

Kimia Farma Business Performance 2020-2023

Kimia Farma - Big Data Analytics

Presented by
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I am a 6th-semester Informatics student with a strong passion for Data Science, Machine Learning, and Data Analysis. I have experience in analyzing complex datasets, building predictive models, and creating interactive visualizations using Python and other visualization tools. I have worked on projects such as sentiment analysis, gender detection, and e-commerce data analysis. In addition, I am also currently participating in a Project-Based Virtual Internship program at Kimia Farma, focusing on Big Data Analytics. I believe that data is a powerful tool for driving innovation and solving real-world problems in business and technology.

Courses and Certification

SQL (Advanced) Certificate | <https://www.hackerrank.com/certificates/iframe/02d242b4824d>

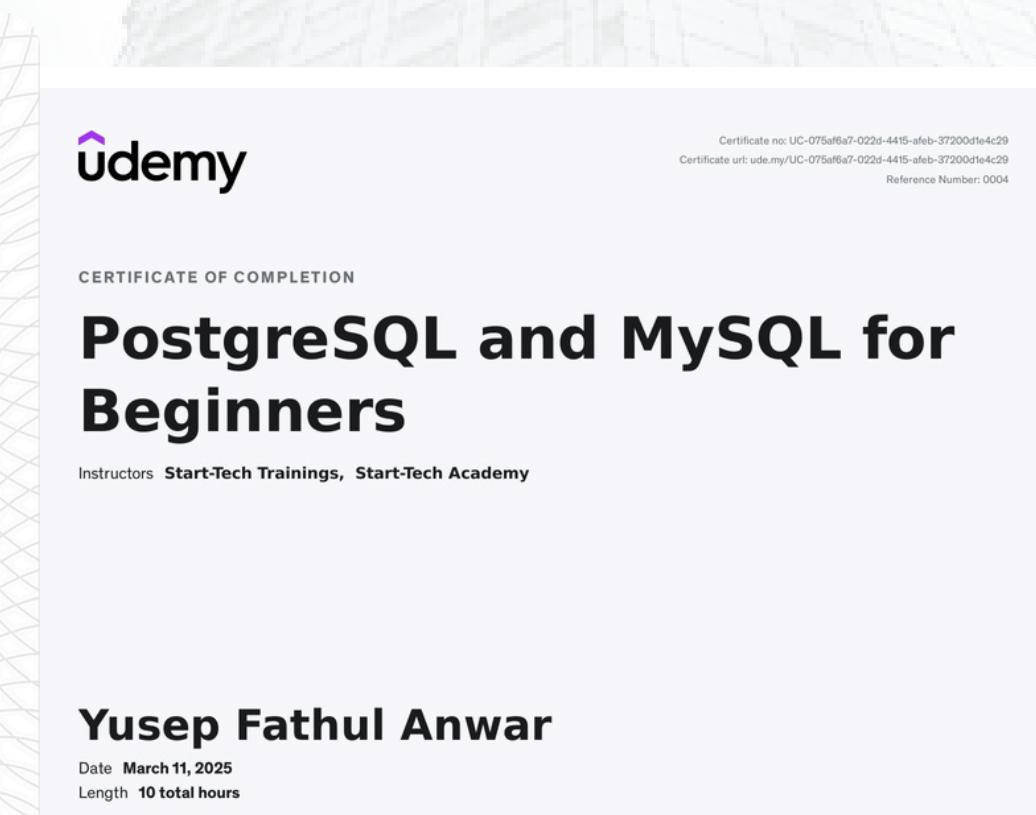
<Mar, 2025>

PostgreSQL and MySQL for Beginners | https://www.udemy.com/certificate/UC-075af6a7-022d-4415-afeb-37200d1e4c29/?utm_campaign=email&utm_medium=email&utm_source=sendgrid.com

<Mar, 2025>

Python for Data Science Pro: The Complete Mastery Course | https://www.udemy.com/certificate/UC-ff2814d4-19f4-4b90-ae56-33af8e06f767/?utm_campaign=email&utm_medium=email&utm_source=sendgrid.com

<Mar, 2025>



About Company

Kimia Farma is the first pharmaceutical industry company in Indonesia, founded by the Dutch East Indies government in 1817. The company's original name was NV Chemicalien Handle Rathkamp & Co. Based on the nationalization policy of former Dutch companies in the early years of independence, in 1958, the Government of the Republic of Indonesia merged several pharmaceutical companies into PNF (State Pharmaceutical Company) Bhinneka Kimia Farma. Then, on August 16, 1971, the legal status of PNF was changed to a Limited Liability Company (Perseroan Terbatas), thus the company's name changed to PT Kimia Farma (Persero).



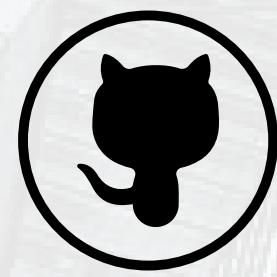
kimia farma

The logo for Kimia Farma features the company name in a bold, blue, sans-serif font. Above the text is a stylized graphic element consisting of a yellow semi-circle with a dotted pattern transitioning into a solid yellow shape.

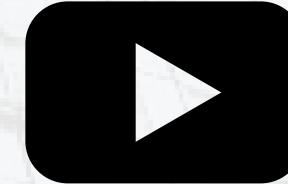
Project Portfolio

Kimia Farma, as one of the largest pharmaceutical companies in Indonesia, needed an in-depth analysis of its business performance to improve operational efficiency. With historical data from 2020 to 2023, this analysis aims to identify revenue trends, branch performance, and profit distribution across provinces. The data includes transaction date, branch name and province, total transactions, nett sales, profit, and transaction rating.

The analysis focuses on several key aspects, such as annual revenue comparison, identification of branches with the highest total transactions and nett sales, and search for branches with high ratings but low transactions. In addition, a geo map will be used to visualize the distribution of total profit per province. With an interactive dashboard in Looker Studio, the results of this analysis are expected to help Kimia Farma's management in making strategic decisions.

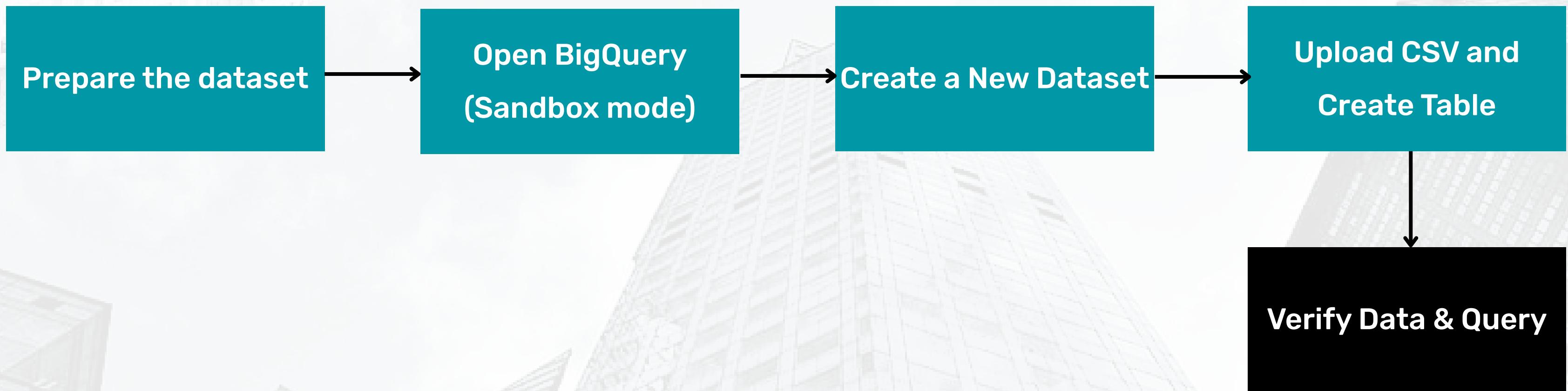


[My Github](#)



