



# NLP Guide

2024.77



# Copyright

**Revision Date:** 16 December 2024

This documentation has been created for software version 2024.77

It is also valid for subsequent software versions as long as no new document version is shipped with the product.



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## Support:

For more information, visit <https://www.whiz.ai/contact>

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## Disclaimer

No Warranties and Limitation of Liability. Every effort has been made to ensure that this document is an accurate representation of the features offered by WHIZ.AI platform in the release 2024.77. However, the development of the software is a continuous process. So, small inconsistencies may occur. We would appreciate any feedback on this document.

Send comments via email to: [support@whiz.ai](mailto:support@whiz.ai)

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## Preface

This guide is designed to help you understand WhizAI's NLP engine and its functionalities such as Natural Language Queries (NLQ) and Natural Language Understanding (NLU).

## Intended Audience

This document is intended for all WhizAI users.

## Related Documents

Along with this NLP guide, you can refer to the following documents:

- WhizAI User Guide
- WhizAI Admin Guide
- WhizAI ExplAIIn Guide

## Contacting WhizAI

For any support, you can reach to WhizAI support team in any of the following ways:

- Website: <https://whiz.ai>
- Email: [support@whiz.ai](mailto:support@whiz.ai)

# Introduction

This document gives you an overview of the functions and features of the WhizAI NLP engine along with the necessary information and instructions about leveraging WhizAI NLP capabilities and features to produce useful analytical information that you can act upon right away.

Refer to the following sections to get started with WhizAI NLP:

- [Understanding NLP at WhizAI](#)
- [Improving NLP through NLP Workbench](#)

## Understanding NLP at WhizAI

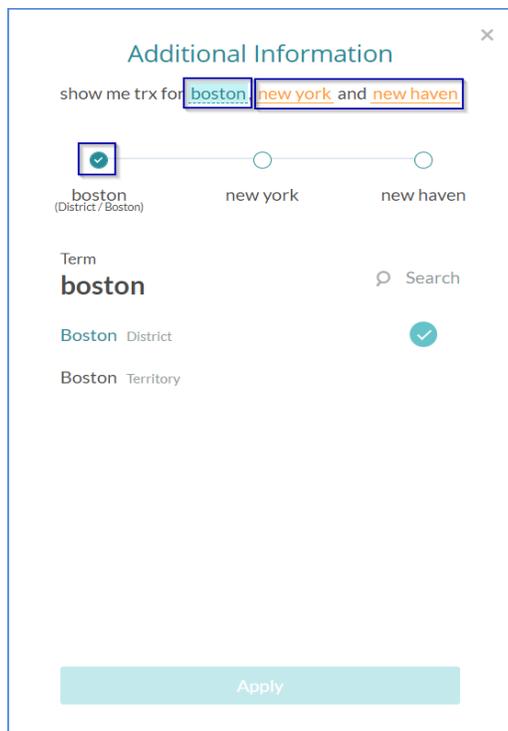
WhizAI NLP engine analyses and understands Natural Language Query (NLQ). A natural language query is an input query in normal words in your language, without any special syntax or format. WhizAI's NLP engine enables you to ask queries using natural language and immediately receive visualizations that provide you with the response. When you ask NLQs, WhizAI's NLP engine works through the following tasks:

- **Tagging and categorization:** As part of speech tagging, machine learning detects natural language to sort words into nouns, verbs, and so on. This is useful for words that can have several different meanings depending on their use in a sentence. This analysis, called word sense disambiguation, is used to determine the meaning of a sentence.

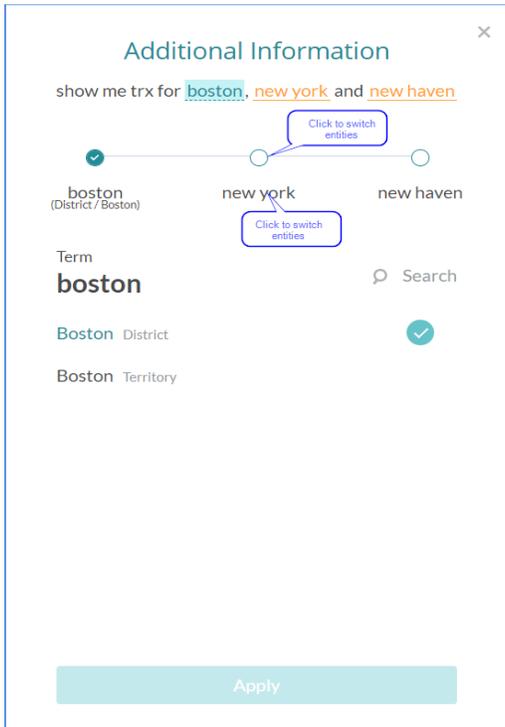
When a question has multiple ambiguities and you resolve any of them, for the next question (having the same or additional ambiguities), the resolved ambiguities are taken into consideration, and you are directed to the next ambiguity.

Resolved ambiguities are shown in green color with a tick mark  and unresolved ones as white circles. Thereby, you can distinctly identify resolved and unresolved ambiguous entities.

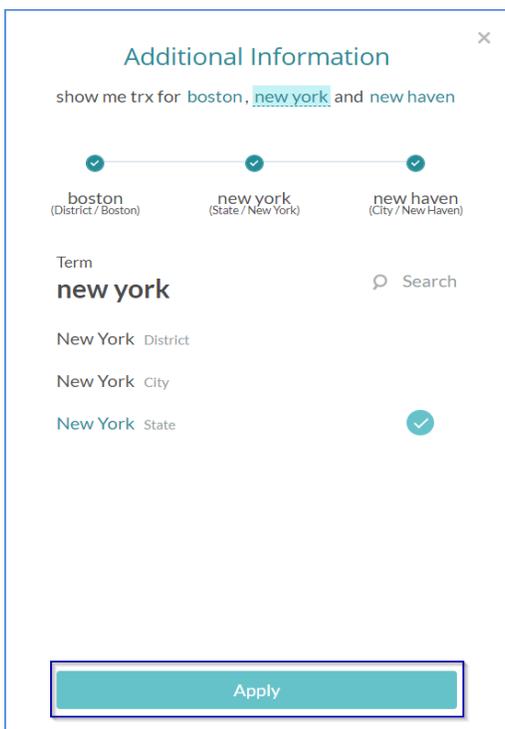
Also, the Additional Information dialog box, title highlights unresolved entities in Orange as shown in the figure below.



You can click on the text or circle to switch between entities as shown in the figure below:



Apply button is visible for all the entities. It is deactivated if there are unresolved entities. After all ambiguities are resolved, the Apply button becomes active as shown in the figure below:



**Note!** You can see the previous selection in parentheses under the ambiguous entity. There is no change in slot filling.

- Named entity recognition: The NLP engine recognizes and identifies named entities like Doctor's names or medicine names, territory or district names, brands, etc.

- **Syntax analysis / Parsing:** The NLP engine separates a series of text into smaller pieces. The NLP engine figures out which group of words go together (as phrases) and which words are the subject or object of a verb.

Refer to the following sections to get an overview of NLP at WhizAI:

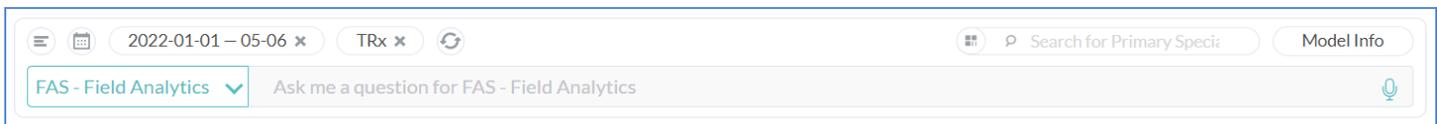
- [Step 1: Asking queries to WhizAI \(NLQ\)](#)
- [Step 2: Understanding the queries](#)
- [Step 3: Natural Language Generation \(NLG\) from NLQs](#)

## Step 1: Asking Natural Language Queries (NLQs) to WhizAI

A natural language query is an input query in normal words in your natural language, without any special syntax or format.

You can ask queries/questions to WhizAI using simple words in your language, and WhizAI understands it, as WhizAI's NLP engine is trained to understand and process the natural language. Along with English, WhizAI supports French, German, Italian, and Spanish languages.

You can enter your queries in the conversation box, or you can input the queries using voice by clicking the voice input option.

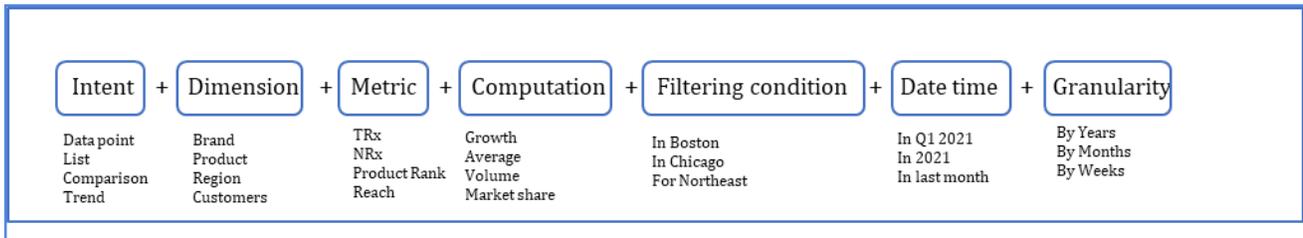


## Understanding the basic structure of WhizAI NLQ

At the basic level, WhizAI NLQs include intents, dimensions, and metrics.

- **Intent:** Intent is what the user is looking for when entering a query in WhizAI. For example, List of top 2 brands, sales trends, sales comparison of different entities/brands, etc.
- **Dimension:** Dimensions are characteristics and information attributes of your data such as customers, products, brands, regions, etc.
- **Metric:** Metrics are the quantitative measurements of your data, such as sales (TRx, NRx), customer count, product rank, etc.

You can include filtering conditions, date time expressions, or computations such as growth, average, etc., to form a complex query. For example, refer to the following structure to build complex queries.



All the Intents, filters, and different expressions in WhizAI NLQ fall into one of the following categories. You can ask queries using any of the combinations shown in the following table.

