



# Reimagining Data Workflows with Weaviate Agents

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# Meet our speakers:



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Developer Experience



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Senior Developer Educator



**Charles Pierse**

Director of Innovation Labs



**Tuana Çelik**

Developer Relations Engineer



# Agenda

## 1 An Overview of Weaviate Agents

by Charles Pierse

## 3 Transformation Agent

by JP Hwang

## 2 Query Agent

by Tuana Çelik

## 4 Personalization Agent

by Sebastian Witalec



# Weaviate Agents

## Let's discuss



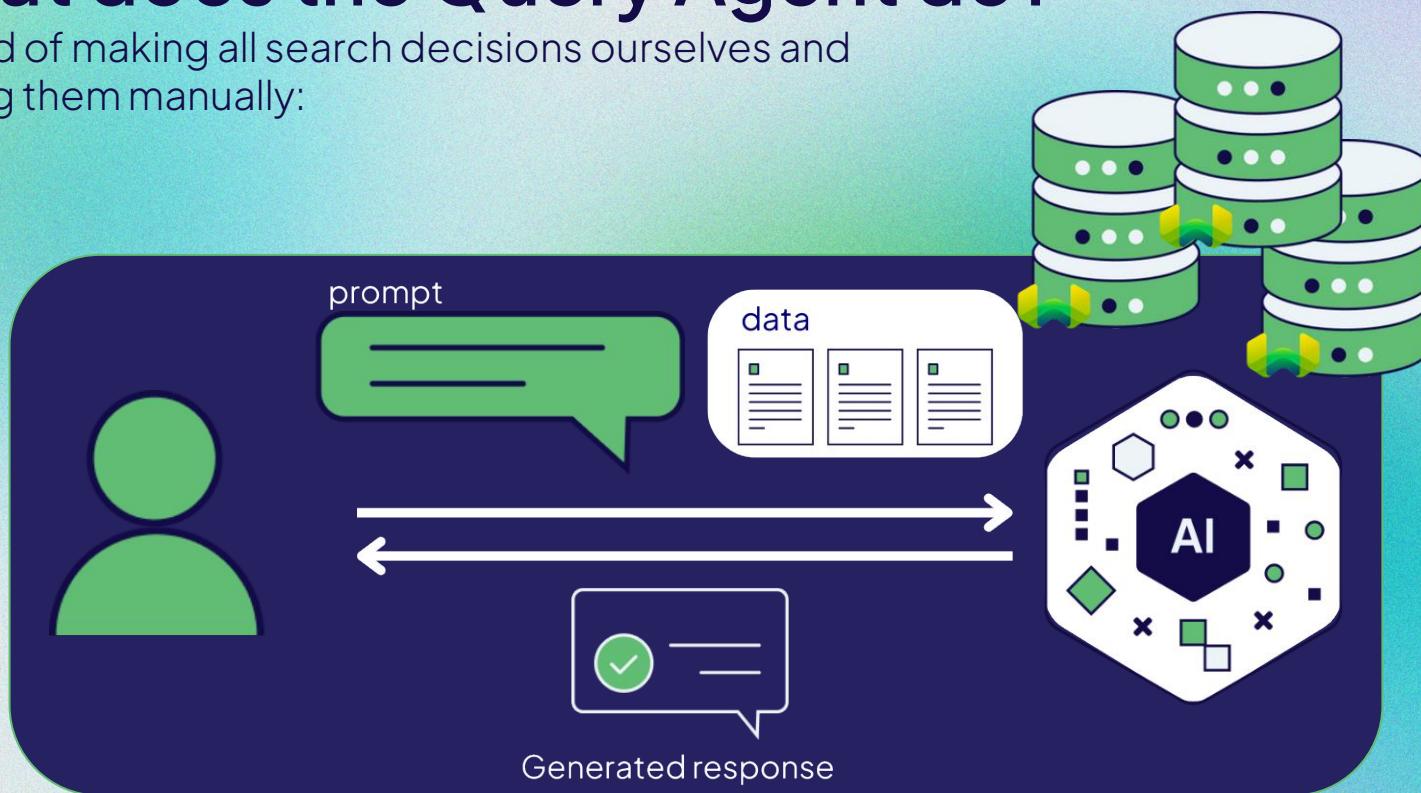
# Query Agent

Ask complex questions about your  
data in Weaviate



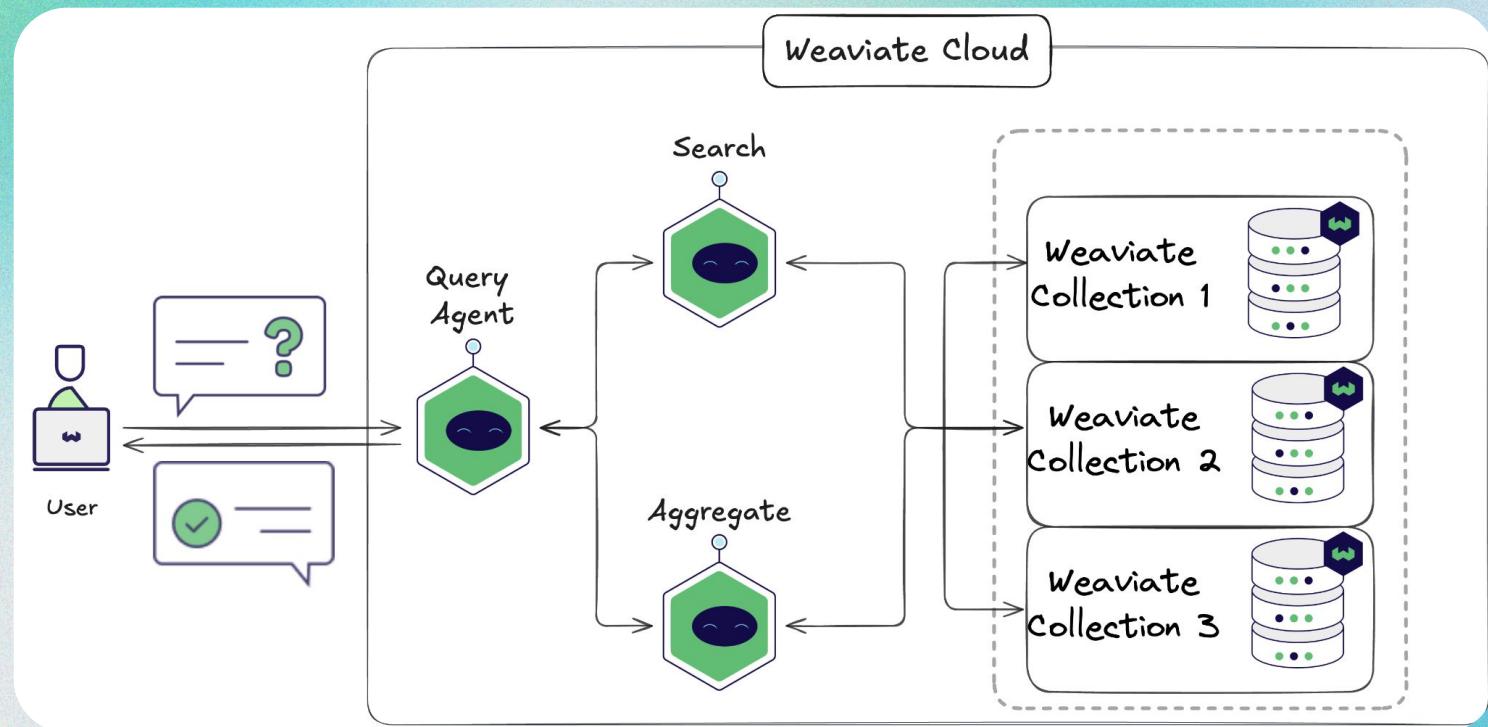
# What does the Query Agent do?

