Table RAG

Table RAG

- In companies information usually stored in a structured approach

- typically SQL

- to fetch data from complex database-systems, good technical understand of SQL schemas is required
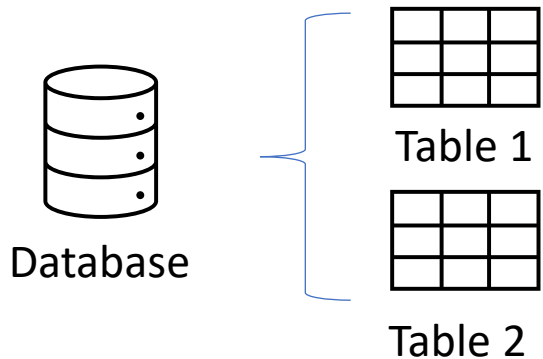
- This limits the use of many colleagues.

Database

Table 1

Table 2

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Table RAG

- Table RAG allows to ask SQL tables with human questions!
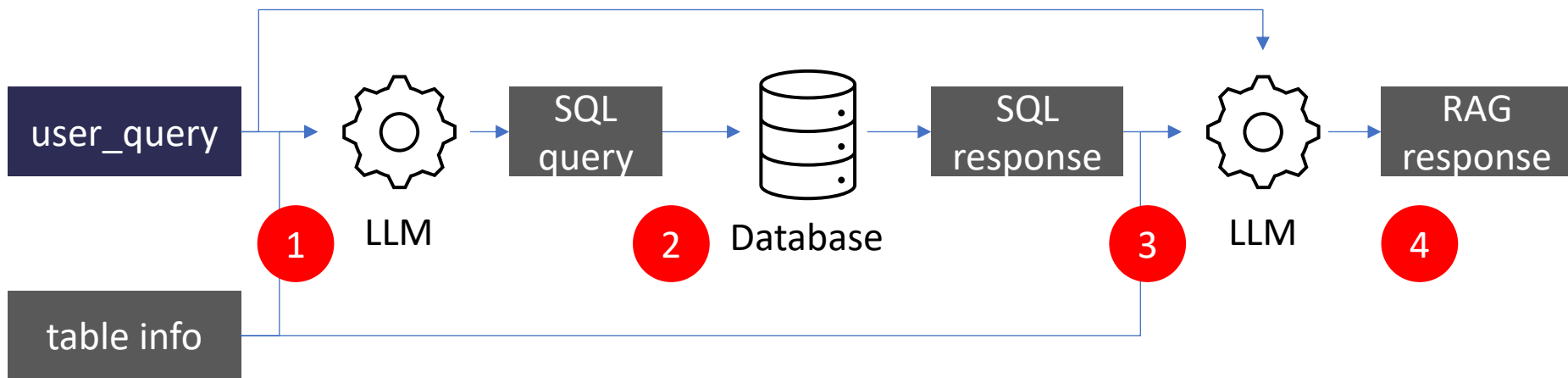

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Table RAG

Example

sale_id	product_name	origin_country	bean_type	roast_level	price_per_kg	quantity_kg	sale_date	customer_id	region	organic	certification
1	Ethiopian Yirgacheffe	Ethiopia	Arabica	Light	28.5	500	15/08/2024	103	North America	TRUE	Fair Trade
2	Colombian Supremo	Colombia	Arabica	Medium	24.75	750	22/07/2024	205	Europe	TRUE	Rainforest Alliance
3	Sumatra Mandheling	Indonesia	Arabica	Dark	22	300	01/09/2024	187	Asia	FALSE	NULL
4	Jamaican Blue Mountain	Jamaica	Arabica	Medium	85	100	05/08/2024	321	North America	TRUE	Organic
5	Brazilian Santos	Brazil	Arabica	Medium-Dark	18.5	1200	12/09/2024	142	South America	FALSE	NULL
6	Vietnamese Robusta	Vietnam	Robusta	Dark	15.75	2000	30/07/2024	256	Asia	FALSE	NULL
7	Kenyan AA	Kenya	Arabica	Medium	32	400	22/08/2024	119	Europe	TRUE	Fair Trade
8	Costa Rican Tarrazu	Costa Rica	Arabica	Light-Medium	27.5	350	05/09/2024	244	North America	TRUE	Bird Friendly
9	Guatemalan Antigua	Guatemala	Arabica	Medium	26.25	600	18/08/2024	173	Europe	FALSE	Rainforest Alliance
10	Indian Monsooned Malabar	India	Arabica	Medium-Dark	24	300	10/09/2024	298	Asia	FALSE	NULL

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Table RAG

```
Which regions
prefer light
roast coffee?
```

user_query

table info

LLM

SQL query

Database

SQL response

LLM

RAG response

```
coffee_sales (
    sale_id INT PRIMARY KEY,
    product_name VARCHAR(100),
    origin_country VARCHAR(50),
    bean_type VARCHAR(50),
    …
)
```

```
SELECT region, COUNT(*)
as light_roast_count
FROM coffee_sales WHERE
roast_level = 'Light'
GROUP BY region ORDER BY
light_roast_count DESC;
```

```
[('North
America', 1)]
```

Basierend auf den Daten bevorzugten Kunden in Nordamerika Light-Roast-Kaffee am meisten. In der Tabelle ist nur eine Region aufgeführt, nämlich Nordamerika, mit einer Anzahl von 1. Es gibt keine Informationen über andere Regionen, die Light-Roast-Kaffee bevorzugen.

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