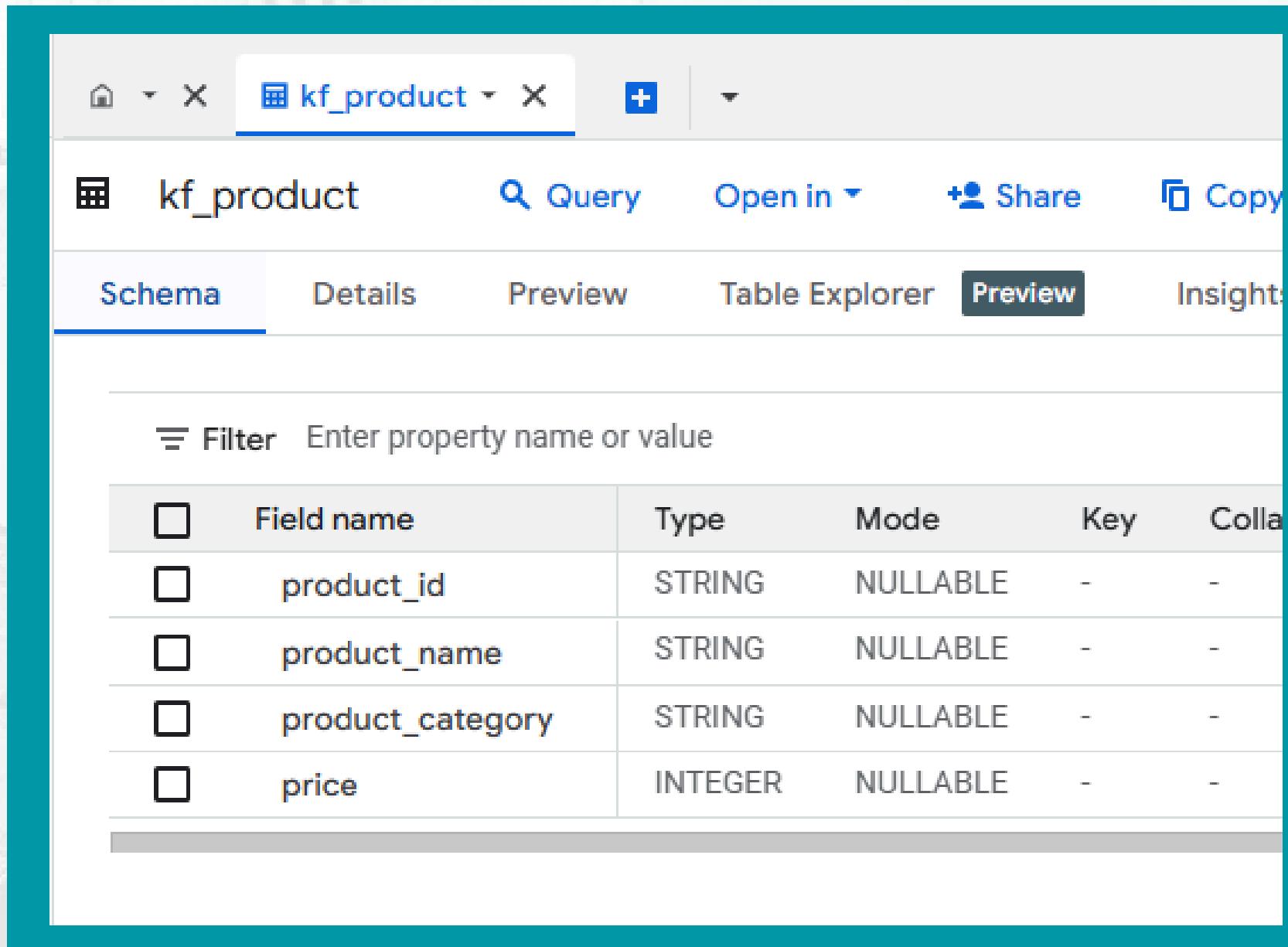
[My Youtube](#)

1. Importing Dataset to BigQuery



2. Tabel Analisa

- kf_product



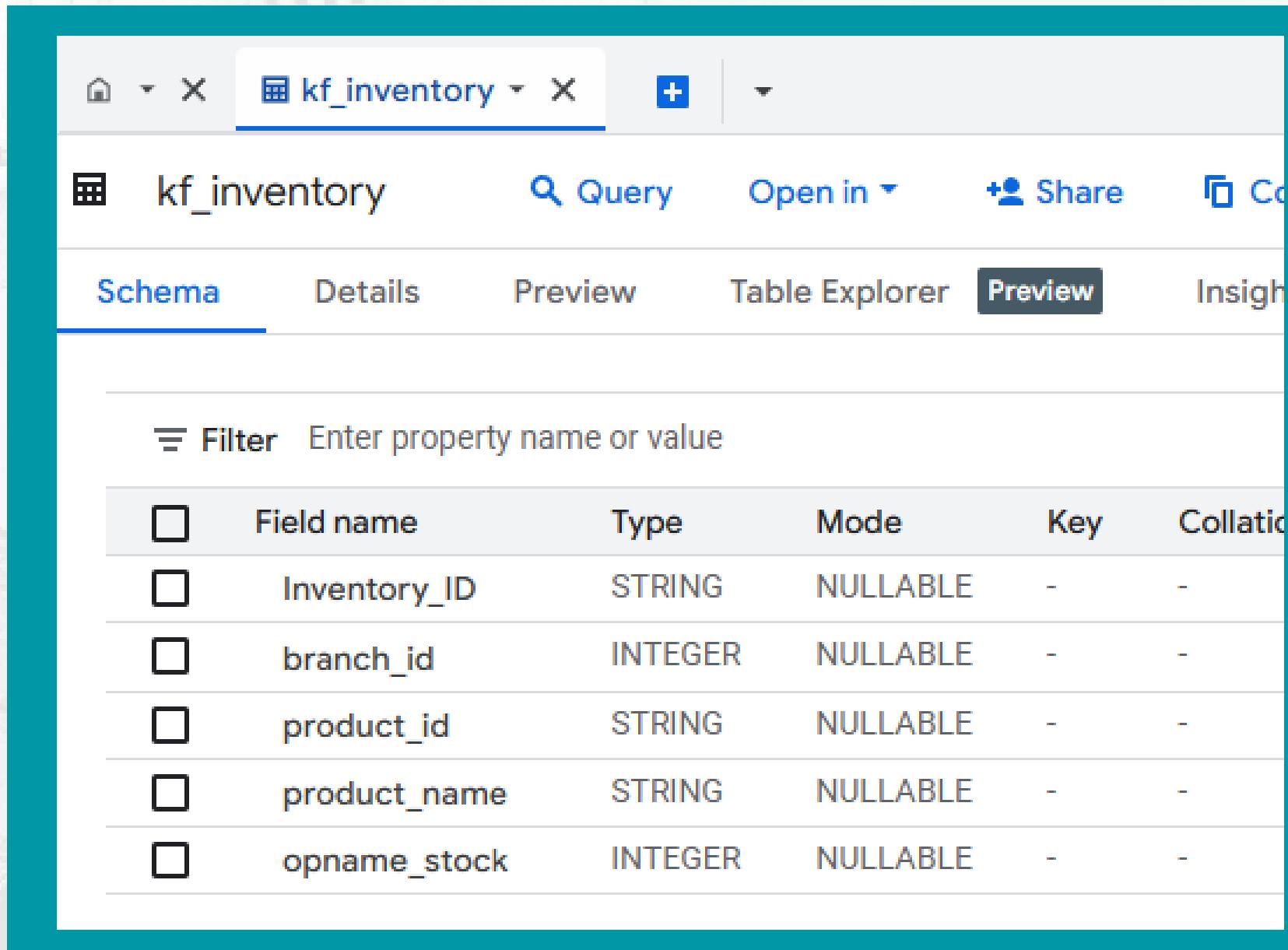
The screenshot shows a database interface with a teal header bar. The title bar says "kf_product". Below it, there are tabs: Schema (which is selected), Details, Preview, Table Explorer, Preview (which is highlighted in blue), and Insights. A search bar says "Query". There are also "Open in", "Share", and "Copy" buttons. A "Filter" input field is present. The main area displays a table with the following columns:

