



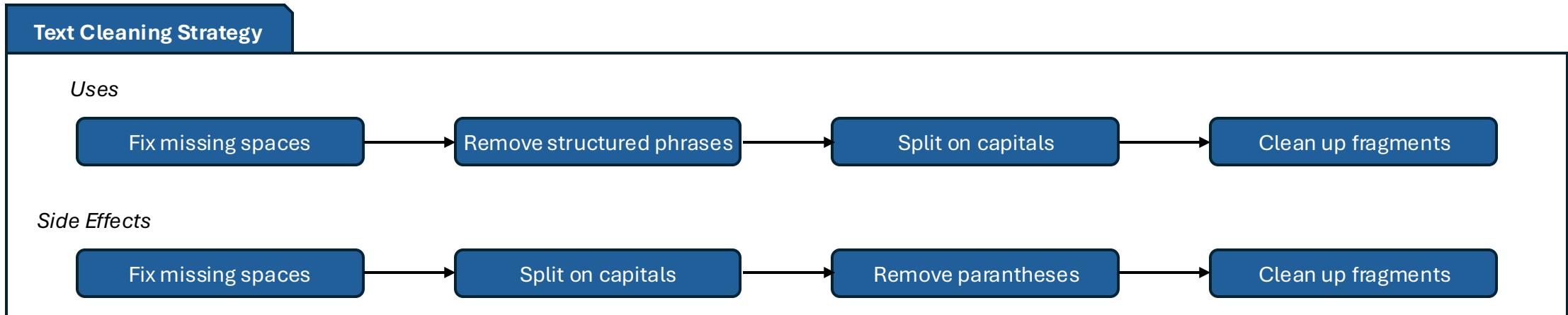
# **Analyzing Drug Medication Database Project**