Instead of making all search decisions ourselves and running them manually:



# What does the Query Agent do?

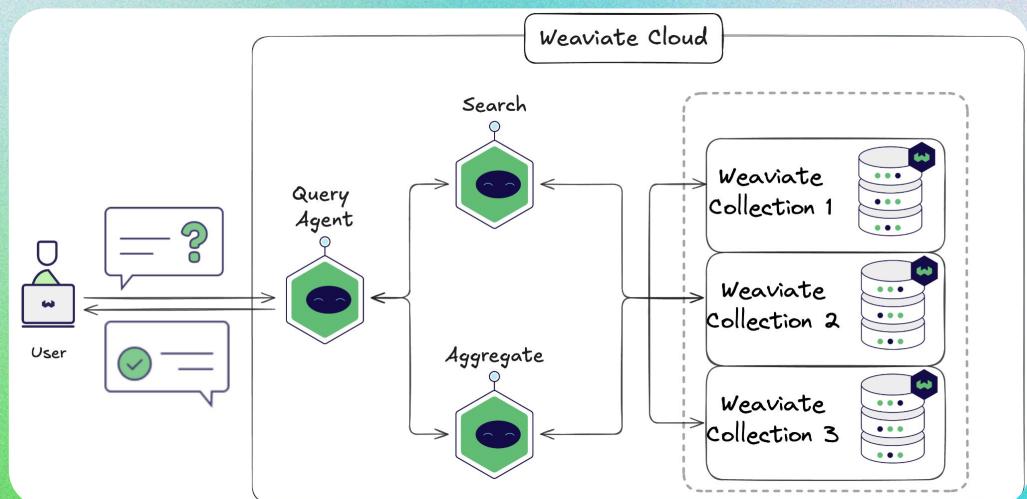
Instead of making all search decisions ourselves and running them manually:



# What does the Query Agent do?

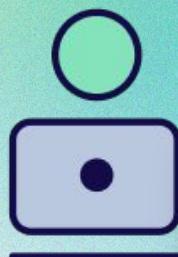
Based on a user's query, the agent:

1. Decides which collection(s) to access.
2. Determines if we need regular semantic search, aggregations, or both.
3. Formulates the Weaviate query for each search that will be made.
4. Determines the filters for each query if necessary.
5. Based on the results from all searches, formulates a final answer.





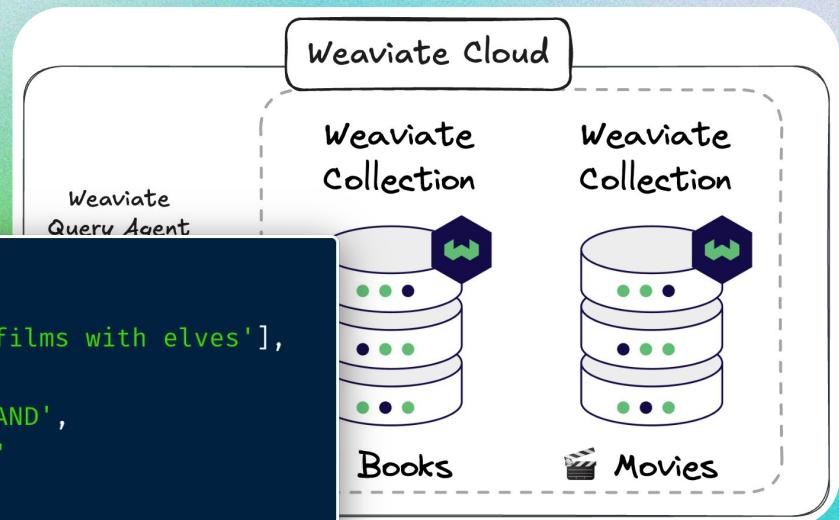
# Classifying User Queries



What are some good fantasy films that involve elves?

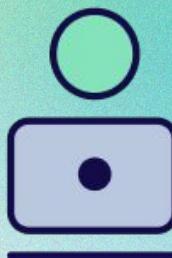
○ ○ ○

```
QueryResultWithCollection(queries=['fantasy films with elves'],
                           filters=[[]],
                           filter_operators='AND',
                           collection='Movies'
                         )
```



