Rakamin Academy X kimia farma

Performance Analytics Kimia Farma Business Year 2020 - 2023

Kimia Farma - Big Data Analytics

Presented by
Addiina Najlaa N.

Rakamin Academy

Addiina Najlaa N.

Graduated with Bachelors Degree in Information System. Data Enthusiast with strong foundation in data analysis, Data Modeling, and Data Visualization. Proficient in Data Tools such as Python, BigQuery, Looker Studio, Tableau which is obtained during project work and internships. Have an interest career in Information Technology Industry especially as a Data Analyst.

Bekasi, Jawa Barat, Indonesia

ann.dinanajlaa@gmail.com

https://www.linkedin.com/in/dinanajlaa

https://github.com/najlaadina

Rakamin Academy

Courses and Certification

FGA Data Science Digital Talent Scholarship | Certificate — April 2024

BNSP Junior Web Developer | Certificate — Jan 2022 - Jan 2025

MTA Database Administrator Fundamentals | Certificate — April 2021

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 Handie Rathkamp & Co. Based on the policy of Nationalization of Former Dutch companies in the early independence period, in 1958, the Republic of Indonesia Government merged several Pharmaceutical companies into PNF (State Pharmaceutical Company) Bhinneka Kimia Farma. Then on August 16, 1971, the legal form of PNF was changed into a limited Liability Company, so the company's name was changed into PT. Kimia Farma (Persero).

Project Portfolio

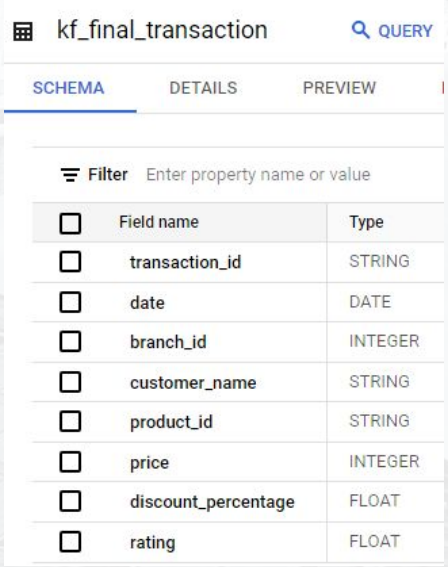
The project aims to provide in-depth insights into Kimia Farma sales performance through detailed data analysis. This project using Data Analyst Tools, such as BigQuery for SQL Query and Looker Studio for Data Visualization. Steps are includes:

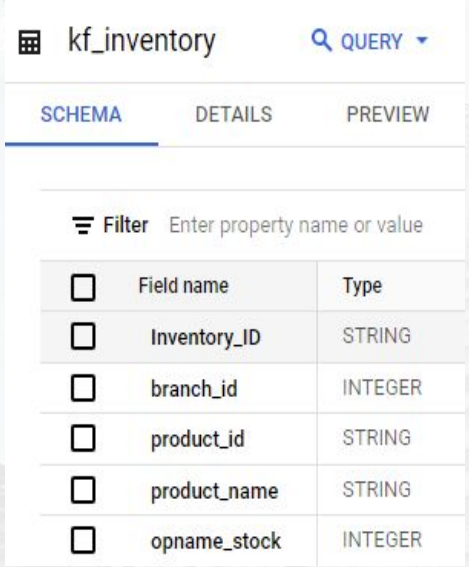
1. The first step in this project is importing dataset into the BigQuery to ensure the availability of the necessary data.
2. Created the aggregate analysis table to identify relevant trends and patterns in sales and provide valuable insight into Kimia Farma's sales performance.
3. Created Data Visualization using Looker Studio to easily understanding of the analysis finding, what trends, and interpretation of data.

