Rakamin Academy X kimia farma

# Kimia Farma Regional Performance Evaluation (2020-2023)

Kimia Farma - Big Data Analytics

Presented by
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# KEVIN BAGAS ARIFKI MAWUNTU

## Fresh Graduate

A fresh graduate with academic background in civil engineering. I have an interest in data analytics and data science, and have completed the Data Science Bootcamp at Rakamin Academy in 2024 to develop skills in this field. Possess skills in operating MS Excel, MATLAB, and experience in using Python, SQL, and data visualization tools such as Power BI. I am ready to apply my skills to dive into various industries.

# Contents

# About Company


**Kimia Farma** is the first pharmaceutical industry company in Indonesia founded by the Dutch East Indies Government in 1817. The name of this company was originally NV Chemicalien Handle Rathkamp & Co.

Based on the nationalization policy of former Dutch companies in the early days of independence, in 1958, the Government of the Republic of Indonesia merged a number of pharmaceutical companies into PNF (Perusahaan Negara Farmasi/State Pharmaceutical Company) Bhinneka Kimia Farma.

Then on August 16, 1971, the legal entity form of PNF was changed to a Limited Liability Company, so that the company name changed to PT Kimia Farma (Persero).

# About Project

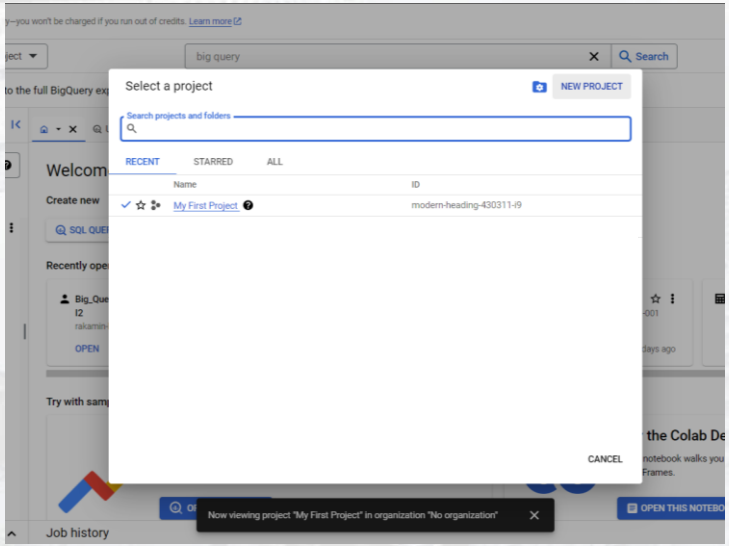
This project is part of the Project Based Internship (PBI) organized by Kimia Farma x Rakamin Academy. As a Big Data Analytics Intern at Kimia Farma, the tasks given to me include a series of jobs that require a deep understanding of data and analytical skills.

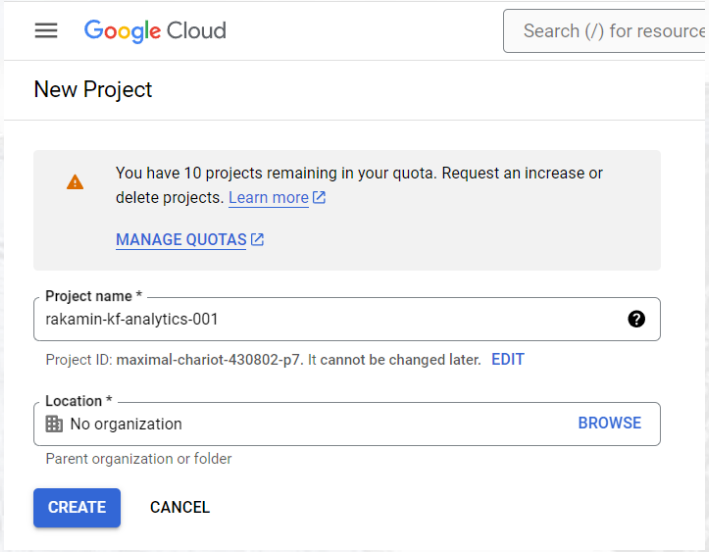
Main project **“Evaluating Kimia Farma Regional Performance (2020-2023)”** :

- Raw Data:
    1) Details of drug purchase transactions at Kimia Farma branches
    2) Details of drug product stock at Kimia Farma branches
    3) Kimia Farma branch office data
    4) Drug product data (name, category, and price) at Kimia Farma
- Create a dashboard that summarizes the sales performance of pharmaceutical products at Kimia Farma.