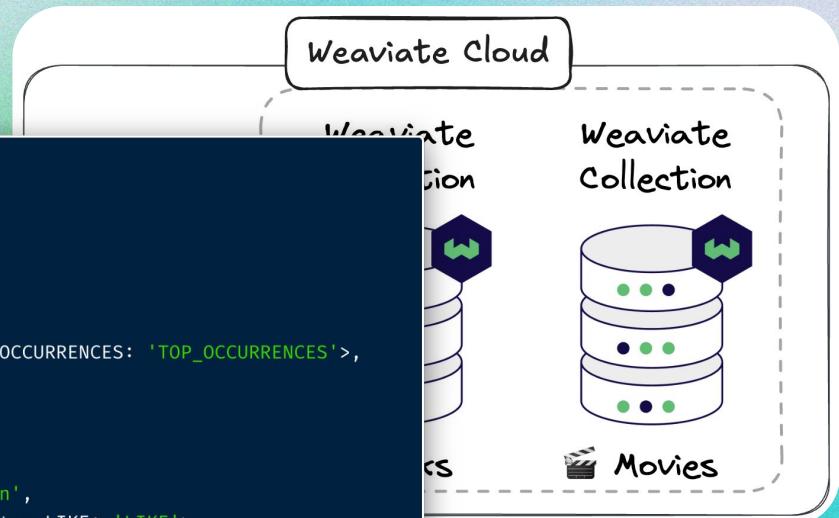


# Classifying User Queries



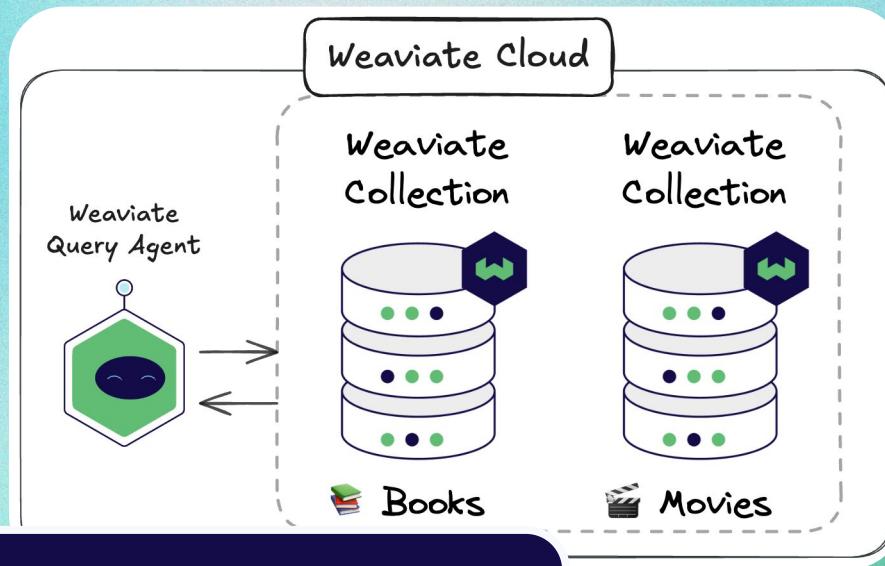
Which author has the most books in the 'fantasy'

```
AggregationResultWithCollection(search_query=None,  
                                groupby_property='author',  
                                aggregations=[  
                                    TextPropertyAggregation(  
                                        property_name='title',  
                                        metrics=<TextMetrics.TOP_OCCURRENCES: 'TOP_OCCURRENCES'>,  
                                        top_occurrences_limit=1  
                                    ),  
                                    filters=[  
                                        TextPropertyFilter(  
                                            property_name='description',  
                                            operator=<ComparisonOperator.LIKE: 'LIKE'>,  
                                            value='*fantasy*')],  
                                    collection='Books'  
                                )
```





# Classifying User Queries



Demo time!