Basic Categories	Example NLQ 1	Example NLQ 2
Data point	Show me TRx	Show me TRx in Boston MA last week
List: Top N / Bottom N	Show me top two brands	Show me bottom five territories
Comparison	Show me Boston vs Chicago by brands	Show me Boston vs Chicago 2021 vs 2020
Date and Time	What are my sales in Q1 2020	What were my sales last month
Filtering Condition	Show me NRx in Boston MA	Show me NRx for northeast
Quantification	Give me count of HCPs	Show me count of districts
Calculations	Show me TRx growth by brands	What is TRx market share by brands
Trend	Give me sales trend by weeks	Show me TRx by months

Example query: Show me top 2 brands in northeast for TRx growth

In this query, three categories are combined, which are list - top N (top 2 brands), filtering condition (in northeast), and calculation (TRx growth). The response for this query is shown below.

**Scott** Sunday Dec 01, 2024 11:15  
Show me top 2 brands in northeast for TRx growth

**whiz.ai** Sunday Dec 01, 2024 11:15

**Top 2 Products by Growth TRx** NEW  
Expl | n

2022-01-01 – 05-06 | TRx | Growth | Northeast

🔍 Search

	Product	Growth TRx [%] ↓
1	Ofasan	3.73
2	Plabenil	3.06
<b>Total</b>		<b>3.20</b>

Data: Growth TRx as of 2022-05-06  
Generated in: 4.63 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Refer to the following sections for different examples of building queries for different intents.

### List (Top N / Bottom N)

To build a list query, you can add intent, dimensions, and other expressions in the following structure.

You must provide primary intent and dimension in the query. Other expressions are optional, you can add these as required. You can change the sequence of these optional expressions.

For example: Top 2 (Intent-mandatory) + brands (Dimension-mandatory) + by TRx (Metric-optional) + growth (Computation-optional) + in Boston MA (Filtering condition-optional) + in Q2 2021 (Date time-optional) + by Months (Granularity-optional)

NLQ: Give me top 2 brands by TRx In Boston in Q2 2021 by months.

**Scott** Sunday Dec 01, 2024 11:17  
Give me top 2 brands by TRx In Boston in Q2 2021 by months

**whiz.ai** Sunday Dec 01, 2024 11:17

**⚠** We need some clarifications for the following terms: "boston".  
The following response is based on your previous choices. [VIEW OPTIONS](#) [DISMISS](#)

**TRx by Product [Monthly]**  
2021-04-03 – 07-02 | TRx | Boston

**Data Controls** Search

Product	03 Apr to 30 Apr, 2021	01 May to 28 May, 2021	29 May to 02 Jul, 2021
Arobi	23.08K	26.46K	28.71K
Trexine	26.43K	13.81K	21.93K
<b>Total</b>	<b>49.51K</b>	<b>40.27K</b>	<b>50.64K</b>

Data: TRx as of 2022-05-06  
Generated in: 3.88 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

You can build complex queries by including different filtering and date time expressions in your NLQs. More examples of 'List' type queries with different optional expressions are shown in the following table.

Primary Intent	Optional Expression 1	Optional Expression 2	Optional Expression 3	Example NLQ
List: Top 2 brands	Date & Time: in Q1 2021	Filtering Condition: in Boston	Calculations: by TRx growth	Top 2 brands in Q1 2021 in Boston by TRx growth
List: Top 2 brands	Date & Time: in Q1 2020	Filtering Condition: in Boston	Trend: by months	Top 2 brands in Q1 2020 in Boston by months
List: Top 2 brands	Date & Time: in Q1 2021	Calculations: by TRx growth	Trend: by weeks	Top 2 brands in Q1 2021 by TRx growth by weeks
List: Top 2 brands	Filtering Condition: in Boston	Calculations: by TRx growth	Trend: by weeks	Top 2 brands in Boston by TRx growth by weeks

Primary Intent	Optional Expression 1	Optional Expression 2	Optional Expression 3	Example NLQ
List: Top 2 brands	Date & Time: in 2021	Filtering Condition: in Chicago	Calculations: by NRx growth	Top 2 brands in 2021 in Chicago by NRx growth

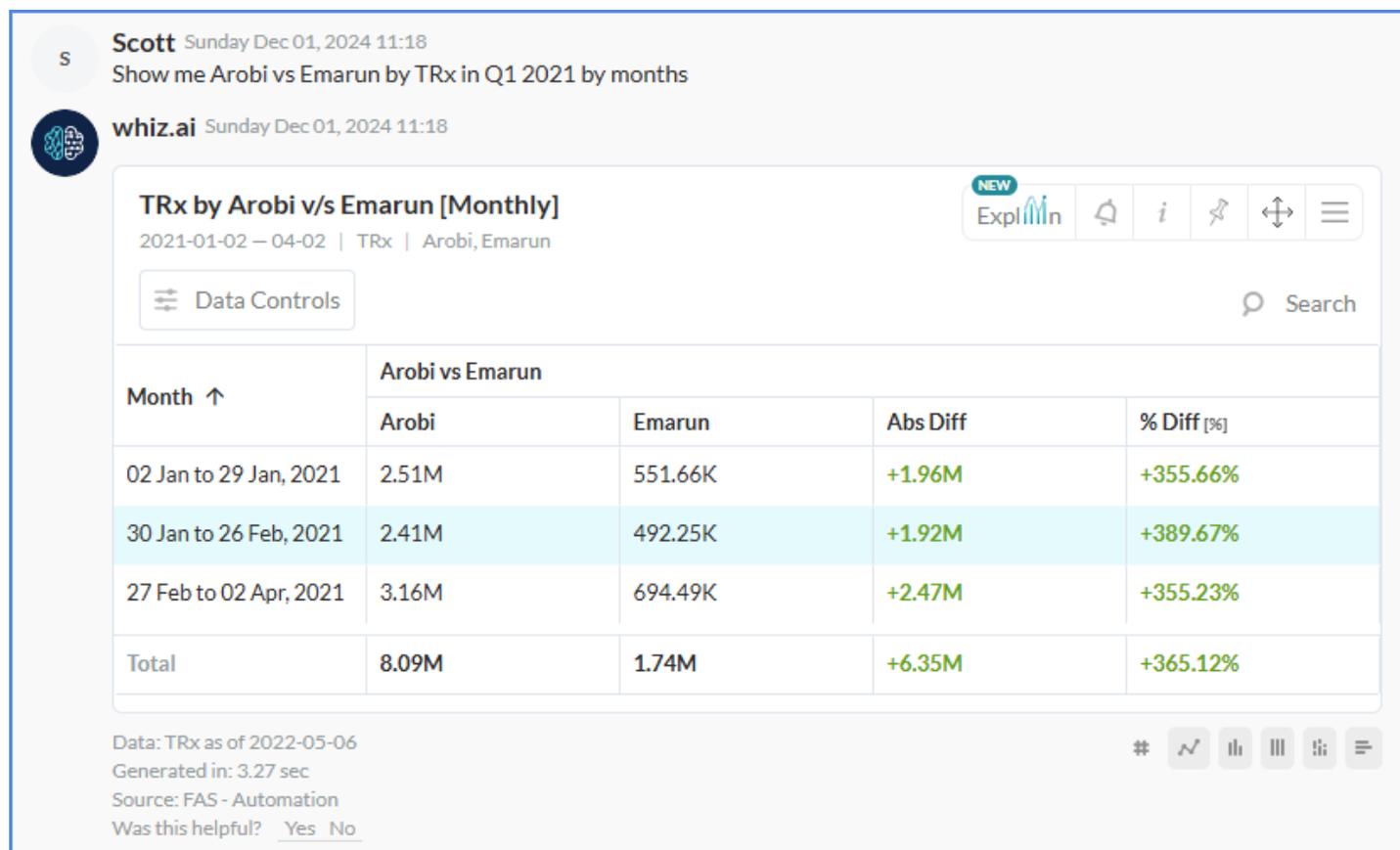
## Entity Comparison query

To build an entity comparison query, you can add comparison dimensions and other expressions in the following structure.

You must provide a comparison dimension (Entity 1 vs Entity 2) in the query. Other expressions are optional, you can add these as required. You can change the sequence of these optional expressions.

For example: Arobi vs Emarun (Entity 1 vs Entity 2-mandatory) + in 2021 (Date time-optional) + by TRx (metric-optional) + by months (Granularity-optional)

NLQ: Show me Arobi vs Emarun by TRx in Q1 2021 by months



More examples of 'Entity Comparison' type queries are shown in the following table.

Primary Intent	Optional Expression 1	Optional Expression 2	Example NLQs
Comparison: Boston vs Chicago	Top N: by brands	Filtering Condition: in northeast	Boston vs Chicago by brands in northeast
Comparison: Boston vs Chicago	Date & Time: in last month	Calculation: by TRx growth	Boston vs Chicago for last month by TRx growth
Comparison: Boston vs Chicago	Filtering Condition: for Crestor	Calculation: by TRx growth	Boston vs Chicago for Crestor by TRx growth
Comparison: Boston vs Chicago	Date & Time: in last month	Filtering Condition: for Crestor	Boston vs Chicago last month for Crestor

### Time Comparison query

To build a time comparison query, you can add comparison dimensions and other expressions in the following structure.

You must provide periods for comparison (Period 1 vs Period 2) in the query. Other expressions are optional, you can add these as required. You can change the sequence of these optional expressions.

For example: 2021 vs 2020 (Time period 1 vs Time period 2-mandatory) + for NRx (Metric-optional) + market share (Computation-optional)

NLQ: Show me 2021 vs 2020 for NRx market share



**Scott** Sunday Dec 01, 2024 11:19

Show me 2021 vs 2020 for NRx market share



**whiz.ai** Sunday Dec 01, 2024 11:19


Your query looks incomplete. We need more inputs to resolve your question.

[VIEW OPTIONS](#)

**NRx Market Share [PoP]**

2021-01-02 – 12-31/2019-12-28 – 2021-01-01 | NRx | Market Share | Arobi | AMARD

NEW








31.26%

↗ +0.08% (+0.02%)

Data: NRx Market Share as of 2022-05-06

Generated in: 1.52 sec

Source: FAS - Automation

Was this helpful? Yes No







More examples of 'Time Comparison' type queries are shown in the following table.

Primary Intent	Optional Expression 1	Optional Expression 2	Example NLQ
Comparison: 2021 vs 2020	Filtering Condition: in northeast	Calculation: by NRx growth	Show me 2021 vs 2020 in northeast by NRx growth
Comparison: 2021 vs 2020	Filtering Condition: in southeast	Trend: by weeks	Show me 2021 vs 2020 in southeast by NRx by weeks
Comparison: MoM in 2021	Filtering Condition: in Boston	Filtering Condition: in Boston	Show me MoM in 2021 by TRx growth in Boston
Comparison: 2021 vs 2020	Calculation: NRx market share	Trend: by months	Show me 2021 vs 2020 by NRx market share by months

The following table explains some examples of time operators which can be used for seasonal comparisons.