Nathan Arimilli, Humphrey Hui,  
Pranit Yadav

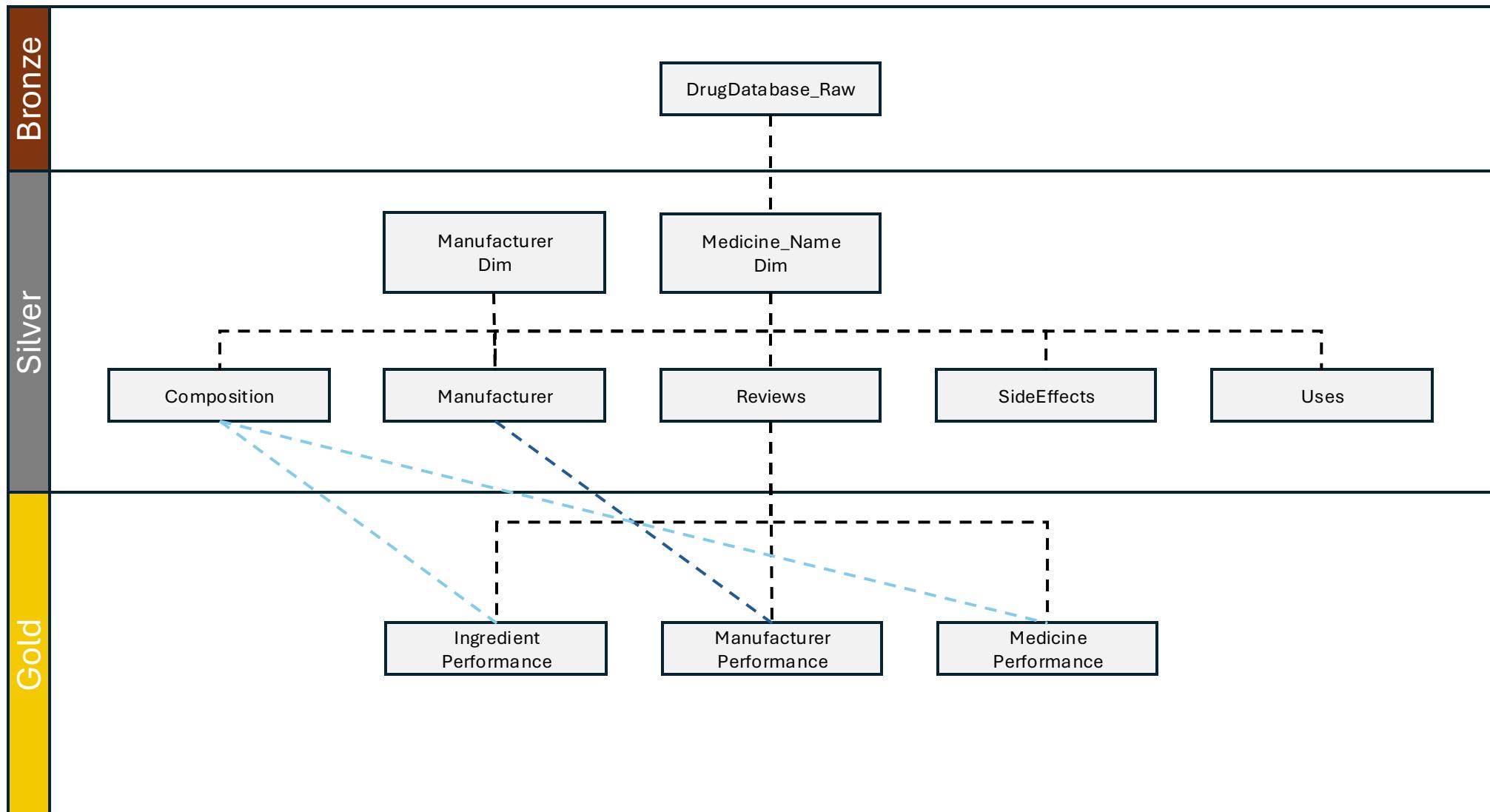
# Data Background

We chose to work with Drug Dataset found on Kaggle with 9 columns and 11.8k rows.

Medicine Name	Composition	Uses	Side Effects	Image URL	Manufacturer	Excellent Review %	Average Review %	Poor Review %
Azithral 500 Tablet	Azithromycin (500mg)	Treatment of Bacterial infections	Nausea Abdominal pain Diarrhea	<a href="https://onemg.gumlet.io/">https://onemg.gumlet.io/...</a>	Alembic Pharmaceuticals Ltd	39	40	21