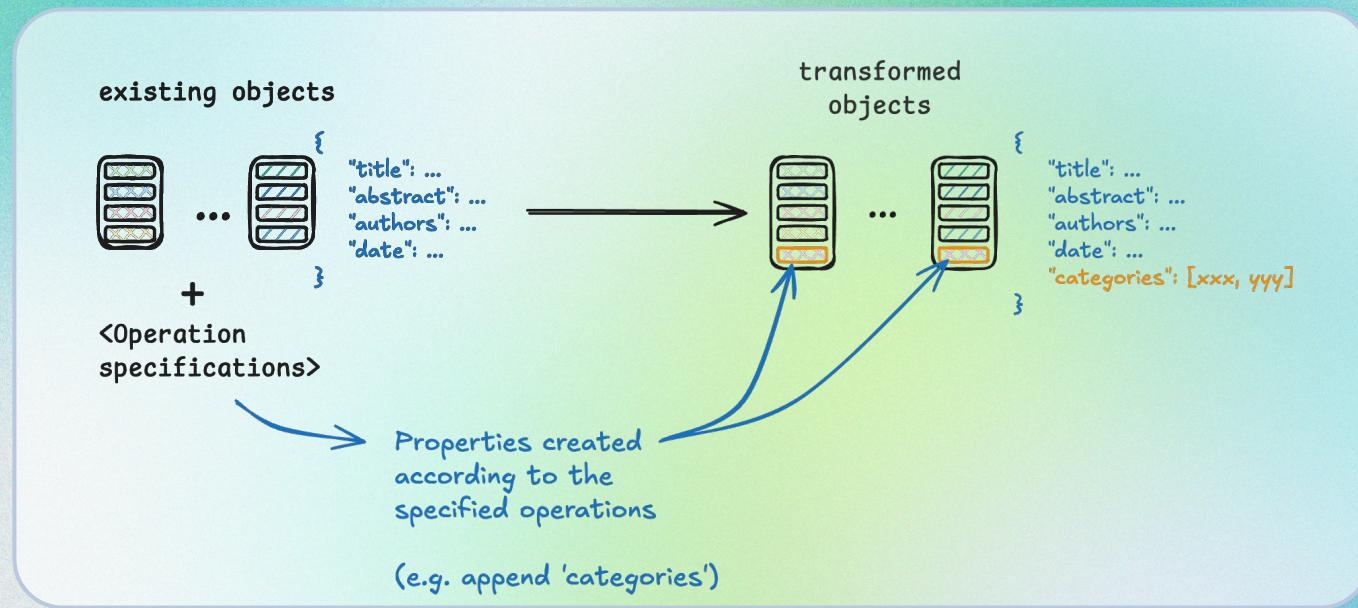


# Transformation Agent

## Get more out of your data

# What does the Transformation Agent do?

It augments and transforms data

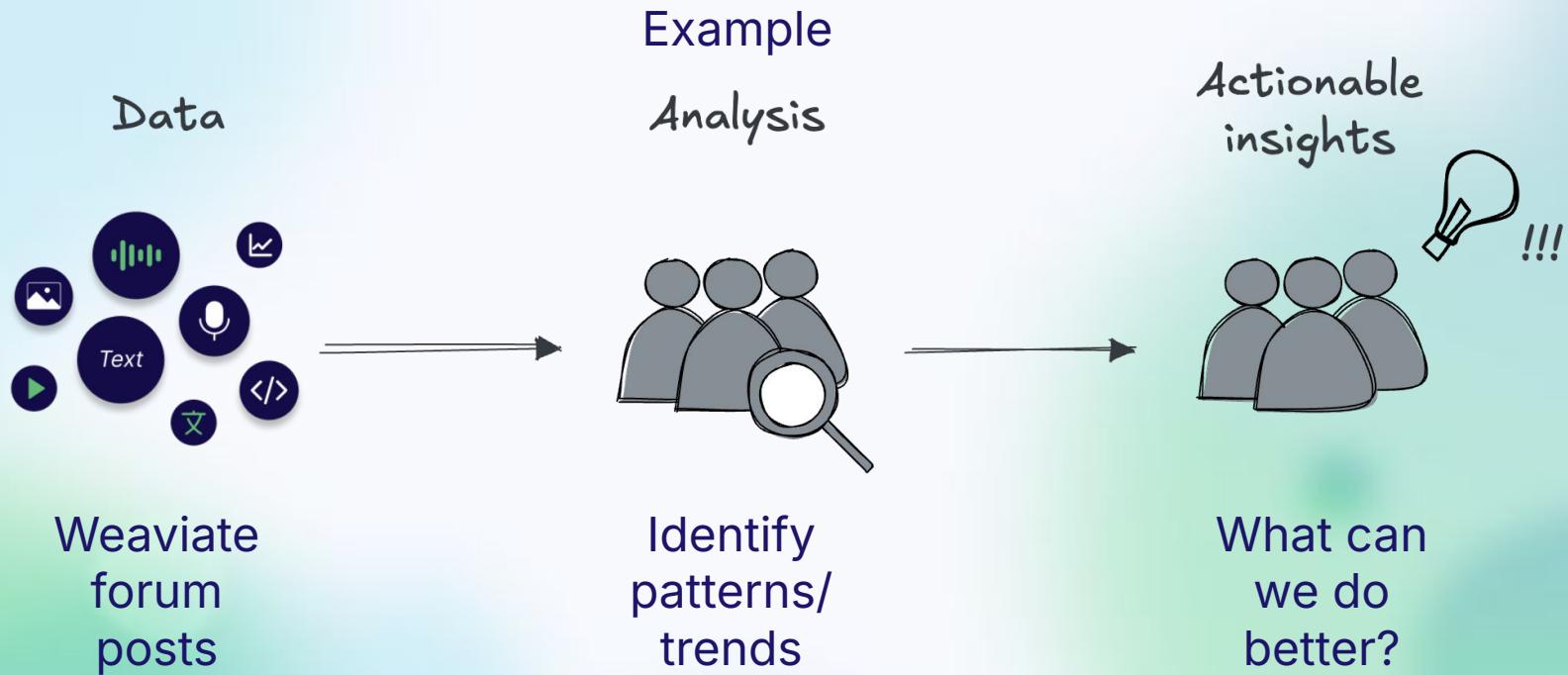


# Why use the Transformation Agent?

Typical data workflow



# Why use the Transformation Agent?





# Why use the Transformation Agent?

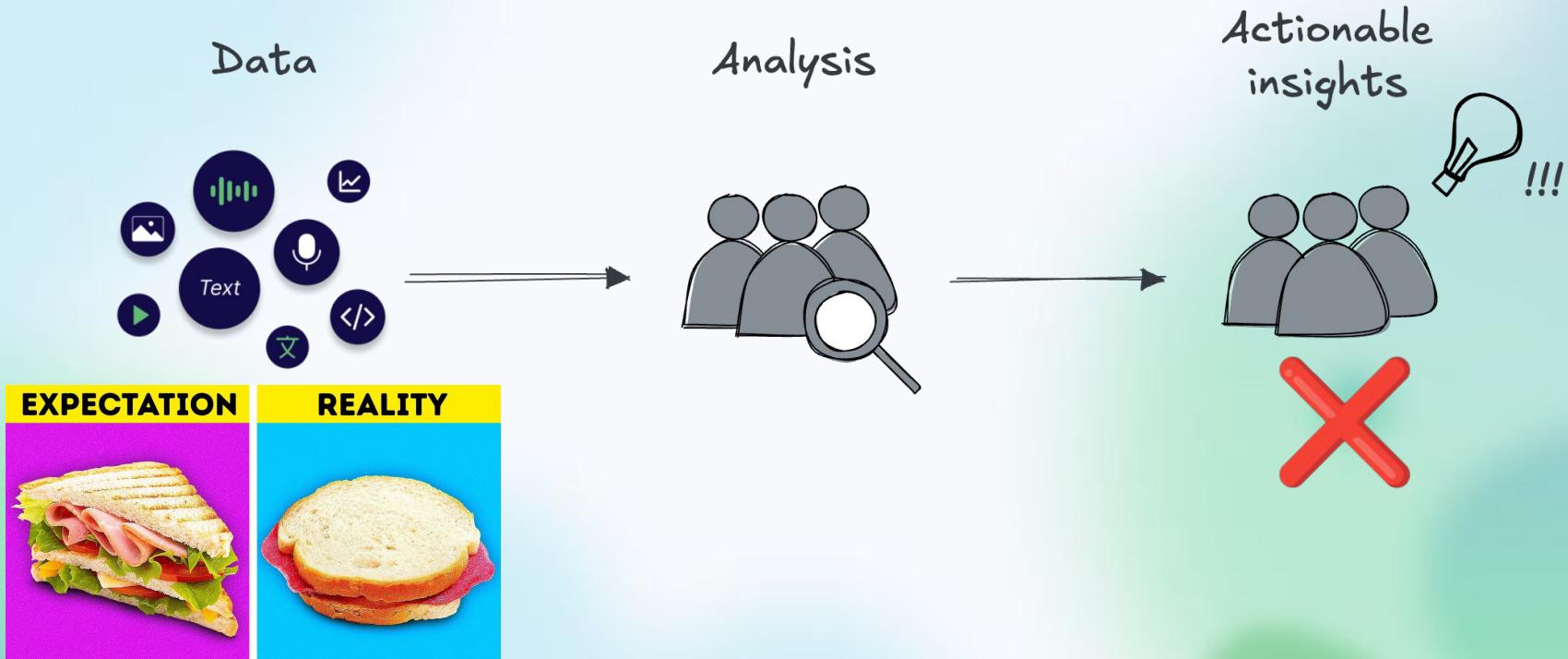
Example forum post

Unstructured text:

Difficult to manipulate  
(group, filter, aggregate, etc)

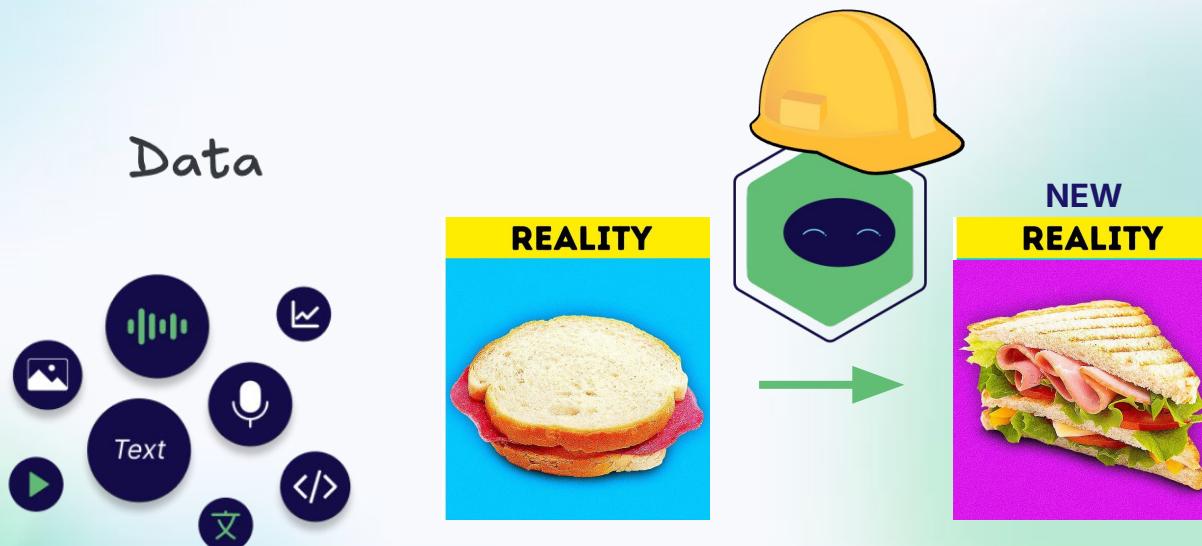
```
{  
    "user_id": 427,  
    "conversation": "[Sandip (2024-11-08T07:02:03.772Z)]: I'm  
trying to index and search articles in Weaviate, but I'm  
encountering an error when querying with near_vector. Here's my  
process:\n\nIndexing: I successfully index articles in the...",  
    "date_created": "2024-11-08T07:02:03.706Z",  
    "has_accepted_answer": true,  
    "title": "No such prop with name 'title' found in class  
'Test' in the schema\" when querying Weaviate with near_vector",  
    "topic_id": 7498  
},
```

