

Business Performance Analytics 2020-2023

Kimia Farma - Big Data Analytics

Presented by

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Husnia Munzayana

Undergraduate Student of Informatics at
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I am from Sragen, Central Java. Previously, I received my education at SMA Negeri 1 Surakarta. Currently, as a third-year student majoring in Informatics at Bandung Institute of Technology, I bring a foundation in data science and full-stack website development. Through coursework and hands-on projects, I've honed my skills in programming languages, database management, and web development frameworks, enabling me to excel in roles that require analytical thinking and creative problem solving within the computer science field.



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About Company

Kimia Farma is a pharmaceutical company based in Indonesia. It is one of the oldest and largest pharmaceutical companies in the country, with a history dating back to 1817. Originally established as a Dutch colonial pharmacy, Kimia Farma has since evolved into a modern pharmaceutical company engaged in the manufacture, distribution and retailing of pharmaceutical products, medical devices and healthcare services. The company operates in several segments, including prescription drugs, over-the-counter drugs, herbal medicines and healthcare facilities. Kimia Farma plays a significant role in Indonesia's healthcare sector, providing essential medicines and healthcare solutions to the population.



Project Portfolio

As a big data analytics intern at Kimia Farma, I was assigned to analyze the company's business performance for the years 2020 to 2023. My responsibilities include creating analysis tables and presenting reports through dashboards to evaluate Kimia Farma's business performance during the specified time period. The analysis table was implemented using the BigQuery platform, while the dashboard was developed using Looker Studio.

The provided dataset consists of the following tables:

- kf_final_transaction
- kf_inventory
- kf_kantor_cabang
- kf_product

From that dataset, we were asked to create a data analysis table from the existing raw data and visualize the company's performance report with a dashboard.

Project Repository [here!](https://github.com/munzayanahusn/VIX-Kimia-Farma-Data-Analytics.git)

<https://github.com/munzayanahusn/VIX-Kimia-Farma-Data-Analytics.git>

Project explanation video [here!](https://youtu.be/frSdz65cFKQ)

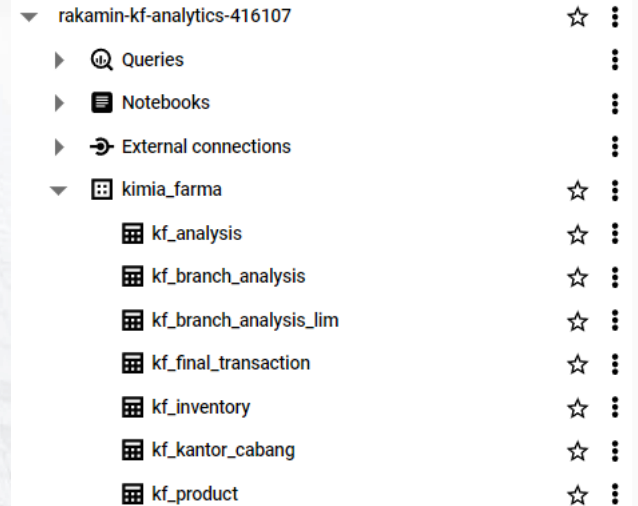
<https://youtu.be/frSdz65cFKQ>

1. Importing Dataset to BigQuery

In the first task, I was asked to import the four records provided:

- kf_final_transaction.csv
- kf_inventory.csv
- kf_kantor_cabang.csv
- kf_product.csvFirst,

I created a new project in BigQuery Studio Google Cloud named "Rakamin-KF-Analytics". Then I created a new dataset named "kimia_farma". Then I imported the provided tables into the kimia_farma dataset.



2. Tabel Analisa

In the second task, I was asked to create an **analysis table** based on the aggregated results of the four tables, based on the aggregated results of the four tables that have been imported before.

Therefore, I created an **SQL query** to be able to display the mandatory analysis columns that have been determined.

