Rakamin Academy X kimia farma

Final Task: Business Performance Analysis

Kimia Farma - Big Data Analytics

Presented by
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Rakamin Academy

Izza Zahrotunnisa

Accounting Graduate from Universitas Gadjah Mada

I am a driven and analytical Accounting graduate from Universitas Gadjah Mada with strong foundations in finance, accounting information systems, and data-driven decision-making. My experience as Accounting Staff at AIESEC UGM, Media Manager at PALMAE FEB UGM, and Lead Unit Treasurer for KKN-PPM UGM 2023 strengthened my skills in financial reporting, process optimization, and cross-functional collaboration, achieving outcomes such as 100% financial compliance. I am currently advancing my data analytics expertise through training and certifications, with proficiency in Power BI, RStudio, SPSS, Looker Studio, and Excel.

Courses and Certification

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Introduction to Data Analytics | Certificate	**October 2025**
Excel for Data Analysis | Certificate	**November 2025**
Analyzing and Visualising Data with Power BI | Certificate	**November 2025**
Data Transformation with Power BI | Certificate	**November 2025**
Strategic Decision-Making Workshop | Certificate	**November 2025**

About Company

With roots in the Dutch colonial era, Kimia Farma is one of the biggest and oldest pharmaceutical enterprises in Indonesia. Prior to being nationalized by the Indonesian government, it was known as NV Chemicalien Handle Rathkamp & Co. In 1971, Kimia Farma was formally founded as a state-owned business and subsequently went public.

Kimia Farma, a pioneer in Indonesia's pharmaceutical sector, uses an integrated business model that encompasses the whole pharmaceutical value chain, including clinical services, distribution, production of branded and generic medications, research and development, and retail pharmacies. The company oversees several manufacturing facilities in Indonesia, all of which are certified in accordance with international quality standards and Good Manufacturing Practices (GMP).

The company serves millions of clients every year through its vast retail network, Kimia Farma Apotek, which operates more than 1,300 pharmacies in more than 200 locations. By creating reasonably priced generic medications and increasing access to healthcare services across the nation, Kimia Farma is well known for promoting public health initiatives.

Project Portfolio

Project Explanation:

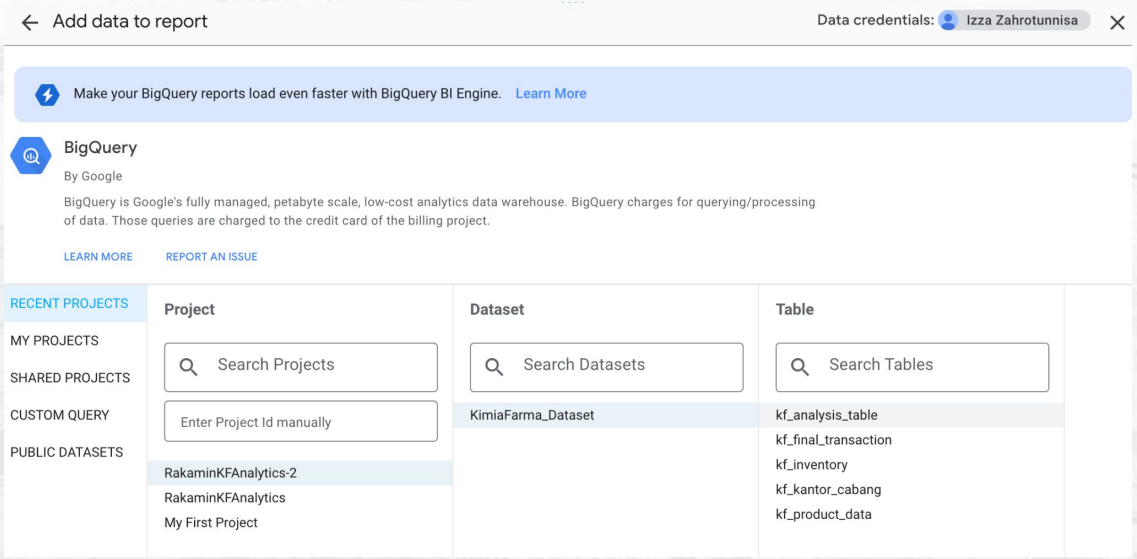
- The project focuses on analyzing Kimia Farma's business performance for the years 2020–2023.
- An analytical table is created in Google BigQuery by aggregating the four imported datasets, containing mandatory columns such as transaction_id, date, branch_id, branch_name, etc.
- The analytical table is connected to Google Looker Studio as the main data source.
- A performance dashboard is developed to visualize key metrics and trends over the four-year period.
- The dashboard design and layout are created creatively according to analytical requirements.
- Objective: To deliver clear insights into financial, operational, and branch-level performance.