# Why use the Transformation Agent?





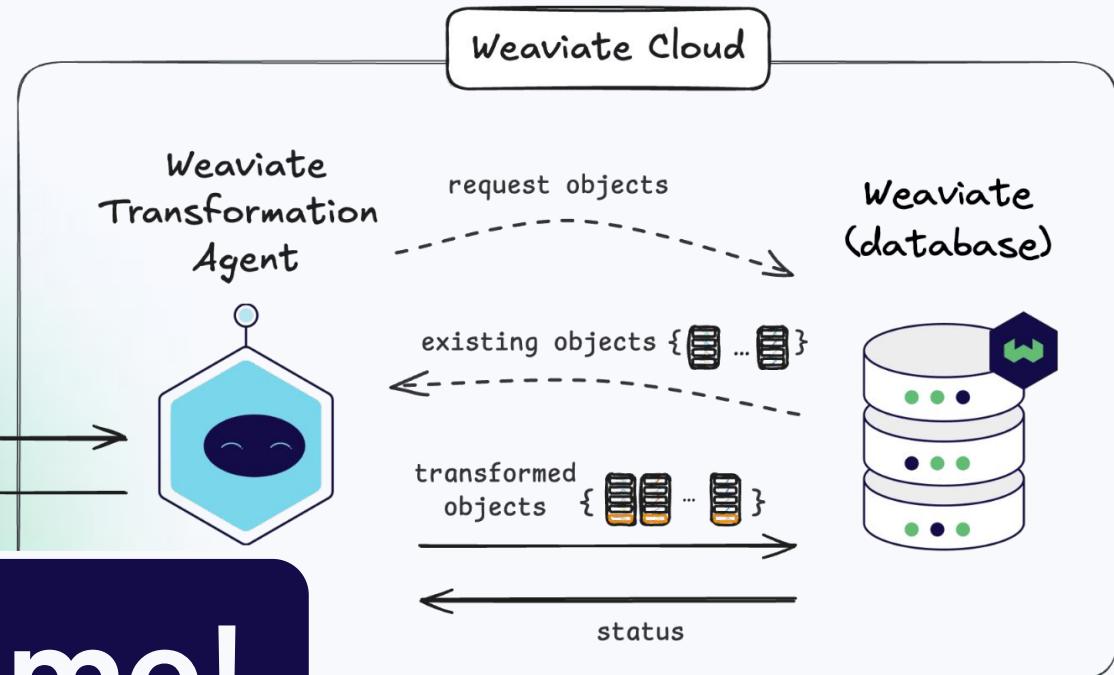
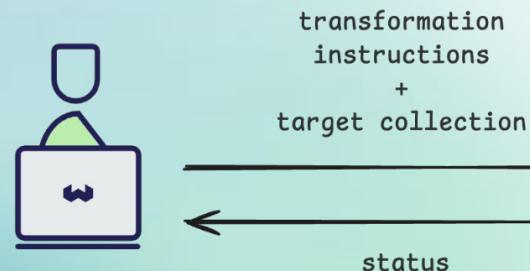
# Why use the Transformation Agent?





# How does the Transformation Agent work?

Agentic workflow to enhance data in Weaviate



## Demo time!

Update or add object properties

## Before transformation

```
{  
    "user_id": 427,  
    "conversation": "[Sandip  
(2024-11-08T07:02:03.772Z)]: I'm trying  
to index and search articles...",  
    "date_created":  
"2024-11-08T07:02:03.706Z",  
    "has_accepted_answer": true,  
    "title": "No such prop with name  
'title' found in class 'Test' ...",  
    "topic_id": 7498  
},
```

