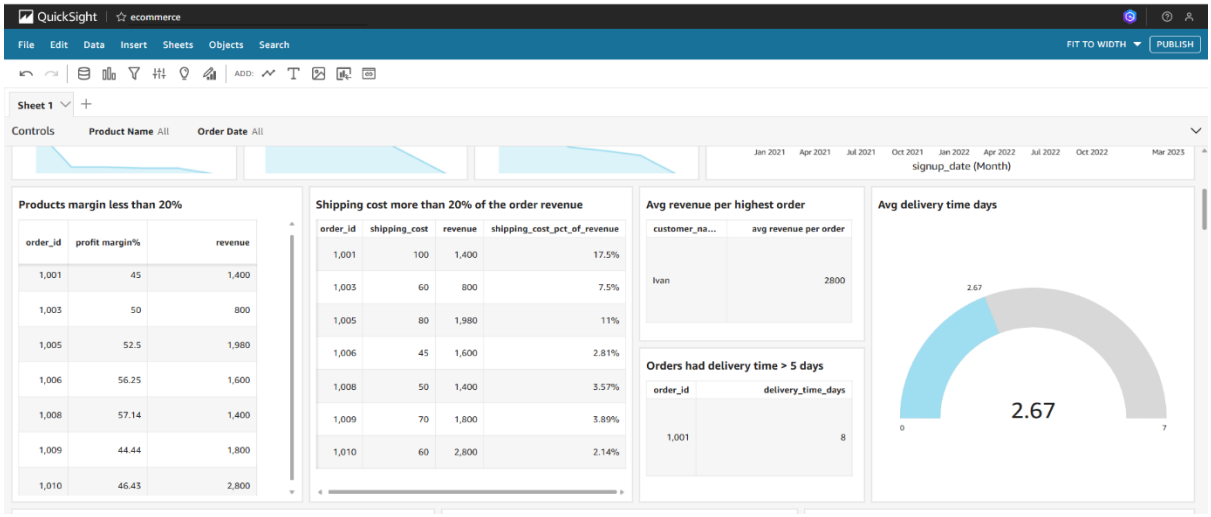
KPI / Chart	Description
Total Revenue, Cost, Profit	KPI cards showing key metrics with trend comparison
Revenue by Product Category	Bar chart to compare revenue across categories
Monthly Sales Trend	Line chart showing revenue trend over months
Profitability by Country	Heat map highlighting profit by geographic region
Average Delivery Time	Gauge chart showing average order delivery time
Order Status Distribution	Donut chart showing percentage of each order status
Customer Sign-ups by Month	Area chart showing customer growth over time
Shipping Cost & Order Revenue	Table chart comparing shipping cost vs revenue
High Discount Order Quantity	Scatter plot to analyze discount impact on quantity