<b>Time Operator</b>	<b>Description</b>	<b>Example NLQs</b>
Year to date (YTD)	YTD gives the sales for the period starting from the beginning of the year and the current date.	Show me YTD sales by months Show me TRx by products YTD
Quarter to date (QTD)	QTD gives the sales for the period starting from the beginning of the quarter and the current date.	Show me top customers QTD
Month to date (MTD)	MTD gives the metric performance (sales) for the period starting from the beginning of the current month up until the current date.	What are MTD sales Show me NRx MTD
Period over period (PoP)	PoP compares growth/decline in metric value in a specified time period (eg. year 2021) with the previous time period (year 2020) of the same duration.	Last month sales PoP Show me sales MTD PoP Show me sales for Arobi YTD PoP
Week over Week (WoW)	WoW gives the growth/decline of a metric in a week over the previous week.	Show me WoW for TRx market share
Month over month (MoM)	MoM compares the performance of a metric (for example: TRx, NRx etc) in a month versus the previous month and provides you with absolute and percent change in performance.	Give me sales MoM Sales MoM 2021 Sales trend MoM Q1 2021
Quarter over Quarter (QoQ)	QoQ this operator gives you the sales in a quarter versus the sales in the previous quarter.	Show me sales QoQ by months Show me NRx QoQ 2021
Year over Year (YoY)	YoY gives the sales in a year versus the sales in the previous year and gives the absolute and percent change in sales.	YoY sales YoY 2020

Time Operator	Description	Example NLQs
		YoY 2021
Moving annual total (MAT)	MAT gives the total sales value for the last twelve months, as the twelve-month period moves forward with each month, the sales value from the latest month is added and the sales value from the oldest month is removed from calculation.	MAT 2020 Show me MAT sales trend for 2021 What are my sales for MAT Jan 2021?

### Date format support

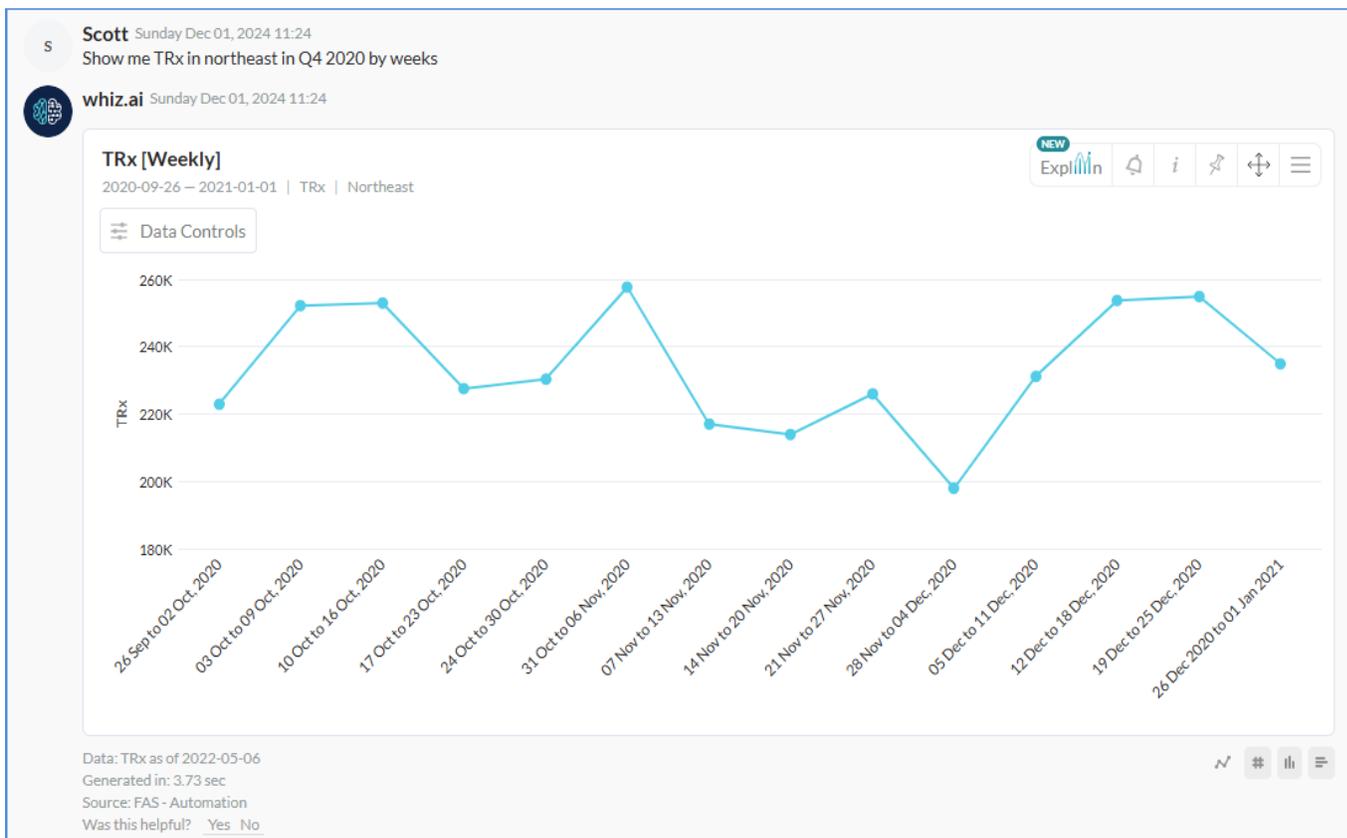
WhizAI supports the following date formats to set the context period.

Format	Example
yyyy-mm-dd to yyyy-mm-dd	2023-12-22 to 2023-12-29
dd/mm/yyyy - dd/mm/yyyy	03/01/2022 - 05/05/2022
dd mmmm yyyy to dd mmmm yyyy	25 August 2020 to 21 September 2021
dd mmm yyyy to dd mmm yyyy	25 Aug 2020 to 21 Sept 2020
dd-mmm-yyyy through dd-mmm-yyyy	25-Aug-2020 through 21-Sep-2020
mmmm do, yyyy to mmmm do, yyyy	March 3rd, 2022, to April 4th 2022
mm/yyyy to mm/yyyy	03/2022 to 05/2022
mm/dd/yyyy - mm/dd/yyyy	03/01/2022-05/05/2022
do mmm yyyy to do mmm yyyy	1st Jan 2023 to 7th Jan 2024

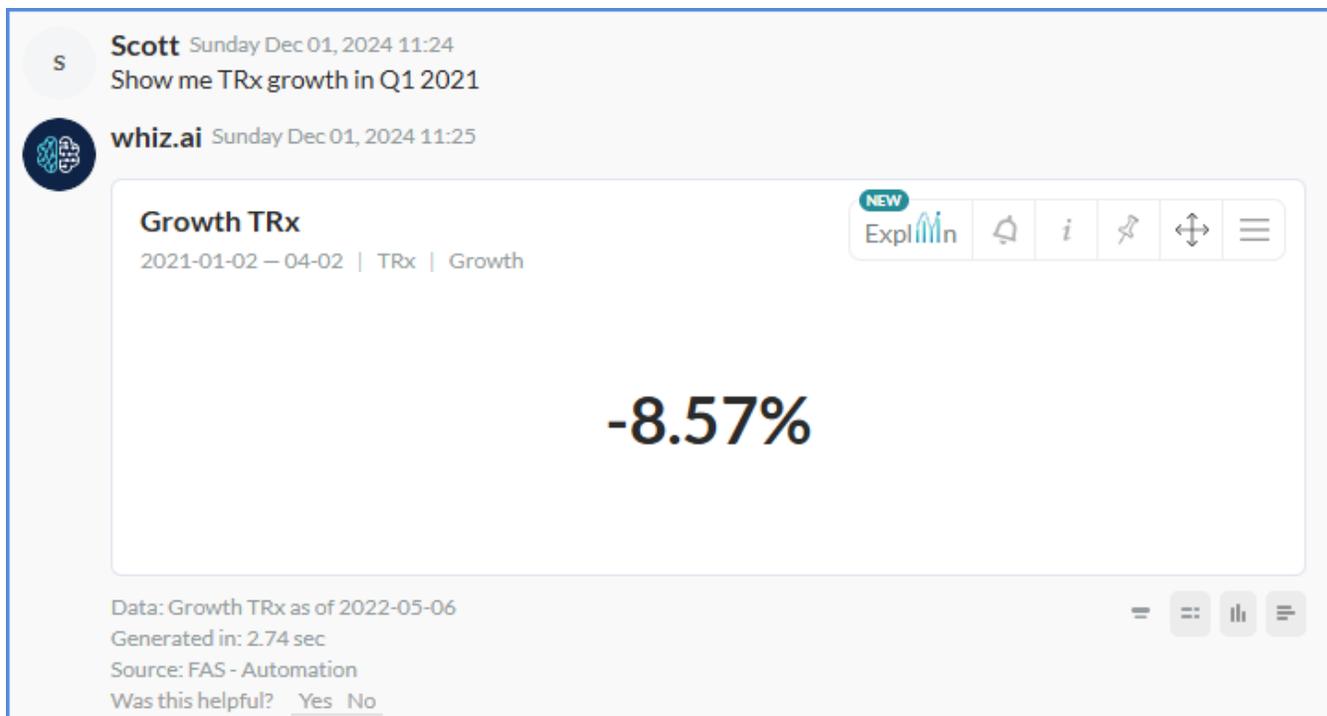
The following are some examples of NLQs to get you started with WhizAI.