**Project explanation video here!**

# Importing Dataset to BigQuery



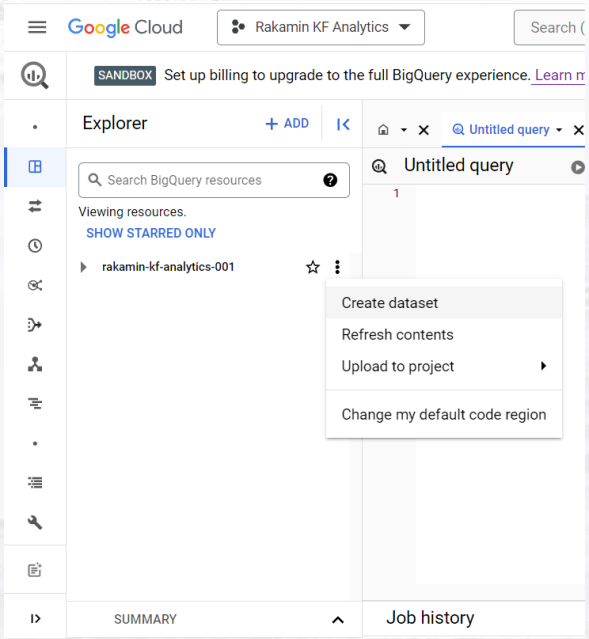



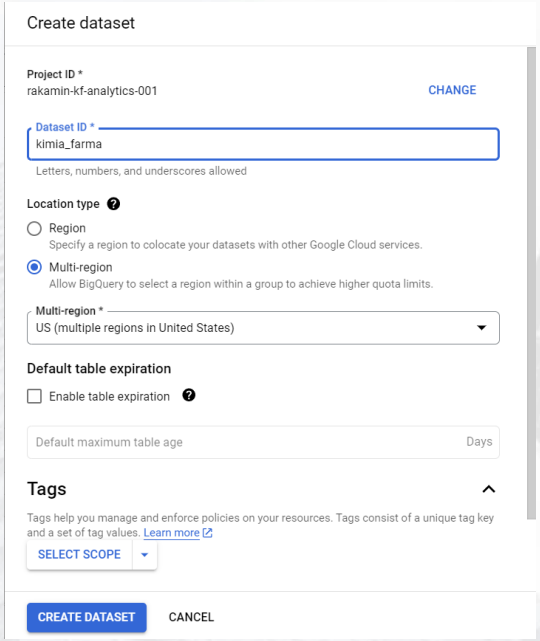

**Steps to import Dataset into BigQuery:**

**1.** Open the Google Cloud BigQuery Console

**2.** Create (NEW PROJECT) dan assign project name (Project name)

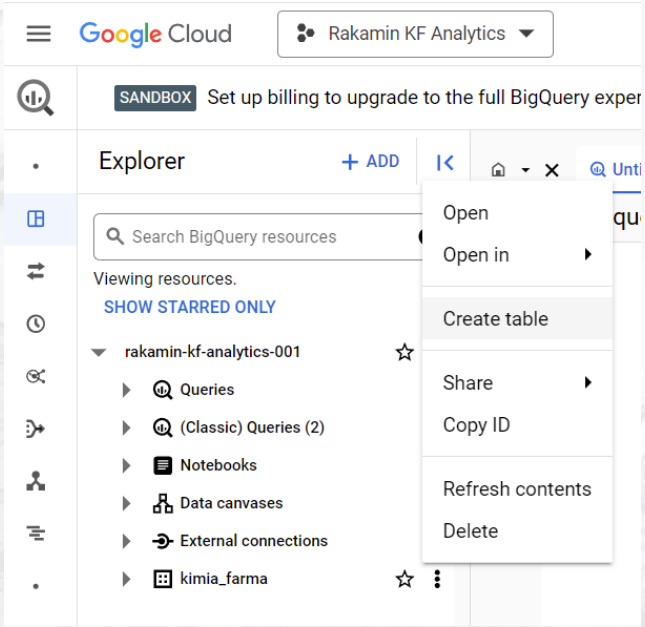
# Importing Dataset to BigQuery

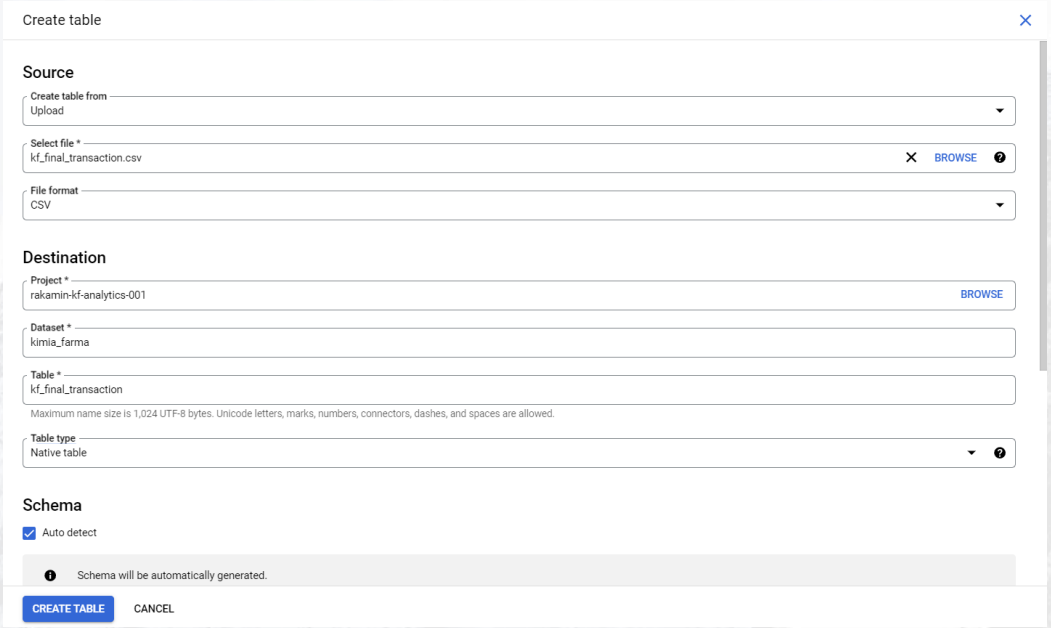



**3.** (Create dataset) and define Dataset ID

# Importing Dataset to BigQuery




**4.** Import tables by creating table (Create table), select the source and specify the dataset format, then specifythe table title for each dataset imported into a new table in BigQuery.

# Importing Dataset to BigQuery

Dataset:

1) **kf_final_transaction** : Detailed data on drug purchase transactions at Kimia Farma branches, including discounts given and transaction ratings by customers
2) **kf_inventory** : Stock data of drug products at Kimia Farma branches
3) **kf_kantor_cabang** : Kimia Farma branch office data, including consumer assessment data for the branch
4) **kf_product** : Drug product data including drug name, category and price

# Analysis Table

Tabel analisa berdasarkan hasil agregasi dari ke-empat tabel yang sudah diimport sebelumnya:

- **transaction_id** : transaction ID code,
- **date** : date the transaction was made,
- **branch_id** : Kimia Farma branch office ID code,
- **branch_name** : Kimia Farma branch office name,
- **kota** : Kimia Farma branch office location (City),
- **provinsi** : Kimia Farma branch office location (Province),
- **rating_cabang** : Consumer rating of Kimia Farma branch office
- **customer_name** : Name of the customer who made the transaction,
- **product_id :** drug ID code,
- **product_name** : drug name,
- **actual_price** : drug price,
- **discount_percentage** : The percentage of discount given on drugs,
- **persentase_gross_laba** : Percentage of profit that should be received from the drug with the following provisions:
  - Price <= Rp 50,000 -> 10% profit
  - Price > Rp 50,000 - 100,000 -> 15% profit
  - Price > Rp 100,000 - 300,000 -> 20% profit
  - Price > Rp 300,000 - 500,000 -> 25% profit
  - Price > Rp 500,000 -> 30% profit,
- **nett_sales** : price after discount,
- **nett_profit** : profit obtained by Kimia Farma,
- **rating_transaksi** : consumer rating of the transactions

