Rakamin Academy X kimia farma

Business Performance Analytics 2020 - 2023

Kimia Farma - Big Data Analytics

Presented by
Handi Widiansyah

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Handi Widiansyah

Data Enthusiast

Fresh graduate from Metallurgical Engineering, University of Indonesia, with interests in the fields of Data Analyst, Data Scientist, and Business Intelligence. Experienced in Data Analyst positions in manufacturing production. Have expertise in the use of SQL, Python and Data Visualization languages. Continue to increase experience and knowledge in the world of Data Science through bootcamps, courses, competitions and projects. With a relentless commitment to learning and innovation, I am ready to make significant contributions to drive the success of data-driven companies.

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Courses and Certification

Rakamin Academy

SQL: A Practical Introduction for Querying Databases | <link certificate>	**<Mar, 2024>**
SQL for Data Analysis | <link certificate>	**<Feb, 2024>**
Intro to Data Analytics | <link certificate>	**<Dec, 2023>**
Intro to Programming | <link certificate>	**<Feb, 2024>**
Analyzing and Visualizing Data With Power BI | <link certificate>	**<Mar, 2024>**

About Company

Kimia Farma was the first pharmaceutical industrial company in Indonesia which was 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 (Pharmaceutical State Company) Bhinneka Kimia Farma. Then on August 16 1971, the legal entity form of PNF was changed to a Limited Liability Company, so the company name changed to PT Kimia Farma (Persero).

Project Portfolio

Rakamin Academy

As a Big Data Analytics Intern at Kimia Farma, I am faced with a series of challenges that require a deep understanding of data and analytical skills. One of my main projects is evaluating Kimia Farma's business performance from 2020 to 2023. With the existing dataset, namely:

- kf_final_transaction
- kf_inventory
- kf_branch_office
- kf_product

I created a new analysis table which is a datamart using the Google Cloud BigQuery platform. From the analysis table that was created using SQL, I created a report in the form of data visualization using Looker Studio. The report is then presented via video presentation.

Project repository here!

https://github.com/handiwidiansyah/Project-Based-Internship-Kimia-Farma-Big-Data-Analytics.git

Project explanation video here!

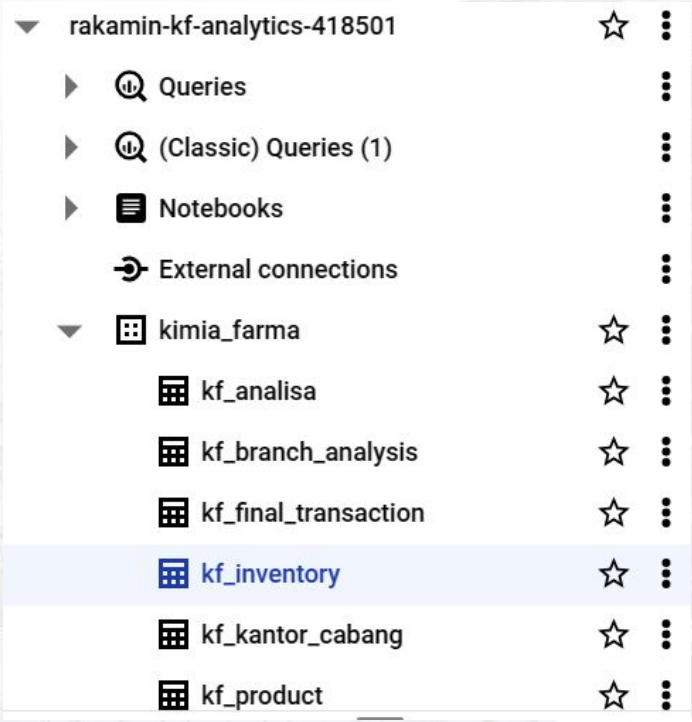
https://youtu.be/8KatwB24GFs

1. Importing Dataset to BigQuery

The first thing I did was **import the table**. The table provided includes:

- Kf_final_transaction
- Kf_inventory
- Kf_branch_office
- kf_product

In BigQuery, the first thing I did was **create a new project** called "Rakamin_KF_Analytics". After creating the project, I **created a new dataset** with the name "kimia_farma" inside the project "Rakamin_KF_Analytics". Finally, I **imported** the given table into the "kimia_farma" dataset.



2. Tabel Analisa

Next, I **created an analysis table** using a query in BigQuery. There are several columns that must be present in the analysis table. The analysis table is then named "kf_analisa" which can be seen in the preview in the following image.