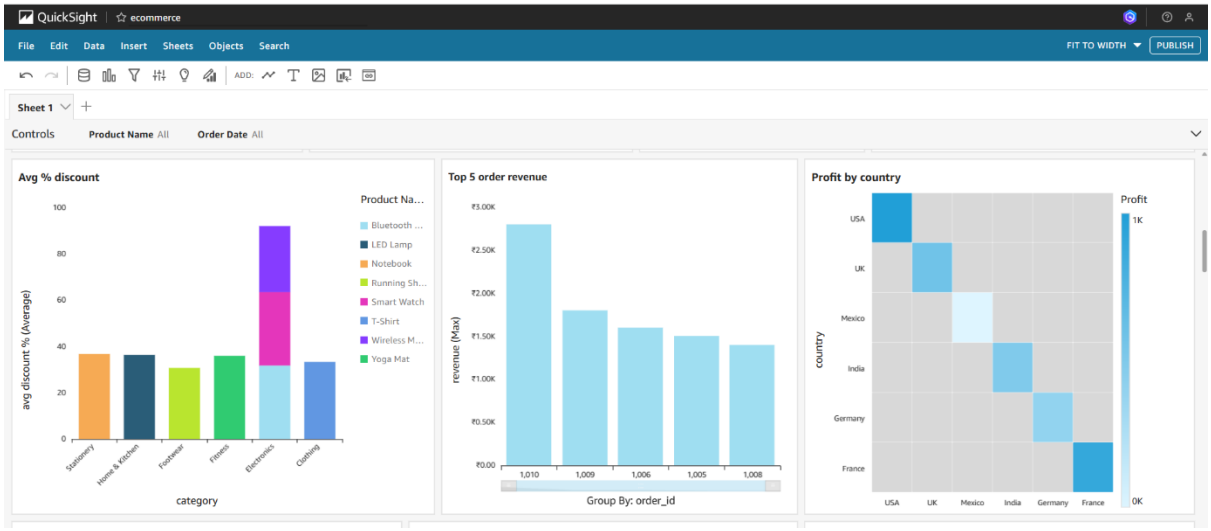
Calculated Fields Used

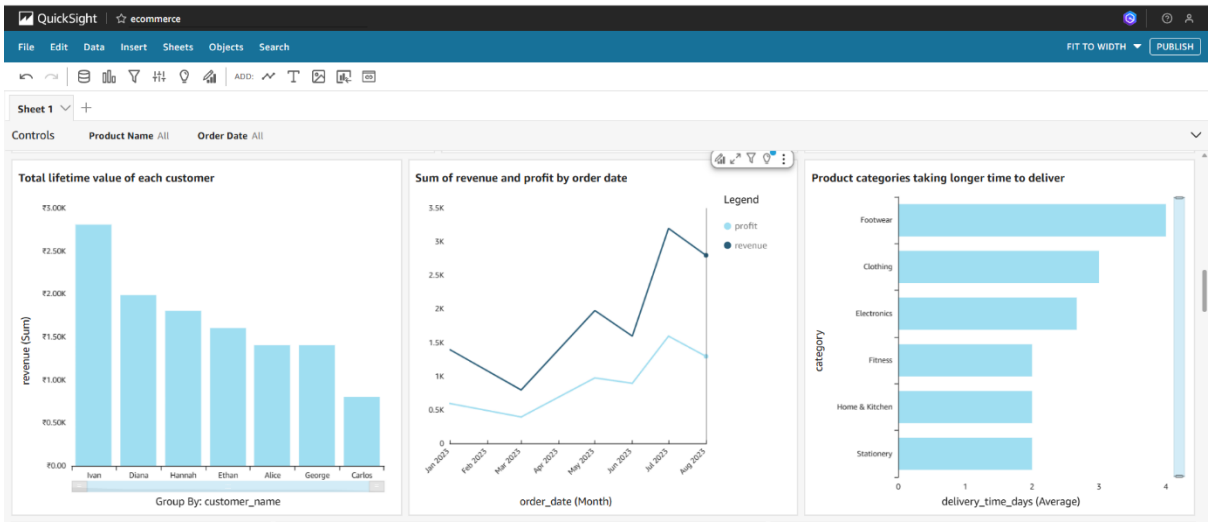
Field Name	Formula / Logic
Profit	revenue - cost
Delivery Days	dateDiff(end_date, start_date, 'DD')
Order Status Flag	ifelse({order_status} = 'Delivered', 'Completed', 'Pending/Cancelled')
Profit Margin %	({profit} / {revenue}) * 100
Avg Revenue per Order	sum(revenue) / distinct_count(order_id)
Gross Profit per Order	(sum(revenue) - sum(cost)) / distinct_count(order_id)
Discount %	({discount_amount} / {original_price}) * 100
Repeated Customer	ifelse(countOver(order_id, [customer_name]) > 1, 1, 0)
Net Revenue	revenue - discount_amount
Revenue per Customer	sum(revenue) / distinct_count(customer_name)
Orders per Customer	count(order_id) / distinct_count(customer_name)

