Rakamin Academy X kimia farma

Sales Performance Analysis

Kimia Farma - Big Data Analytics

Presented by
Wahyu Tejakusuma Kalpikajati

Rakamin Academy

Wahyu Tejakusuma Kalpikajati

I am an undergraduate Management student at Universitas Sebelas Maret Surakarta, actively involved in various organizations. I am passionate about learning new things and constantly improving myself. I possess strong decision-making, leadership, and analytical skills, which I have developed through both academic and extracurricular activities.

Klaten, Central Java, Indonesia

wahyuukusuma1704@gmail.com

Wahyu Tejakusuma Kalpikajati

About Company

Kimia Farma was established in 1817, making it one of the oldest pharmaceutical companies in Indonesia. Originally founded as a small drugstore by the Dutch East Indies colonial government, it has since evolved into a leading pharmaceutical company in the country. Over the years, Kimia Farma has expanded its operations to include the production, distribution, and retail of pharmaceuticals, health supplements, and medical devices. With a commitment to improving public health, Kimia Farma has grown into a trusted name in the healthcare industry, operating through a network of pharmacies, clinics, and distribution channels across Indonesia.

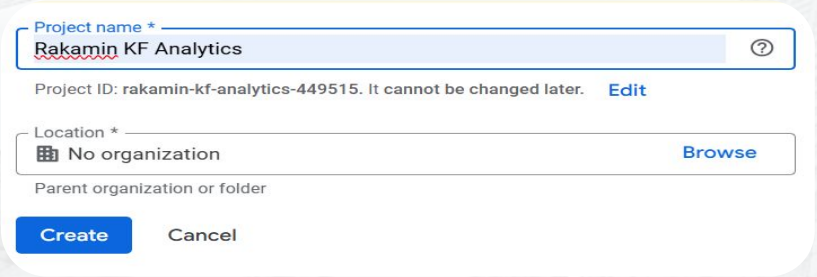
Kimia Farma is one of Indonesia's leading pharmaceutical companies, specializing in the production, distribution, and retail of pharmaceutical products, health supplements, and medical devices. Established in 1817, Kimia Farma has a long history of contributing to the healthcare sector, providing high-quality products and services that meet the needs of the Indonesian community. The company operates through a network of pharmacies, clinics, and distribution channels, with a strong commitment to improving public health and well-being.

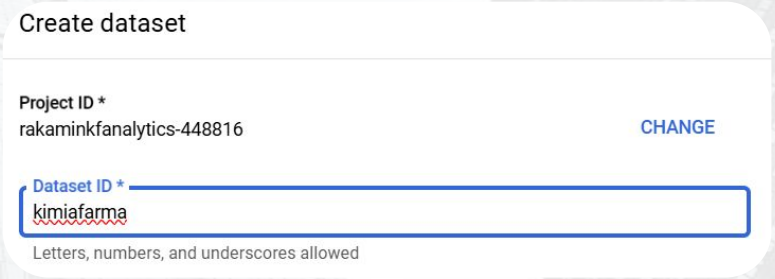
Project Portfolio

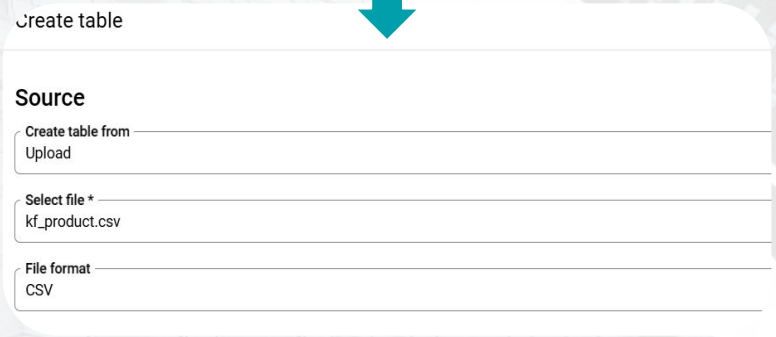
The Big Data Analytics project at Kimia Farma focuses on utilizing data-driven insights to optimize business processes and enhance decision-making across various functions. As a leading pharmaceutical company in Indonesia, Kimia Farma has accumulated vast amounts of data from transactions, product inventories, and branch performance. However, there is a need to better analyze and leverage this data to drive improvements in sales performance, operational efficiency, and customer understanding. The project aims to aggregate and analyze data from four key datasets: transaction details from kf_final_transaction.csv, inventory data from kf_inventory.csv, branch information from kf_kantor_cabang.csv, and product data from kf_product.csv. The objective is to uncover patterns and trends that can help Kimia Farma make more informed decisions, identify growth opportunities, and enhance overall performance. The key challenge lies in transforming this data into actionable insights that can support the company's strategic goals and improve its competitive advantage in the pharmaceutical market.