Datasets: kf_final_transaction.csv, kf_inventory.csv, kf_kantor_cabang.csv, kf_product.csv

Problem Statement:

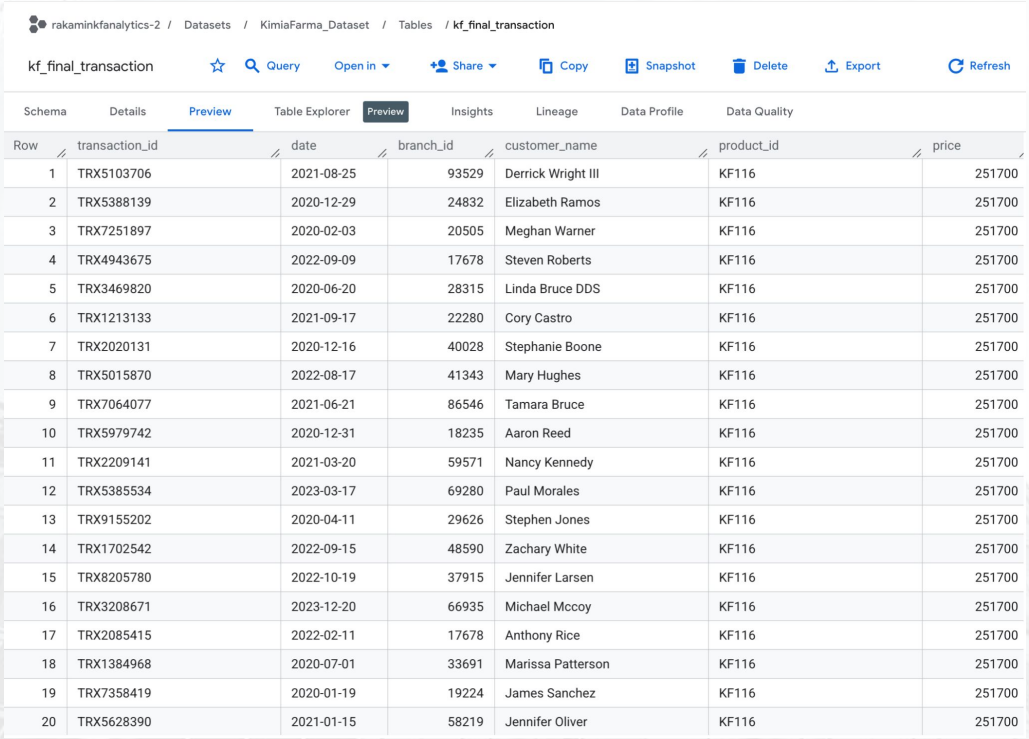
- Kimia Farma's Year-over-Year Revenue Comparison
- Top 10 Total Transactions by Provincial Branches
- Top 10 Net Sales by Provincial Branches
- Top 5 Branches with the Highest Ratings but Lowest Transaction Ratings
- Indonesia's Geo Map of Total Profit by Province

1. Importing Dataset to BigQuery



1. Opened BigQuery and created a new dataset in the US region.
2. Imported each CSV as a separate table using “Create table” → “Upload.”
3. Named tables consistently based on filenames and enabled Auto-detect for schema.
4. Set delimiter as comma and used first row as header.
5. Repeated the upload process for all files
6. Checked each table using Preview to verify data accuracy and correct data types.
7. Planned to clean or convert incorrect types (e.g., numbers stored as strings) later via SQL if needed.