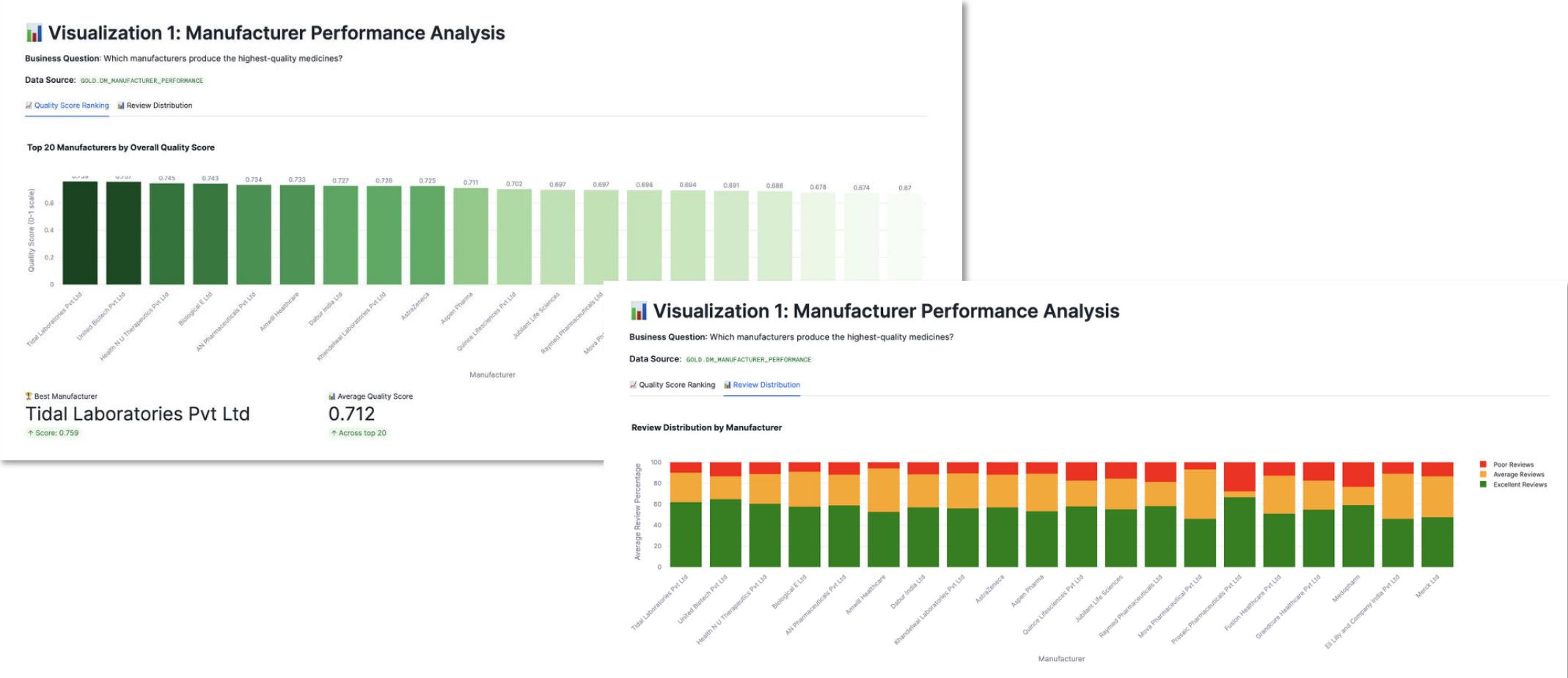


# Medallion Architecture



# Gold Layer Streamlit Visualizations

## Manufacturer Performance:



# Gold Layer Streamlit Visualizations

## Medicine Performance:

 **Visualization 2: Top-Performing Medicines**

Business Question: Which medicines deliver the best customer satisfaction?

Data Source: GOLD\_DM\_TOP\_MEDICINES

Filter by Performance

All

[Leaderboard Table](#) [Performance vs Complexity](#)

OVERALL_RANK	MEDICINE_NAME	MANUFACTURER	EXCELLENT REVIEW PERCENTAGE	OVERALL_QUALITY_SCORE	PERFORMANCE_CATEGORY
0	1 Decdan Next 6mg Tablet	Wockhardt Ltd	100.0%	1.0000	Excellent Performer
1	1 K Terbimax Cream	Eskon Pharma	100.0%	1.0000	Excellent Performer
2	1 Tribet 1 Tablet ER	Abbott	100.0%	1.0000	Excellent Performer
3	1 Twintel 40 Tablet	Zydus Cadila	100.0%	1.0000	Excellent Performer
4	1 Seizgard 200mg Tablet	UCB India Pvt Ltd	100.0%	1.0000	Excellent Performer
5	1 Seizgard 200mg Tablet	UCB India Pvt Ltd	100.0%	1.0000	Excellent Performer
6	1 Seizgard 200mg Tablet	UCB India Pvt Ltd	100.0%	1.0000	Excellent Performer
7	1 Seizgard 200mg Tablet	UCB India Pvt Ltd	100.0%	1.0000	Excellent Performer
8	1 Olsivir Capsule	Glenmark Pharmaceuticals Ltd	100.0%	1.0000	Excellent Performer
9	1 Emilmont 5mg/10mg Tablet	Dr Cure Pharmaceuticals India Pvt Ltd	100.0%	1.0000	Excellent Performer
10	1 Trioptal 450 Tablet	Novartis India Ltd	100.0%	1.0000	Excellent Performer
11	1 NAC -AQ Injection	Systopic Laboratories Pvt Ltd	100.0%	1.0000	Excellent Performer
12	1 Enzrid-DS Tablet	Zunison Healthcare	100.0%	1.0000	Excellent Performer
13	1 Telmijub AM 80mg Tablet	Jubilant Life Sciences	100.0%	1.0000	Excellent Performer
14	1 Glynamic M 2mg/500mg Tablet	Fusion Healthcare Pvt Ltd	100.0%	1.0000	Excellent Performer
15	1 Omnix 100 Dry Syrup Strawberry	Cipla Ltd	100.0%	1.0000	Excellent Performer

