Rakamin Academy X kimia farma

Performance Analytics Kimia Farma Business Year 2020-2023

Kimia Farma - Big Data Analytics

Presented by

Luqyana Zakiya Almas, S.Stat

Surabaya, Indonesia

luqyanaalmas@gmail.com

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

Luqyana Zakiya Almas, S.Stat

Master's Student at Institute Sepuluh Nopember

Recent graduate with a Bachelor's degree in Statistics from Sebelas Maret University (UNS), currently in the second semester of pursuing a Master's degree in Statistic at Institute Teknologi Sepuluh Nopember (ITS). I have a strong passion for data analysis and machine learning, with hands-on experience as a machine learning specialist within a team. I have also participated in several competitions focused on data visualization and analysis. Actively involved in organizational and volunteer activities, which have helped me develop strong communication and responsibility skills.

Courses and Certification

Bangkit, specializing in Machine Learning | <link>	**July, 2023**
TensorFlow Data and Deployment Specialization (Coursera) | <link>	**May, 2023**
DeepLearning.AI TensorFlow Developer Professional (Coursera) | <link>	**May, 2023**
Machine Learning Specialization (Coursera) | <link>	**April, 2023**
Mathematics for Machine Learning (Coursera) | <link >	**March, 2023**
Google Data Analytics (Google) | <link>	**March, 2023**

About Company

Kimia Farma was the first pharmaceutical industry company in Indonesia established by the Dutch East Indies Government in 1817. The name of the 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 consolidated a number of pharmaceutical companies into PNF (State Pharmaceutical Company) Bhinneka Kimia Farma. Then on August 16, 1971, the legal form of PNF was changed to a Limited Liability Company, so the company name changed to PT Kimia Farma (Persero).

Project Portfolio

The Project focuses on analyzing the business performance of Kimia Farma from 2020 to 2023.

The data consists of four main tables

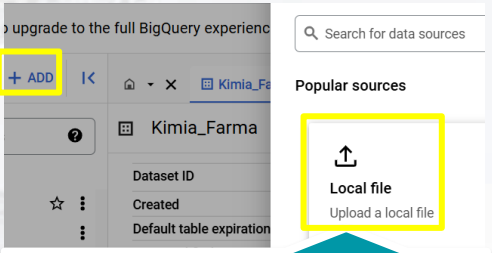
- Final Transaction
- Inventory
- Branch Offices
- Products

The resulting analytical table serves as the foundation for detailed insights and performance evaluation

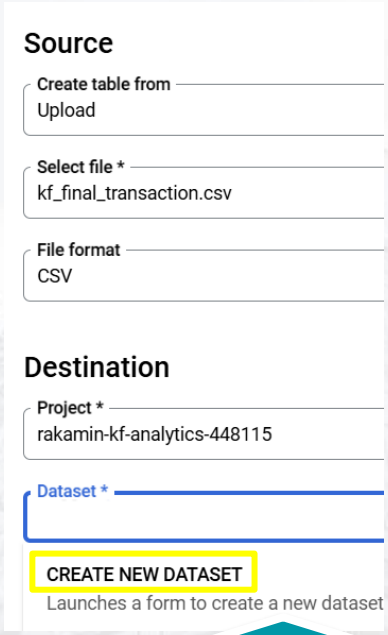
The final outputs were visualized in a performance dashboard built using **Google Looker Studio**

Project explanation video here!

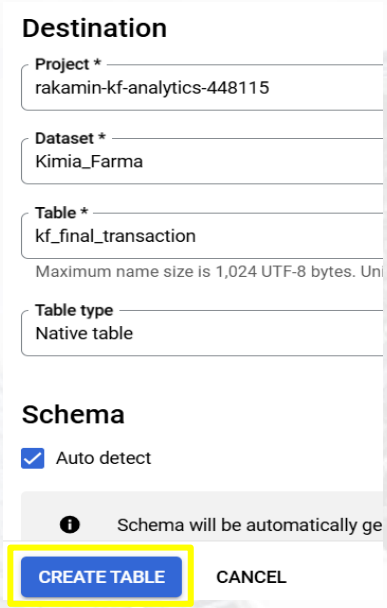
1. Importing Dataset to BigQuery



First, **ADD** than upload from local file



Than fill the blank, and if you don't have any dataset, **CREATE NEW DATASET**



Checklist **auto in schema**, and let the others defult, after that **CREATE TABLE**. Repeat the steps to input another table.