Date and time queries:

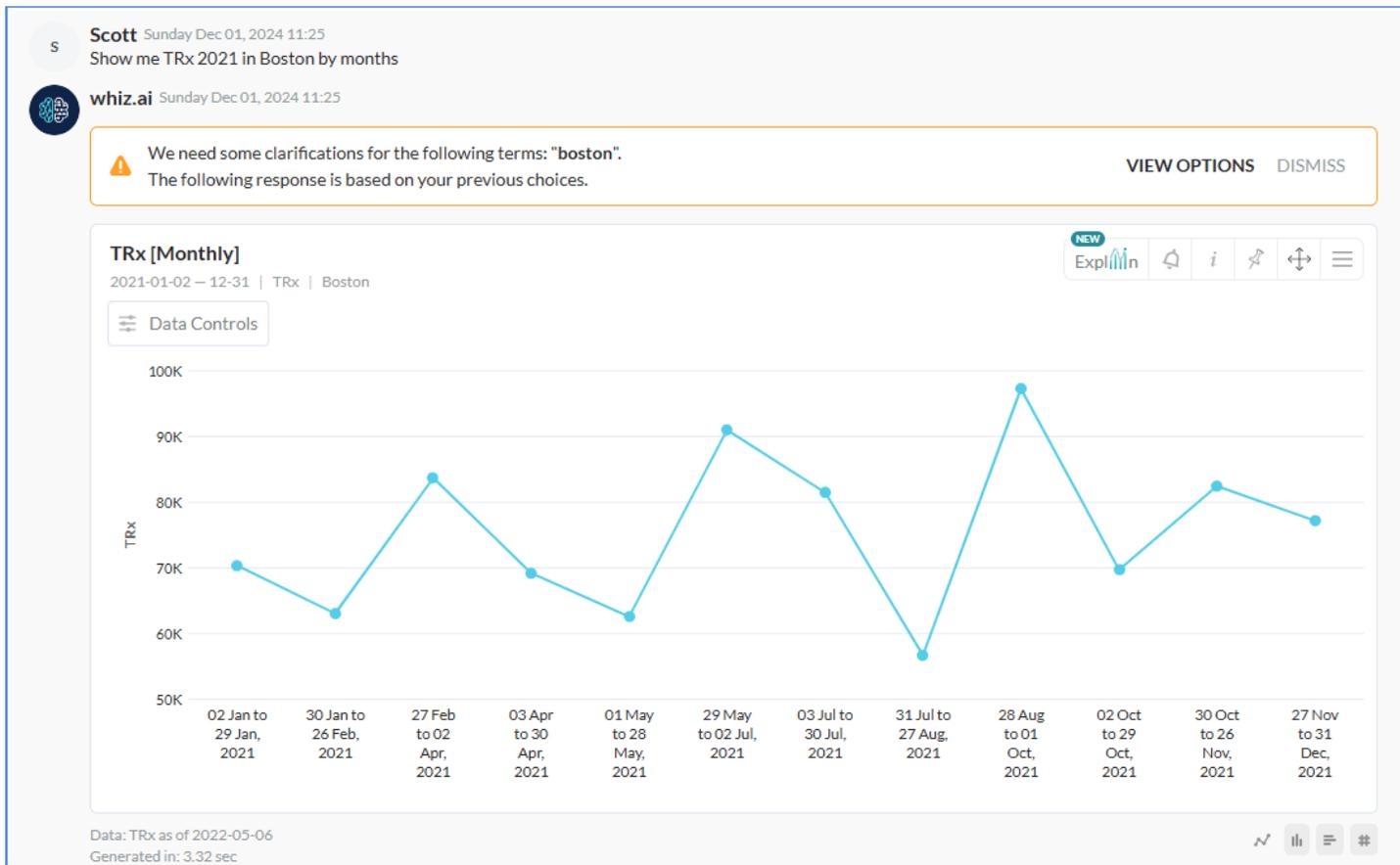
- NLQ example 1: Show me TRx in northeast in Q4 2020 by weeks



- NLQ example 2: Show me TRx growth in Q1 2021



- NLQ example 3: Show me TRx 2021 in Boston by months



List type queries:

- NLQ example 1: Top 2 brands for TRx growth

**Scott** Sunday Dec 01, 2024 11:27  
Top 2 brands for TRx growth

**whiz.ai** Sunday Dec 01, 2024 11:27

### Top 2 Products by Growth TRx

2022-01-01 – 05-06 | TRx | Growth

**NEW** Expl | i | ↕ | ☰

🔍 Search

Product	Growth TRx [%] ↓
1 Emarun	2.26
2 Plabeniil	1.54
Total	1.68

Data: Growth TRx as of 2022-05-06  
Generated in: 4.27 sec  
Source: FAS - Automation  
Was this helpful? Yes No

- NLQ example 2: Top 2 brands in Q1 2021 by TRx growth

**Scott** Sunday Dec 01, 2024 11:28  
Top 2 brands in Q1 2021 by TRx growth

**whiz.ai** Sunday Dec 01, 2024 11:28

**Top 2 Products by Growth TRx**  
2021-01-02 – 04-02 | TRx | Growth

NEW Explorin     

Search

Product	Growth TRx [%] ↓
1 Ofasan	-5.93
2 Emarun	-6.74
Total	-6.32

Data: Growth TRx as of 2022-05-06  
Generated in: 3.85 sec  
Source: FAS - Automation  
Was this helpful?  Yes  No

#      

- NLQ example 3: Show me bottom 5 territories by NRx

**Scott** Sunday Dec 01, 2024 11:28  
Show me bottom 5 territories by NRx

**whiz.ai** Sunday Dec 01, 2024 11:28

**Worst 5 Territories by NRx**  
2022-01-01 – 05-06 | NRx

Data Controls     

Search

Territory	NRx ↑
1 Boston South	18.60K
2 Morristown	21.47K
3 Hollywood	25.46K
4 Columbus	25.91K
5 Blacksburg	28.13K
Total	119.56K

Data: NRx as of 2022-05-06  
Generated in: 3.71 sec  
Source: FAS - Automation  
Was this helpful?  Yes  No

#      

Entity comparison type queries:

- NLQ example 1: Show me Plabenil vs Ofasan in last month

**Scott** Sunday Dec 01, 2024 11:29  
Show me Plabenil vs Ofasan in last month

**whiz.ai** Sunday Dec 01, 2024 11:29

**Comparison of Ofasan v/s Plabenil by TRx**  
2022-04-02 – 04-29 | TRx | Ofasan, Plabenil

Data Controls Search

Metrics	Ofasan vs Plabenil			
	Ofasan	Plabenil	Abs Diff	% Diff
TRx	525.62K	2.11M	-1.58M	-75.04%

Data: TRx as of 2022-05-06  
Generated in: 2.72 sec  
Source: FAS - Automation

- NLQ example 2: Show me Arobi vs Emarun for TRx growth

**Scott** Sunday Dec 01, 2024 11:30  
Show me Arobi vs Emarun for TRx growth

**whiz.ai** Sunday Dec 01, 2024 11:30

**Comparison of Arobi v/s Emarun by Growth TRx**  
2022-04-02 – 04-29 | TRx | Growth | Arobi, Emarun

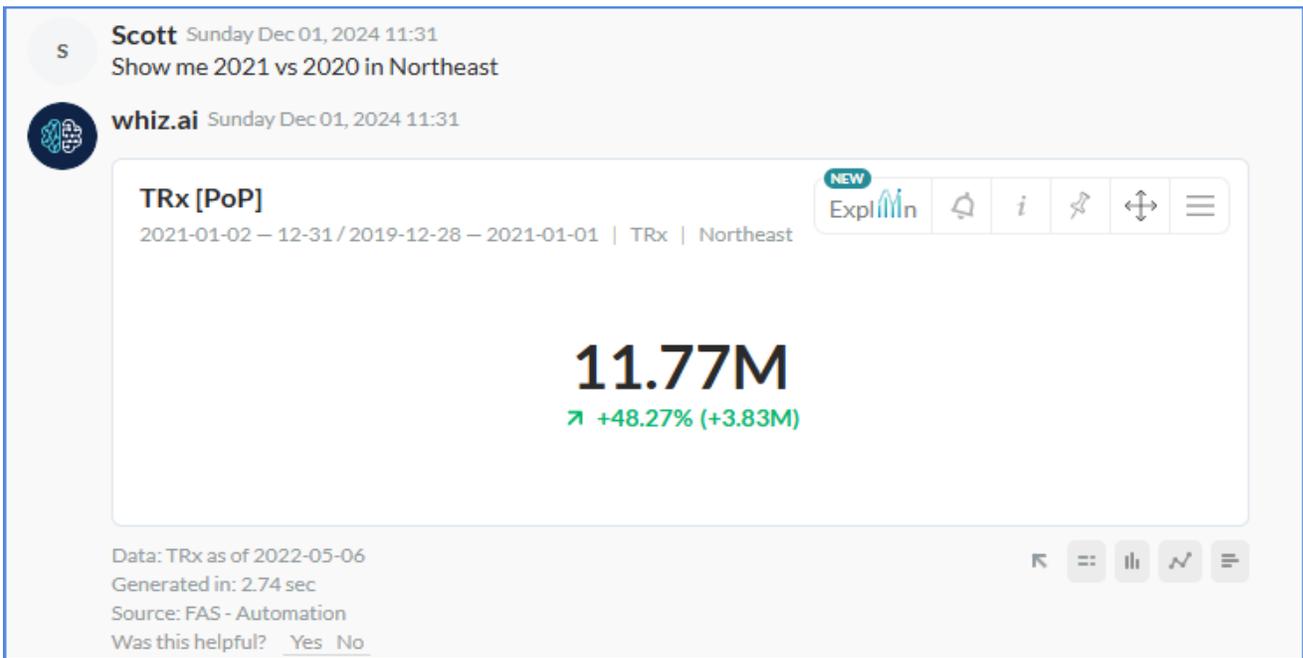
Data Controls Search

Metrics	Arobi vs Emarun			
	Arobi [%]	Emarun [%]	Abs Diff	% Diff
Growth TRx	-19.43	-16.96	-2.48%	-14.60%

Data: Growth TRx as of 2022-05-06  
Generated in: 2.83 sec  
Source: FAS - Automation  
Was this helpful? Yes No

Time Comparison type queries:

- NLQ example 1: Show me 2021 vs 2020 in Northeast



- NLQ example 2: Show me 13x13 TRx market share by regions

**Scott** Sunday Dec 01, 2024 11:31  
Show me 13x13 TRx market share by regions

**whiz.ai** Sunday Dec 01, 2024 11:31

⚠ Your query looks incomplete. We need more inputs to resolve your question. VIEW OPTIONS