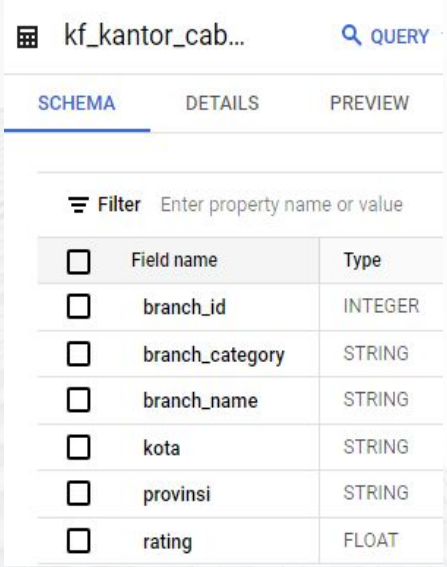
Project Repository here!

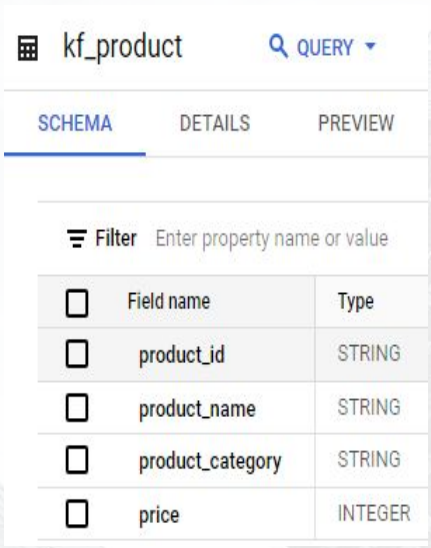
Project explanation video here!

1. Importing Dataset to BigQuery









The dataset includes transaction information **kf_final_transaction**, inventory data **kf_inventory**, branch office **kf_kantor_cabang_**, and product information **kf_product**.

2. Analysis Table

New Table Preview — Aggregate Table

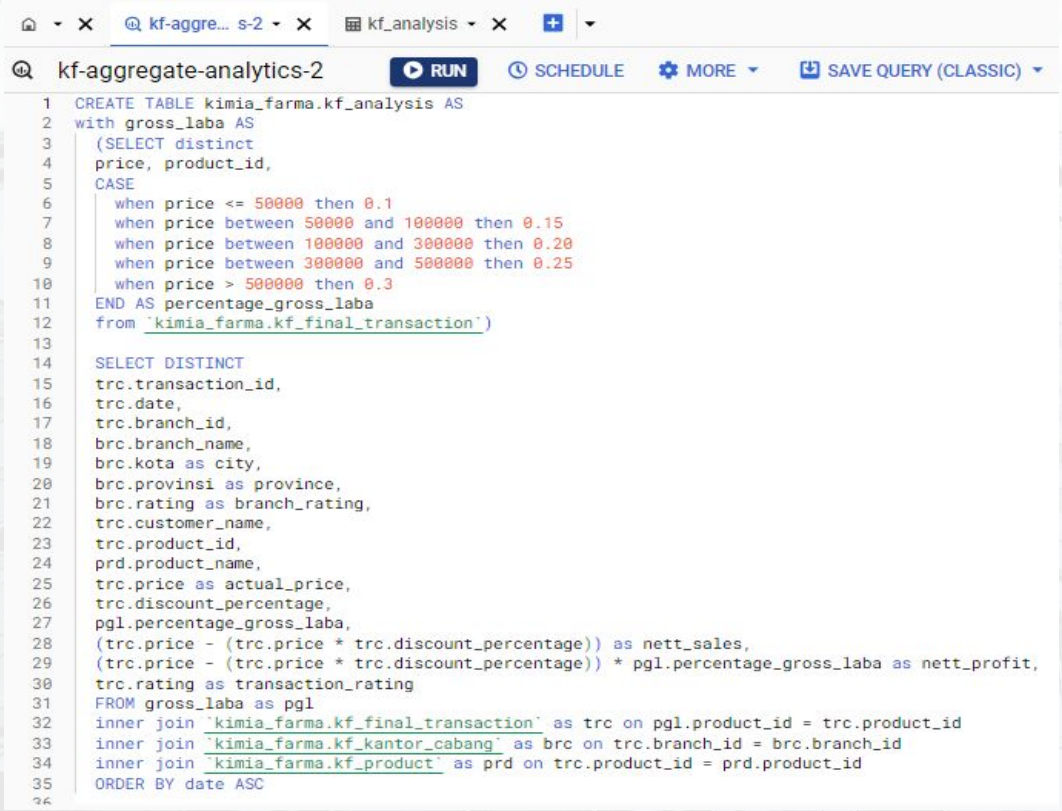
kf_analysis | QUERY | SHARE | COPY | SNAPSHOT | DELETE | EXPORT | REFRESH