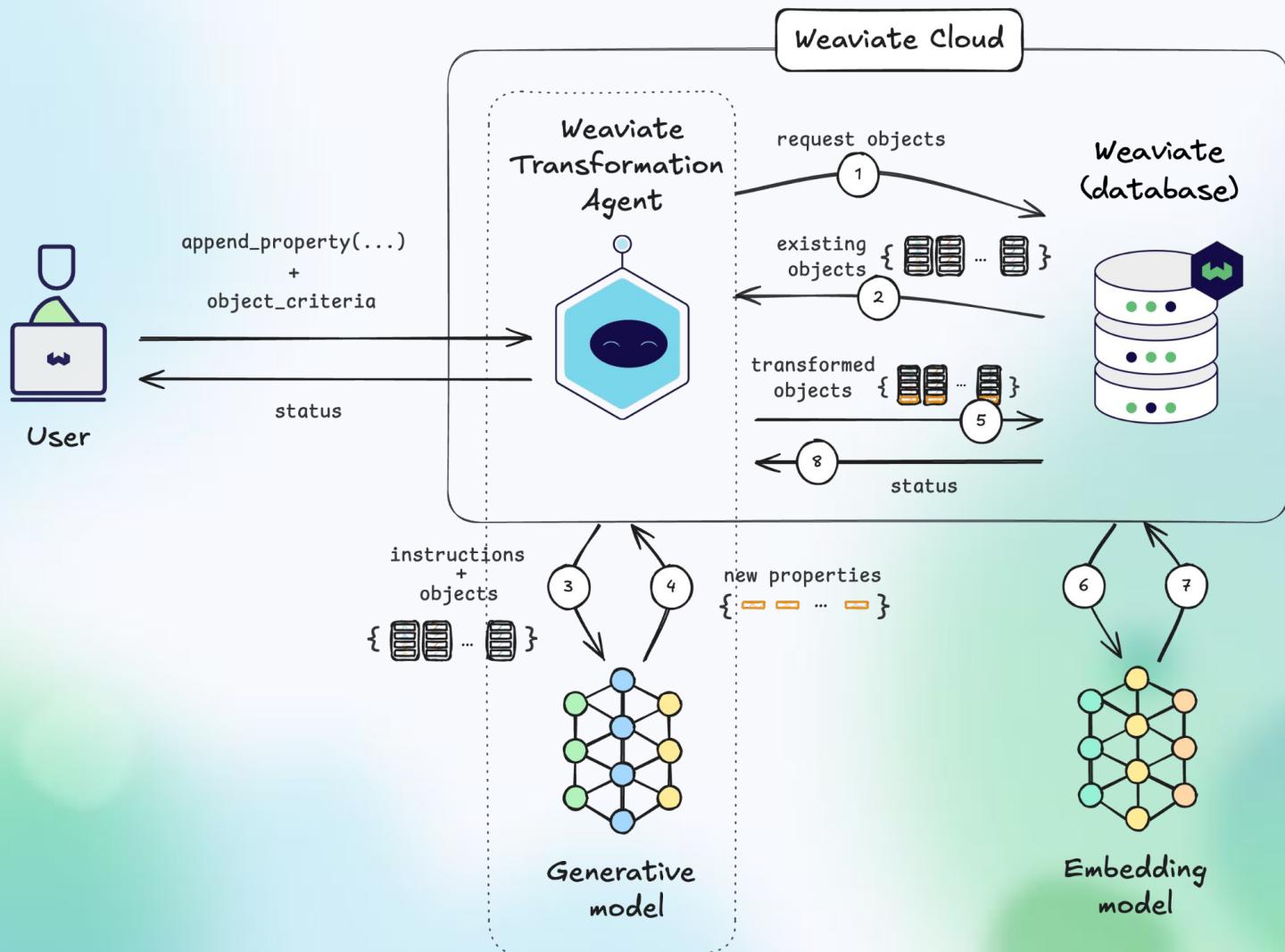
Weaviate  
Transformation  
Agent



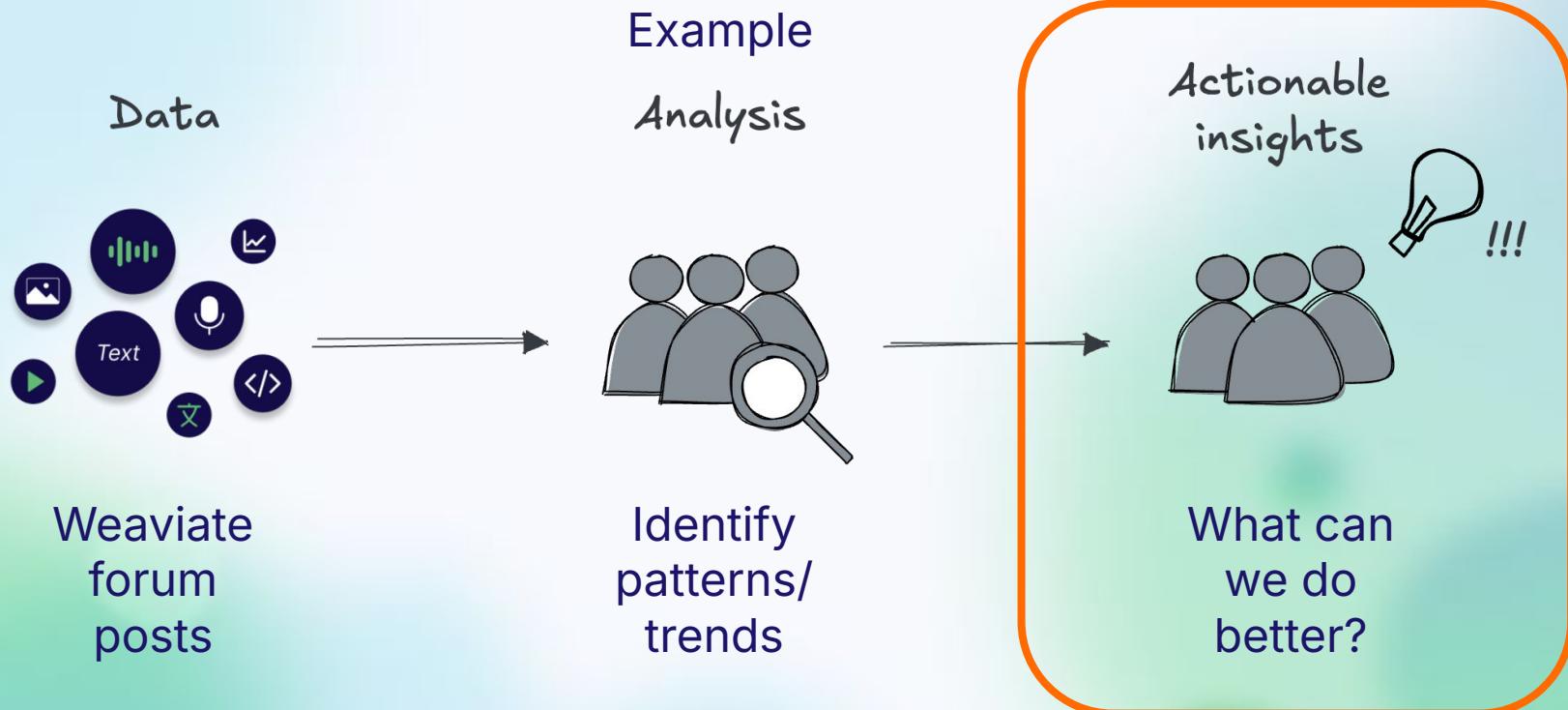
## After transformation

```
{  
    "user_id": 427,  
    "conversation": "[Sandip  
(2024-11-08T07:02:03.772Z)]: I'm trying  
to index and search articles ...",  
    "date_created":  
"2024-11-08T07:02:03.706Z",  
    "has_accepted_answer": true,  
    "title": "No such prop with name  
'title' found in class 'Test' ...",  
    "topic_id": 7498,  
    "accessContext": python_client,  
    "technicalComplexity": 3,  
    "has_accepted_answer": True,  

```



# Why use the Transformation Agent?





# Actionable insights

## How can we help?

Count of Weavite forum posts, by root cause & technical area.

Root cause category	Deployment	Ingestion	Integration	Queries	Security	Server setup	Others
Conceptual misunderstanding	19	22	31	64	1	12	6
Data modeling	0	1	2	4	0	0	0
Incorrect configuration	43	6	20	11	4	14	0
Incorrect usage	3	4	3	5	0	2	1
Performance	15	21	3	20	0	10	0

Categorized from the raw data by the Weavite Transformation Agent

Source: Weavite Forum • Created with Datawrapper



```
1 response = collection.generate.fetch_objects(  
2     filters=  
3         Filter.by_property(name="rootCauseCategory").equal("conceptual_misunderstanding") &  
4         Filter.by_property(name="technicalDomain").equal("queries")  
5     ),  
6     limit=100,  
7     generative_provider=GenerativeConfig.anthropic(model="claude-3-7-sonnet-latest"),  
8     grouped_task=""  
9     From these Weaviate Forum post conversations, identify 3-5 most common things  
10    that we can help users to understand better about Weaviate queries.  
11    If possible, also provide a count of each type in the sample.  
12    "",  
13    grouped_properties=["summary", "title"]  
14 )
```

## Deeper dive with TA + RAG



From these Weaviate Forum post conversations, identify 3-5 most common things  
that we can help users to understand better about Weaviate queries.

If possible, also provide a count of each type in the sample.

""",

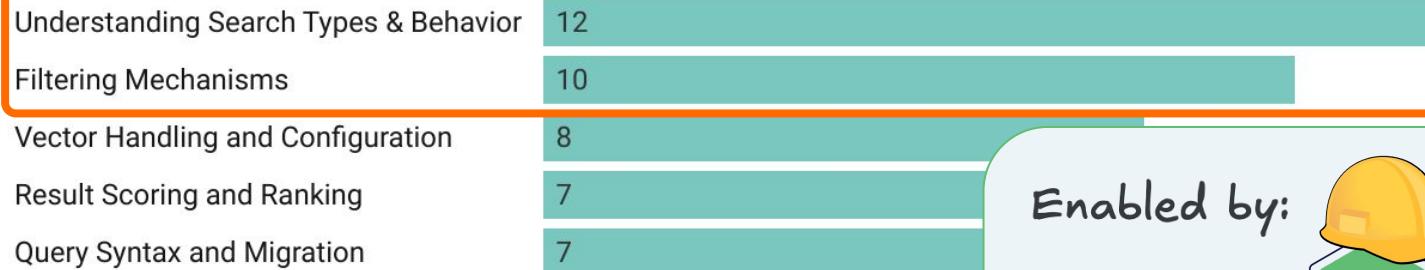
grouped\_properties=["summary", "title"]



# Actionable insights

## Deep-dive into common user misconceptions

Common re-occurring themes in posts related to "queries" that involved a conceptual misunderstanding.

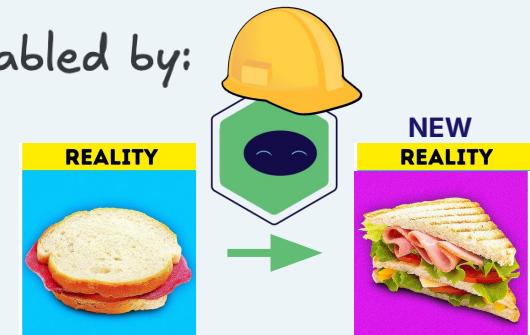


Categorized from the raw data by the Weavite Transformation Agent, and ext...