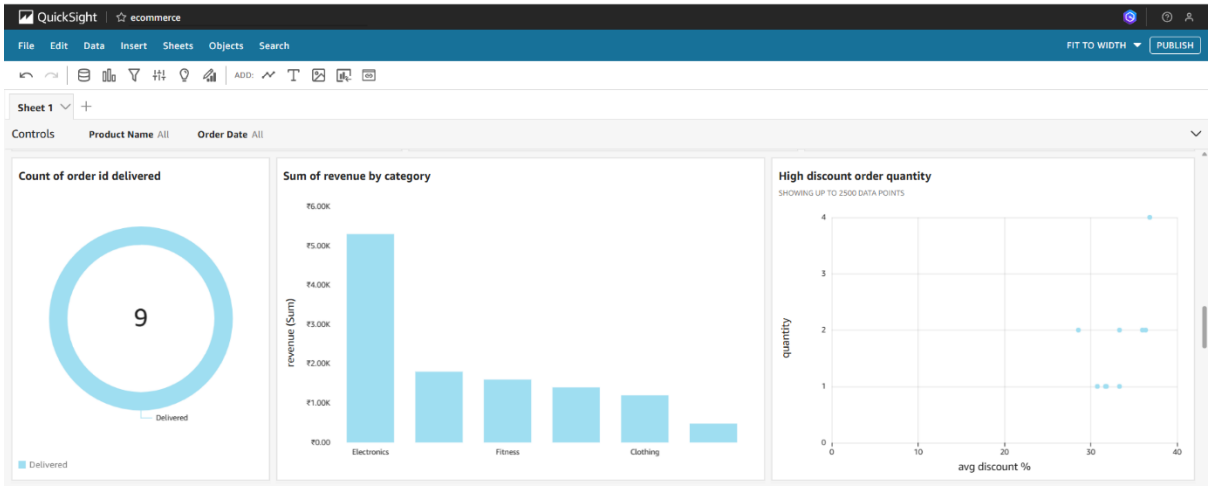
Screenshots

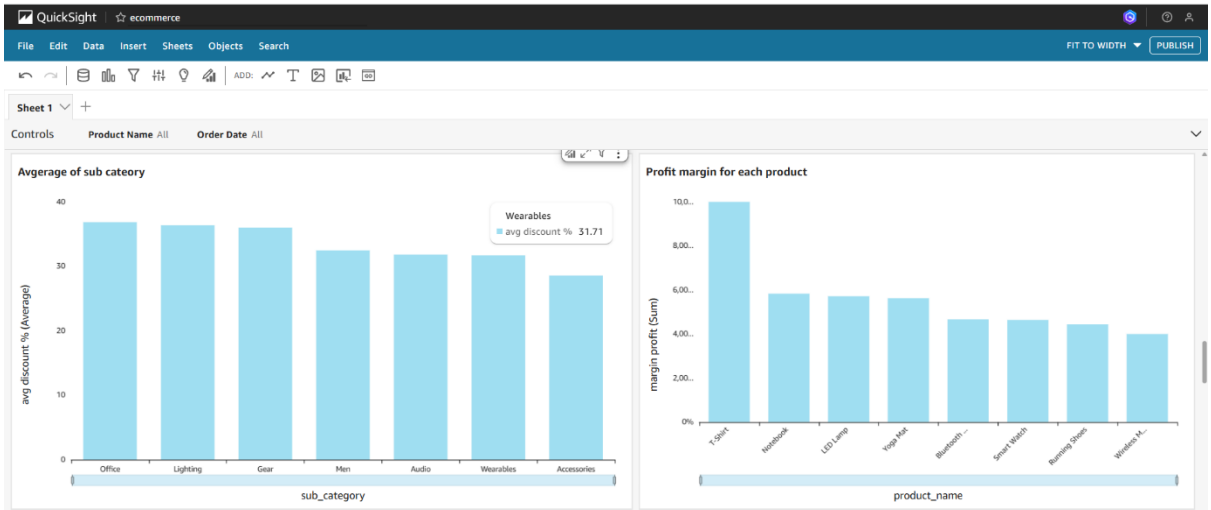


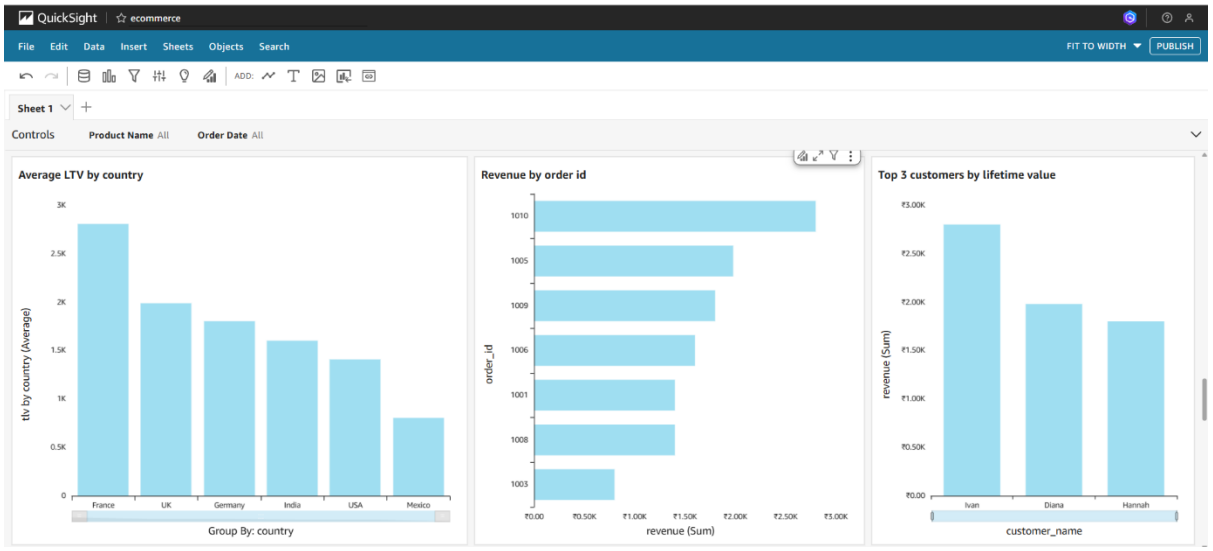


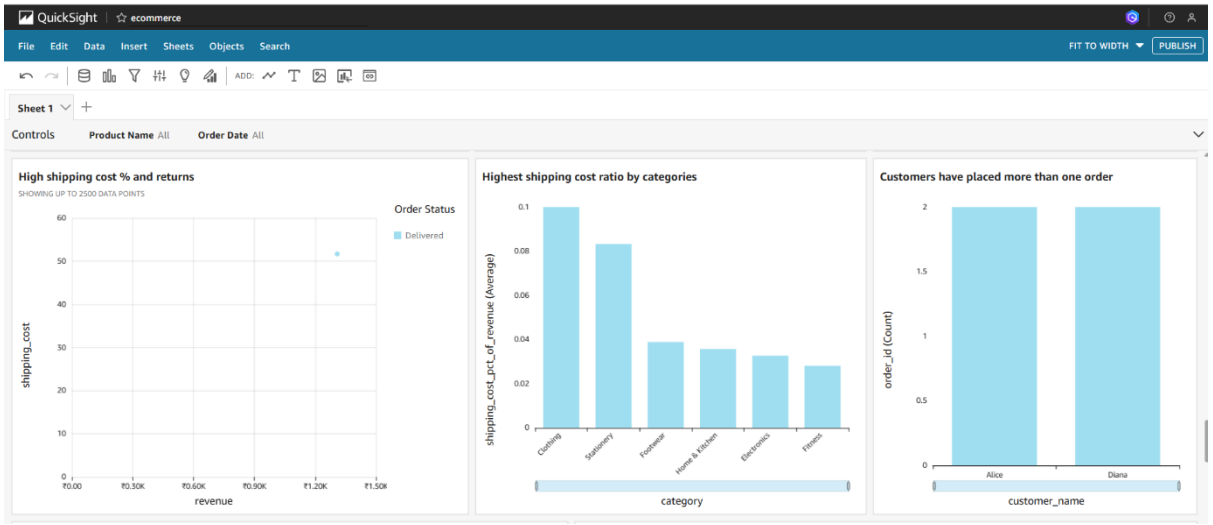


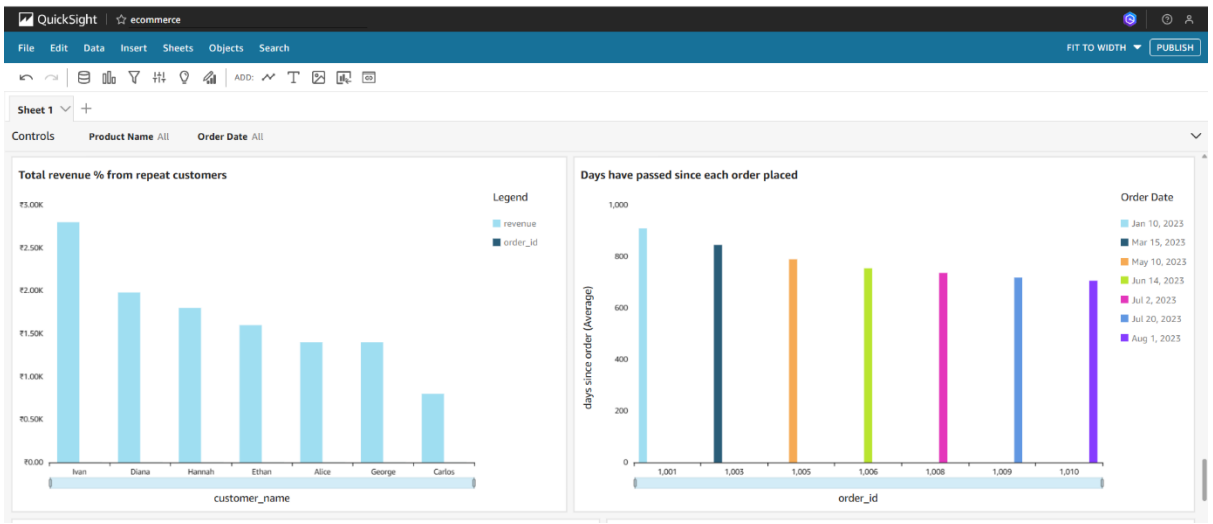

QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
Total lifetime value of each customer
revenue (Sum)
₹3.00K
₹2.50K
₹2.00K
₹1.50K
₹1.00K
₹0.50K
₹0.00
Ivan
Diana
Hannah
Ethan
Alice
George
Carlos
Group By: customer_name
Sum of revenue and profit by order date
Legend
profit
revenue
3.5K
3K
2.5K
2K
1.5K
1K
0.5K
0
Jan 2023
Feb 2023
Mar 2023
Apr 2023
May 2023
Jun 2023
Jul 2023
Aug 2023
order_date (Month)
Product categories taking longer time to deliver
category
Footwear
Clothing
Electronics
Fitness
Home & Kitchen
Stationery
0
1
2
3
4
delivery_time_days (Average)