<input type="checkbox"/> Field name	Type	Mode	Key	Collation
<input type="checkbox"/> product_id	STRING	NULLABLE	-	-
<input type="checkbox"/> product_name	STRING	NULLABLE	-	-
<input type="checkbox"/> product_category	STRING	NULLABLE	-	-
<input type="checkbox"/> price	INTEGER	NULLABLE	-	-

The kf_product table contains information about products sold at Kimia Farma, consisting of product_id as the unique identifier for each product, product_name which lists the product name, product_category for grouping products by their type, and price which indicates the product's selling price.

Tabel Analisa

- kf_inventory



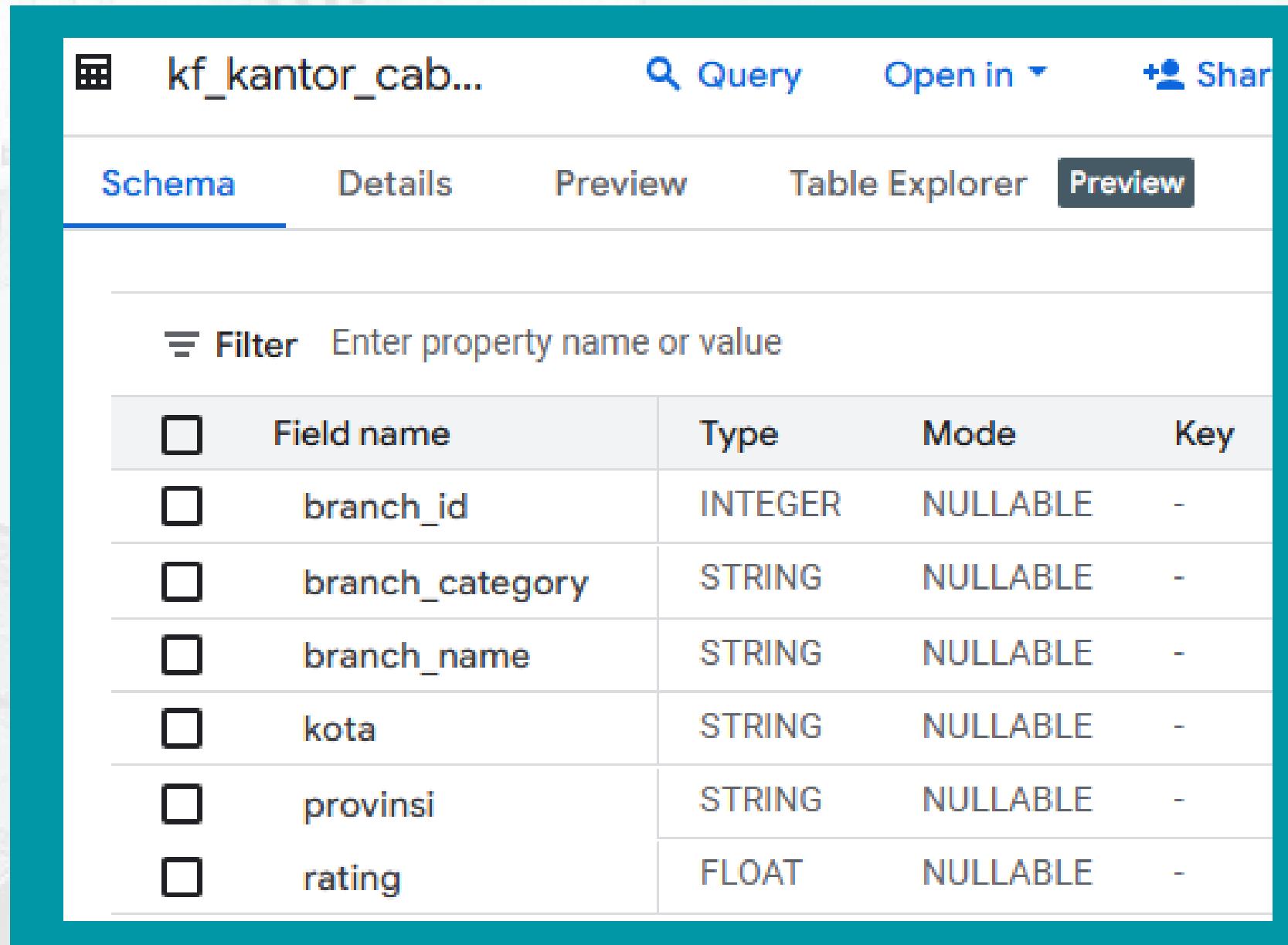
The screenshot shows the schema of the kf_inventory table. The table has six columns: Inventory_ID, branch_id, product_id, product_name, and opname_stock. All columns are of type STRING or INTEGER and are nullable.

Field name	Type	Mode	Key	Collation
Inventory_ID	STRING	NULLABLE	-	-
branch_id	INTEGER	NULLABLE	-	-
product_id	STRING	NULLABLE	-	-
product_name	STRING	NULLABLE	-	-
opname_stock	INTEGER	NULLABLE	-	-

The kf_inventory table contains data about product stock at each Kimia Farma branch. The Inventory_ID column serves as a unique identification for each stock entry, branch_id indicates the branch where the product is available, product_id links the product to other tables, product_name lists the product name, and opname_stock records the amount of stock available based on the stock-taking process.