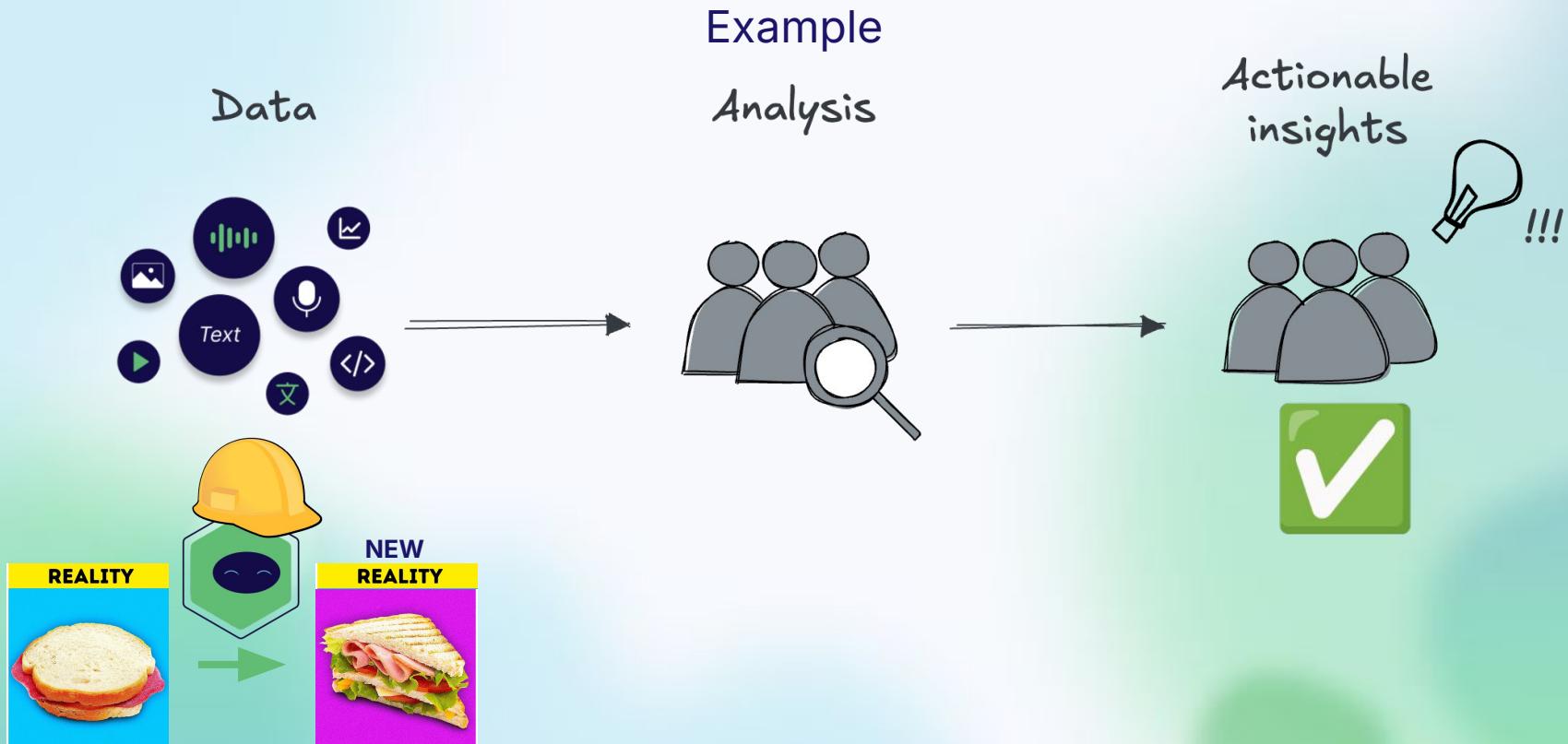
Source: Weavite Forum • Created with Datawrapper



Enabled by:



# Why use the Transformation Agent?





```
1 add_technical_domain = Operations.append_property(  
2     property_name="technicalDomain",  
3     data_type=DataType.TEXT,  
4     view_properties=["conversation", "title"],  
5     instruction=f"""\n6 Identify the primary technical domain of the user's forum post query.  
7 The answer must be one of the following:  
8 {TECHNICAL_DOMAIN_CATEGORIES.keys()}\n9\n10 The definitions of the categories are as follows:  
11 {TECHNICAL_DOMAIN_CATEGORIES}\n12\n13 Remember that the answer must be one of these categories:  
14 {TECHNICAL_DOMAIN_CATEGORIES.keys()}\n15 """,  
16 )
```