Importing Dataset to BigQuery

The process starts with preparing the dataset, followed by creating a GCP project ('Rakamin KF Analytics') and opening the BigQuery Console. Next, the user creates a dataset ('kimiafarma') and imports data into BigQuery. After importing, they verify the data and perform data validation. Finally, the user runs an SQL query to create a new table for further analysis.

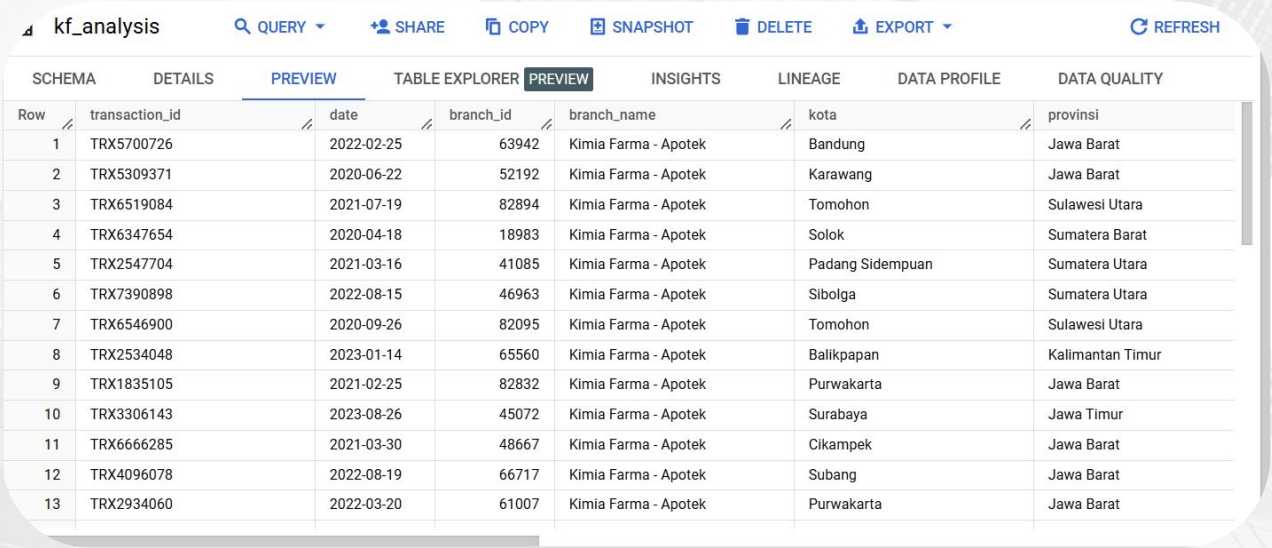






Tabel Analisa

This BigQuery table records transactional data for *Kimia Farma - Apotek*, tracking sales across multiple branches. It helps analyze sales trends, seasonal patterns, and branch performance by comparing transaction volumes across regions. The data also provides insights into market distribution, operational efficiency, and potential anomalies. When integrated with product and customer data, it enables deeper analysis of purchasing behavior and inventory optimization, supporting data-driven decision-making for business growth.



