



***PROJECT***

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# ***INTRODUCTION***

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- Ryha Store is a footwear store located in Tangerang Selatan, Banten
- offer a wide range of products from both local and international brands
- Engage in sales through both offline and online channels

# PROJECT SCENARIO

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The Brief	<ul style="list-style-type: none"><li>• The management team is looking for a solution to monitor key performance indicators (<b>KPI</b>) such as sales, revenue, profit, and cost.</li><li>• Additionally, they need to be able to analyze the <b>geographical locations</b> of product sales</li></ul>
The Objective	<ul style="list-style-type: none"><li>• Manage and store raw data in a <b>MySQL database</b></li><li>• Connect MySQL database to <b>Power BI Desktop</b></li><li>• Explore the dataset and analyze it with <b>DAX</b></li><li>• Design an interactive <b>dashboard</b> to visualize the data</li></ul>

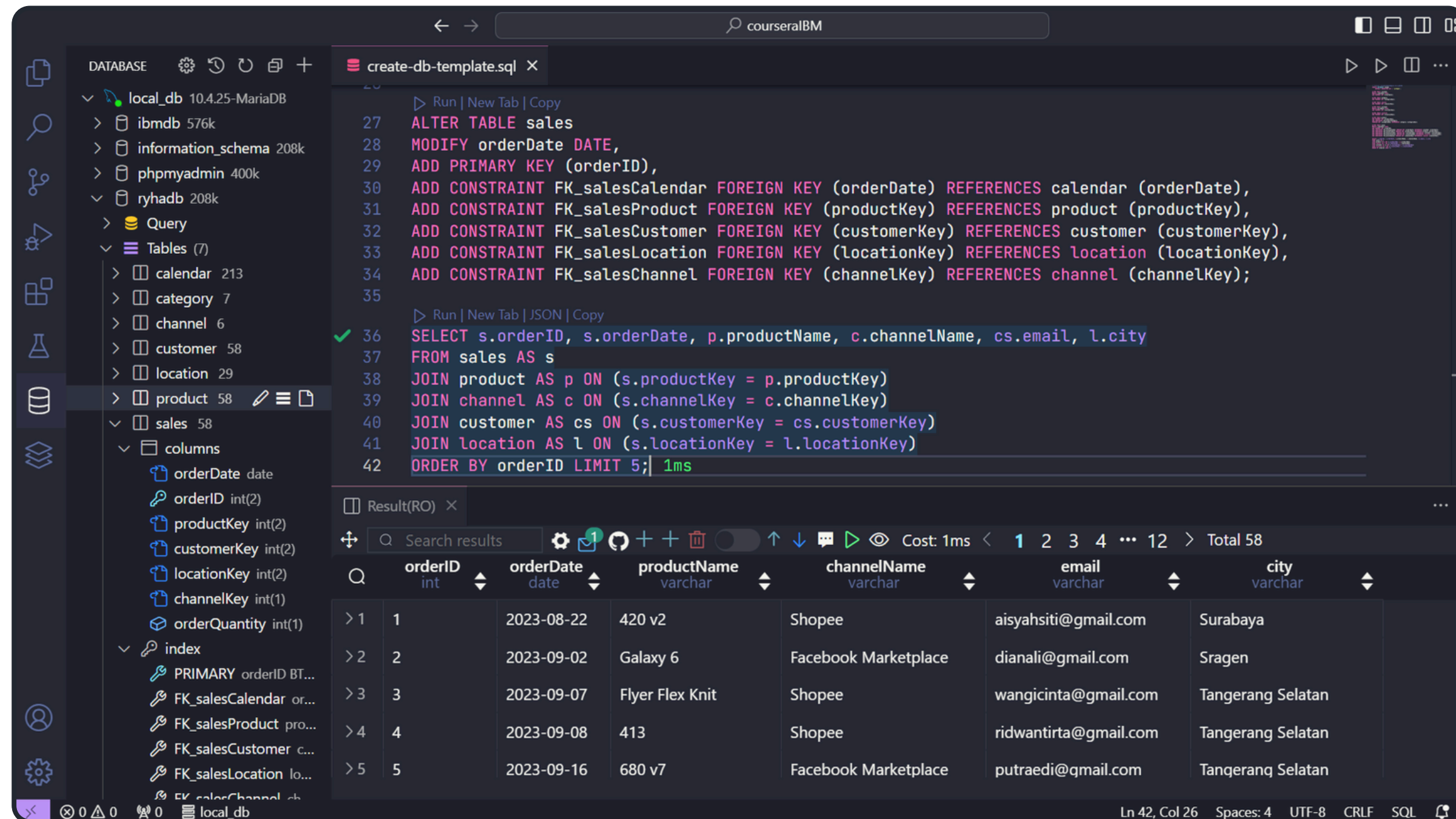
# SETUP

## Three Key Questions

Question	Answer
What <b>type of data</b> are you working with?	<ul style="list-style-type: none"><li>• Time-series</li><li>• Categorical</li><li>• Financial</li></ul>
What do you want to <b>communicate</b> ?	<ul style="list-style-type: none"><li>• Description (Card, KPI, Matrix Table)</li><li>• Comparison (Bar Chart, Line Chart)</li><li>• Distribution (Map)</li></ul>
