Rakamin Academy X kimia farma

Presented by
FADIA TRI SEPTIANI

Performance Analytics Kimia Farma Business Year 2020-2023

Project Based Internship

github.com/fadiatriseptiani

INTRODUCTION

Fresh Graduate of Geophysics from Universitas Padjadjaran with a strong interest in the field of data. Experienced in data collection, statistical analysis, and data visualization using tools such as Excel, Google Colab, SQL Tools, Looker Studio, Power BI, and QGIS. Published scientific research (Sinta 3 accredited) and guided data-driven academic projects. Passionate about transforming complex datasets into actionable insights. Adept at teamwork, problem-solving, and continuous learning in a dynamic, collaborative environment.

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SELANJUTNYA

ABOUT COMPANY

- Indonesia's first pharmaceutical company, established in 1817.
- Part of the state-owned pharmaceutical holding.
- Integrated business: R&D, manufacturing, distribution, and healthcare services.

With the support of modern technology and professional human resources, Kimia Farma is committed to providing high-quality, safe and affordable healthcare products and services. Through continuous innovation, Kimia Farma continues to strengthen its role as a trusted integrated healthcare company at both the national and global levels.

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PROJECT PORTFOLIO

This project aims to transform raw pharmaceutical business data into meaningful insights that support strategic decision-making within Kimia Farma.

Tools: BigQuery and Looker Studio

IMPORTING DATASET TO BIGQUERY

The process begins with collecting and importing multiple data sources into Google BigQuery. This cloud-based data warehouse enables fast query performance and efficient data management at scale. By leveraging BigQuery, the raw transaction records, product information, and branch details were consolidated to ensure centralized and secure access for further analysis.

BUILDING ANALYTICAL TABLES

New analytical tables were created to highlight key performance metrics such as revenue growth, sales volume, discount trends, and customer behavior across business units.

CREATING DASHBOARD

The dashboard presents interactive charts covering product profitability, branch performance, seasonal trends, and overall business growth. These analytics empower stakeholders to identify improvement opportunities and make data-driven decisions that enhance competitive advantage.

DATA UNDERSTANDING

DATASET 1

kf_final_transaction:

transaction_id: transaction id code
product_id: product id code
branch_id: branch id code
customer_name: name of the customer
date: date of the transaction
price: the product price
discount_percentage: the percentage of discount given
rating: customer assessment of transaction

DATASET 2

kf_product:

product_id: product id code
product_name: name of the product
product_category: category of the product
price: the product price

DATA UNDERSTANDING

DATASET 3

kf_inventory:

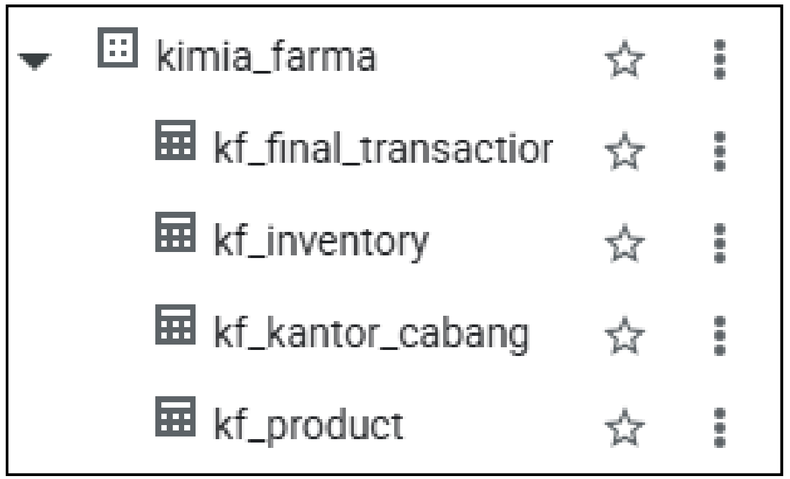
inventory_id: product inventory id code
branch_id: branch id code
product_id: product id code
product_name: name of the product
opname_stock: stock amount of products