### Top Regions by TRx Market Share

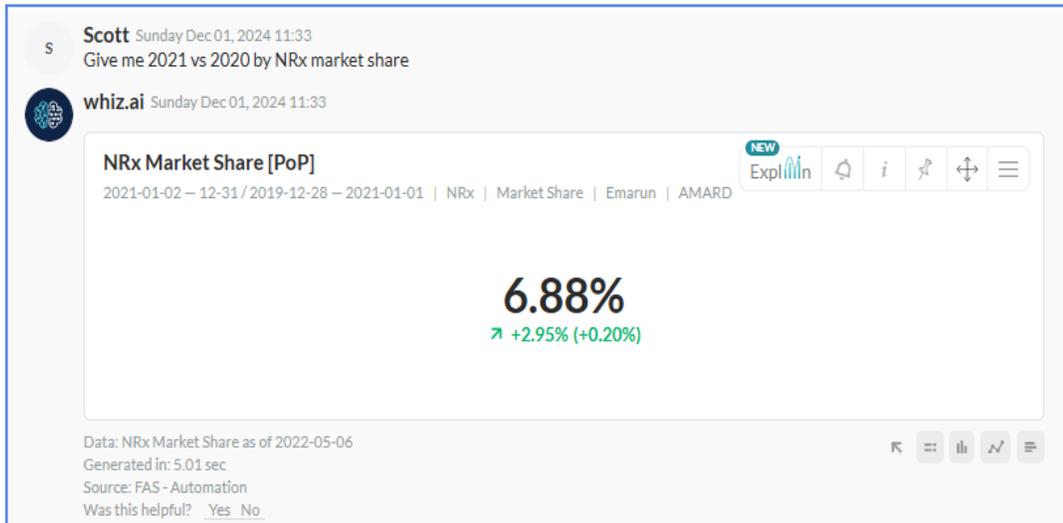
2022-02-05 – 05-06 / 2021-11-06 – 2022-02-04 | TRx | Market Share | Emarun | AMARD

Data Controls Search

Region	Last 13 Weeks vs Prior 13 Weeks			
	Curr [%]	Prev [%]	Abs Chg [%] ↓	% Chg [%]
1 South Central	7.13	6.20	+0.92%	+14.88%
2 West	7.43	6.74	+0.68%	+10.12%
3 Mid-Central	6.89	6.32	+0.58%	+9.11%
4 Southwest	7.98	7.47	+0.51%	+6.87%
5 Mid-Atlantic	6.66	6.49	+0.17%	+2.68%
6 Midwest	7.02	7.00	+0.02%	+0.31%
7 Northeast	6.05	6.05	0.00%	-0.04%
8 Southeast	6.74	7.15	-0.41%	-5.80%
Total	6.98	6.72	+0.26%	+3.91%

Data: TRx Market Share as of 2022-05-06  
 Generated in: 1.45 sec  
 Source: FAS - Automation  
 Was this helpful? [Yes](#) [No](#)

- NLQ example 3: Give me 2021 vs 2020 by NRx market share

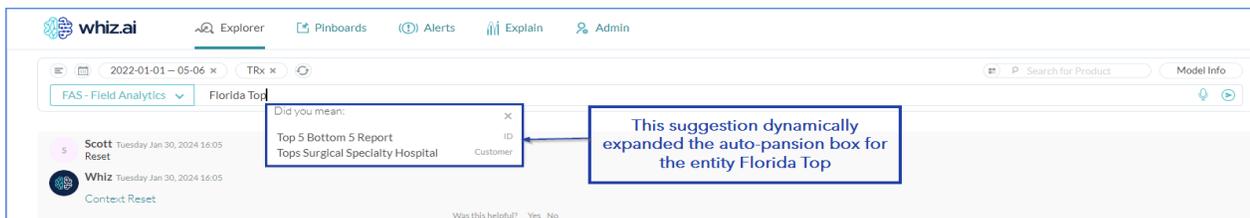


## Simplifying and improving NLQs with the WhizAI NLP engine

As you enter your questions in the Conversation box, WhizAI provides real-time assistance in following ways:

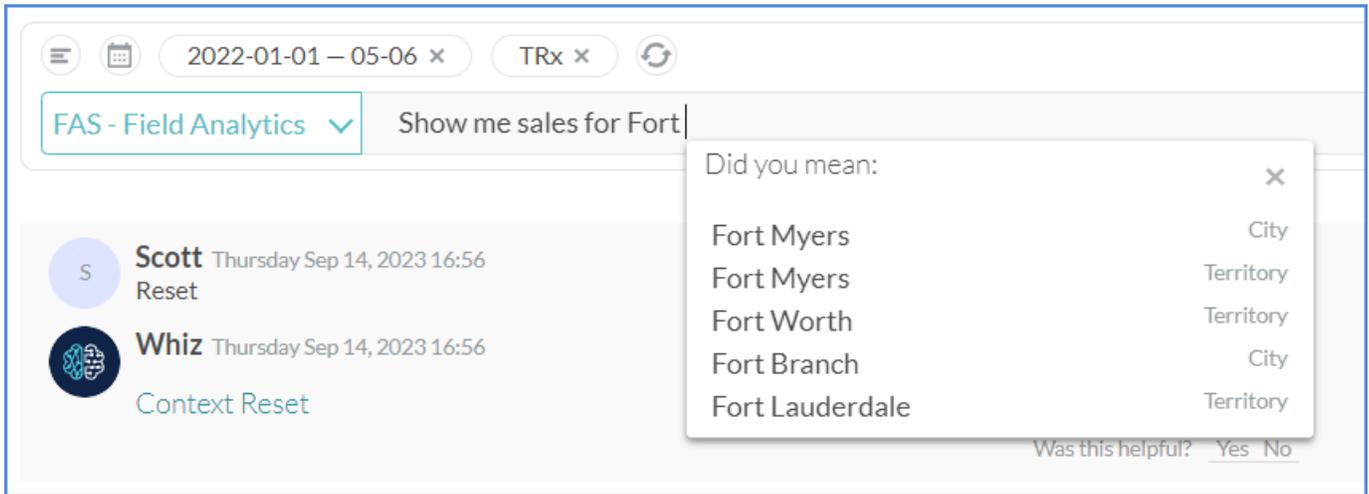
- Entity suggestions to help you build your query:

When typing your questions, when you enter a few letters of any entity name, WhizAI suggests the matching entities. You can click from these suggestions, as required, to add them to your query. These suggestions include dimensions, metrics, and computations available in the selected data model. The suggestion box is dynamic, that is longer entity names can be seen clearly in one row without wrapping them.



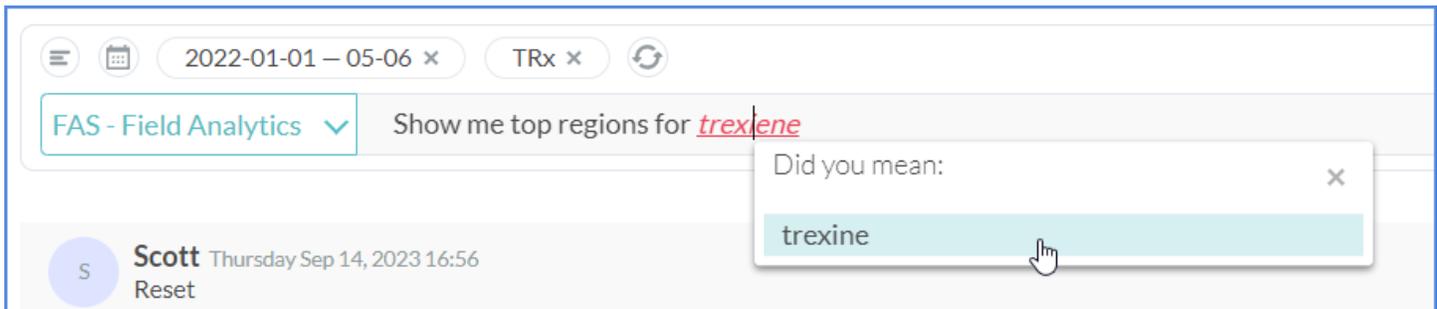
- Predictive suggestions for the next word:

When typing your questions, when you add a 'space' after a word, WhizAI suggests words that you can use to complete the question.



- Spell checks:

When typing your question, if you mistype or misspell a word, the NLP engine identifies such words and then marks and underlines it with a red line.



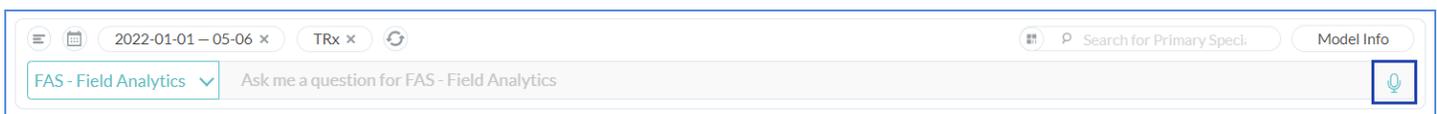
You can click the word to get a list of suggested correct spellings. All these suggestions help you in the process of typing a query by offering relevant suggestions as you type. This reduces the time and effort required to enter the complete query, especially for longer or complex queries. Thus, these suggestions help you to frame your queries more precisely. These suggestions can also be helpful for users who are less familiar or have limited experience with entities from the data model.

You can manage (enable/disable) these features from Admin console > Content Manager > Configurations > Data Model Configurations.

### Voice Recognition

Voice recognition (Speech to Text) is a feature that helps you convert your speech to text. WhizAI supports speech-to-text in English, French, German, Italian, and Spanish.

To use this feature, open WhizAI Explorer and then click on the microphone icon to start converting your voice to text.



## Step 2: Understanding the queries

Natural language understanding (NLU) technology involves the ability to turn text or audio speech into encoded, structured information, based on a recognition and classification of appropriate entities. WhizAI's NLP engine is trained to understand natural language. NLU helps the NLP engine to understand and analyze NLOs by extracting the content such as names, entities, relations, dimensions, metrics, computations, etc. NLU provides you with the following features:

- [Intent identification](#)
- [NLQ Contexts](#)
- [Slot filling for incomplete queries](#)
- [Natural Language Understanding \(NLU\) Coverage](#)

### Intent identification

When understanding NLQs, WhizAI's NLP engine identifies different structures in your queries.

For example: When you ask, 'Show me top 2 brands by TRx growth in Boston MA in Q1 2020 by months', the NLP engine identifies NLQ intents, different categories, and expressions as below,

- Top 2 brands as list intent
- TRx growth as calculation intent
- In Boston MA as the condition of filtering
- In Q1 2020 as the expression of date time and
- By months as trend intent.