Data Display Final Transaction Table



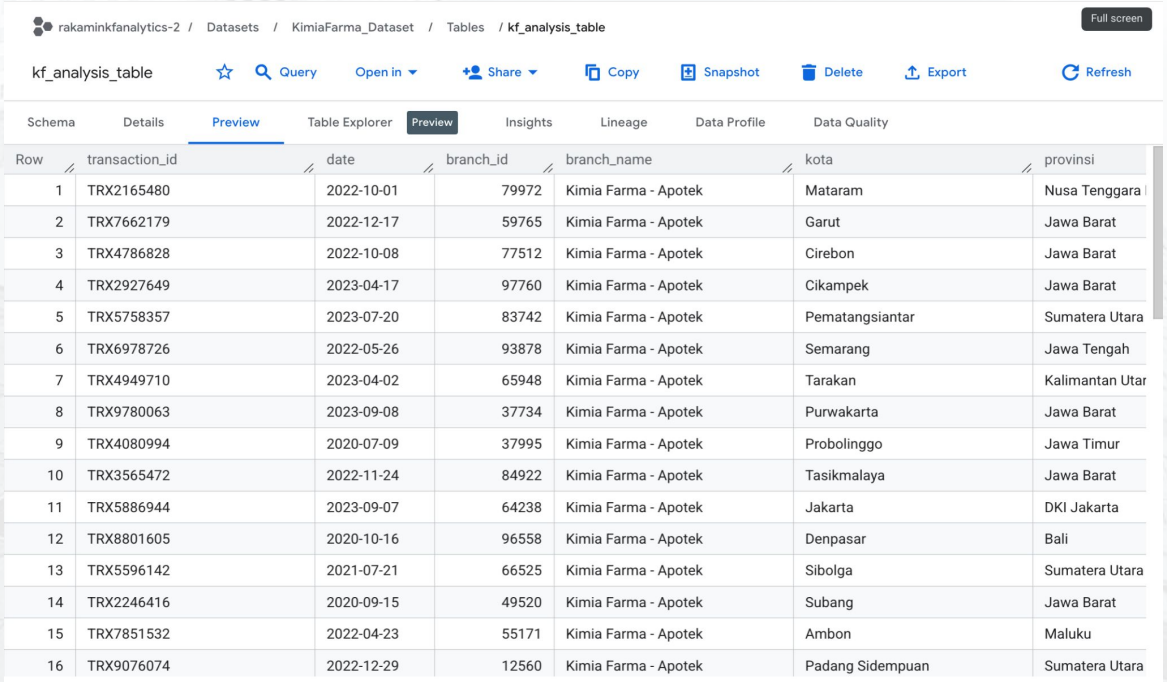
rakaminkfanalytics-2 / Datasets / KimiaFarma_Dataset / Tables / kf_final_transaction

kf_final_transaction ☆ Query Open in Share Copy Snapshot Delete Export Refresh

Schema | Details | Preview | Table Explorer | Preview | Insights | Lineage | Data Profile | Data Quality

Row	transaction_id	date	branch_id	customer_name	product_id	price
1	TRX5103706	2021-08-25	93529	Derrick Wright III	KF116	251700
2	TRX5388139	2020-12-29	24832	Elizabeth Ramos	KF116	251700
3	TRX7251897	2020-02-03	20505	Meghan Warner	KF116	251700
4	TRX4943675	2022-09-09	17678	Steven Roberts	KF116	251700
5	TRX3469820	2020-06-20	28315	Linda Bruce DDS	KF116	251700
6	TRX1213133	2021-09-17	22280	Cory Castro	KF116	251700
7	TRX2020131	2020-12-16	40028	Stephanie Boone	KF116	251700
8	TRX5015870	2022-08-17	41343	Mary Hughes	KF116	251700
9	TRX7064077	2021-06-21	86546	Tamara Bruce	KF116	251700
10	TRX5979742	2020-12-31	18235	Aaron Reed	KF116	251700
11	TRX2209141	2021-03-20	59571	Nancy Kennedy	KF116	251700
12	TRX5385534	2023-03-17	69280	Paul Morales	KF116	251700
13	TRX9155202	2020-04-11	29626	Stephen Jones	KF116	251700
14	TRX1702542	2022-09-15	48590	Zachary White	KF116	251700
15	TRX8205780	2022-10-19	37915	Jennifer Larsen	KF116	251700
16	TRX3208671	2023-12-20	66935	Michael Mccoy	KF116	251700
17	TRX2085415	2022-02-11	17678	Anthony Rice	KF116	251700
18	TRX1384968	2020-07-01	33691	Marissa Patterson	KF116	251700
19	TRX7358419	2020-01-19	19224	James Sanchez	KF116	251700
20	TRX5628390	2021-01-15	58219	Jennifer Oliver	KF116	251700