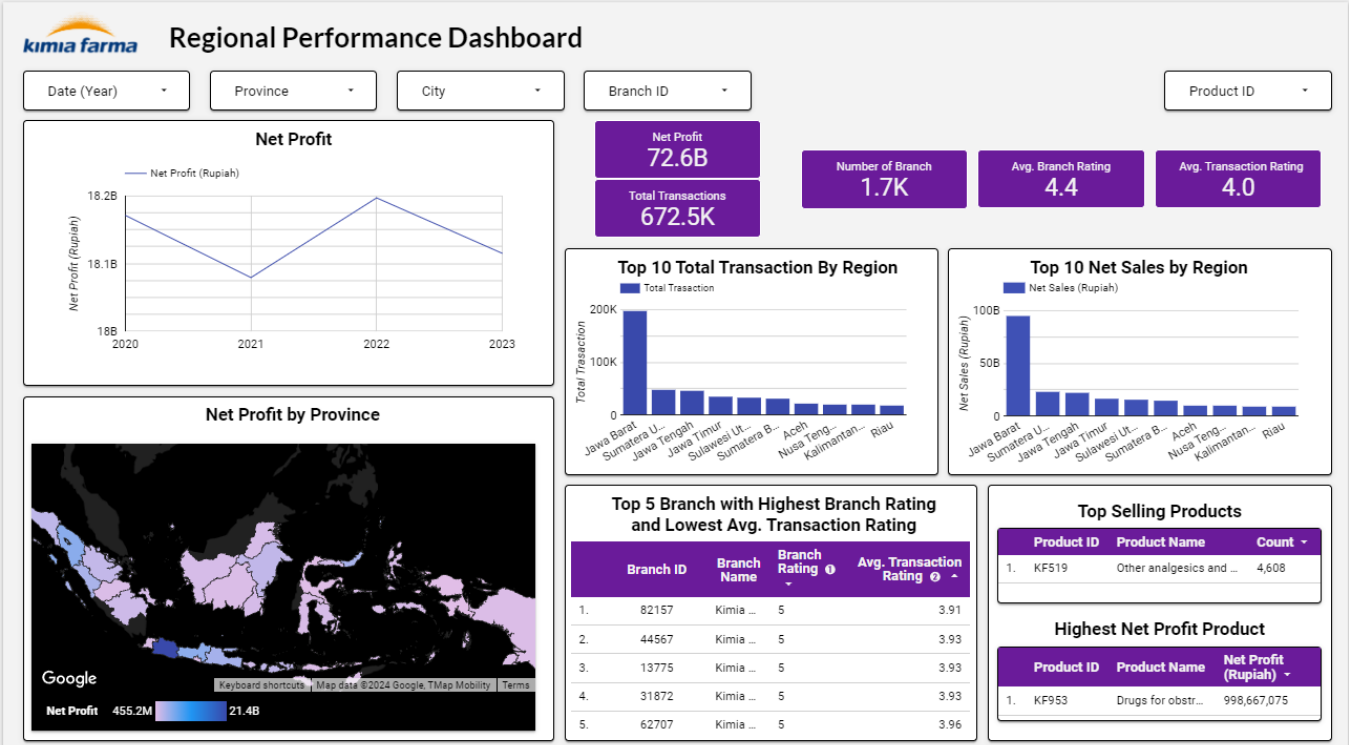
# BigQuery Syntax

```
CREATE TABLE kimia_farma.tabel_analisa AS
SELECT
  FT.transaction_id,
  FT.date,
  FT.branch_id,
  KC.branch_name,
  KC.kota,
  KC.provinsi,
  KC.rating AS rating_cabang,
  FT.customer_name,
  P.product_id,
  P.product_name,
  FT.price AS actual_price,
  FT.discount_percentage,
  FT.price * (1 - FT.discount_percentage) AS nett_sales,
  CASE
    WHEN FT.price <= 50000 THEN 0.1
    WHEN FT.price > 50000 AND FT.price <= 100000 THEN 0.15
    WHEN FT.price > 100000 AND FT.price <= 300000 THEN 0.20
    WHEN FT.price > 300000 AND FT.price <= 500000 THEN 0.25
    WHEN FT.price > 500000 THEN 0.30
  END AS persentase_gross_laba,
  (FT.price *
  CASE
    WHEN FT.price <= 50000 THEN 0.1
    WHEN FT.price > 50000 AND FT.price <= 100000 THEN 0.15
    WHEN FT.price > 100000 AND FT.price <= 300000 THEN 0.20
    WHEN FT.price > 300000 AND FT.price <= 500000 THEN 0.25
    WHEN FT.price > 500000 THEN 0.30
  END) - (FT.price * FT.discount_percentage) AS nett_profit,
  FT.rating AS rating_transaksi
FROM
  kimia_farma.kf_final_transaction AS FT
  LEFT JOIN kimia_farma.kf_kantor_cabang AS KC ON FT.branch_id =
KC.branch_id
  LEFT JOIN kimia_farma.kf_product AS P ON FT.product_id = P.product_id;
```

1) Create new table
2) Define columns to be included in the table:
   - 2a. persentase_gross_laba
     *price * (1 – discount_percentage)*
   - 2b. net_profit
     *(price * persentase_gross_laba) – (price * discount_percentage)*
3) The columns in the Analysis Table contain data from previously imported datasets. Use a JOIN (LEFT JOIN) with the final_transaction table as the leftmost table.

# Dashboard Performance Analytics

The Analysis table that was previously created in BigQuery then connected to Google Looker Studio to create a regional performance dashboard.




[Link to Dashboard]

# Dashboard  Performance Analytics

**Insights:**

**1)** Net profit in a city is proportional to the number of branches in the city. Market expansion can be considered by establishing branches in cities with relatively few branches such as Sorong, Bontang, and Cianjur.

**2)** Consider dynamic pricing, and carefully increase prices for several products with the largest number of transactions in each city. For example: Increase the price of KF500 products at the Kimia Farma branch in Subang.

**3)** Cross-selling or offer bundling packages in each city, combining products with the highest and lowest sales but have the same category (name). For example: Bundling package of KF513 products with KF824 (Psycholeptics drugs, Hypnotics and sedatives drugs)

Link to Dashboard

# Link

GitHub

Presentation Video

Dashboard

# Thank You