DATASET 4

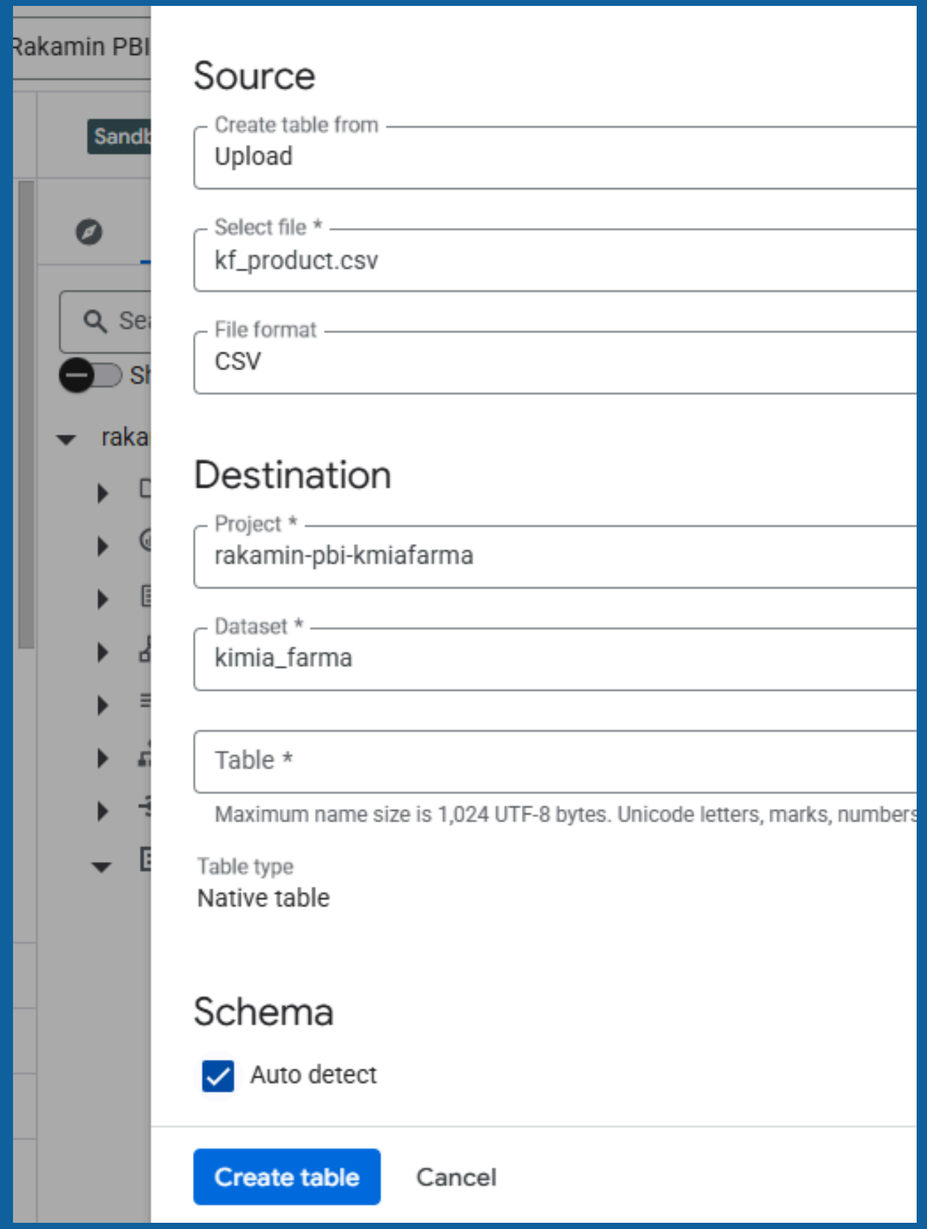
kf_kantor_cabang:

branch_id: branch id code
branch_category: category f the branch
branch_name: name of the branch
kota: name of city
provinsi name of province
rating: customer assessment of branch