SCHEMA | DETAILS | PREVIEW | LINEAGE | DATA PROFILE | DATA QUALITY

Row	transaction_id	date	branch_id	branch_nam	city	province	branch	customer_nam	product_id	product_name	actual_price	discount	percenta	nett_sales	nett_profit	transacti
1	TRX3248504	2020-01-...	92582	Kimia F...	Sibolga	Sumatera Ut...	4.4	Susan Ste...	KF162	Anti-inflammatory and antirheumatic products, non-steroids, Propionic acid derivatives	840200	0.01	0.3	831798...	249539.4	3.0
2	TRX9756282	2020-01-...	43663	Kimia F...	Ambon	Maluku	4.0	Jeffrey Lutz	KF162	Anti-inflammatory and antirheumatic products, non-steroids, Propionic acid derivatives	840200	0.0	0.3	840200...	252060.0	3.0
3	TRX2604879	2020-01-...	48243	Kimia F...	Tasikmal...	Jawa Barat	4.1	Jay Mitch...	KF223	Anti-inflammatory and antirheumatic products, non-steroids, Acetic acid derivatives and related substances	401700	0.15	0.25	341445...	85361.25	3.0
4	TRX2861898	2020-01-...	12174	Kimia F...	Pangkalp...	Bangka Belit...	4.7	Amanda ...	KF395	Drugs for obstructive airway diseases	755400	0.09	0.3	687414...	206224.19...	3.0
5	TRX9941602	2020-01-...	69958	Kimia F...	Palemba...	Sumatera Sel...	4.7	Tracy King	KF402	Other analgesics and antipyretics, Salicylic acid and derivatives	906500	0.12	0.3	797720...	239316.0	3.0
6	TRX7380209	2020-01-...	46118	Kimia F...	Semarang	Jawa Tengah	4.0	Nancy Ga...	KF477	Antihistamines for systemic use	747200	0.01	0.3	739728...	221918.4	3.0
7	TRX7586029	2020-01-...	31365	Kimia F...	Cirebon	Jawa Barat	4.4	Melanie L...	KF556	Other analgesics and antipyretics, Salicylic acid and derivatives	320300	0.14	0.25	275458...	68864.5	3.0
8	TRX1648806	2020-01-...	89229	Kimia F...	Tarakan	Kalimantan ...	4.0	Kim Lowe	KF696	Other analgesics and antipyretics, Pyrazolones and Anil...	125100	0.05	0.2	118845...	23769.0	3.0
9	TRX3936189	2020-01-...	84382	Kimia F...	Subang	Jawa Barat	4.1	Zachary J...	KF961	Other analgesics and antipyretics, Salicylic acid and derivatives	438100	0.02	0.25	429338...	107334.5	3.0
10	TRX1528288	2020-01-...	18508	Kimia F...	Magelang	Jawa Tengah	4.0	Corey Sw...	KF998	Psycholeptics drugs, Hypnotics and sedatives drugs	71300	0.13	0.15	62031.0	9304.65	3.0
11	TRX8159977	2020-01-...	59765	Kimia F...	Garut	Jawa Barat	4.1	Bradley G...	KF999	Other analgesics and antipyretics, Pyrazolones and Anil...	389900	0.05	0.25	370405...	92601.25	3.0
12	TRX7895797	2020-01-...	18533	Kimia F...	Cirebon	Jawa Barat	4.7	Troy Rangel	KF132	Psycholeptics drugs, Hypnotics and sedatives drugs	6400	0.15	0.1	5440.0	544.0	3.5
13	TRX5732415	2020-01-...	91961	Kimia F...	Indramayu	Jawa Barat	4.4	Paul Meza	KF149	Antihistamines for systemic use	385300	0.01	0.25	381447...	95361.75	3.5
14	TRX5602276	2020-01-...	67306	Kimia F...	Semarang	Jawa Tengah	4.1	Barbara R...	KF162	Anti-inflammatory and antirheumatic products, non-	840200	0.14	0.3	722572...	216771.6	3.5