[Download Full Data as CSV](#)

 **Visualization 2: Top-Performing Medicines**

Business Question: Which medicines deliver the best customer satisfaction?

Data Source: GOLD\_DM\_TOP\_MEDICINES

Filter by Performance

All

[Leaderboard Table](#) [Performance vs Complexity](#)

**Medicine Performance vs Ingredient Complexity (Top 30)**

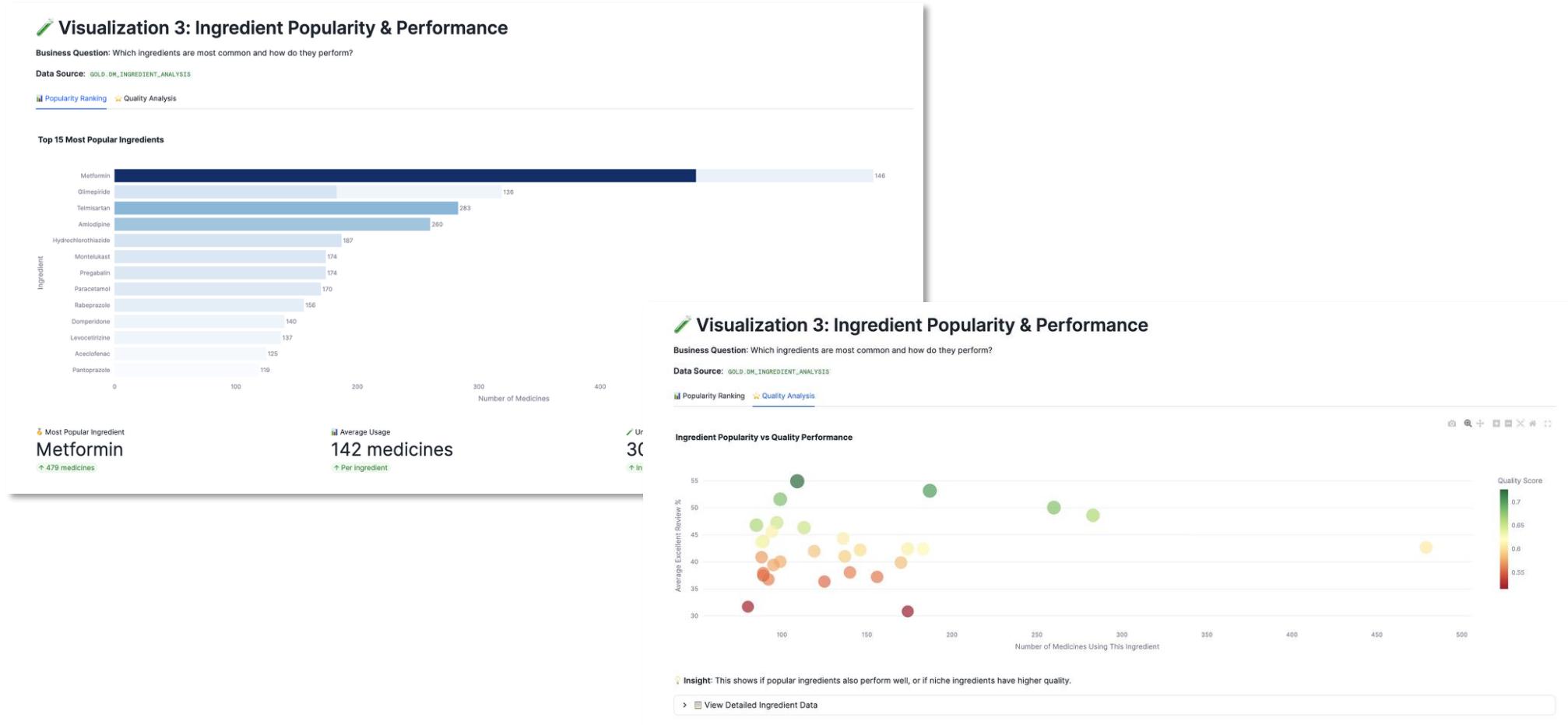


PERFORMANCE\_CATEGORY  
● Excellent Performer

Insight: This chart shows if medicine complexity (number of ingredients) correlates with performance.

# Gold Layer Streamlit Visualizations

## Ingredient Performance:



# AI SQL

We created two AI SQL columns: AI\_Recommendation and AI\_Summary.

The screenshot shows a data preview interface for a table named 'ANIMAL\_TASK\_WH' in the 'DB\_TEAM\_HNP / BRONZE / DRUGDATABASE\_RAW' database. The interface includes navigation tabs for Table Details, Columns, Data Preview (which is selected), Copy History, Data Quality, PREVIEW, and Lineage. It also features buttons for Describing the table, loading data, and more options. The data preview displays 100 rows out of 11.8K, updated just now. The columns shown are R REVIEW PERCENTAGE, AI RECOMMENDATION, and AI SUMMARY. A red dashed box highlights the AI RECOMMENDATION column, which contains AI-generated text-based recommendations for medical treatments. The AI\_SUMMARY column contains detailed pharmaceutical information for each recommendation.