Who is the <b>end user</b> and what do they need?	<ul style="list-style-type: none"><li>• The Executive (Establish clear, top-level KPIs to monitor business performance and health)</li></ul>

# MYSQL DATABASE

## 1. Store dataset from CSV file to MySQL database



The screenshot shows a MySQL database interface with a sidebar on the left listing databases and tables. The main area displays SQL queries and their results.

**SQL Queries:**

```
27 ALTER TABLE sales
28 MODIFY orderDate DATE,
29 ADD PRIMARY KEY (orderId),
30 ADD CONSTRAINT FK_salesCalendar FOREIGN KEY (orderDate) REFERENCES calendar (orderDate),
31 ADD CONSTRAINT FK_salesProduct FOREIGN KEY (productKey) REFERENCES product (productKey),
32 ADD CONSTRAINT FK_salesCustomer FOREIGN KEY (customerKey) REFERENCES customer (customerKey),
33 ADD CONSTRAINT FK_salesLocation FOREIGN KEY (locationKey) REFERENCES location (locationKey),
34 ADD CONSTRAINT FK_salesChannel FOREIGN KEY (channelKey) REFERENCES channel (channelKey);
35
36 SELECT s.orderID, s.orderDate, p.productName, c.channelName, cs.email, l.city
37 FROM sales AS s
38 JOIN product AS p ON (s.productKey = p.productKey)
39 JOIN channel AS c ON (s.channelKey = c.channelKey)
40 JOIN customer AS cs ON (s.customerKey = cs.customerKey)
41 JOIN location AS l ON (s.locationKey = l.locationKey)
42 ORDER BY orderID LIMIT 5;
```