Results per page: 50 | 1 – 50 of 672458

3. BigQuery Syntax




```sql
CREATE TABLE kimia_farma.kf_analysis AS
with gross_laba AS
  (SELECT distinct
  price, product_id,
  CASE
    when price <= 50000 then 0.1
    when price between 50000 and 100000 then 0.15
    when price between 100000 and 300000 then 0.20
    when price between 300000 and 500000 then 0.25
    when price > 500000 then 0.3
  END AS percentage_gross_laba
  from `kimia_farma.kf_final_transaction`)

  SELECT DISTINCT
  trc.transaction_id,
  trc.date,
  trc.branch_id,
  brc.branch_name,
  brc.kota as city,
  brc.provinsi as province,
  brc.rating as branch_rating,
  trc.customer_name,
  trc.product_id,
  prd.product_name,
  trc.price as actual_price,
  trc.discount_percentage,
  pgl.percentage_gross_laba,
  (trc.price - (trc.price * trc.discount_percentage)) as nett_sales,
  (trc.price - (trc.price * trc.discount_percentage)) * pgl.percentage_gross_laba as nett_profit,
  trc.rating as transaction_rating
  FROM gross_laba as pgl
  inner join `kimia_farma.kf_final_transaction` as trc on pgl.product_id = trc.product_id
  inner join `kimia_farma.kf_kantor_cabang` as brc on trc.branch_id = brc.branch_id
  inner join `kimia_farma.kf_product` as prd on trc.product_id = prd.product_id
  ORDER BY date ASC
```

The SQL Syntax was used to create a new table name **kf_analysis** in the database **kimia_farma**. The new table is aggregated with data selected from existing tables **kf_final_transaction**, **kf_kantor_cabang_**, and **kf_product**.

3.1 BigQuery Syntax (Create New Table)

```
CREATE TABLE kimia_farma.kf_analysis AS
```

This syntax was created a new table named **kf_analysis** in **kimia_farma** database

3.2 BigQuery Syntax (CTE)

```
with gross_laba AS
  (SELECT distinct
  price, product_id,
  CASE
    when price <= 50000 then 0.1
    when price between 50000 and 100000 then 0.15
    when price between 100000 and 300000 then 0.20
    when price between 300000 and 500000 then 0.25
    when price > 500000 then 0.3
  END AS percentage_gross_laba
  from `kimia_farma.kf_final_transaction`)
```

Created subquery using CTE (Common Table Expression) with **“with”** clause named **gross_laba**. This was used to calculate the gross profit percentage based on **price** column and to calculate the **nett profit**

3.3 BigQuery Syntax (Data Selection)

```
SELECT DISTINCT
trc.transaction_id,
trc.date,
trc.branch_id,
brc.branch_name,
brc.kota as city,
brc.provinsi as province,
brc.rating as branch_rating,
trc.customer_name,
trc.product_id,
prd.product_name,
trc.price as actual_price,
trc.discount_percentage,
pgl.percentage_gross_laba,
(trc.price - (trc.price * trc.discount_percentage)) as nett_sales,
(trc.price - (trc.price * trc.discount_percentage)) * pgl.percentage_gross_laba as nett_profit,
trc.rating as transaction_rating
FROM gross_laba as pgl
```

This **SELECT** statement fetches data from specified tables **kf_final_transaction**, **kf_kantor_cabang**, **gross_laba**, and **kf_product**.