2. Analysis Table



Row	transaction_id	date	branch_id	branch_name	kota	provinsi
1	TRX2165480	2022-10-01	79972	Kimia Farma - Apotek	Mataram	Nusa Tenggara
2	TRX7662179	2022-12-17	59765	Kimia Farma - Apotek	Garut	Jawa Barat
3	TRX4786828	2022-10-08	77512	Kimia Farma - Apotek	Cirebon	Jawa Barat
4	TRX2927649	2023-04-17	97760	Kimia Farma - Apotek	Cikampek	Jawa Barat
5	TRX5758357	2023-07-20	83742	Kimia Farma - Apotek	Pematangsiantar	Sumatera Utara
6	TRX6978726	2022-05-26	93878	Kimia Farma - Apotek	Semarang	Jawa Tengah
7	TRX4949710	2023-04-02	65948	Kimia Farma - Apotek	Tarakan	Kalimantan Utar
8	TRX9780063	2023-09-08	37734	Kimia Farma - Apotek	Purwakarta	Jawa Barat
9	TRX4080994	2020-07-09	37995	Kimia Farma - Apotek	Probolinggo	Jawa Timur
10	TRX3565472	2022-11-24	84922	Kimia Farma - Apotek	Tasikmalaya	Jawa Barat
11	TRX5886944	2023-09-07	64238	Kimia Farma - Apotek	Jakarta	DKI Jakarta
12	TRX8801605	2020-10-16	96558	Kimia Farma - Apotek	Denpasar	Bali
13	TRX5596142	2021-07-21	66525	Kimia Farma - Apotek	Sibolga	Sumatera Utara
14	TRX2246416	2020-09-15	49520	Kimia Farma - Apotek	Subang	Jawa Barat
15	TRX7851532	2022-04-23	55171	Kimia Farma - Apotek	Ambon	Maluku
16	TRX9076074	2022-12-29	12560	Kimia Farma - Apotek	Padang Sidempuan	Sumatera Utara

1. final analytical table combining transaction, product, and branch data into a complete dataset.
2. Validated data accuracy by checking row counts and NULL values.
3. Verified financial metrics and distribution of net sales and profit.
4. Ran analytical queries to derive key insights: total sales, profit, provincial performance, best-selling products, and branch ratings.
5. Exported the validated analysis table to Looker Studio for dashboard development.

3. BigQuery Syntax - Final Analysis Table

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Untitled query | Run | Save | Download | Share | Schedule

```sql
CREATE OR REPLACE TABLE
  `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table` AS

SELECT
  t.transaction_id,
  t.date,
  t.branch_id,
  b.branch_name,
  b.kota,
  b.provinsi,
  b.rating AS rating_cabang,
  t.customer_name,
  t.product_id,
  p.product_name,
  p.product_category,
  p.price AS actual_price,
  t.discount_percentage,

  CASE
    WHEN p.price <= 50000 THEN 10
    WHEN p.price <= 100000 THEN 15
    WHEN p.price <= 300000 THEN 20
    WHEN p.price <= 500000 THEN 25
    ELSE 30
  END AS persentase_gross_laba,

  (p.price * (1 - t.discount_percentage)) AS nett_sales,

  (p.price * (1 - t.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,

  t.rating

FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_final_transaction` AS t
LEFT JOIN `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_kantor_cabang` AS b
  ON t.branch_id = b.branch_id
LEFT JOIN `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_product_data` AS p
  ON t.product_id = p.product_id;
```

Query for Total Net Sales Per Year

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```sql
SELECT
  EXTRACT(YEAR FROM date) AS year,
  SUM(nett_sales) AS total_nett_sales
FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table`
GROUP BY year
ORDER BY year;
```

Query completed

Using on-demand processing quota

Query results

Save results | Open in

Job information | Results | Visualization | JSON | Execution details | Execution graph

Row	year	total_nett_sales
1	2020	80437605040.0
2	2021	80037846824.0
3	2022	80578445844.0
4	2023	80117292611.0

Query for Top 10 Total Transactions by Province

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```sql
SELECT
  provinsi,
  COUNT(transaction_id) AS total_transactions
FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table`
GROUP BY provinsi
ORDER BY total_transactions DESC
LIMIT 10;
```