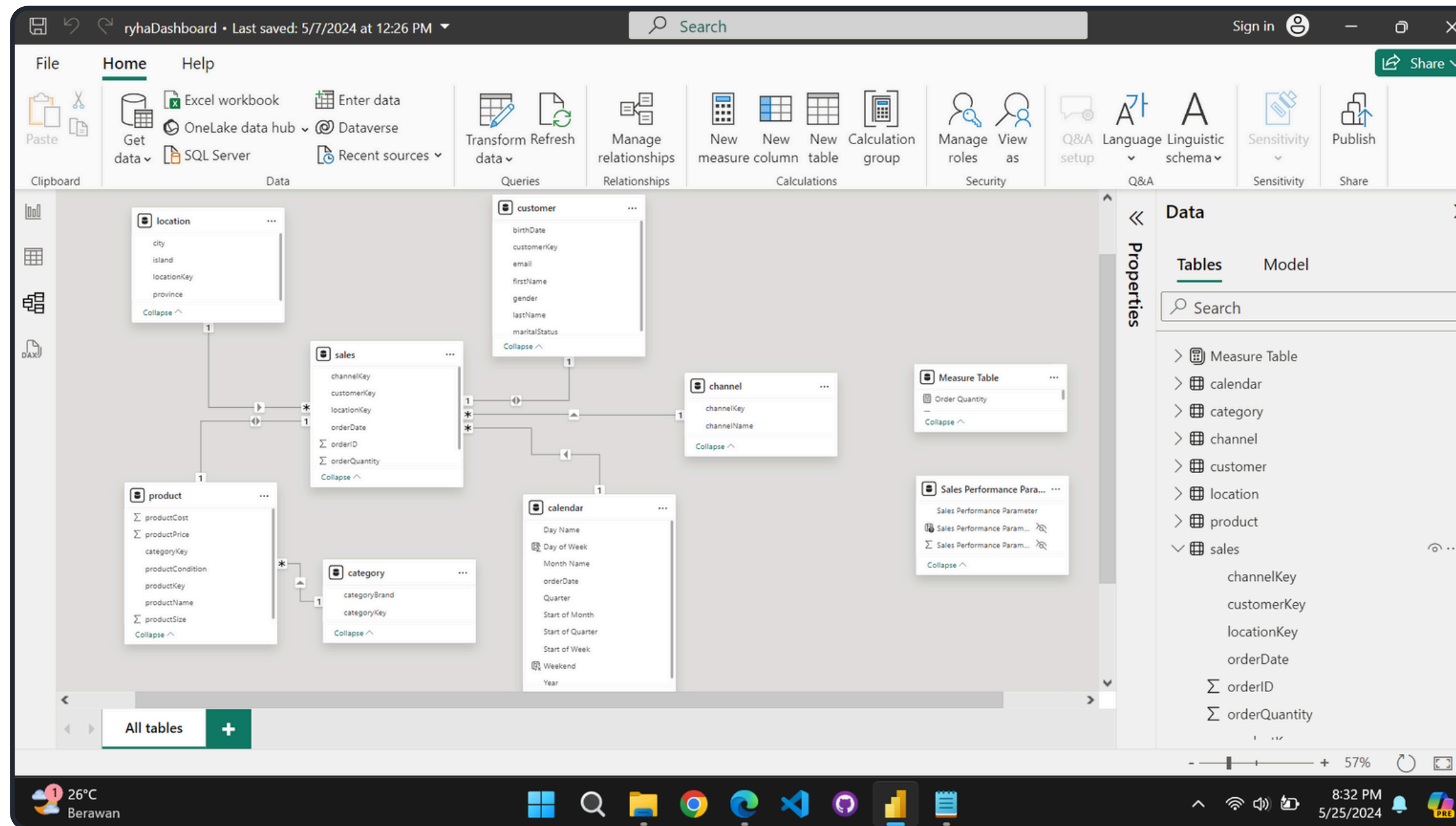
**Result Set:**

orderID	orderDate	productName	channelName	email	city
1	2023-08-22	420 v2	Shopee	aisyahsiti@gmail.com	Surabaya
2	2023-09-02	Galaxy 6	Facebook Marketplace	dianali@gmail.com	Sragen
3	2023-09-07	Flyer Flex Knit	Shopee	wangicinta@gmail.com	Tangerang Selatan
4	2023-09-08	413	Shopee	ridwantirta@gmail.com	Tangerang Selatan
5	2023-09-16	680 v7	Facebook Marketplace	putraedi@gmail.com	Tanqeranq Selatan

- The dataset consists of 8 tables:
  - 1 fact table:
    - sales
  - 7 dimensional tables:
    - calendar
    - category
    - channel
    - customer
    - location
    - product
- Create primary keys and foreign keys for tables in databases