3.4 BigQuery Syntax (Data Join)

```
inner join `kimia_farma.kf_final_transaction` as trc on pgl.product_id = trc.product_id
inner join `kimia_farma.kf_kantor_cabang` as brc on trc.branch_id = brc.branch_id
inner join `kimia_farma.kf_product` as prd on trc.product_id = prd.product_id
ORDER BY date ASC
```

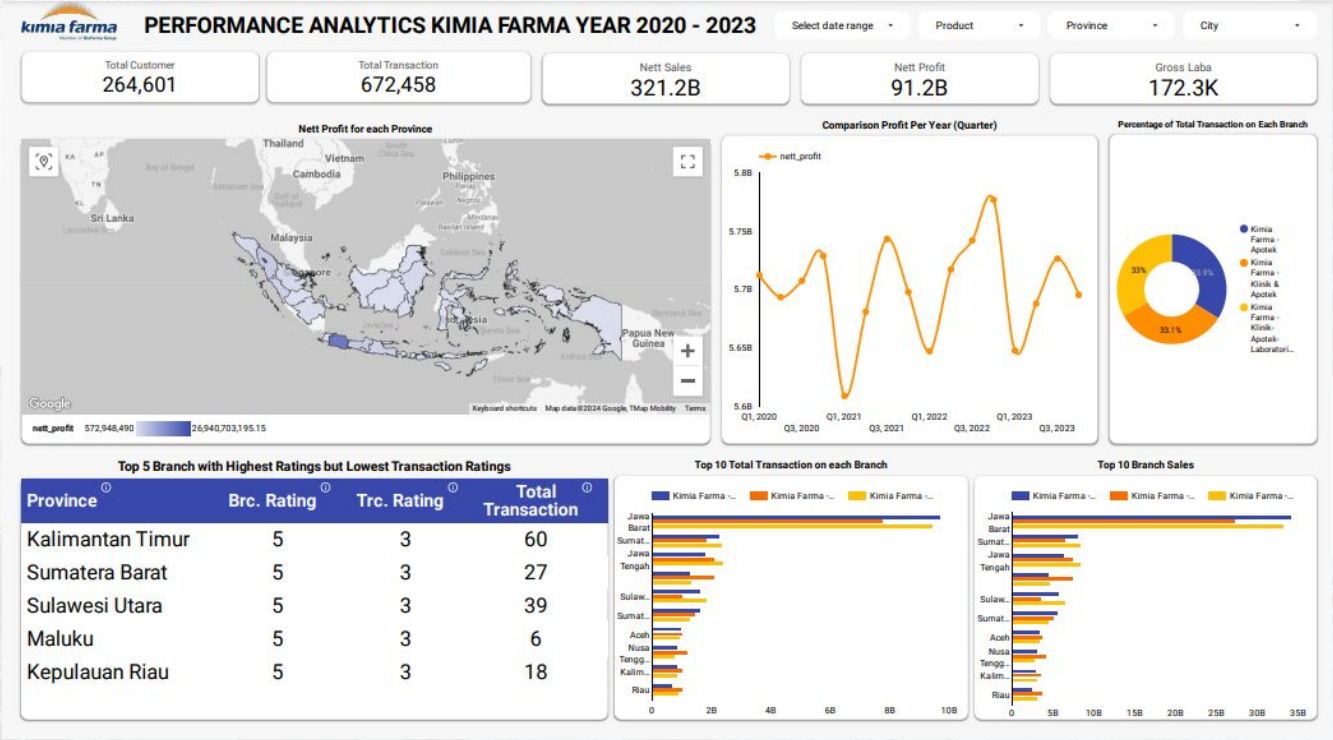
This syntax was specifies the tables to be joined **gross_laba**, **kf_final_transaction**, **kf_kantor_cabang**, and **kf_product**. The syntax joins:

- **kf_final_transaction** with **gross laba** on **product_id**
- **kf_final_transaction** with **kf_kantor_cabang** on **branch_id**
- **kf_final_transaction** with **kf_product** on **product_id**

Syntax **ORDER BY** was used to sorting data based on date year from 2020 to 2023

4. Dashboard Performance Analytics

Project Dashboard here



Province	Brc. Rating	Trc. Rating	Total Transaction
Kalimantan Timur	5	3	60
Sumatera Barat	5	3	27
Sulawesi Utara	5	3	39
Maluku	5	3	6
Kepulauan Riau	5	3	18

Thank You