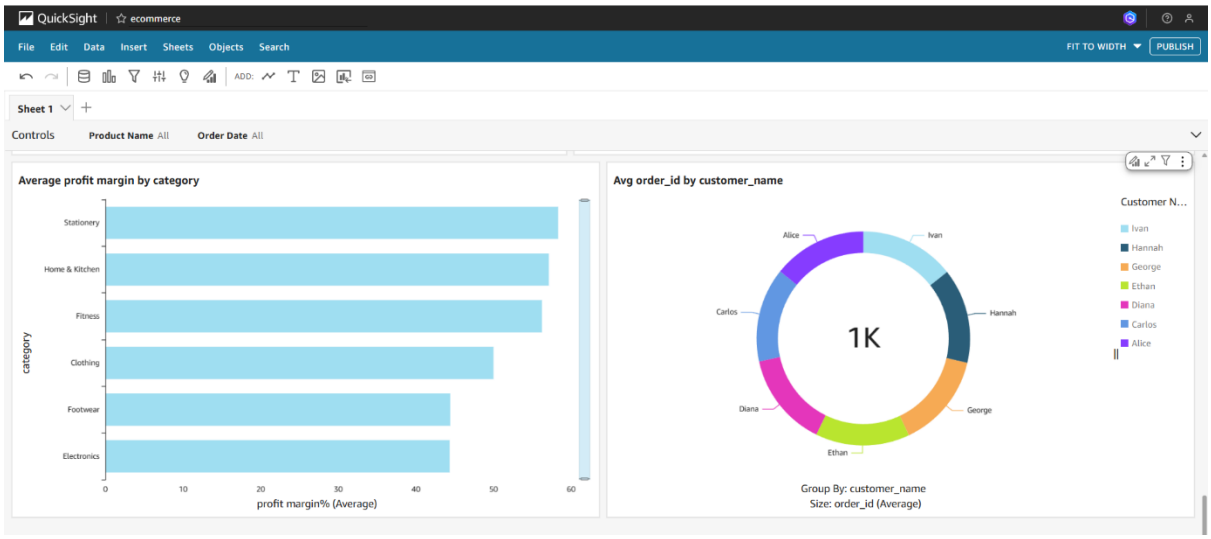

QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
Count of order id delivered
9
Delivered
Delivered
Sum of revenue by category
revenue (Sum)
₹6.00K
₹5.00K
₹4.00K
₹3.00K
₹2.00K
₹1.00K
₹0.00
Electronics
Fitness
Clothing
High discount order quantity
SHOWING UP TO 2500 DATA POINTS
quantity
0
1
2
3
4
0
10
20
30
40
avg discount %


QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
Avgerage of sub cateory
avg discount % (Average)
40
30
20
10
0
Wearables
avg discount % 31.71
Office
Lighting
Gear
Men
Audio
Wearables
Accessories
sub_category
Profit margin for each product
margin profit (Sum)
10,0...
8,00...
6,00...
4,00...
2,00...
0%
T-Shirt
Notebook
LED Lamp
Yoga Mat
Bluetooth ...
Smart Watch
Running Shoes
Wireless M...
product_name


QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
Average LTV by country
tlv by country (Average)
3K
2.5K
2K
1.5K
1K
0.5K
0
France
UK
Germany
India
USA
Mexico
Group By: country
Revenue by order id
order_id
1010
1005
1009
1006
1001
1008
1003
₹0.00
₹0.50K
₹1.00K
₹1.50K
₹2.00K
₹2.50K
₹3.00K
revenue (Sum)
Top 3 customers by lifetime value
revenue (Sum)
₹3.00K
₹2.50K
₹2.00K
₹1.50K
₹1.00K
₹0.50K
₹0.00
Ivan
Diana
Hannah
customer_name


QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
High shipping cost % and returns
SHOWING UP TO 2500 DATA POINTS
Order Status
Delivered
shipping_cost
60
50
40
30
20
10
0
₹0.00
₹0.30K
₹0.60K
₹0.90K
₹1.20K
₹1.50K
revenue
Highest shipping cost ratio by categories
shipping_cost_pct_of_revenue (Average)
0.1
0.08
0.06
0.04
0.02
0
Clothing
Stationery
Footwear
Home & Kitchen
Electronics
Fitness
category
Customers have placed more than one order
order_id (Count)
2
1.5
1
0.5
0
Alice
Diana
customer_name


QuickSight
ecommerce
File Edit Data Insert Sheets Objects Search
FIT TO WIDTH
PUBLISH
Sheet 1
Controls
Product Name All
Order Date All
Total revenue % from repeat customers
Legend
revenue
order_id
₹3.00K
₹2.50K
₹2.00K
₹1.50K
₹1.00K
₹0.50K
₹0.00
Ivan
Diana
Hannah
Ethan
Alice
George
Carlos
customer_name
Days have passed since each order placed
days since order (Average)
1,000
800
600
400
200
0
1,001
1,003
1,005
1,006
1,008
1,009
1,010
order_id
Order Date
Jan 10, 2023
Mar 15, 2023
May 10, 2023
Jun 14, 2023
Jul 2, 2023
Jul 20, 2023
Aug 1, 2023



Conclusion

This project helped me:

- Deepen my hands-on experience in AWS tools like S3, Redshift, and QuickSight.
- Understand business KPIs from a data-driven perspective.
- Applied SQL joins and calculated fields for BI reporting.