Tabel Analisa

- kf_kantor_cabang



The screenshot shows a database schema viewer with the following details:

Table: kf_kantor_cabang

Schema View: Selected

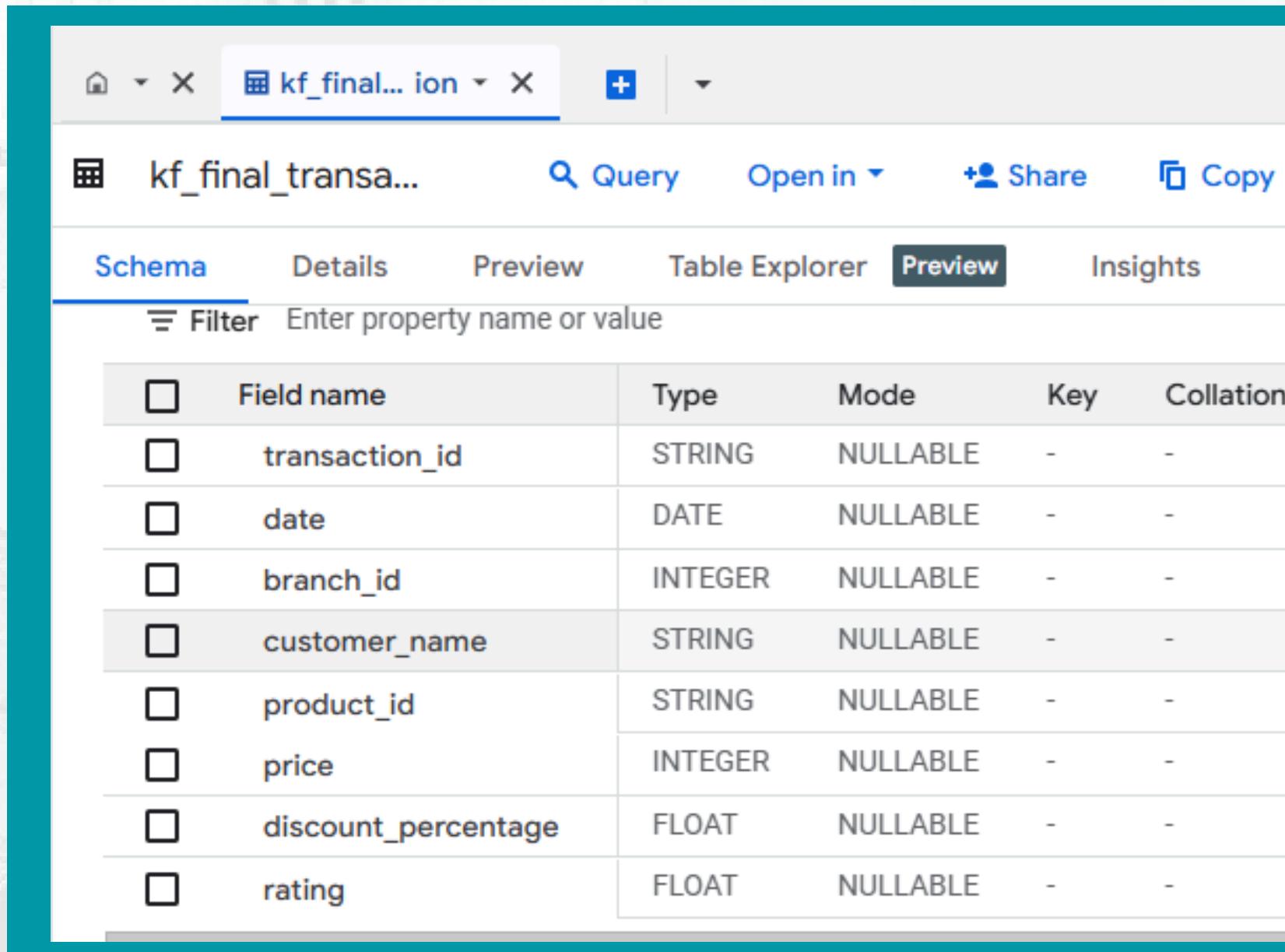
Columns:

Field name	Type	Mode	Key
branch_id	INTEGER	NULLABLE	-
branch_category	STRING	NULLABLE	-
branch_name	STRING	NULLABLE	-
kota	STRING	NULLABLE	-
provinsi	STRING	NULLABLE	-
rating	FLOAT	NULLABLE	-

The kf_kantor_cabang table contains information about Kimia Farma branches in various regions. The branch_id column serves as a unique identification for each branch, branch_category classifies the type of branch, branch_name lists the branch name, city and province indicate its geographical location, while the rating reflects the branch's service quality based on customer reviews.

Tabel Analisa

- kf_final_transactions



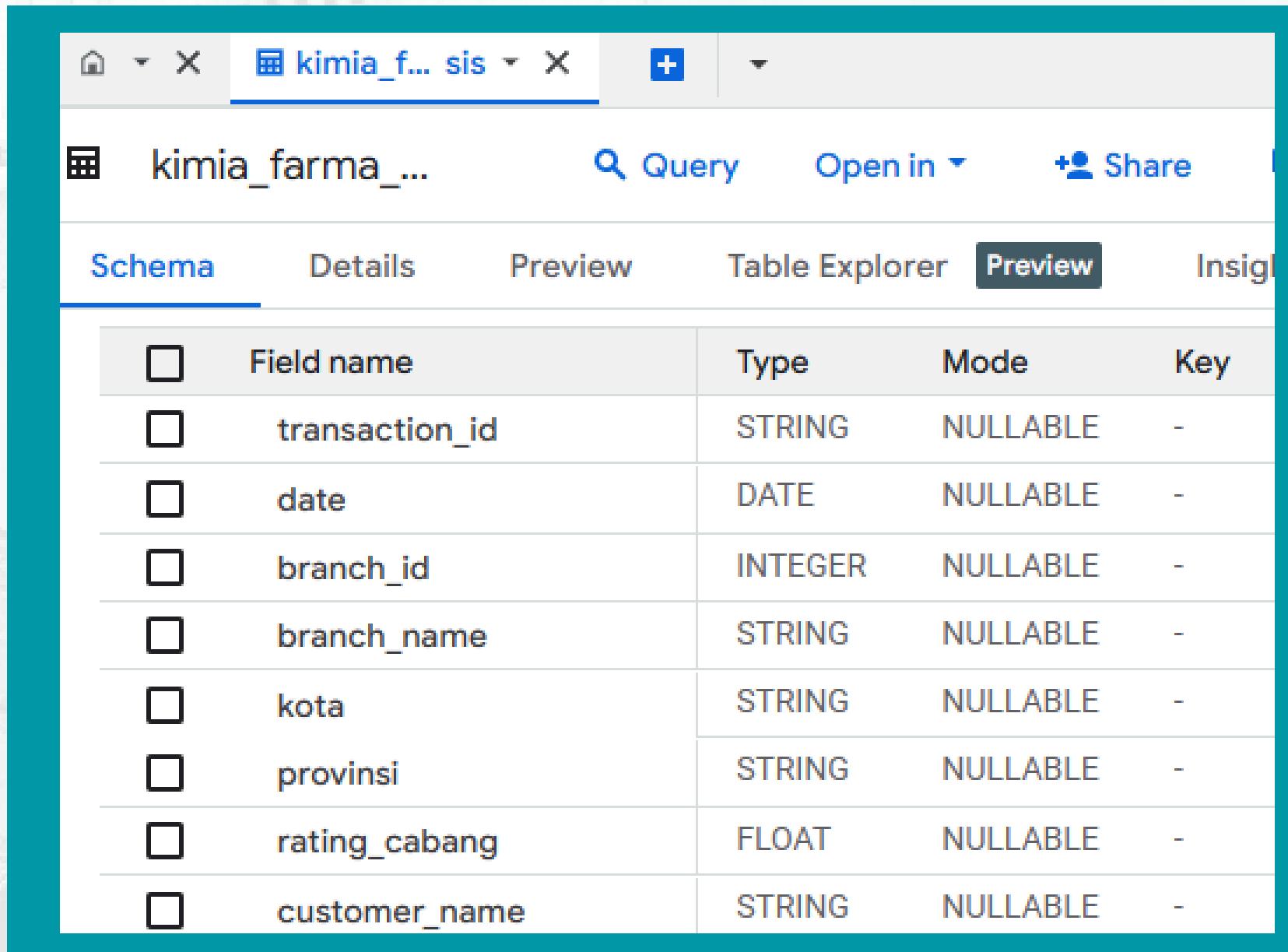
The screenshot shows the schema of the kf_final_transactions table. The table has nine columns:

Field name	Type	Mode	Key	Collation
transaction_id	STRING	NULLABLE	-	-
date	DATE	NULLABLE	-	-
branch_id	INTEGER	NULLABLE	-	-
customer_name	STRING	NULLABLE	-	-
product_id	STRING	NULLABLE	-	-
price	INTEGER	NULLABLE	-	-
discount_percentage	FLOAT	NULLABLE	-	-
rating	FLOAT	NULLABLE	-	-

The kf_final_transactions table contains transaction data that occurs at the Kimia Farma branch. The transaction_id column serves as a unique identification for each transaction, date records the date of the transaction, and branch_id indicates the location of the branch where the transaction occurred. customer_name stores the customer's name, while product_id identifies the product purchased. price indicates the price of the product before the discount, discount_percentage records the percentage discount given, and rating represents the customer's assessment of the transaction.

Tabel Analisa

- **kimia_farma_analysis**



The screenshot shows the schema of the **kimia_farma_analysis** table. The table has 9 columns:

Field name	Type	Mode	Key
transaction_id	STRING	NULLABLE	-
date	DATE	NULLABLE	-
branch_id	INTEGER	NULLABLE	-
branch_name	STRING	NULLABLE	-
kota	STRING	NULLABLE	-
provinsi	STRING	NULLABLE	-
rating_cabang	FLOAT	NULLABLE	-
customer_name	STRING	NULLABLE	-

The **kimia_farma_analysis** table contains transaction data that includes information on branches, customers, products, as well as financial analysis and customer satisfaction. Each transaction is identified by **transaction_id** and **date**, while branches are recorded through **branch_id**, **branch_name**, **city**, and **province**, with an additional **rating_cabang** as an indicator of branch quality. Customer information includes **customer_name**, while the product purchased is recorded in **product_id**, **product_name**, and **actual_price** before discount and **discount_percentage** given. From the financial side, this table records **nett_sales** as the net revenue after discount as well as the **percentage_gross_profit** and **nett_profit** to analyze the profit. In addition, **rating_transactions** is used to evaluate customer satisfaction with transactions.

3. BigQuery Syntax

```
CREATE OR REPLACE TABLE ascendant-ridge-454416-m4.kimia_farma.kimia_farma_analysis AS
```

Create a new table called `kimia_farma_analysis`. If a table with the same name already exists, it will be deleted and replaced with the new table.

BigQuery Syntax

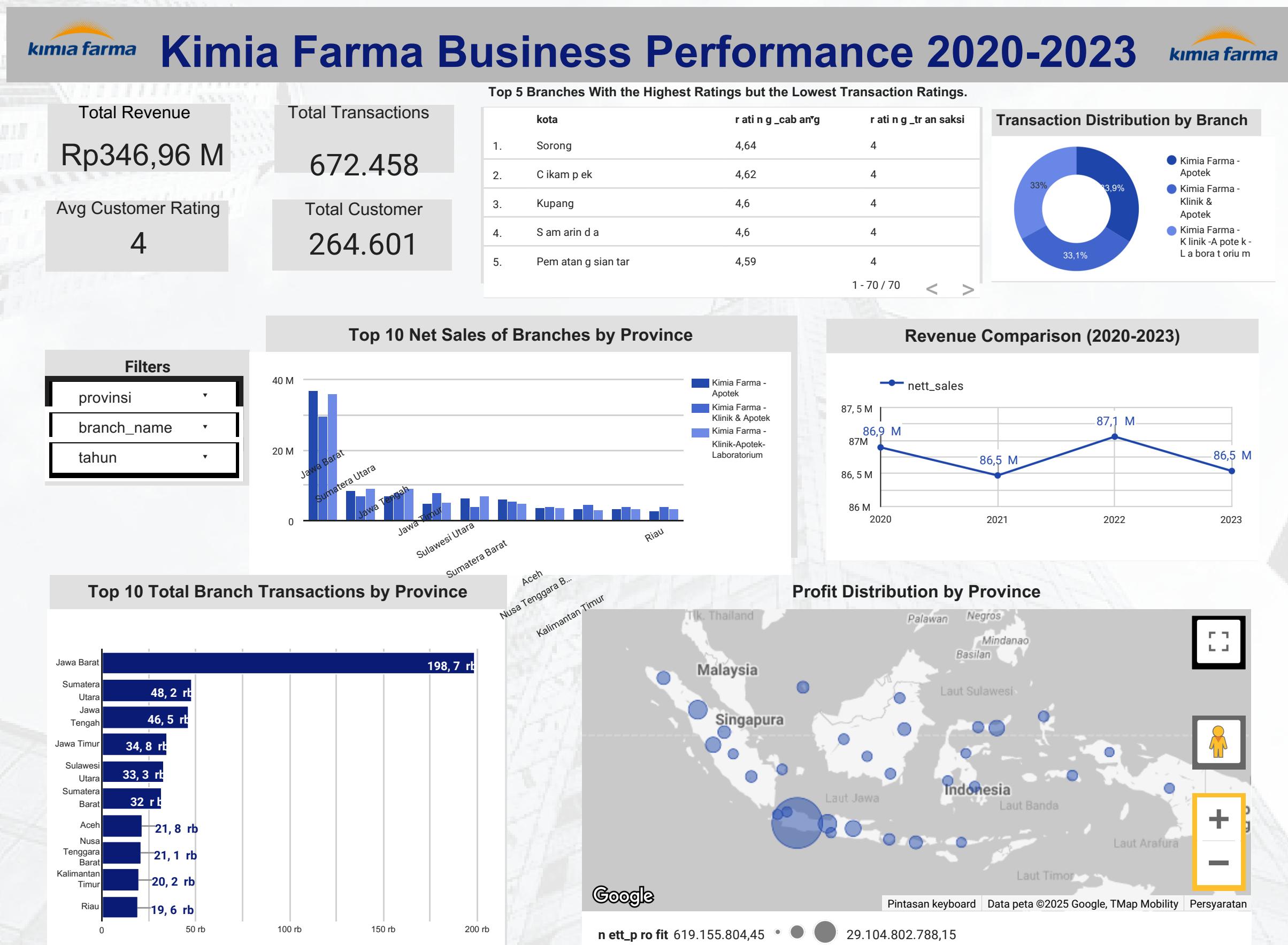
```

SELECT
    t.transaction_id,
    t.date,
    c.branch_id,
    c.branch_name,
    c.kota,
    c.provinsi,
    c.rating AS rating_cabang,
    t.customer_name,
    p.product_id,
    p.product_name,
    t.price AS actual_price,
    t.discount_percentage,
    (t.price - (t.price * t.discount_percentage / 100)) AS nett_sales,
    CASE
        WHEN t.price <= 50000 THEN 0.10
        WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15
        WHEN t.price > 100000 AND t.price <= 300000 THEN 0.20
        WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
        ELSE 0.30
    END AS persentase_gross_laba,
    ((t.price - (t.price * t.discount_percentage / 100)) *
    CASE
        WHEN t.price <= 50000 THEN 0.10
        WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15
        WHEN t.price > 100000 AND t.price <= 300000 THEN 0.20
        WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
        ELSE 0.30
    END) AS nett_profit,
    t.rating AS rating_transaksi
FROM ascendant-ridge-454416-m4.kimia_farma.kf_final_transaction t
JOIN ascendant-ridge-454416-m4.kimia_farma.kf_kantor_cabang c ON t.branch_id = c.branch_id
JOIN ascendant-ridge-454416-m4.kimia_farma.kf_product p ON t.product_id = p.product_id;