Query completed

Using on-demand processing quota

Query results

Save results | Open in

Job information | Results | Visualization | JSON | Execution details

Row	provinsi	total_transactions
1	Jawa Barat	198723
2	Sumatera Utara	48178
3	Jawa Tengah	46494
4	Jawa Timur	34766
5	Sulawesi Utara	33339
6	Sumatera Barat	32014
7	Aceh	21825
8	Nusa Tenggara Barat	21069

Query for Top 10 Net Sales by Province

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```sql
SELECT
  provinsi,
  SUM(nett_sales) AS total_nett_sales
FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table`
GROUP BY provinsi
ORDER BY total_nett_sales DESC
LIMIT 10;
```

Query completed

Using on-demand processing quota

Query results

Save results | Open in

Job information | Results | Visualization | JSON | Execution details

Row	provinsi	total_nett_sales
1	Jawa Barat	94869594875.0
2	Sumatera Utara	22952159897.0
3	Jawa Tengah	22248101144.0
4	Jawa Timur	16627080704.0
5	Sulawesi Utara	15902759535.0
6	Sumatera Barat	15314406695.0
7	Aceh	10467971437.0
8	Nusa Tenggara Barat	10036738806.0

Query for Top 5 Highest Rated Branches but Low Transaction Ratings

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```sql
SELECT
  kota,
  branch_name,
  AVG(rating_cabang) AS avg_branch_rating,
  AVG(rating) AS avg_transaction_rating,
  (AVG(rating_cabang) - AVG(rating)) AS rating_gap
FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table`
GROUP BY kota, branch_name
ORDER BY rating_gap DESC
LIMIT 5;
```

Query completed

Using on-demand processing quota

Query results

Save results | Open in

Job information | Results | Visualization | JSON | Execution details

Row	kota	branch_name	avg_branch_rating
1	Pematangsiantar	Kimia Farma - Klinik-Apotek-Lab...	4.830083333333
2	Jambi	Kimia Farma - Klinik & Apotek	4.771483375959
3	Sorong	Kimia Farma - Apotek	4.7252988047808
4	Batam	Kimia Farma - Klinik-Apotek-Lab...	4.728635204081
5	Cilacap	Kimia Farma - Klinik-Apotek-Lab...	4.713759761993

Query for Indonesian Geo Map of Total Profit of Each Province

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```sql
SELECT
  provinsi,
  SUM(nett_profit) AS total_profit
FROM `rakaminkfanalytics-2.KimiaFarma_Dataset.kf_analysis_table`
GROUP BY provinsi
ORDER BY total_profit DESC;
```

Query completed

Using on-demand processing quota

Query results

Save results | Open in

Job information | Results | Visualization | JSON | Execution details

Row	provinsi	total_profit
1	Jawa Barat	26940703195.15...
2	Sumatera Utara	6517187359.84993
3	Jawa Tengah	6318005348.249...
4	Jawa Timur	4722764504.199...
5	Sulawesi Utara	4516325323.599...
6	Sumatera Barat	4349184029.450...
7	Aceh	2973594696.100...
8	Nusa Tenggara Barat	2848908857.599...

Query for Year-over-Year Revenue Growth

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YOY-REVENUE-GROWTH | Run | Download | Share | Schedule