1. Importing Dataset to BigQuery

There is a dataset that has been created with 4 tables in it as shown in the figure

2. Tabel Analisa

In this project, the analysis table is created based on the aggregated results of the four imported tables. The following are the mandatory columns in the table :

- transaction_id : kode id transaksi,
- date : tanggal transaksi dilakukan,
- branch_id : kode id cabang Kimia Farma,
- branch_name : nama cabang Kimia Farma,
- kota : kota cabang Kimia Farma,
- provinsi : provinsi cabang Kimia Farma,
- rating_cabang : penilaian konsumen terhadap cabang Kimia Farma
- customer_name : Nama customer yang melakukan transaksi,
- product_id : kode product obat,
- product_name : nama obat,
- actual_price : harga obat,
- discount_percentage : Persentase diskon yang diberikan pada obat,
- persentase_gross_laba : Persentase laba yang seharusnya diterima dari obat dengan ketentuan berikut:
  - Harga <= Rp 50.000 -> laba 10%
  - Harga > Rp 50.000 - 100.000 -> laba 15%
  - Harga > Rp 100.000 - 300.000 -> laba 20%
  - Harga > Rp 300.000 - 500.000 -> laba 25%
  - Harga > Rp 500.000 -> laba 30%,
- nett_sales : harga setelah diskon,
- nett_profit : keuntungan yang diperoleh Kimia Farma,
- rating_transaksi : penilaian konsumen terhadap transaksi yang dilakukan.

2. Tabel Analisa

tabel_analisis QUERY SHARE COPY SNAPSHOT DELETE EXPORT

SCHEMA DETAILS PREVIEW TABLE EXPLORER PREVIEW INSIGHTS LINEAGE DATA PROFILE DATA QUALITY

Row	transaction_id	date	branch_id	branch_name	kota	provinsi	rating_cabang	customer_name	product_id	product_name	actual_price	discount_percen	persentase_gros	nett_sales	nett_profit	rating_transaksi
1	TRX3306143	2023-08-26	45072	Kimia Farma - Apotek	Surabaya	Jawa Timur	4.7	Joseph Clark	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.5
2	TRX6666285	2021-03-30	48667	Kimia Farma - Apotek	Cikampek	Jawa Barat	4.2	Joseph Savage	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.4
3	TRX7687611	2023-07-20	63942	Kimia Farma - Apotek	Bandung	Jawa Barat	5.0	Gregory Newman	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.0
4	TRX2737565	2023-10-07	26671	Kimia Farma - Apotek	Pangkalpinang	Bangka Belitung	4.1	Chase Moore	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	3.7
5	TRX1175521	2022-07-12	59607	Kimia Farma - Apotek	Magelang	Jawa Tengah	4.3	Javier Lewis	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.1
6	TRX5700726	2022-02-25	63942	Kimia Farma - Apotek	Bandung	Jawa Barat	5.0	Kelsey Fox	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	3.2
7	TRX5309371	2020-06-22	52192	Kimia Farma - Apotek	Karawang	Jawa Barat	4.2	Brandon Barber	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.7
8	TRX4096078	2022-08-19	66717	Kimia Farma - Apotek	Subang	Jawa Barat	4.2	Paul Stewart	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	3.5
9	TRX2934060	2022-03-20	61007	Kimia Farma - Apotek	Purwakarta	Jawa Barat	4.0	Courtney Mcgee	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.0
10	TRX6903569	2020-04-27	96558	Kimia Farma - Apotek	Denpasar	Bali	4.7	Jill Norton	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.5
11	TRX3433578	2021-03-16	15338	Kimia Farma - Apotek	Kotamobagu	Sulawesi Utara	3.9	Crystal Adams	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.3
12	TRX1878665	2021-04-13	48130	Kimia Farma - Apotek	Tasikmalaya	Jawa Barat	4.7	Daniel Reid	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.0
13	TRX7774440	2021-10-23	75181	Kimia Farma - Apotek	Palembang	Sumatera Selat...	4.4	Kenneth White	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.0
14	TRX7853542	2021-04-05	40120	Kimia Farma - Apotek	Jayapura	Papua	3.9	Richard Miller	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.1
15	TRX3647414	2023-02-19	55000	Kimia Farma - Apotek	Makassar	Sulawesi Selatan	4.0	Danielle Ward	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	4.2
16	TRX5076409	2023-06-08	31305	Kimia Farma - Apotek	Sibolga	Sumatera Utara	4.2	Audrey Brown	KF132	Psycholeptics drug...	6400	0.0	0.1	6400.0	640.0	3.9

The following are the aggregation results

3. BigQuery Syntax

```
CREATE OR REPLACE TABLE rakamin-kf-analytics-448115.Kimia_Farma.tabel_analisis AS
WITH
-- Menghitung persentase laba
price_with_gross_margin AS (
  SELECT
    p.product_id,
    p.product_name,
    p.price AS actual_price,
    CASE
      WHEN p.price <= 50000 THEN 0.10
      WHEN p.price > 50000 AND p.price <= 100000 THEN 0.15
      WHEN p.price > 100000 AND p.price <= 300000 THEN 0.20
      WHEN p.price > 300000 AND p.price <= 500000 THEN 0.25
      ELSE 0.30
    END AS persentase_gross_laba
  FROM rakamin-kf-analytics-448115.Kimia_Farma.kf_product p
),
```

This SQL code creates or replaces a table named tabel_analisis in the Kimia_Farma dataset under the project's name. In the displayed part of the code:

- Common Table Expression (CTE) named price_with_gross_margin is defined.
- Purpose of the CTE: To calculate the gross profit percentage (persentase_gross_laba) based on the product price (price).
- The resulting columns in price_with_gross_margin.