R REVIEW PERCENTAGE	AI RECOMMENDATION	AI SUMMARY
1	22 Based on the provided information, I recommend that doctors consider Avastin 4...	Avastin 400mg Injection, manufactured by Roche Products India Pvt Ltd, contain...
2	18 Based on the information provided, I would recommend Augmentin 625 Duo Tab...	Medicine: Augmentin 625 Duo Tablet. Manufacturer: Glaxo SmithKline Pharmace...
3	21 Based on the information provided, I would recommend Azithral 500 Tablet as a...	Medicine: Azithral 500 Tablet. Manufacturer: Alembic Pharmaceuticals Ltd. Ingre...
4	35 Based on the medication's ingredients and side effects, I recommend that doctor...	Medicine: Ascoril LS Syrup. Manufacturer: Glenmark Pharmaceuticals Ltd. Ingre...
5	29 Based on the information provided, I recommend that doctors consider prescri...	Medicine: Aciloc 150 Tablet. Manufacturer: Cadila Pharmaceuticals Ltd. Ingre...

# Cortex Search

```
207
208 WITH search_results AS (
209     SELECT PARSE_JSON(
210         SYSTEM$CORTEX_SEARCH_QUERY(
211             'DB_TEAM_HNP.BRONZE.BRONZE_SEARCH',
212             '{"query": "antibiotics for bacterial infections", "limit": 10}'
213         )
214     ) AS result
215 )
216 SELECT
217     f.value:MEDICINE_NAME::STRING AS medicine_name,
218     f.value:@scores:cosine_similarity::FLOAT AS relevance_score
219 FROM search_results,
220 LATERAL FLATTEN(input => result:results) f
221 ORDER BY relevance_score DESC;
```

Results (just now)