IMPORTING DATASET TO BIGQUERY



Create a project title (rakamin-pbi-kimiafarma). Then, upload all the tables to the dataset (kimia_farma) by selecting Create table > Upload > > Browse the tables file > Checklist the auto detect schema > Create table.



```sql
CREATE OR REPLACE TABLE kimia_farma.table_analisa AS
WITH tabel_analisa2 AS (
SELECT
  kft.transaction_id,
  kft.date,
  kft.branch_id,
  kkc.branch_name,
  kkc.kota AS city,
  kkc.provinsi AS province,
  kkc.rating AS branch_rating,
  kft.customer_name,
  kft.product_id,
  kp.product_name,
  kp.price AS actual_price,
  kft.discount_percentage,

  -- Calculate the profit percentage based on the price range
    (
      CASE
    WHEN kp.price <= 50000 THEN 0.10
    WHEN kp.price > 50000 AND kp.price <= 100000 THEN 0.15
    WHEN kp.price > 100000 AND kp.price <= 300000 THEN 0.20
    WHEN kp.price > 300000 AND kp.price <= 500000 THEN 0.25
    WHEN kp.price > 500000 THEN 0.30
  END) AS gross_profit_percentage,

  -- Calculate the price after discount
  (kp.price * (1 - kft.discount_percentage / 100)) AS nett_sales,

  -- Calculate the nett_profit (nett_sales * profit_percentage)
  (kp.price * (1 - kft.discount_percentage / 100)) *
    CASE
    WHEN kp.price <= 50000 THEN 0.10
    WHEN kp.price > 50000 AND kp.price <= 100000 THEN 0.15
    WHEN kp.price > 100000 AND kp.price <= 300000 THEN 0.20
    WHEN kp.price > 300000 AND kp.price <= 500000 THEN 0.25
    WHEN kp.price > 500000 THEN 0.30
  END AS nett_profit,

  kft.rating AS transaction_rating

FROM `kimia_farma.kf_final_transaction` AS kft
LEFT JOIN `kimia_farma.kf_product` AS kp
  ON kft.product_id = kp.product_id
LEFT JOIN `kimia_farma.kf_kantor_cabang` AS kkc
  ON kft.branch_id = kkc.branch_id
LEFT JOIN `kimia_farma.kf_inventory` AS ki
  ON kft.product_id = ki.product_id AND kft.branch_id = ki.branch_id
)

SELECT *
FROM tabel_analisa2;
```

create analytical table

profit percentage

nett sales

nett profit

table joins

BIGQUERY SYNTAX

TO CREATE ANALYTICAL TABLE

```sql
-- duplicate data check table kf_final_transaction

WITH duplicate_cte AS
(
SELECT *,
ROW_NUMBER() OVER(
PARTITION BY transaction_id, `date`, branch_id, customer_name,
product_id, price ) AS row_num
FROM `kimia_farma.kf_final_transaction`
)
SELECT *
FROM duplicate_cte
WHERE row_num > 1;

-- null data check tabel kf_final_transaction
SELECT * FROM `kimia_farma.kf_final_transaction` WHERE transaction_id IS NULL
OR `date` IS NULL
OR branch_id IS NULL
OR customer_name IS NULL
OR product_id IS NULL
OR price IS NULL
OR discount_percentage IS NULL
OR rating IS NULL;
```

The dataset is clean, but I tried checking for null and duplicate data using the syntax above.

ANALYTICAL TABLE

This analytical table contains: transaction_id, date, branch_id, branch_name, city, province, branch_rating, customer_name, product_id, product_name, actual_price, discount_percentage, gross_profit_percentage, nett_sales, nett_profit, and transaction_rating.

with the profit percentage determined as follows:
Price <= Rp 50.000 -> profit 10% ■ Price > Rp 50.000 - 100.000 -> profit 15% ■ Price > Rp 100.000 - 300.000 -> profit 20% ■ Price > Rp 300.000 - 500.000 -> profit 25% ■ Price > Rp 500.000 -> profit 30%

transaction_id	date	branch_id	branch_name	city	province	branch_rating	customer_name	product_id
TRX6445517	2023-11-18	80557	Kimia Farma - Apotek	Pariaman	Sumatera Barat	4.0	Stephen Marshall	KF172
TRX4786828	2022-10-08	77512	Kimia Farma - Apotek	Cirebon	Jawa Barat	4.5	Jake Hammond	KF172
TRX5777638	2021-02-20	11400	Kimia Farma - Apotek	Ambon	Maluku	4.1	Warren Snyder	KF172
TRX6978726	2022-05-26	93878	Kimia Farma - Apotek	Semarang	Jawa Tengah	4.5	Suzanne Miller	KF172
TRX4786828	2022-10-08	77512	Kimia Farma - Apotek	Cirebon	Jawa Barat	4.5	Jake Hammond	KF172
TRX6601695	2022-08-25	78158	Kimia Farma - Apotek	Palu	Sulawesi Tengah	4.1	Kendra Brown	KF172
TRX7089127	2021-06-05	88089	Kimia Farma - Apotek	Indramayu				
TRX6601695	2022-08-25	78158	Kimia Farma - Apotek	Palu				

product_name	actual_price	discount_per...	gross_profit_...	nett_sales	nett_profit	transaction_rating
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.15	0.1	2096.85	209.685	3.2
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.15	0.1	2096.85	209.685	4.1
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.15	0.1	2096.85	209.685	5.0
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.15	0.1	2096.85	209.685	3.5
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.15	0.1	2096.85	209.685	4.1
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.14	0.1	2097.06	209.7060000...	3.5
Psycholeptics drugs, Hypnotics and sedatives drugs	2100	0.14	0.1	2097.06	209.7060000...	4.9