# POWER BI DESKTOP

## 2. Connect MySQL database to Power BI Desktop



- The data model features a star schema, with a central fact table surrounded by associated dimension tables
- Sales table has a many-to-one relationship with the calendar, location, and channel tables
- Category table has one-to-many relationship with product table



# DAX

## 3. Explore the dataset and analyze it with DAX

The screenshot shows the Microsoft Power BI Desktop interface. The top ribbon includes 'File', 'Home', 'Help', and 'Table tools'. The 'Table tools' ribbon has options like 'Mark as date table', 'Manage relationships', 'New measure', 'Quick measure', 'New column', and 'New table'. The main area displays a table with 58 rows of data. The table has columns: orderDate, orderID, productKey, customerKey, locationKey, channelKey, and orderQuantity. The data spans from Tuesday, August 22, 2023, to Saturday, November 18, 2023. On the right, the 'Data' pane shows a search bar and a list of measures: Order Quantity, Previous Month Cost, Previous Month Profit, Previous Month Revenue, Total Cost, Total Orders, Total Profit, and Total Revenue. Below these are categories: calendar, category, channel, customer, location, product, sales, and Sales Performance Parameter. The bottom status bar shows 'Table: sales (58 rows)' and the system clock.

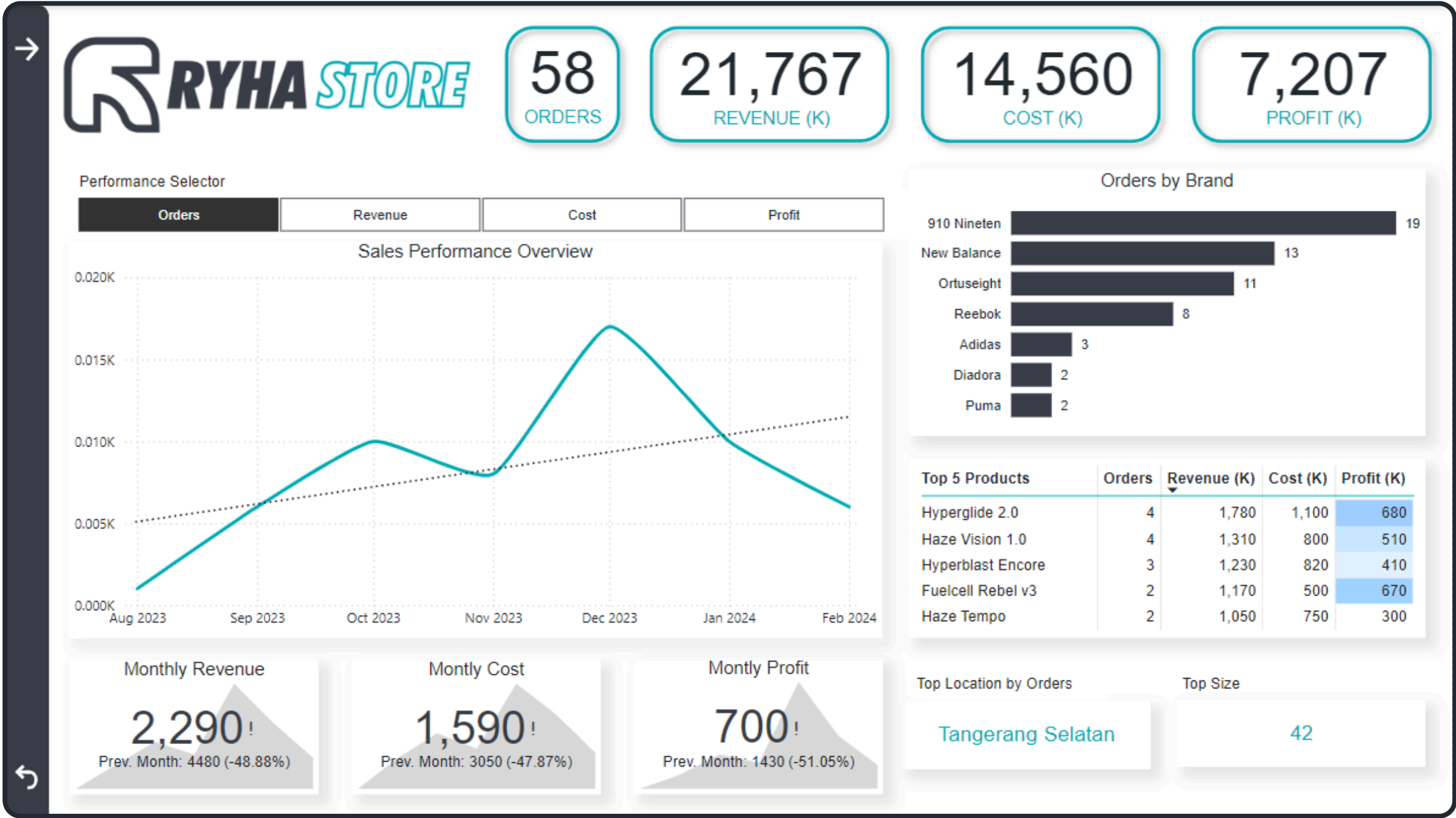
orderDate	orderID	productKey	customerKey	locationKey	channelKey	orderQuantity
Tuesday, August 22, 2023	1	31	35	26	2	1
Saturday, September 2, 2023	2	16	33	21	1	1
Thursday, September 7, 2023	3	42	37	6	2	1
Friday, September 8, 2023	4	52	34	6	2	1
Saturday, September 16, 2023	5	45	45	6	1	1
Tuesday, September 26, 2023	6	3	48	12	2	1
Friday, September 29, 2023	7	36	46	6	6	1
Monday, October 2, 2023	8	5	5	6	2	1
Tuesday, October 3, 2023	9	46	20	6	2	1
Tuesday, October 3, 2023	10	22	49	26	6	1
Friday, October 6, 2023	11	44	9	5	1	1
Saturday, October 7, 2023	12	29	12	13	6	1
Friday, October 13, 2023	13	38	7	15	2	1
Friday, October 13, 2023	14	2	24	11	2	1
Sunday, October 15, 2023	15	14	3	4	1	1
Tuesday, October 17, 2023	16	12	11	6	4	1
Thursday, October 19, 2023	17	27	8	6	2	1
Monday, November 13, 2023	18	7	25	7	5	1
Tuesday, November 14, 2023	19	48	23	11	2	1
Friday, November 17, 2023	20	53	16	13	2	1
Saturday, November 18, 2023	21	33	29	6	1	1