Table Chart

MEDICINE_NAME	RELEVANCE_SCORE
Ibflux Oral Solution	0.44051868
Inmecin 50mg Capsule	0.4692691
+8 more	
Percin Tablet	0.46188933
Supirocin-B Plus Ointment	0.45389456
Inmecin 50mg Capsule	0.45343328
Pirox Gel 30gm for Skin Infections	0.45158833
Zithrocin 500mg Tablet	0.45128083
Supirocin Ointment	0.4497434
Zithrocin XL Syrup	

Q 10 rows 174ms

```
240
241 WITH search_results AS (
242     SELECT PARSE_JSON(
243         SYSTEM$CORTEX_SEARCH_QUERY(
244             'DB_TEAM_HNP.BRONZE.BRONZE_SEARCH',
245             '{"query": "diabetes treatment medication", "limit": 10}'
246         )
247     ) AS result
248 )
249 SELECT
250     f.value:MEDICINE_NAME::STRING AS medicine_name,
251     f.value:@scores:cosine_similarity::FLOAT AS relevance_score
252 FROM search_results,
253 LATERAL FLATTEN(input => result:results) f
254 ORDER BY relevance_score DESC;
```

Results (just now)

Table Chart

MEDICINE_NAME	RELEVANCE_SCORE
Diabetrol SR Tablet	0.5081167
Diabetrol Tablet	0.57148015
+8 more	
Diabetrol Tablet	0.5553127
Diabetrol SR Tablet	0.54780054
Dibeta GB 5 mg/500 mg Tablet	0.5282036
Metformin 850mg Tablet	0.527387
Gluformin 500 Tablet	0.5239576
Triformin 5mg/500mg/15mg Tablet	0.5229777
Mibeta 20mg Tablet	

Q 10 rows 180ms

# Cortex Analyst

Code Snippet 1 (SQL Query 1):

```

270    CONCAT(
271      'Based on this data, should doctors prescribe this for bacterial infections?\n',
272      'Medicine: ', MEDICINE_NAME, '\n',
273      'Uses: ', USES, '\n',
274      'Side Effects: ', SIDE_EFFECTS, '\n',
275      'Patient Rating: ', EXCELLENT REVIEW_PERCENTAGE, '%\n\n',
276      'Answer: YES or NO, then give 1 sentence explaining why.'
277    )
278  ) AS prescription_recommendation
279 FROM DRUGDATABASE_RAW
280 WHERE LOWER(USES) LIKE '%bacterial%'
281 ORDER BY EXCELLENT REVIEW_PERCENTAGE DESC
282 LIMIT 10;

```

Results (just now)

	MEDICINE_NAME	MANUFACTURER	EXCELLENT REVIEW PERCENTAGE	PRESCRIPTION RECOMMENDATION
1	Acnecap Gel	Micro Labs Ltd	10.0%	NO The medicine is intended for the treatment of b...
2	Aminogen Eye ...	AN Pharmaceuticals Pv...	10.0%	NO The medicine is labeled for use in bacterial infec...
3	+8 more	+6 more	100	+8 more

Code Snippet 2 (SQL Query 2):

```

-- QUERY 3: What are the safest medicines in our database (risk assessment)?
-- Business Value: Risk management, insurance optimization, patient safety
-- SELECT
-- MEDICINE_NAME,
-- MANUFACTURER,
-- SIDE_EFFECTS,
-- EXCELLENT REVIEW_PERCENTAGE,
-- POOR REVIEW_PERCENTAGE,
-- SNOWFLAKE.COREX_COMPLETE(
--   'l1m3-Bb',
--   CONCAT(
--     'Assess the safety profile:\n',
--     'Medicine: ', MEDICINE_NAME, '\n',
--     'Side Effects: ', SIDE_EFFECTS, '\n',
--     'Excellent Reviews: ', EXCELLENT REVIEW_PERCENTAGE, '%\n\n',
--     'Poor Reviews: ', POOR REVIEW_PERCENTAGE, '%\n\n',
--     'Risk safety as: VERY SAFE, SAFE, MODERATE RISK, or HIGH RISK. ',
--     'Explain in 1 sentence.'
--   )
-- ) AS safety_rating
FROM DRUGDATABASE_RAW
WHERE EXCELLENT REVIEW_PERCENTAGE >= 50
ORDER BY POOR REVIEW_PERCENTAGE ASC
LIMIT 15;