3. BigQuery Syntax

```sql
-- Menggabungkan tabel transaksi dengan produk
transaction_with_product AS (
  SELECT
    t.transaction_id,
    t.date,
    t.branch_id,
    t.customer_name,
    t.product_id,
    p.product_name,
    p.persentase_gross_laba,
    p.actual_price,
    t.discount_percentage,
    (t.price * (1 - t.discount_percentage / 100)) AS nett_sales,
    ((t.price * (1 - t.discount_percentage / 100)) * p.persentase_gross_laba) AS nett_profit,
    t.rating AS rating_transaksi
  FROM rakamin-kf-analytics-448115.Kimia_Farma.kf_final_transaction t
  JOIN price_with_gross_margin p
    ON t.product_id = p.product_id
),
```

This SQL code defines another Common Table Expression (CTE) called transaction_with_product, which joins transaction data with product details to enrich the information for analysis.Purpose: To combine transaction data with product data, calculate net sales, net profit, and include product-specific information.

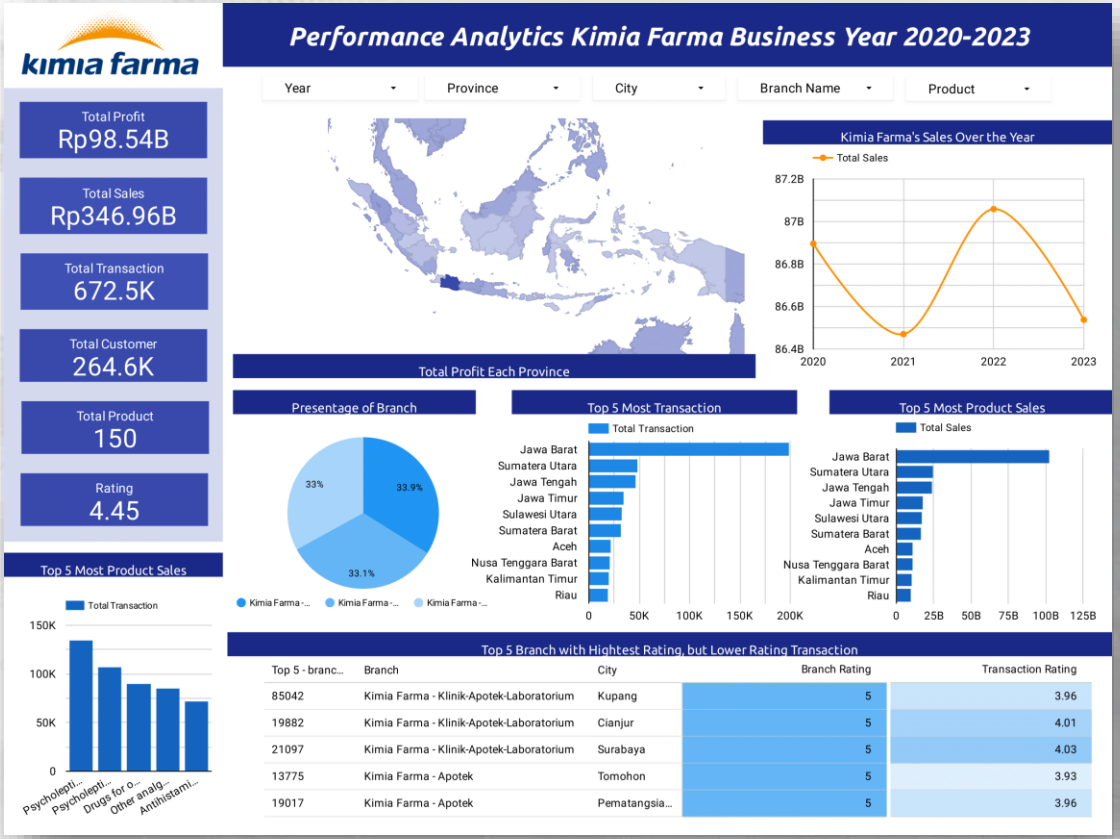
3. BigQuery Syntax

```sql
-- Menggabungkan dengan tabel cabang
transaction_with_branch AS (
  SELECT
    tp.transaction_id,
    tp.date,
    tp.branch_id,
    b.branch_name,
    b.kota,
    b.provinsi,
    b.rating AS rating_cabang,
    tp.customer_name,
    tp.product_id,
    tp.product_name,
    tp.actual_price,
    tp.discount_percentage,
    tp.persentase_gross_laba,
    tp.nett_sales,
    tp.nett_profit,
    tp.rating_transaksi
  FROM transaction_with_product tp
  JOIN rakamin-kf-analytics-448115.Kimia_Farma.kf_kantor_cabang b
    ON tp.branch_id = b.branch_id
)

-- Membuat tabel final
SELECT * FROM transaction_with_branch;
```

This SQL code further enhances the data by defining another Common Table Expression (CTE) named transaction_with_branch, which integrates branch information into the previously enriched transaction data. Finally, it outputs the combine

4. Dashboard Performance Analytics



The dashboard created using Google Looker Studio.

dashboard

https://github.com/luqyza/Rakamin-KF-Analytics/tree/main

Thank You

Rakamin Academy X kimia farma