The analysis query can be seen in **the repository in the `query.sql` file.**

Row	transaction_id	date	branch_id	branch_name	kota	provinsi	rating_cabang	customer_name	product_id	product_name	actual_price	discount_percent	persentase_gross	nett_sales	nett_profit	rating_transaksi
1	TRX5103706	2021-08-25	93529	Kimia Farma - Klinik & Apotek	Yogyakarta	DI Yogyakarta	4.3	Derrick Wright III	KF116	Psycholeptics drugs, Hypnotic...	251700	0.1	0.2	226530.0	45306.0	3.0
2	TRX5388139	2020-12-29	24832	Kimia Farma - Klinik-Apotek-La...	Pekanbaru	Riau	4.2	Elizabeth Ramos	KF116	Psycholeptics drugs, Hypnotic...	251700	0.12	0.2	221496.0	44299.2000000...	3.0
3	TRX7251897	2020-02-03	20505	Kimia Farma - Apotek	Cilacap	Jawa Tengah	4.5	Meghan Warner	KF116	Psycholeptics drugs, Hypnotic...	251700	0.09	0.2	229047.0	45809.4	3.0
4	TRX4943675	2022-09-09	17678	Kimia Farma - Klinik & Apotek	Subang	Jawa Barat	4.8	Steven Roberts	KF116	Psycholeptics drugs, Hypnotic...	251700	0.1	0.2	226530.0	45306.0	3.0
5	TRX3469820	2020-06-20	28315	Kimia Farma - Klinik-Apotek-La...	Sukabumi	Jawa Barat	3.9	Linda Bruce DDS	KF116	Psycholeptics drugs, Hypnotic...	251700	0.07	0.2	234080.999999...	46816.2	3.0
6	TRX1213133	2021-09-17	22280	Kimia Farma - Apotek	Batam	Kepulauan Riau	4.5	Cory Castro	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224013.0	44802.6000000...	3.0
7	TRX2020131	2020-12-16	40028	Kimia Farma - Klinik-Apotek-La...	Balikpapan	Kalimantan Timur	4.0	Stephanie Boone	KF116	Psycholeptics drugs, Hypnotic...	251700	0.03	0.2	244149.0	48829.8	3.0
8	TRX5015870	2022-06-17	41343	Kimia Farma - Apotek	Semarang	Jawa Tengah	4.0	Mary Hughes	KF116	Psycholeptics drugs, Hypnotic...	251700	0.03	0.2	244149.0	48829.8	3.0
9	TRX7064077	2021-06-21	86546	Kimia Farma - Klinik & Apotek	Pematanglantar	Sumatera Utara	4.5	Tamara Bruce	KF116	Psycholeptics drugs, Hypnotic...	251700	0.04	0.2	241632.0	48326.4	3.0
10	TRX5979742	2020-12-31	18235	Kimia Farma - Klinik & Apotek	Pekanbaru	Riau	4.8	Aaron Reed	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224013.0	44802.6000000...	3.0
11	TRX2209141	2021-03-20	59571	Kimia Farma - Klinik-Apotek-La...	Tarakan	Kalimantan Utara	4.9	Nancy Kennedy	KF116	Psycholeptics drugs, Hypnotic...	251700	0.1	0.2	226530.0	45306.0	3.0
12	TRX5385534	2023-03-17	69280	Kimia Farma - Klinik & Apotek	Purwakarta	Jawa Barat	4.0	Paul Morales	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224013.0	44802.6000000...	3.0
13	TRX9155202	2020-04-11	29626	Kimia Farma - Klinik & Apotek	Bitung	Sulawesi Utara	4.6	Stephen Jones	KF116	Psycholeptics drugs, Hypnotic...	251700	0.02	0.2	246666.0	49333.2000000...	3.0
14	TRX1702542	2022-09-15	48590	Kimia Farma - Klinik & Apotek	Gandut	Jawa Barat	4.9	Zachary White	KF116	Psycholeptics drugs, Hypnotic...	251700	0.12	0.2	221496.0	44299.2000000...	3.0
15	TRX8205780	2020-10-19	37915	Kimia Farma - Klinik & Apotek	Cianjur	Jawa Barat	3.9	Jennifer Larsen	KF116	Psycholeptics drugs, Hypnotic...	251700	0.13	0.2	218979.0	43795.8	3.0
16	TRX3208671	2023-12-20	66935	Kimia Farma - Klinik & Apotek	Madura	Jawa Timur	4.3	Michael McCoy	KF116	Psycholeptics drugs, Hypnotic...	251700	0.05	0.2	239115.0	47823.0	3.0
17	TRX2085415	2022-02-11	17678	Kimia Farma - Klinik & Apotek	Subang	Jawa Barat	4.8	Anthony Rice	KF116	Psycholeptics drugs, Hypnotic...	251700	0.07	0.2	234080.999999...	46816.2	3.0
18	TRX1384968	2020-07-01	33691	Kimia Farma - Klinik-Apotek-La...	Palu	Sulawesi Tengah	4.9	Marissa Patterson	KF116	Psycholeptics drugs, Hypnotic...	251700	0.03	0.2	244149.0	48829.8	3.0
19	TRX7358419	2020-01-19	19224	Kimia Farma - Apotek	Purwakarta	Jawa Barat	4.4	James Sanchez	KF116	Psycholeptics drugs, Hypnotic...	251700	0.15	0.2	213945.0	42789.0	3.0
20	TRX5628390	2021-01-15	58219	Kimia Farma - Apotek	Magelang	Jawa Tengah	4.3	Jennifer Oliver	KF116	Psycholeptics drugs, Hypnotic...	251700	0.13	0.2	218979.0	43795.8	3.0
21	TRX6463209	2021-03-13	96558	Kimia Farma - Apotek	Denpasar	Bali	4.7	Lisa Rosales	KF116	Psycholeptics drugs, Hypnotic...	251700	0.08	0.2	231564.0	46312.8	3.0
22	TRX1588524	2023-03-06	20554	Kimia Farma - Klinik-Apotek-La...	Cirebon	Jawa Barat	4.2	Erin Villanueva	KF116	Psycholeptics drugs, Hypnotic...	251700	0.06	0.2	236598.0	47319.6000000...	3.0
23	TRX6976260	2022-06-23	73596	Kimia Farma - Klinik-Apotek-La...	Subang	Jawa Barat	4.8	Lori Parks	KF116	Psycholeptics drugs, Hypnotic...	251700	0.09	0.2	229047.0	45809.4	3.0
24	TRX7535559	2021-11-20	18250	Kimia Farma - Klinik-Apotek-La...	Jakarta	DKI Jakarta	4.4	Monique Griffith	KF116	Psycholeptics drugs, Hypnotic...	251700	0.08	0.2	231564.0	46312.8	3.0