Row	transaction_id	date	branch_id	branch_name	kota	provinsi
1	TRX5700726	2022-02-25	63942	Kimia Farma - Apotek	Bandung	Jawa Barat
2	TRX5309371	2020-06-22	52192	Kimia Farma - Apotek	Karawang	Jawa Barat
3	TRX6519084	2021-07-19	82894	Kimia Farma - Apotek	Tomohon	Sulawesi Utara
4	TRX6347654	2020-04-18	18983	Kimia Farma - Apotek	Solok	Sumatera Barat
5	TRX2547704	2021-03-16	41085	Kimia Farma - Apotek	Padang Sidempuan	Sumatera Utara
6	TRX7390898	2022-08-15	46963	Kimia Farma - Apotek	Sibolga	Sumatera Utara
7	TRX6546900	2020-09-26	82095	Kimia Farma - Apotek	Tomohon	Sulawesi Utara
8	TRX2534048	2023-01-14	65560	Kimia Farma - Apotek	Balikpapan	Kalimantan Timur
9	TRX1835105	2021-02-25	82832	Kimia Farma - Apotek	Purwakarta	Jawa Barat
10	TRX3306143	2023-08-26	45072	Kimia Farma - Apotek	Surabaya	Jawa Timur
11	TRX6666285	2021-03-30	48667	Kimia Farma - Apotek	Cikampek	Jawa Barat
12	TRX4096078	2022-08-19	66717	Kimia Farma - Apotek	Subang	Jawa Barat
13	TRX2934060	2022-03-20	61007	Kimia Farma - Apotek	Purwakarta	Jawa Barat

BigQuery Syntax
Create Table

Rakamin Academy

This SQL creates the **kf_analysis** table in the **kimia_farma** database by integrating data from **kf_final_transaction**, **kf_inventory**, **kf_kantor_cabang**, and **kf_product**. It consolidates transaction records, inventory, branch details, and product data into a structured table, enabling efficient analysis of sales, stock, and operations to support strategic decision-making.

```
BigQuery Syntax for Task Sales Performance Big Data Analytics Kimia Farma Business Year 2020-2023
CREATE TABLE `kimiafarma.kf_analysis` AS
```

Source : from GitHub Repository, here!

Big Query Syntax - Data Select

Rakamin Academy

```
SELECT
  t.transaction_id,
  t.date,
  t.branch_id,
  c.branch_name,
  c.kota,
  c.provinsi,
  t.rating AS rating_transaction,
  t.customer_name,
  t.product_id,
  p.product_name,
  t.price,
  t.discount_percentage,
  CASE
    WHEN t.price <= 50000 THEN 0.1
    WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15
    WHEN t.price > 100000 AND t.price <= 300000 THEN 0.2
    WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
    ELSE 0.3
  END AS gross_profit_percentage,
  (t.price * (1 - (t.discount_percentage / 100))) AS nett_sales,
  (t.price * (1 - (t.discount_percentage / 100)) *
  CASE
    WHEN t.price <= 50000 THEN 0.1
    WHEN t.price > 50000 AND t.price <= 100000 THEN 0.15
    WHEN t.price > 100000 AND t.price <= 300000 THEN 0.2
    WHEN t.price > 300000 AND t.price <= 500000 THEN 0.25
    ELSE 0.3
  END) AS nett_profit,
  c.rating AS rating_branch
```

This `SELECT` statement retrieves data from `kf_final_transaction`, `kf_kantor_cabang`, and `kf_product`, selecting specific columns while applying transformations. It computes `gross_profit_percentage` from the price, `nett_sales` by subtracting the discount, and `nett_profit` using `nett_sales` and `gross_profit_percentage` to enhance sales and profitability analysis.

Source : from GitHub Repository, here!