```

USE ROLE ROLE\_TEAM\_HIP;

Table:

MEDICINE_NAME	MANUFACTURER	SIDE_EFFECTS	EXCELLENT REVIEW PERCENTAGE	POOR REVIEW PERCENTAGE	SAFETY_RATING
Proxylon Tablet	Ajanta Pharma Ltd	Abdominal pain Allergy Vomiting Nausea Diarrhea Muc...	6.7%	93	I would rate the safety profile of Ace Proxylon Tablet as ...
Injection	Aklem Laboratories Ltd	Akathisia inability to stay still Anxiety Blurred vision Con...	6.7%	0	I would rate the safety profile of Alloc Injection as VERY ...
+13 more	+13 more	+13 more	+13 more	+13 more	+13 more
Proxylon Tablet	Dr Reddy's Laboratories Ltd	Nausea Vomiting Stomach pain epigastric pain Loss of appetite Hea...	53	0	I would rate the safety profile of Ace-Proxylon Tablet as SAFE, as w...
sun 1000mg Tablet	Sun Pharmaceutical Industries Ltd	Diarrhea Dizziness Hives Itching Nausea Erythema skin redness Sto...	83	0	I would rate the safety profile of Alosome 1000mg Tablet as VERY E...
LS Ophthalmic Solution	Allergan India Pvt Ltd	Burning sensation Stinging sensation	53	0	I would rate the safety profile of Acular LS Ophthalmic Solution as VI...
0.25mcg Capsule	Panacea Biotech Ltd	Rash Itching Abdominal pain Increased calcium level in blood Incre...	100	0	I would rate the safety profile of Alphadil 0.25mcg Capsule as VERY ...
Amrolite Syrup	Tablets India Limited	Vomiting Nausea Upset stomach	56	0	I would rate the safety profile of Amrolite Syrup as VERY SAFE, as i...
z 20 Tablet	Zydus Cadila	Dyspepsia Abdominal pain Indigestion Diarrhea Joint pain Nasophar...	56	0	I would rate the safety profile of Alorva 20 Tablet as MODERATE RIS...
MT 2 Tablet	Torrent Pharmaceuticals Ltd	Akathisia inability to stay still Anxiety Blurred vision Constipation Diz...	89	0	I would rate the safety profile of Arip MT 2 Tablet as VERY SAFE, as i...
rops DM Eye Drop	Ajanta Pharma Ltd	Eye irritation Eye discomfort Blurred vision	78	0	I would rate the safety profile of Atropos DM Eye Drop as VERY SAF...
10mg/5mg Tablet	Lupin Ltd	Hypoglycemia low blood glucose level Cough Nasopharyngitis inflam...	67	0	I would rate the safety profile of Ajduco 10mg/5mg Tablet as SAFE, as i...
ates CV10 Capsule	Macleods Pharmaceuticals Pvt Ltd	Stomach pain Diarrhea Indigestion Constipation Headache Dizziness Wi...	100	0	I would rate the safety profile of Atomax CV10 Capsule as VERY SA...
l-Trio 50 Tablet ER	Micro Labs Ltd	Nausea Taste change Constipation Diarrhea Headache Dizziness Wi...	59	0	I would rate the safety profile of Arotel-Trio 50 Tablet ER as MODER...
2.5 Tablet	Natco Pharma Ltd	Anemia low number of red blood cells Blood in urine Bruise Nausea I...	53	0	I would rate the safety profile of Agipat 2.5 Tablet as MODERATE RIS...
Injection	Cadila Pharmaceuticals Ltd	Headache Diarrhea Gastrointestinal disturbance	89	0	I would rate the safety profile of Alcloc injection as VERY SAFE, as it...
en-DS Suspension	Zuventus Healthcare Ltd	Abdominal pain Allergy Vomiting Nausea Diarrhea Mucocutaneous c...	52	0	I would rate the safety profile of Augen-DS Suspension as SAFE, as it...
xD Eye/Ear Drops	Aklem Laboratories Ltd	Application site reactions burning irritation Itching and redness Eye i...	67	0	I would rate the safety profile of Alciflox D Eye/Ear Drops as SAFE, as...