3. BigQuery Syntax

```
CREATE TABLE kimia_farma.kf_analysis AS
SELECT tr.transaction_id,
       tr.date,
       tr.branch_id,
       kc.branch_name,
       kc.kota,
       kc.provinsi,
       kc.rating AS rating_cabang,
       tr.customer_name,
       tr.product_id,
       pd.product_name,
       pd.price AS actual_price,
       tr.discount_percentage,
CASE
  WHEN pd.price <= 50000 THEN 0.1
  WHEN pd.price > 50000 AND pd.price <= 100000 THEN 0.15
  WHEN pd.price > 100000 AND pd.price <= 300000 THEN 0.2
  WHEN pd.price > 300000 AND pd.price <= 500000 THEN 0.25
  ELSE 0.3      --pd.price >500000
END AS persentase_gross_laba,
(pd.price * (1-tr.discount_percentage)) AS nett_sales,
((tr.price * (1-tr.discount_percentage)) - pd.price)AS nett_profit,
tr.rating AS rating_transaksi
FROM kimia_farma.kf_final_transaction AS tr
LEFT JOIN kimia_farma.kf_kantor_cabang AS kc
  ON (tr.branch_id = kc.branch_id)
LEFT JOIN kimia_farma.kf_product AS pd
  ON (tr.product_id = pd.product_id)
;
```