```

This SQL query retrieves comprehensive transactional data by joining three tables: kf_final_transaction, kf_kantor_cabang, and kf_product. It selects essential information such as transaction ID, date, customer name, product details, and branch location. The query calculates the nett_sales by applying a discount to the original price and determines the nett_profit by multiplying the discounted price with a profit margin that varies based on the product price range. It also includes the branch rating (rating_cabang) and transaction rating (rating_transaksi). This combined dataset is useful for further analysis and building business insights related to sales performance, customer behavior, and profitability across different branches and products.

4. Dashboard Performance Analytics



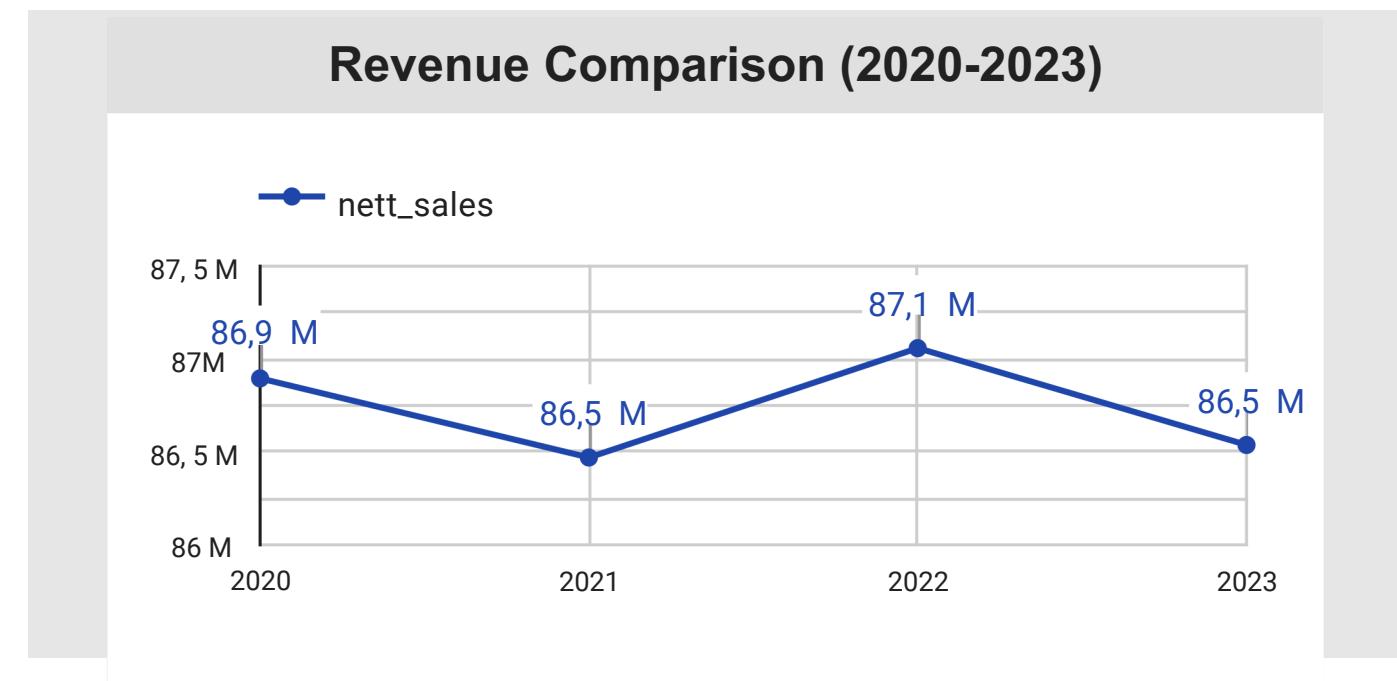
Link dashboard : [click here](#)

5. Business Questions

1. How has Kimia Farma's revenue performance evolved annually from 2020 to 2023?
2. What is the overall sales performance in terms of total transactions, revenue, and customer reach?
3. What is the average customer satisfaction level across all branches?
4. Which branches demonstrate high customer ratings but low transaction volumes, indicating potential underutilization?
5. How are transactions geographically distributed across branches and provinces?
6. Which provinces and branches contribute most significantly to net sales performance?
7. Which provinces have the highest transaction volumes, and how does this reflect customer engagement and regional performance?

6. Performance Insights & Business Answer

How has Kimia Farma's revenue performance evolved annually from 2020 to 2023?



Kimia Farma's revenue (nett sales) remained stable, ranging between IDR 86–87 billion per year, indicating no significant spikes or drops throughout the 2020–2023 period.

Performance Insights & Business Answer

How is the overall sales performance in terms of total transactions, revenue, and customer reach?

What is the average customer satisfaction rating across all branches?

Total Revenue

Rp346,96 M

Total Transactions

672.458

Avg Customer Rating

4

Total Customer

264.601

Overall sales performance is strong, with total revenue of IDR 346.96 billion, total transactions reaching 672,458, and customer reach of 264,601 individuals.

The average customer rating across branches is 4 out of 5, indicating that most customers are generally satisfied with the services provided.

Performance Insights & Business Answer

Which branches demonstrate high customer ratings but low transaction volumes, indicating potential underutilization?