# Incremental Load (Before)

We loaded a sample file with three rows, one of them being manufactured by GSK.

**Bronze**

```
SELECT COUNT(*) AS rows_before_load
FROM Bronze.DrugDatabase_Raw;
```

(just now) Chart Q 1 row 90ms 11825

Results (just now) Table Chart

# ROWS_BEFORE_LOAD
11825

**Gold**

```
5
6   SELECT Total_Medicines
7   FROM Gold.DM_Manufacturer_Performance
8   WHERE Manufacturer = 'GlaxoSmithKline Pharmaceuticals Ltd';
9
```

Results (just now) Table Chart 0 rows 174ms

TOTAL\_MEDICINES

Query produced no results

**Silver**

```
303   SELECT COUNT(*) AS rows_before_load
304   FROM Silver.DrugDatabase_Medicine_Ref;
```

Results (just now) Table Chart 1 row 56ms 11498

# ROWS_BEFORE_LOAD
11498

# Incremental Load (After)

Bronze and Silver layers show 3 additional entries each, and Gold layer identifies one new medicine from GSK.

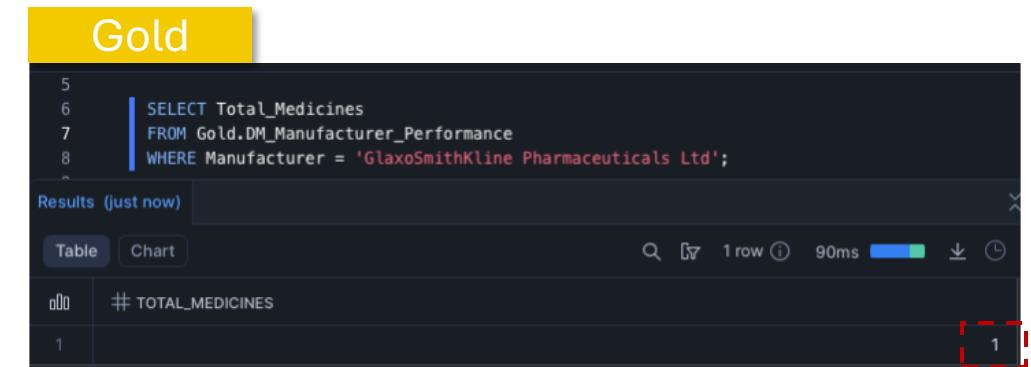
**Bronze**

```
9  
10 | SELECT COUNT(*) AS rows_after_load  
11 | FROM Bronze.DrugDatabase_Raw;  
12 |  
Results (just now)  
Table Chart  
000 | # ROWS_AFTER_LOAD  
1 | 11828
```



**Gold**

```
5  
6 | SELECT Total_Medicines  
7 | FROM Gold.DM_Manufacturer_Performance  
8 | WHERE Manufacturer = 'GlaxoSmithKline Pharmaceuticals Ltd';  
Results (just now)  
Table Chart  
000 | # TOTAL_MEDICINES  
1 | 1
```



**Silver**

```
13 | SELECT COUNT(*) AS rows_after_load  
14 | FROM Silver.DrugDatabase_Medicine_Ref;  
15 |  
16 | --- ======  
Results (just now)  
Table Chart  
000 | # ROWS_AFTER_LOAD  
1 | 11501
```