- Create a DAX measures to calculate the values of key performance indicators (KPIs)
- Create a DAX measure to calculate the cost, profit, and revenue for the previous month and compare it to the last month
- Group all measurements to the measure table
- The dataset has 58 orders from Aug 2023 until Feb 2024



# DASHBOARD

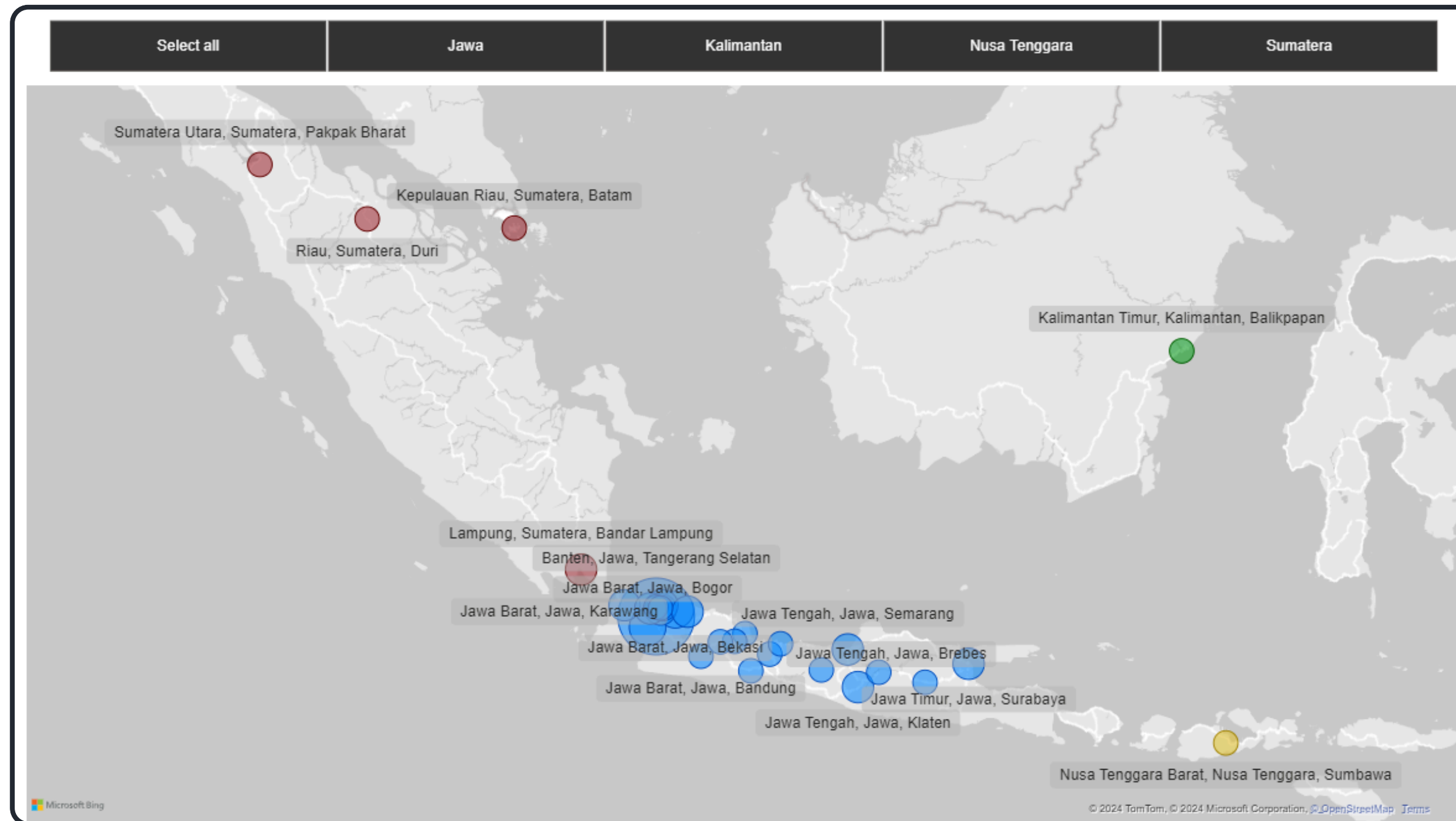
## 4. Design an interactive dashboard to visualize the data (tab 1)



- The sales performance line chart includes filters for adjusting KPI values and is grouped by monthly sales
- The bar chart displays order values by brand and is linked to a matrix table that shows the top 5 products
- The KPI cards below the line chart compare last month's values to the previous month's values

# DASHBOARD

## 4. Design an interactive dashboard to visualize the data (tab 2)



- The map chart includes a filter to group sales results by island location
- A drill-through function has been added to adjust the results by island, province, and city.

# CONCLUSION

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- Sales in **December 2023** had the **highest revenue** of any month
- The KPI in **February 2024 decreased** compared to the previous month
- The top brand by orders is **910 Nineten**, followed by New Balance and Ortuseight
- The **New Balance FuelCell Rebel v3** has the highest average profit per order
- Sales are dominated by the island of Java, with the highest number of orders in

**Tangerang Selatan**



***CONTACT ME | CLICKABLE***



Hary Yusuf



Hary Yusuf



+62 813 8652 2811



haryyusuf11@gmail.com