Performance Analytics Kimia Farma Business Year 2020-2023

Total Transaction	Total Customer	Total Revenue	Total Profit	Transaction Rating
672.5K	264.6K	1.4T	395.7B	4.0

Province

Revenue

2,096.85 — 997,500

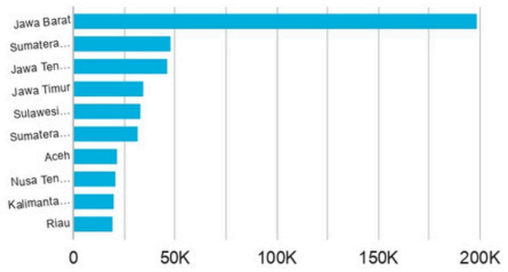
Branch Name

- Kimia Farma - Klinik-…
- Kimia Farma - Klinik …
- Kimia Farma - Apotek

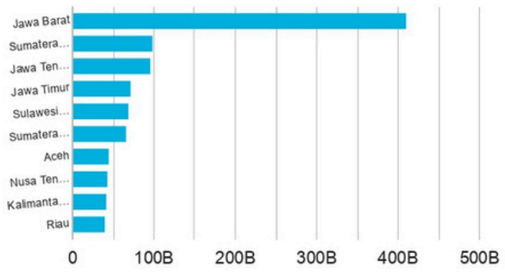
Product Name

- Psycholeptics drugs, …
- Psycholeptics drugs, …
- Other analgesics and…
- Other analgesics and…
- Drugs for obstructive …
- Antihistamines for sy…
- Anti-inflammatory an…
- Anti-inflammatory an…

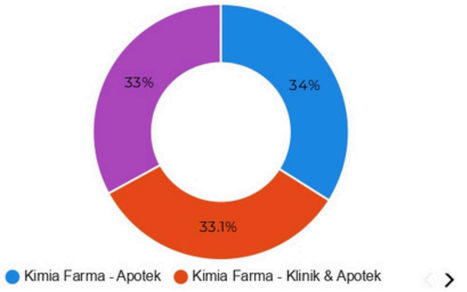
Top 10 Transaction by Province



Top 10 Sales By Province



Sales by Branch Name



Total Revenue by Year 2020-2023

Top 5 High Branch and Transaction Rating

City	Transaction	Branch
Subang	4	4.5
Garut	4	4.4
Purwakarta	4	4.4
Semarang	4	4.3
Sukabumi	4	4.5

1 - 70 / 70

Profit by Province

Profit 2,473,432,679.91 — 116,677,535,181.5

DATA INSIGHT

Overall Business Performance

- Total Transactions: 672.5K
- Total Customers: 264.6K
- Total Revenue: 1.4 Trillion IDR
- Total Profit: 395.7 Billion IDR
- Average Customer Rating: 4.0

This rating reflects **strong customer engagement**

Yearly Revenue Trend

- **Drop in 2021** likely **driven by COVID-19** restrictions and shifts in consumer behavior.
- **Recovery in 2022** shows adaptable business performance.
- Another **decline in 2023** suggests:
  - Increasing competition
  - Evolving customer needs

Regional Sales Analysis

- **West Java** is the **strongest market**, leading in both revenue and transaction volume.
- Other key contributors include **North Sumatra, Central Java, and East Java**, although still significantly behind West Java.
- Provinces **outside Java show lower sales performance,** indicating market expansion opportunities.

Profit Distribution

- Profit remains **concentrated in Java**, indicating operational strength but also untapped potential in other regions.
- Provinces with **low profitability** could benefit from:
  - Market penetration strategies
  - Better distribution networks
  - Local-targeted promotion

Branch Performance Insights

Subang, Garut, and Purwakarta appear in the Top 5 high-performing branches, excelling in both transaction count and customer satisfaction.

These branches can **serve as benchmarks** for operational excellence.

DATA INSIGHT

Business recommendation:

- Strengthen Operations in High-Performing Regions (West Java)
- Expand Market Penetration Outside Java
- Improve Customer Satisfaction and Experience

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THANK YOU!

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