Top 5 Branches With the Highest Ratings but the Lowest Transaction Ratings.

	kota	rating_cabang	rating_transaksi
1.	Sorong	4,64	4
2.	Cikampek	4,62	4
3.	Kupang	4,6	4
4.	Samarinda	4,6	4
5.	Pematangsiantar	4,59	4

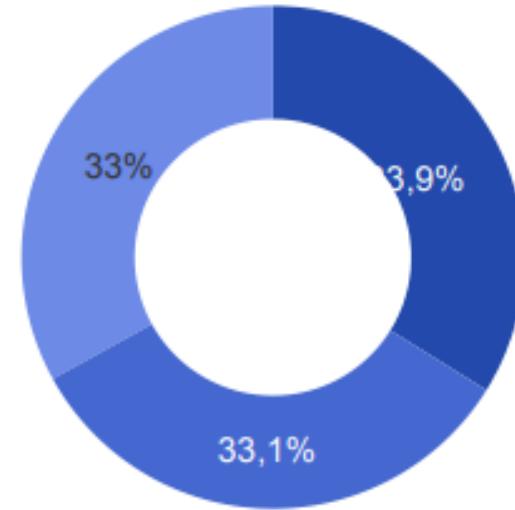
1 - 70 / 70 < >

Branches such as Sorong, Cikampek, Kupang, Samarinda, and Pematangsiantar show high customer ratings but low transactions, indicating untapped growth potential.

Performance Insights & Business Answer

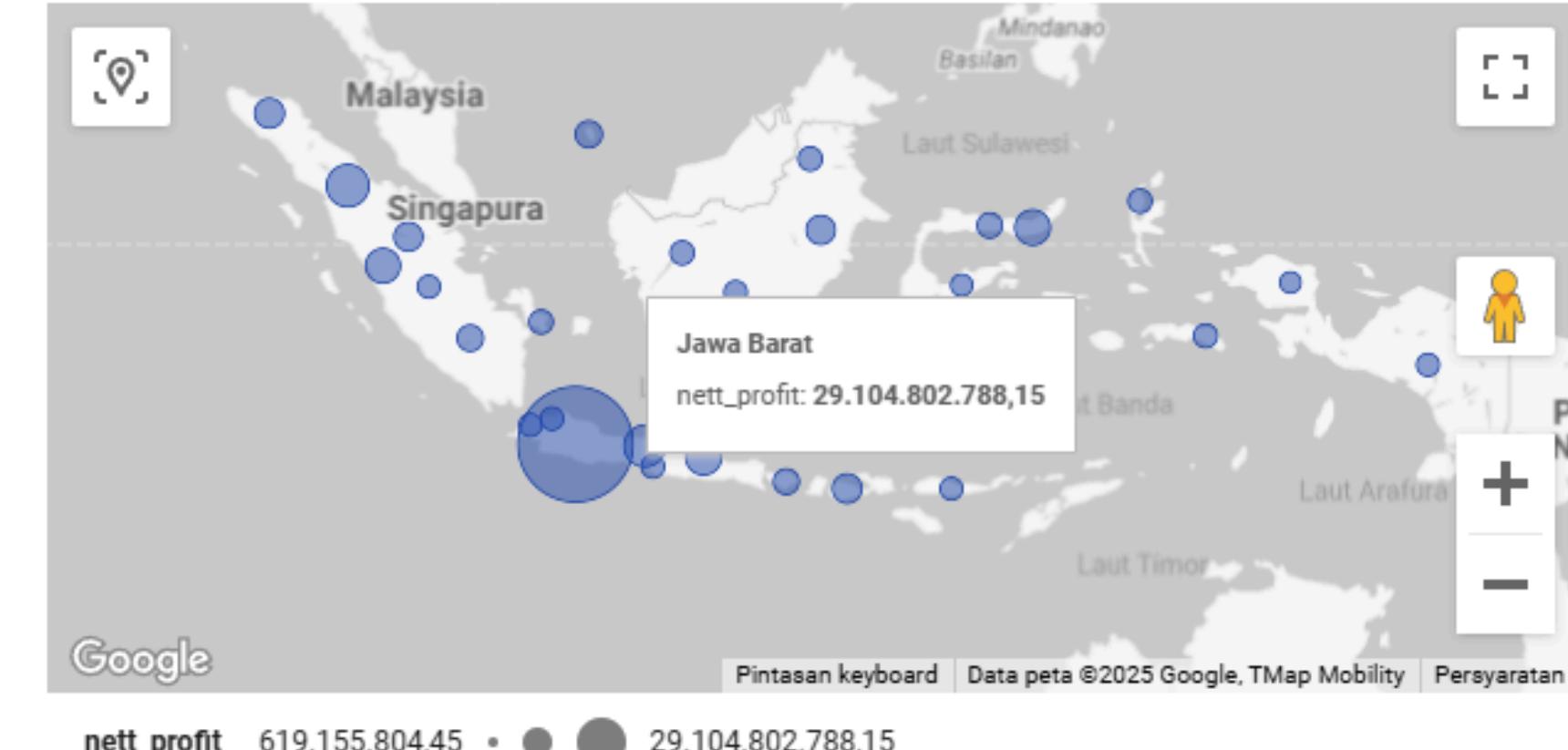
How are transactions geographically distributed across branches and provinces?

Transaction Distribution by Branch



- Kimia Farma - Apotek
- Kimia Farma - Klinik & Apotek
- Kimia Farma - Klinik-Apotek-Laboratorium