Simple,  
natural language  
instructions



Weaviate  
Transformation  
Agent



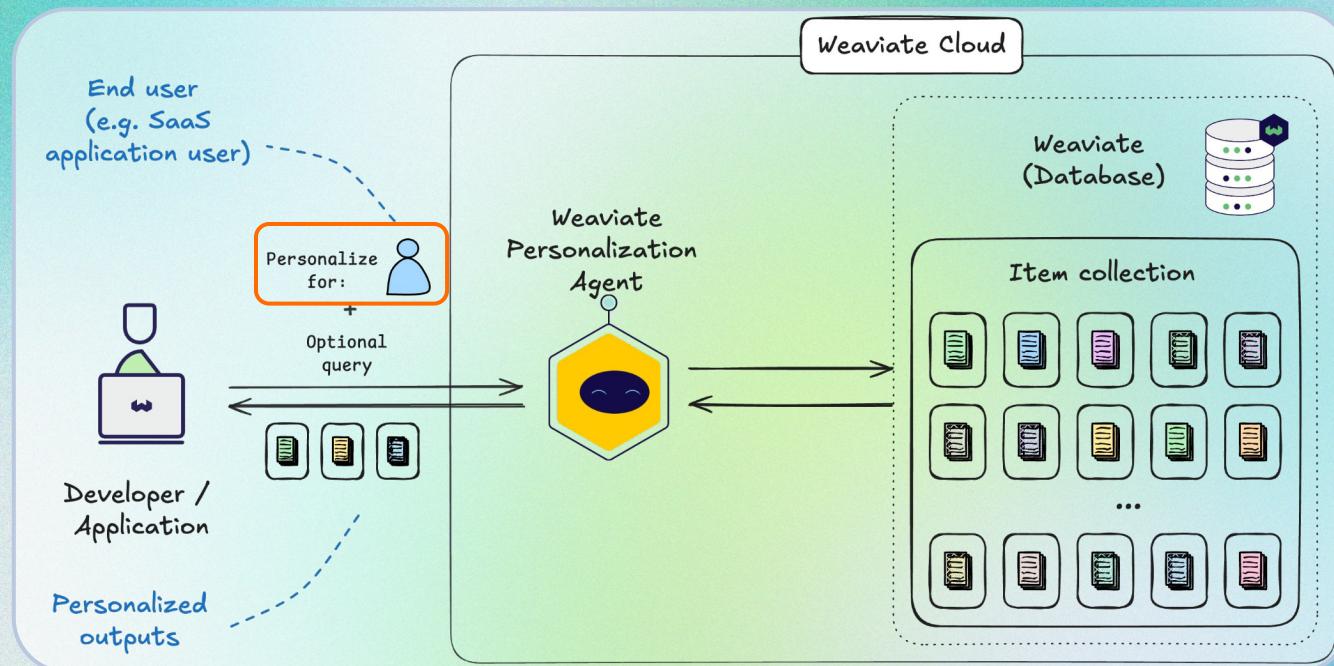


# Personalization Agent

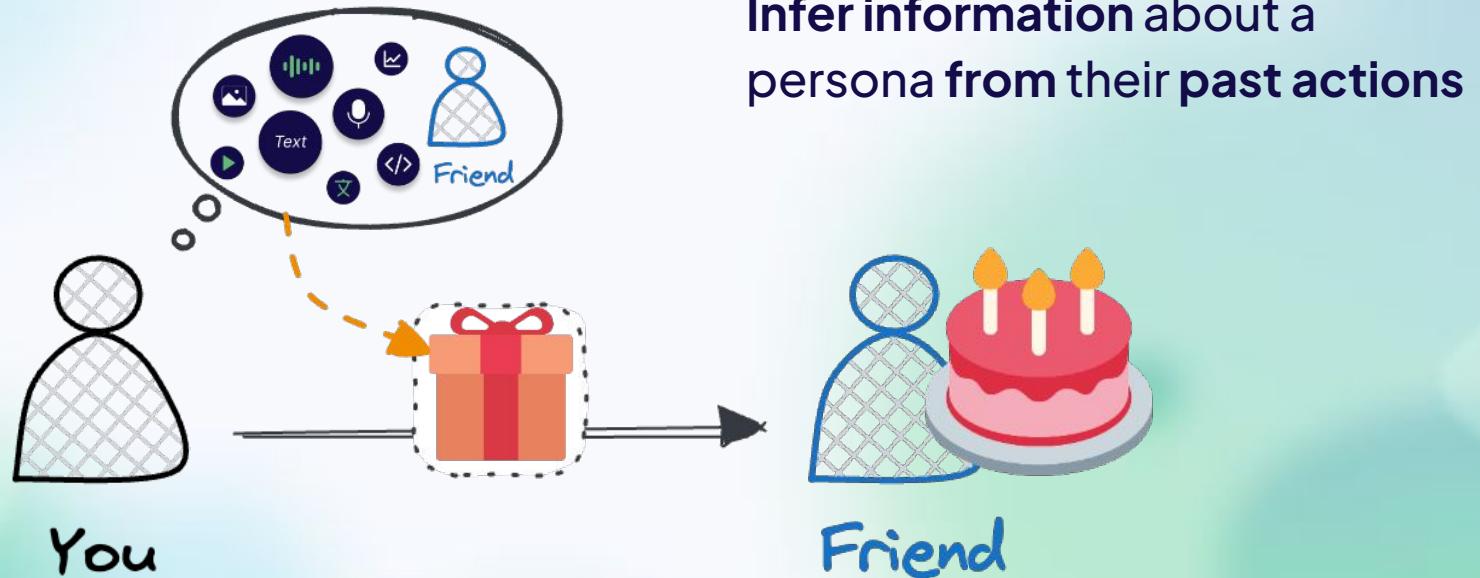
## Data matchmaking

# What does the Personalization Agent do?

It returns personalized recommendations for each user

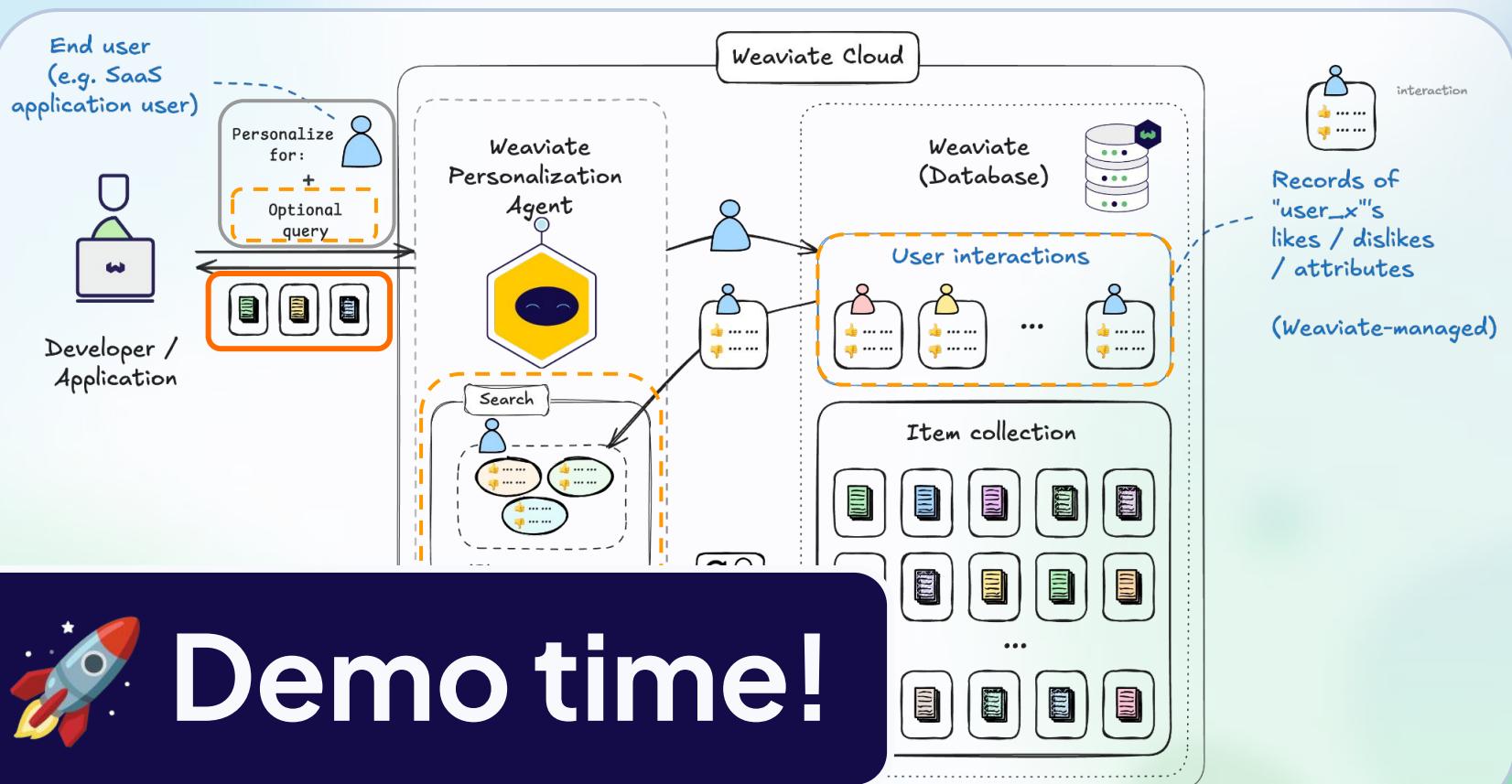


# Why use the Personalization Agent?





# How does the Personalization Agent work?





# Q&A

## Query Agent



## Transformation Agent



## Personalization Agent



# THANK YOU



LOVED THIS SESSION - SIGNUP FOR FOLLOW UP MATERIAL