BigQuery Syntax
Data Joins

Rakamin Academy

This BigQuery syntax retrieves data by joining three tables: `kf_final_transaction`, `kf_kantor_cabang`, and `kf_product`. It selects data from `kf_final_transaction` and joins it with `kf_kantor_cabang` on `branch_id` and with `kf_product` on `product_id`. The query returns records where there are matching `branch_id` and `product_id` values across all three tables, combining transaction, branch, and product details.

```
FROM `kimiafarma.kf_final_transaction` t
JOIN `kimiafarma.kf_kantor_cabang` c ON t.branch_id = c.branch_id
JOIN `kimiafarma.kf_product` p ON t.product_id = p.product_id;
```

Source : from GitHub Repository, here!

BigQuery Syntax

Exploratory Data Analysis

Rakamin Academy

This BigQuery syntax performs an exploratory data analysis on the `kf_analysis` table in the `kimia_farma` dataset. It aggregates various metrics by `branch_name`, including the total number of transactions, the earliest and latest transaction dates, the average price, discount percentage, and gross profit percentage. Additionally, it calculates the total net sales and net profit, as well as the average transaction and branch ratings. The query also counts the distinct number of customers per branch. Finally, the results are ordered by total net sales in descending order, providing insights into the performance of each branch.

```
SELECT
    COUNT(*) AS total_transactions,
    MIN(date) AS earliest_date,
    MAX(date) AS latest_date,
    AVG(price) AS average_price,
    AVG(discount_percentage) AS average_discount_percentage,
    AVG(gross_profit_percentage) AS average_gross_profit_percentage,
    SUM(nett_sales) AS total_net_sales,
    SUM(nett_profit) AS total_net_profit,
    AVG(rating_transaction) AS average_transaction_rating,
    AVG(rating_branch) AS average_branch_rating,
    branch_name,
    COUNT(DISTINCT customer_name) AS total_customers
FROM `kimiafarma.kf_analysis`
GROUP BY branch_name
ORDER BY total_net_sales DESC;
```

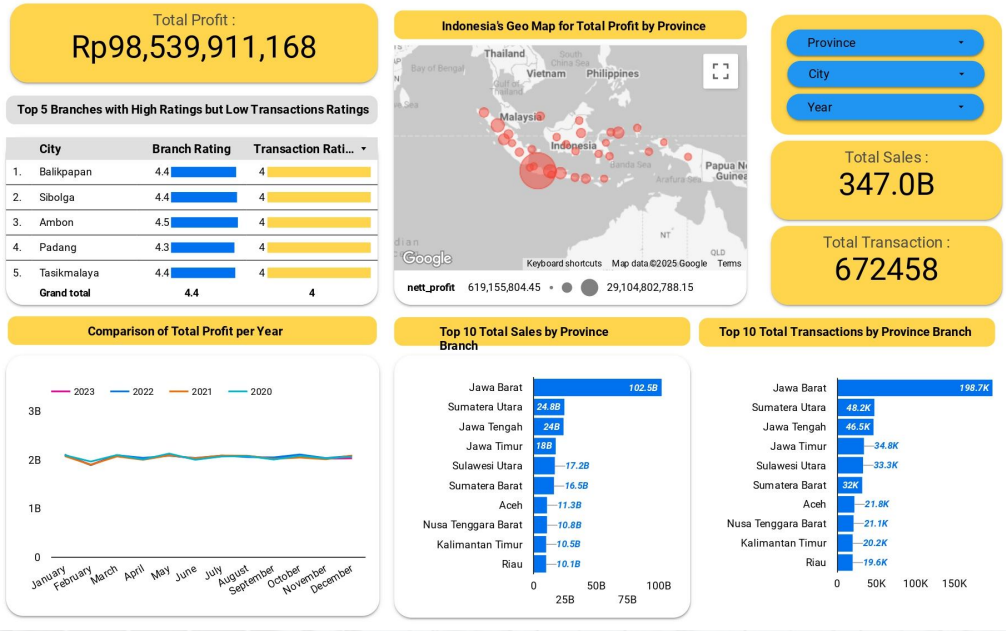
Source : from GitHub Repository, here!

Dashboard Performance Analytics

Rakamin Academy

Performance Analytics Kimia Farma Dashboard

Business Year 2020-2023



Source : from Google Looker Studio, here!

Thank You

Rakamin Academy X kimia farma