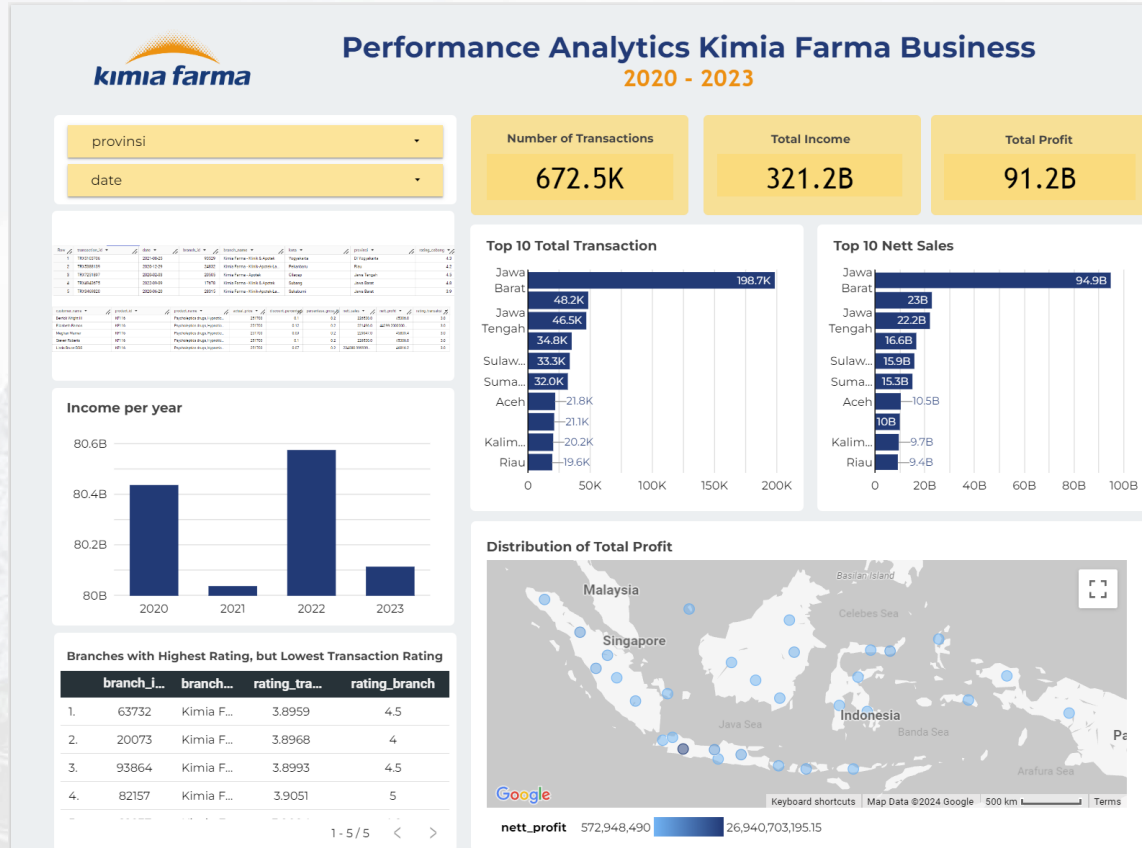
```
CREATE TABLE kimia_farma.kf_branch_analysis_lim AS
SELECT kc.branch_id,
       kc.branch_name,
       AVG(tr.rating) AS rating_transaction,
       kc.rating AS rating_branch
FROM kimia_farma.kf_kantor_cabang AS kc
LEFT JOIN kimia_farma.kf_final_transaction AS tr
  ON (kc.branch_id = tr.branch_id)
GROUP BY kc.branch_id, kc.branch_name, kc.rating
ORDER BY AVG(tr.rating) ASC, kc.rating DESC
LIMIT 5
;
```


4. Dashboard Performance Analytics

Next, I was asked to create a performance analysis visualization in the form of a dashboard built through Looker Studio.

Project Dashboard [here!](https://lookerstudio.google.com/s/qgr_JPexnm8)

https://lookerstudio.google.com/s/qgr_JPexnm8



Thank You