### An alternative way to understand WhizAI NLP

The following table explains different intents in WhizAI NLQ:

Intents	NLQ Analysis/response	Example NLQ
Data point	Gives one value for a given metric in NLQ	TRx in Boston MA last week
Aggregated data point	Gives one value for the aggregate of multiple entities	TRx for south and west regions
List (Top N / Bottom N)	Gives a list of entities in a descending/ ascending order of metric value	NRx volume by regions this month
List (Quantification)	Gives a list of entities in descending order of 'quantified' dimension value	Total HCP count by regions
Trend	Gives a trend line for a given metric for the period asked	NRx, TRx by months for last year
Multi dimension (Cross tab)	Gives a cross table - dimensions become rows and columns. and each cell is populated with a metric value	TRx by brands by regions
Multi dimension (Nested)	Gives a nested table - dimensions form a tree structure because of the hierarchy involved	TRx for Boston MA and Chicago IL by market by brands
Trend for list	Gives a trend line for each of the entities for the period asked	NRx volume trend by regions last year
Multi dimension trend	Gives a complex table with 3 dimensions and each cell is populated with a metric value	TRx by brands by regions by months

Intents	NLQ Analysis/response	Example NLQ
List time comparison	Compares the entities based on metric value period over period	Show me top growing territories
Entity comparison	Compares the entities based on the metric value	Show me Boston MA vs Chicago IL
Entity comparison trend	Compares the trend of entities based on the metric value	Show me Boston MA vs Chicago IL by months
List entity comparison	Compares the entities based on metric value for the dimension asked	Show me Boston MA vs Chicago IL by brands
Time comparison	Compares the given metric over a period of time	Show me TRx 2020 vs 2021
Time comparison trend	Gives a trend line for period-over-period comparison	Show me MoM for TRx

## Context in NLQs

When you ask a query, WhizAI's NLP engine identifies the context of the conversation and remembers it so that you do not have to repeat common things such as the metrics and filters previously used in your queries.

For example: If you ask WhizAI, 'show me the TRx count for California'. WhizAI will show you the response for this, however, it will identify California as the context and remember it for your next query.

- NLQ example 1: Show me TRx for California

The screenshot displays the WhizAI interface. At the top, there are filters for the date range '2022-01-01 - 05-06', the metric 'TRx', and the location 'California'. Below the filters is a search bar with the text 'Ask me a question for FAS - Automation'. The main content area shows a conversation between 'Scott' and 'whiz.ai'. Scott asks 'Show me TRx for California'. Whiz.ai responds with a large number '2.09M'. Below the number, there is a small chart area with the title 'TRx' and the subtitle '2022-01-01 - 05-06 | TRx | California'. At the bottom of the response, there is a footer with the text: 'Data: TRx as of 2022-05-06', 'Generated in: 2.85 sec', 'Source: FAS - Automation', and 'Was this helpful? Yes No'.

- Follow up question when context is set: Show me top 2 brands. As shown below it retains the context.

The screenshot shows a chat conversation. On the left, a user named 'Scott' asks 'Show me top 2 brands'. On the right, 'whiz.ai' responds with a data visualization titled 'Top 2 Products by TRx' for the period '2022-01-01 – 05-06' in 'California'. The data is presented in a table with two columns: 'Product' and 'TRx'. The top two products are 'Arobi' (653.34K) and 'Plabeniil' (588.39K). A 'Total' row shows 1.24M. The interface includes a search bar, a 'NEW Explorations' button, and a 'Reset' icon (a circular arrow) at the bottom right of the data panel.

Product	TRx ↓
1 Arobi	653.34K
2 Plabeniil	588.39K
Total	1.24M

Data: TRx as of 2022-05-06  
Generated in: 4.20 sec  
Source: FAS - Automation  
Was this helpful? Yes No

If you do not want the context and wish to start over again. In this case, you must reset the context and ask your query again. You can reset the context by clicking the Reset  icon as shown in the figure below.

The screenshot shows the context bar at the top of the chat interface. It contains several elements: a menu icon, a calendar icon, a date range '2022-01-01 – 05-06' with a close button, 'TRx' with a close button, 'California' with a close button, and a 'Reset' icon (a circular arrow) which is highlighted with a blue box. Below the context bar is a dropdown menu showing 'FAS - Automation' and a text input field with the placeholder 'Ask me a question for FAS - Automation'.

WhizAI NLP engine uses natural language understanding technology to understand the ambiguity in NLQs such as “sales” refers to “Units” or “TRx” so that you always receive contextual, and accurate answers.

Scott Sunday Dec 01, 2024 11:43  
What are my sales trend week over week?

whiz.ai Sunday Dec 01, 2024 11:43

 We need some clarifications for the following terms: "sales".  
The following response is based on your previous choices. [VIEW OPTIONS](#) [DISMISS](#)

**TRx, NRx [WoW]**  
2022-01-01 – 05-06 | TRx, NRx

[Data Controls](#) NEW Explorin    

 Search

Period ↑	TRx				NRx			
	Curr	Prev	Abs Chg	% Chg [%]	Curr	Prev	Abs Chg	% Chg [%]
08 Jan to 14 Jan, 2022 vs. 01 Jan to ...	1.90M	1.80M	+94.85K	+5.27%	1.87M	1.78M	+85.44K	+4.80%
15 Jan to 21 Jan, 2022 vs. 08 Jan to ...	2.05M	1.90M	+157.79K	+8.32%	2.04M	1.87M	+173.11K	+9.28%
22 Jan to 28 Jan, 2022 vs. 15 Jan to ...	2.04M	2.05M	-18.16K	-0.88%	2.01M	2.04M	-32.24K	-1.58%
29 Jan to 04 Feb, 2022 vs. 22 Jan to ...	1.81M	2.04M	-225.84K	-11.10%	1.77M	2.01M	-231.54K	-11.54%
05 Feb to 11 Feb, 2022 vs. 29 Jan to ...	2.04M	1.81M	+226.28K	+12.51%	2.01M	1.77M	+239.35K	+13.49%
12 Feb to 18 Feb, 2022 vs. 05 Feb to ...	1.98M	2.04M	-59.26K	-2.91%	1.91M	2.01M	-102.64K	-5.10%
19 Feb to 25 Feb, 2022 vs. 12 Feb to ...	1.98M	1.98M	+5.82K	+0.29%	1.95M	1.91M	+39.35K	+2.06%
26 Feb to 04 Mar, 2022 vs. 19 Feb t...	1.99M	1.98M	+3.40K	+0.17%	1.95M	1.95M	-3.76K	-0.19%
05 Mar to 11 Mar, 2022 vs. 26 Feb t...	2.03M	1.99M	+44.61K	+2.25%	1.99M	1.95M	+45.08K	+2.32%
<b>Total</b>	<b>33.46M</b>	<b>33.32M</b>	<b>+141.51K</b>	<b>+0.42%</b>	<b>32.94M</b>	<b>32.82M</b>	<b>+118.69K</b>	<b>+0.36%</b>

Data: TRx, NRx as of 2022-05-06  
Generated in: 6.36 sec

## Slot filling for incomplete queries

The NLP engine automatically detects missing information in a query and prompts the user to provide the critical attributes necessary to give an exact answer.

In case you enter incomplete information in your query, to complete the query, WhizAI intelligently displays a prompt containing probable data values. You can choose from these data values and fill in the incomplete details in your query so that a correct data response can be rendered.

For example, if you ask a query, Show me TRx market share. (Without adding information about the brand for which this data is required.) In this case, WhizAI prompts you to complete the query by adding the information of the brands for which TRx market share should be displayed, as shown in the following figure:

Scott Thursday Sep 14, 2023 17:23  
TRx market share

Whiz Thursday Sep 14, 2023 17:23

 Your query looks incomplete. We need more inputs to resolve your question. [VIEW OPTIONS](#)

Was this helpful? [Yes](#) [No](#)

Additional Information x

trx market share

Term  
**Market Share**

Market 1  
Select a value ▼

Product 2  
Select a value ▼

3

Apply

**Note!** If one of the slots belonging to the hierarchy is set in the context, the dimension populated from the slot appears as blank.

## Natural Language Understanding (NLU) coverage

### Handling "Since-Time" Expressions in Queries

WhizAI supports an expanded range of "since-time" expressions for queries. This feature improves the system's ability to understand and process various ways users express time-based queries. Based on user feedback, the system now recognizes a broader set of variations for the "since" operator. Now, you can use variations like starting, onwards, to date, to current, from-to date, till date and the system provides the correct response

Some examples and variations of since expressions are as below.

**s** **Scott** Thursday Nov 14, 2024 13:24  
All TRx starting Feb 2022

**whiz.ai** Thursday Nov 14, 2024 13:24

**TRx** NEW  
Expl $\bar{a}$ n

2022-01-29 – 05-06 | TRx

27.48M

Data: TRx as of 2022-08-05  
Generated in: 0.49 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

- Number of products for June to date

**s** **Scott** Thursday Nov 14, 2024 13:27  
Number of products for June to date

**whiz.ai** Thursday Nov 14, 2024 13:28

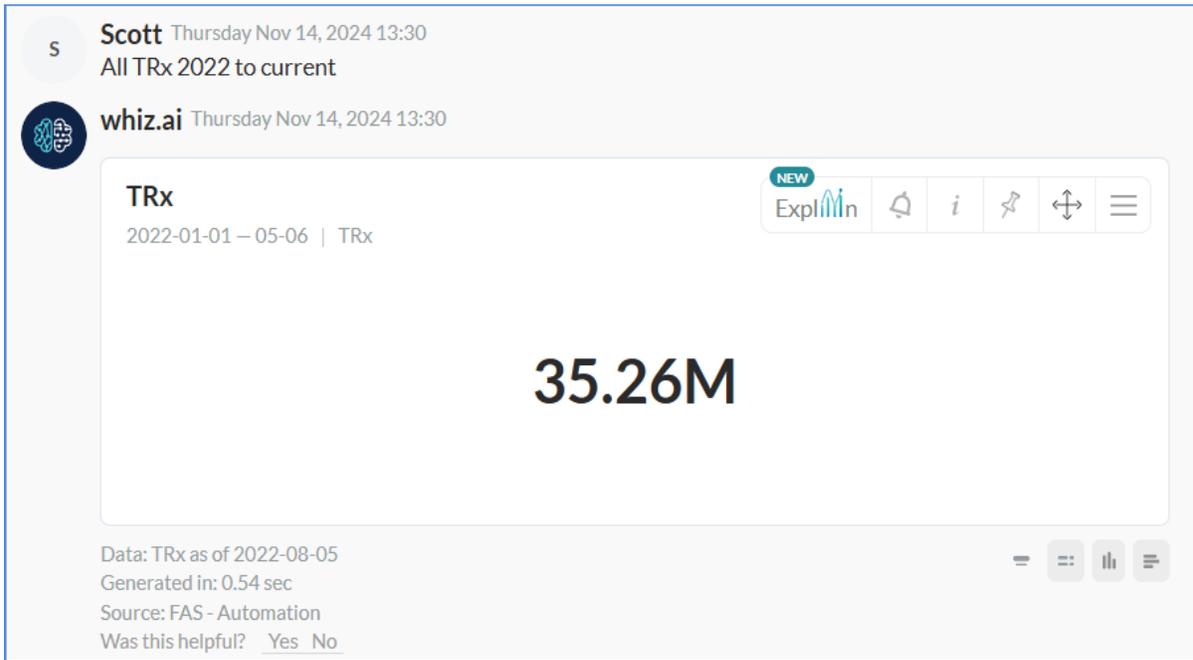
**Product Count** NEW  
Expl $\bar{a}$ n