```
1  WITH yearly AS (
2    SELECT
3      EXTRACT(YEAR FROM date) AS year,
4      SUM(nett_sales) AS revenue
5    FROM `KimiaFarma_Dataset.kf_analysis_table`
6    GROUP BY year
7  )
8  SELECT
9    year,
10   revenue,
11   ROUND(
12     100 * (revenue - LAG(revenue) OVER (ORDER BY year))
13     / LAG(revenue) OVER (ORDER BY year),
```

This query will process 10.26 MB when run.

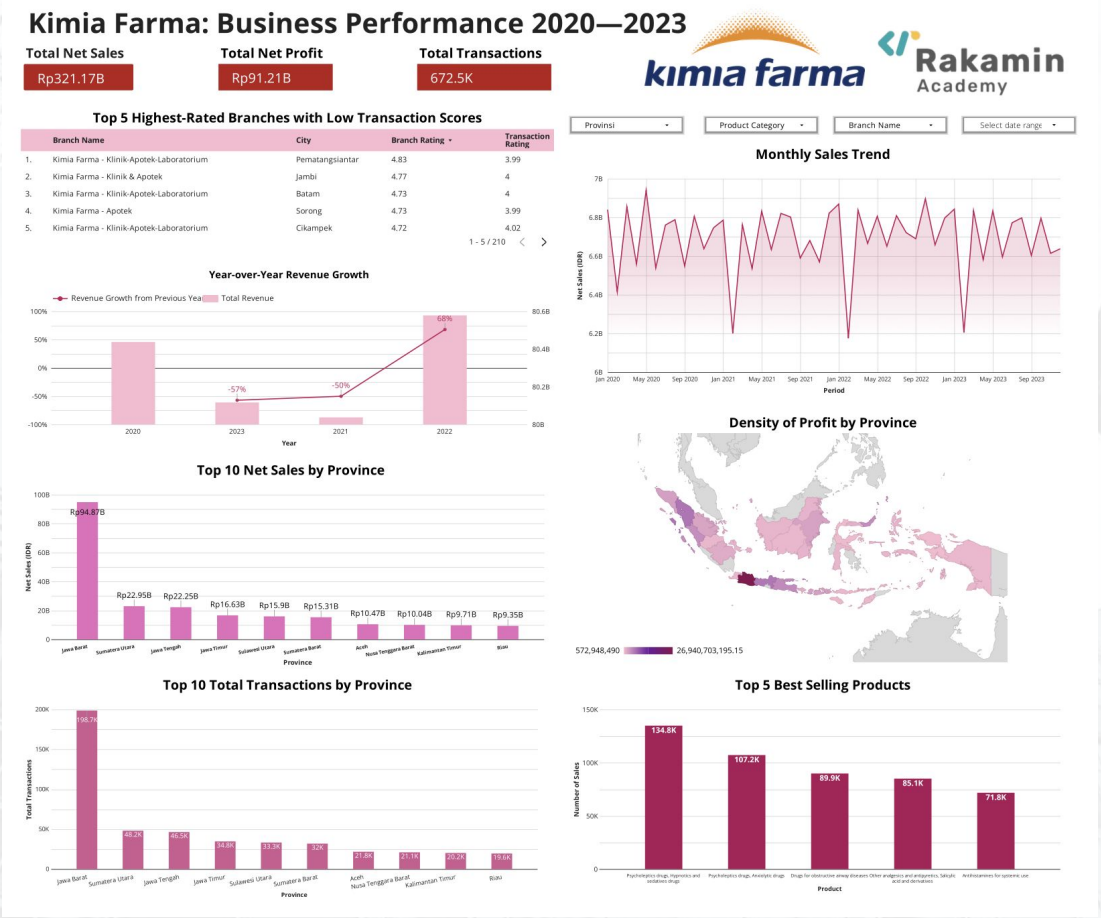
Using on-demand processing quota

Query results | Save results

Job information | Results | Visualization | JSON | Execution details | Execution graph

Row	year	revenue	YoY_revenue_gro...
1	2020	80437605040.0	*null*
2	2021	80037846824.0	-0.5
3	2022	80578445844.0	0.68
4	2023	80117292611.0	-0.57

4. Performance Analytics Dashboard



Key Insights

- West Java leads in performance, generating ~Rp 94.9B in net sales
- Highest transaction volume also seen in West Java with ~198.7K transactions
- Revenue trends remained stable year-over-year
- Peak revenue in Jan–Feb 2022 at ~Rp 7B
- Lowest revenue in March 2022 at just under Rp 6B
- Psycholeptic drugs ranked as highest-demand product category
- Hypnotic & sedative products recorded ~134.8K transactions

Conclusion:

West Java remains the strongest revenue driver, with stable but seasonally influenced sales patterns and sustained demand for psycholeptic, particularly hypnotic and sedative products, providing clear guidance for market prioritization, inventory planning, and strategic resource allocation.

Links

GitHub: https://github.com/izzazahrotunnisa/Rakamin-KimiaFarma/tree/main

LinkedIn: https://www.linkedin.com/in/izzazahrotunnisa/

Presentation Video: https://youtu.be/18qiuSAgeNE

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Thank You!

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