Row	transaction_id	date	branch_id	branch_name	kota	provinsi	rating_cabang	customer_name	product_id	product_name	actual_price	discount_percentage	persentase_gross_laba	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	TRX2943675	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	28815	Kimia Farma - Klinik-Apotek-La...	Sukabumi	Jawa Barat	3.9	Linda Bruce DDS	KF116	Psycholeptics drugs, Hypnotic...	251700	0.07	0.2	234060.699999...	46816.2	3.0
6	TRX1219133	2021-09-17	22280	Kimia Farma - Apotek	Batam	Kepulauan Riau	4.5	Cory Castro	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224019.0	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	2022-08-17	41848	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	Pematangsiantar	Sumatera Utara	4.5	Tamara Bruce	KF116	Psycholeptics drugs, Hypnotic...	251700	0.04	0.2	241632.0	48326.4	3.0
10	TRX3979742	2020-12-31	18235	Kimia Farma - Klinik & Apotek	Pekanbaru	Riau	4.8	Aaron Reed	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224019.0	44802.6000000...	3.0
11	TRX2209141	2021-08-20	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	TRX5985534	2023-03-17	69280	Kimia Farma - Klinik-Apotek-La...	Purwakarta	Jawa Barat	4.0	Paul Morales	KF116	Psycholeptics drugs, Hypnotic...	251700	0.11	0.2	224019.0	44802.6000000...	3.0
13	TRX9155202	2020-06-11	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	TRX1702562	2022-09-15	48590	Kimia Farma - Klinik & Apotek	Garut	Jawa Barat	4.9	Zachary White	KF116	Psycholeptics drugs, Hypnotic...	251700	0.12	0.2	221496.0	44299.2000000...	3.0
15	TRX8205780	2022-10-19	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	Madiun	Jawa Timur	4.3	Michael Moody	KF116	Psycholeptics drugs, Hypnotic...	251700	0.05	0.2	239115.0	47823.0	3.0

3. BigQuery Syntax

I created a syntax to create an analysis table with the required columns using the "**CREATE TABLE**" , "**JOIN**" function and there is also "**CASE WHEN**". To make visualization easier, I created an additional table called "kf_branch_analysis".

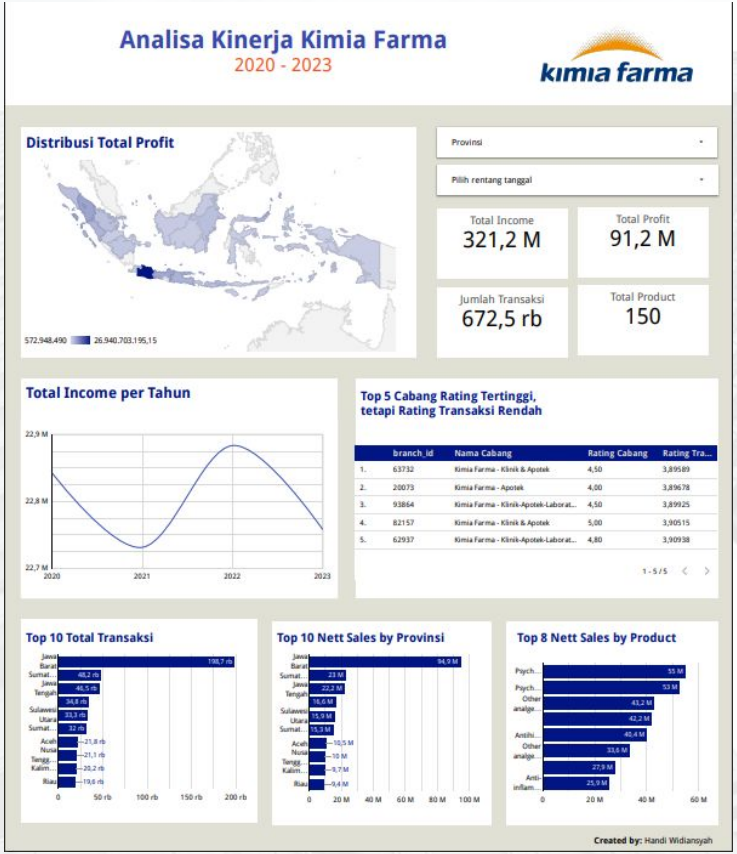
```sql
CREATE TABLE kimia_farma.kf_analisa AS
SELECT
  ft.transaction_id,
  ft.date,
  ft.branch_id,
  kc.branch_name,
  kc.kota,
  kc.provinsi,
  kc.rating AS rating_cabang,
  ft.customer_name,
  ft.product_id,
  p.product_name,
  p.price AS actual_price,
  ft.discount_percentage,
  CASE
    WHEN p.price <= 50000 THEN 0.10
    WHEN p.price <= 100000 THEN 0.15
    WHEN p.price <= 300000 THEN 0.20
    WHEN p.price <= 500000 THEN 0.25
    ELSE 0.30
    END AS persentase_gross_laba,
  (p.price * (1-discount_percentage)) AS nett_sales,
  (p.price * (1-discount_percentage)) * CASE WHEN p.price <= 50000 THEN 0.10
                                             WHEN p.price <= 100000 THEN 0.15
                                             WHEN p.price <= 300000 THEN 0.20
                                             WHEN p.price <= 500000 THEN 0.25
                                             ELSE 0.30
                                        END 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);
```

```sql
CREATE TABLE kimia_farma.kf_branch_analysis AS
SELECT kc.branch_id,
  kc.branch_name,
  AVG(ft.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 ft
  ON (kc.branch_id = ft.branch_id)
GROUP BY kc.branch_id, kc.branch_name, kc.rating
ORDER BY AVG(ft.rating) ASC, kc.rating DESC
;
```

4. Dashboard Performance Analytics

Then, from the analysis table that was created with a query, I visualized the data using Looker Studio.

Project Dashboard [here](https://lookerstudio.google.com/reporting/eeffe0ce-e4e6-4304-9eb0-4fb5aba63761)!



Thank You

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