2021-05-29 – 2022-05-06 | Product Count

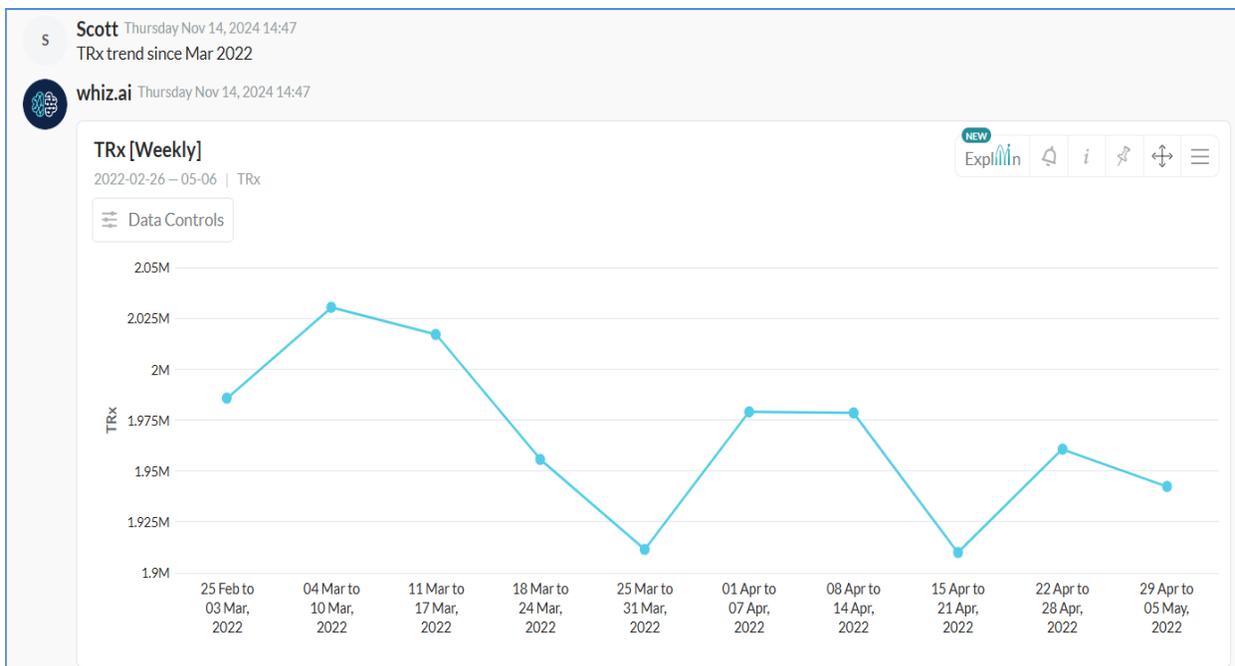
5 :

Data: Product Count as of 2022-08-05  
Generated in: 9.81 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

- All TRx 2022 to current



- TRx trend since Mar 2022



### Support for filtering multi-dimensional NLOs

WhizAI allows you to apply a filtering condition on any dimension or combination of two dimensions. This displays a nested, pivot /crosstab response honoring the specified filtering conditions.

For example,

- Show districts by territory where districts have TRx less than 5M (show me districts where TRx < 5M by territories) - This displays a nested response with all the districts honoring the filtering condition at level 1.

**Scott** Sunday Dec 01, 2024 11:47  
Show districts by territory where districts have TRx less than 5M

**whiz.ai** Sunday Dec 01, 2024 11:47

**TRx by District, Territory where TRx for Territory, District less than 5000000** NEW Explain     

2022-01-01 – 05-06 | TRx

 Data Controls  Search

District / Territory	TRx ↓
> Eastern	988.56K
> Tennessee	895.19K
> Iowa North	855.28K
> Rocky Mountain	839.97K
> Orlando	836.39K
> Central California	832.01K
> Raleigh	821.08K
> Tampa	805.79K
> Seattle	781.40K
> South Florida	773.40K
Total	35.26M

Data: TRx as of 2022-05-06  
Generated in: 4.79 sec  
Source: FAS - Automation  
Was this helpful?  Yes  No

- Show me regions by products where TRx > 5M - this displays a nested response with every cell honoring the filtering condition.

Scott Sunday Dec 01, 2024 11:50  
Show me regions by products where TRx > 5M

whiz.ai Sunday Dec 01, 2024 11:50

**TRx by Region, Product where TRx for Product more than 5000000**  
2022-01-01 – 05-06 | TRx

Data Controls Search

Region ↑	Arobi	Plabeniil	Trexine
Mid-Atlantic	1.74M	1.50M	1.54M
Mid-Central	1.74M	1.42M	1.60M
Midwest	1.47M	1.37M	1.42M
Northeast	1.25M	1.11M	1.04M
South Central	372.33K	382.56K	325.30K
Southeast	1.52M	1.21M	1.31M
Southwest	1.35M	1.10M	1.24M
West	1.51M	1.44M	1.32M
<b>Total</b>	<b>10.96M</b>	<b>9.53M</b>	<b>9.80M</b>

Data: TRx as of 2022-05-06  
Generated in: 4.15 sec  
Source: FAS - Automation  
Was this helpful? Yes No

- Show products by territory where territories have TRx less than 5M - this generates a pivot or crosstab response, with territories meeting the filter criteria in columns and products grouped by these territories in rows, all honoring the filtering condition.

Scott Sunday Dec 01, 2024 11:51  
Show products by territory where territories have TRx less than 5M

whiz.ai Sunday Dec 01, 2024 11:51

**TRx by Product, Territory where TRx for Territory less than 5000000**  
2022-01-01 – 05-06 | TRx

Data Controls Search

Product ↑	Abilene	Abington	Akron	Alaska	Albany	Albuquerque	Allentown	Altoona	Amarillo	Ann Ar
Arobi	42.94K	22.02K	26.54K	33.34K	100.81K	33.44K	43.90K	32.19K	19.57K	46.48K
Emarun	4.27K	6.30K	7.28K	7.06K	18.81K	11.24K	6.14K	8.73K	5.11K	13.79K
Ofasan	8.08K	6.69K	7.35K	3.79K	15.14K	2.72K	9.27K	1.18K	6.34K	9.14K
Plabeniil	19.44K	33.09K	49.81K	18.75K	85.03K	6.87K	29.17K	26.45K	20.10K	37.94K
Trexine	38.15K	17.03K	47.25K	6.44K	72.42K	36.32K	18.21K	29.02K	18.35K	30.32K
<b>Total</b>	<b>112.88K</b>	<b>85.13K</b>	<b>138.23K</b>	<b>69.39K</b>	<b>292.21K</b>	<b>90.58K</b>	<b>106.70K</b>	<b>97.57K</b>	<b>69.48K</b>	<b>137.66K</b>

Data: TRx as of 2022-05-06  
Generated in: 5.45 sec  
Source: FAS - Automation  
Was this helpful? Yes No

- Show me growing regions by products - this generates a nested response honoring combined filtering condition of region and product.

The screenshot shows a chat window with two messages. The first message is from 'Scott' asking to show growing regions by products. The second message is from 'whiz.ai' which displays a data table titled 'TRx by Region, Product' for the period 2022-01-01 to 2021-01-02. The table compares current and previous year-to-date (YTD) values for four regions: Mid-Atlantic, West, Southwest, and Mid-Central, along with a total. The table includes columns for 'Curr', 'Prev', 'Abs Chg', and '% Chg'.

Region / Product	YTD vs Prior YTD			
	Curr	Prev	Abs Chg ↓	% Chg [%]
> Mid-Atlantic	5.58M	5.43M	+147.69K	+2.72%
> West	5.00M	4.91M	+93.01K	+1.90%
> Southwest	4.33M	4.33M	+5.82K	+0.13%
> Mid-Central	5.50M	5.50M	+5.07K	+0.09%
Total	20.41M	20.16M	+251.59K	+1.25%

Data: TRx as of 2022-05-06  
Generated in: 5.78 sec  
Source: FAS - Automation  
Was this helpful?  Yes  No

**Important!** If the query is ambiguous, then a filter will be applied on both the dimensions.

### Include filter metric in NLQ response

When you ask NLQ with a filtering condition on a metric, you can now view the filtered metric in the response. This helps in validating the results for the NLQs.

For example, the query Top regions by Trx where NRx is more than 4M includes NRx (filtering condition metric) in the response as shown below:

**Scott** Sunday Dec 01, 2024 11:53  
 Top regions by Trx where NRx is more than 4M includes NRx

**whiz.ai** Sunday Dec 01, 2024 11:53

**Top Regions by NRx, TRx where NRx more than 4000000** NEW Expl | n | i | ↻ | ↕ | ☰

2022-01-01 – 05-06 | NRx, TRx

Data Controls Search

Region	NRx	TRx ↓
1 Mid-Atlantic	5.47M	5.58M
2 Mid-Central	5.41M	5.50M
3 West	4.92M	5.00M
4 Midwest	4.88M	4.96M
5 Southeast	4.66M	4.73M
6 Southwest	4.25M	4.33M
<b>Total</b>	<b>29.60M</b>	<b>30.10M</b>

Data: NRx, TRx as of 2022-05-06  
 Generated in: 4.44 sec  
 Source: FAS - Automation  
 Was this helpful?  Yes  No

# | | : | | C | ☰

## Support for Exclusionary Logic Using 'Like'

WhizAI supports exclusionary logic support for NLP with the keyword "Like" to enhance data query flexibility. This feature allows you to include or exclude multiple strings in queries, facilitating more accurate data retrieval and analysis.