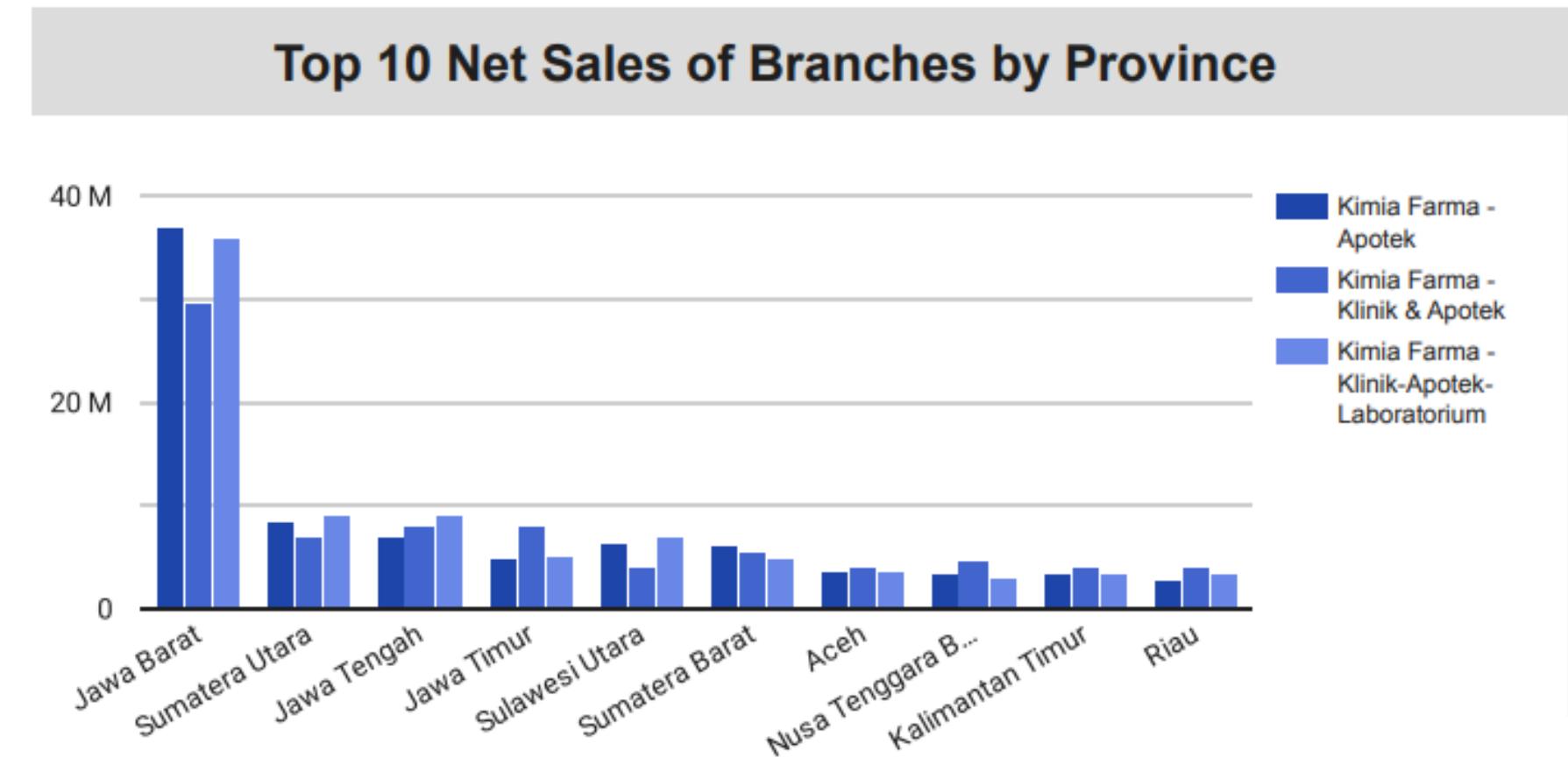
Profit Distribution by Province



West Java has the highest transaction volume, followed by North Sumatra and Central Java, showing a concentration of business activity in these regions. The branch types are also relatively balanced between Kimia Farma - Apotek, Kimia Farma - Klinik & Apotek, and Kimia Farma - Klinik, Apotek, Laboratorium.

Performance Insights & Business Answer

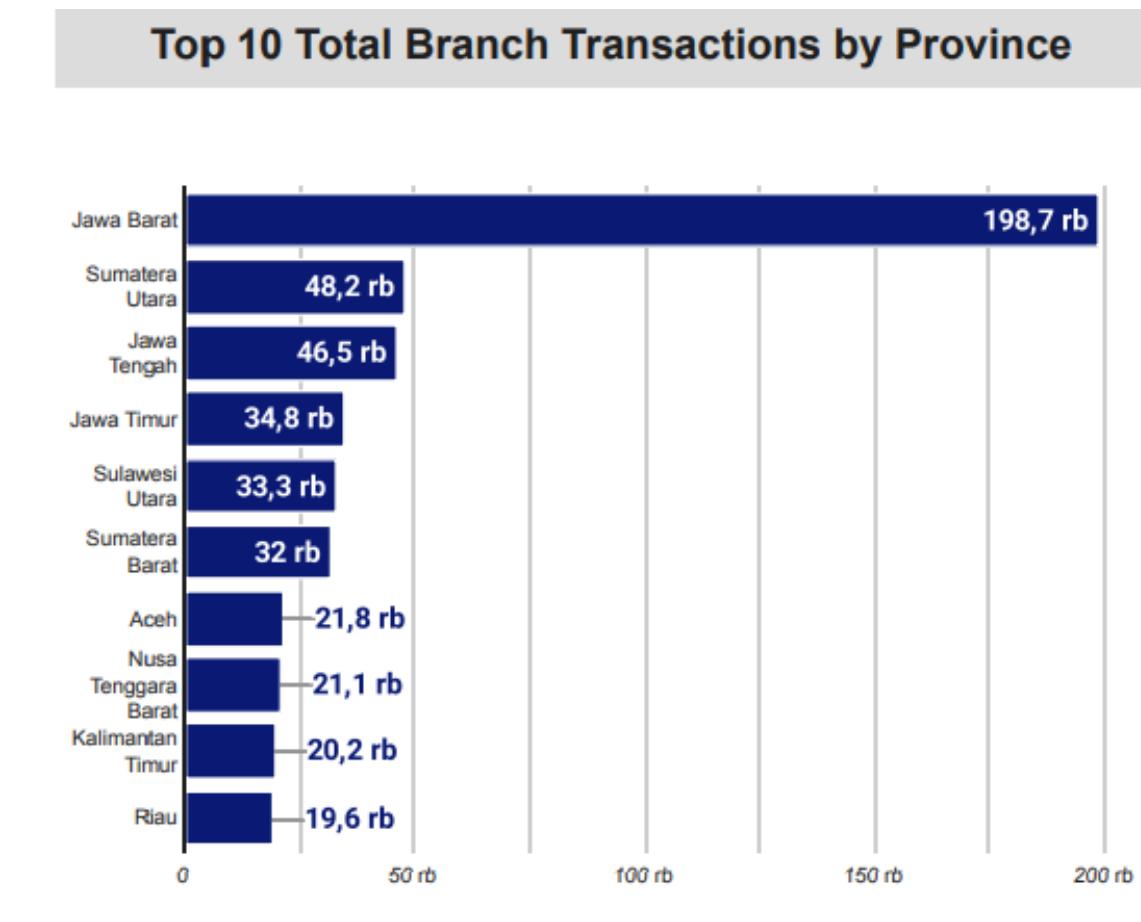
Which provinces and branches contribute most significantly to net sales performance?



The provinces contributing the most to net sales are West Java, followed by North Sumatra, Central Java, and East Java, indicating the core business strength lies in western and central Indonesia.

Performance Insights & Business Answer

Which provinces have the highest transaction volumes, and how does this reflect customer engagement and regional performance?



The chart shows that Jawa Barat (West Java) dominates with 198.7k transactions, far ahead of other provinces like Sumatera Utara (48.2k) and Jawa Tengah (46.5k). This indicates that West Java is the most active region in terms of customer transactions, reflecting high customer engagement and possibly stronger branch presence or accessibility in that province.

7. Recommendation

What we should do

1. Enhance Performance of Branches with High Ratings but Low Transactions.

→ Conduct promotional campaigns or adjust sales strategies in these branches, as they have good market potential based on customer ratings but have not yet reached optimal sales levels.

2. Maintain and Optimize Branches in Provinces with the Highest Net Sales.

→ Focus resource allocation, product stock, and marketing strategies on branches that contribute significantly to net sales to remain competitive and sustain performance.

3. Expand Market in Provinces with High Profit Margins

→ Provinces that demonstrate high profitability can be targeted for further expansion, as they have proven capable of delivering strong margins.

Thank You