**Important!** For accurate responses, always enclose the 'like' and 'not like' operators within quotes. Using ';' to include or exclude multiple strings in queries may lead to inaccurate responses. For better accuracy, please use 'and/or' instead of ','

For example,

- Show me regions like 'West' and 'Mid' - All regions containing keyword 'West' or 'Md' are displayed.

The screenshot shows a chat conversation with a user named Scott asking for regions like 'West' and 'Mid'. The WhizAI assistant responds with a table of top regions by TRx. The table is as follows:

Region	TRx
1 Mid-Atlantic	5.58M
2 Mid-Central	5.50M
3 West	5.00M
4 Midwest	4.96M
5 Southwest	4.33M
<b>Total</b>	<b>25.38M</b>

Additional details from the screenshot: Data: TRx as of 2022-05-06, Generated in: 5.36 sec, Source: FAS - Automation. A blue box highlights the 'West' and 'Mid' regions in the table.

- Show me regions not like 'West' and 'Mid' --> All regions except those containing keyword 'West' and 'Mid' are displayed

Show me regions not like 'West' and 'Mid'

**Scott** Monday Apr 22, 2024 15:41  
Show me regions not like 'West' and 'Mid'

**Whiz** Monday Apr 22, 2024 15:41

**Top Regions not like west, mid by TRx**  
2022-01-01 – 05-06 | TRx

Columns Search

Region	TRx ↓
1 Southeast	4.73M
2 Northeast	3.93M
3 South Central	1.23M
Total	9.88M

Data: TRx as of 2022-05-06  
Generated in: 3.40 Sec  
Source: FAS - Field Analytics  
Was this helpful? [Yes](#) [No](#)

### Support for NLQs with “top metric%” and “bottom metric%”

WhizAI has NLQ support for having dimensions that contribute to a specified percentage of any cumulative metric. This feature allows you to make data-driven decisions by displaying key metric contributors.

For example,

- Show me top regions that contributes to 20% of total TRx

**Scott** Sunday Dec 01, 2024 11:59  
Show me top regions that contributes to 20% of total TRx

**whiz.ai** Sunday Dec 01, 2024 11:59

**Top Regions by TRx where TRx equals to 20 and contributing 20% of TRx**  
2022-01-01 – 05-06 | TRx | Contribution

Data Controls Search

Region	TRx ↓	TRx Contribution [%]
1 Mid-Atlantic	5.58M	15.83
2 Mid-Central	5.50M	15.61
Total	11.08M	31.43

Data: TRx, TRx Contribution as of 2022-05-06  
Generated in: 5.42 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

- Show me TRx growth for top regions that contributes to 20% of total TRx

Scott Sunday Dec 01, 2024 12:04  
Show me TRx growth for top regions that contributes to 20% of total TRx

whiz.ai Sunday Dec 01, 2024 12:04

**Top Regions by Growth TRx where TRx equals to 20 and contributing 20% of TRx** NEW Expl in 🔔 i 🔗 🔄 ☰

2022-01-01 – 05-06 | TRx | Growth, Contribution

Data Controls 🔍 Search

Region	Growth TRx [%] ↓	TRx Contribution [%]
1 Mid-Atlantic	2.72	15.83
2 Mid-Central	0.09	15.61
Total	1.40	31.43

Data: Growth TRx, TRx Contribution as of 2022-05-06  
Generated in: 5.28 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

**Note!** Applying Threshold to list will give unsupported message For example, show me top 5 accounts where cumulative TRx is 50% of total gives unsupported message.

Workaround : If you remove the threshold from the query , the response will be generated as expected  
Working NLQ - show me top accounts where cumulative TRx is 50% of total

**Note!** Top HCPs cutoff gives incorrect values as it sets the default thresholds as 1 instead of 0. Hence HCPs with Support X% NLQs will give unsupported message error. For example, Top HCPs that contribute to 20% of TRx gives unsupported message.

### Support for smarter disambiguation using metric-dimension compatibility

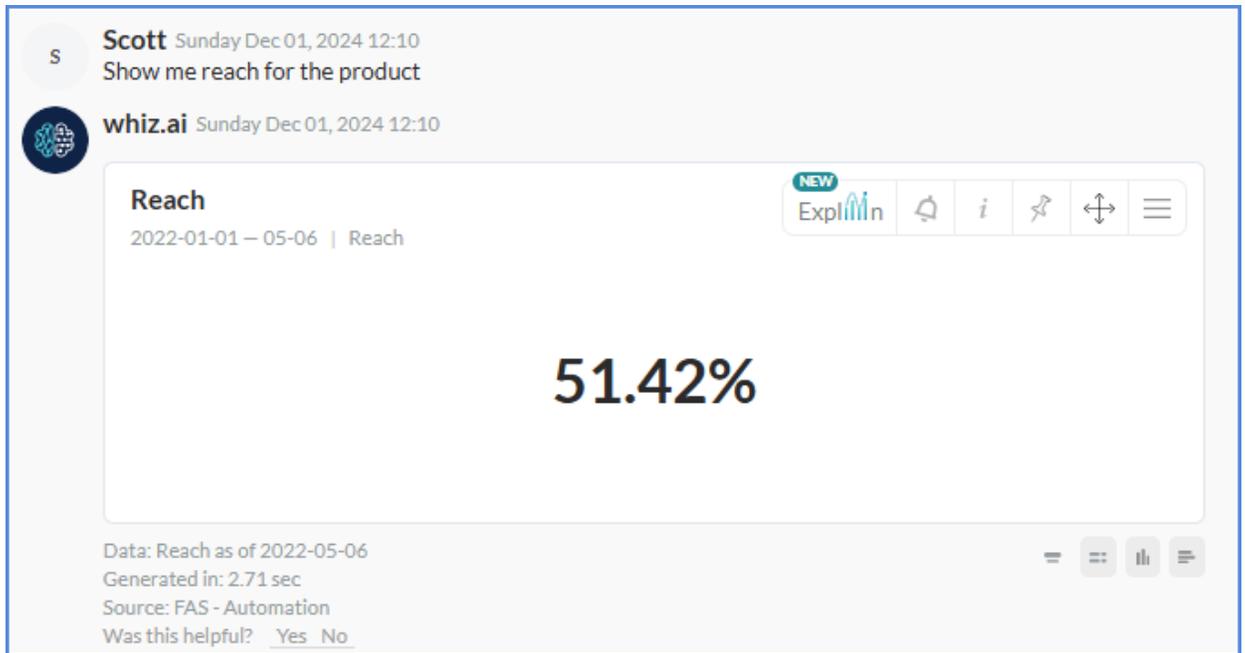
WhizAI supports enhanced smarter disambiguation flow where you see only the relevant ambiguity options by handling metric-dimension compatibility in a better way. Following is the chart of metric-dimension compatibility.

Sr. No.	Metric	Ambiguous/ Non-Ambiguous Metric	Dimension	Compatible (Y/N)
1	Reach	Non - Ambiguous metric	Product	N
2	Reach	Non - Ambiguous metric	Territory Manager	N
3	Reach	Non - Ambiguous metric	Customer	Y
4	Reach	Non - Ambiguous metric	District, State	Y
5	Reach	Non - Ambiguous metric	City	N
6	sales	Ambiguous metric	Product	Y (NBRx)
7	sales	Ambiguous metric	New York	Y (Ambiguation Box is generated for metric and New York)

Sr. No.	Metric	Ambiguous/ Non-Ambiguous Metric	Dimension	Compatible (Y/N)
8	sales	Ambiguous metric	Boston	Y (Ambiguation Box is generated for metric and Boston)

For more information refer to the following queries.

- Non-Ambiguous Metric: Reach
  - Show me reach for the product: The metric ignores the incompatible dimension product.



- Show me reach by region - Since Reach is compatible with the dimension region, it displays reach for the dimension region.

**Scott** Sunday Dec 01, 2024 12:11  
Show me reach by region

**whiz.ai** Sunday Dec 01, 2024 12:11

**Top Regions by Reach** NEW Explorin

2022-01-01 – 05-06 | Reach

Data Controls Search

	Region	Reach [%] ↓
1	Mid-Atlantic	52.43
2	West	51.81
3	Southeast	51.00
4	Northeast	50.94
5	Southwest	50.71
6	South Central	50.31
7	Mid-Central	50.20
8	Midwest	49.65

Data: Reach as of 2022-05-06  
Generated in: 5.69 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

- Reach for New York – Since City is an incompatible dimension for reach, it does not display in the disambiguation box. It displays the other two dimensions District and State in the disambiguation box.

**Scott** Sunday Dec 01, 2024 12:12  
Reach for New York

**whiz.ai** Sunday Dec 01, 2024 12:12

⚠ We need some clarifications for the following terms: "new york". VIEW OPTIONS

Was this helpful? [Yes](#) [No](#)

Additional Information

reach for new york

Term  
**new york** Search

New York State

New York District

Apply

**S** **Scott** Sunday Dec 01, 2024 12:12  
Reach for New York

**whiz.ai** Sunday Dec 01, 2024 12:12

 We need some clarifications for the following terms: "new york".  
The following response is based on your previous choices. **VIEW OPTIONS**

**Reach** NEW Expl in 🔔 i 🔗 ↔ ☰

2022-01-01 – 05-06 | Reach | New York

**53.45%**

Data: Reach as of 2022-05-06  
Generated in: 1.11 sec  
Source: FAS - Automation  
Was this helpful? Yes No ☰ ☰ ☰ ☰

New York

**Scott** Sunday Dec 01, 2024 12:16  
New York

**whiz.ai** Sunday Dec 01, 2024 12:16

 We need some clarifications for the following terms: "New york". [VIEW OPTIONS](#) [DISMISS](#)

The following response is based on your previous choices.

**TRx** NEW Expln     

2022-01-01 – 05-06 | TRx | New York

293.19K

Data: TRx as of 2022-05-06  
Generated in: 1.94 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Additional Information ×

new york

Term **new york** 🔍 Search

New York District ✓

New York City

New York State

Apply

Tip ! If you select City, it being an incompatible dimension with metric Reach, Reach is replaced by default metric TRx .

- Ambiguous metric

- Show me sales for New York: Sales being an ambiguous metric, and New York being an ambiguous dimension, it shows ambiguity options for both sales and New York.

S **Scott** Thursday Mar 07, 2024 16:38  
 Show me sales for New York

Whiz Thursday Mar 07, 2024 16:38

 We need some clarifications for the following terms: "sales", "new york".
 VIEW OPTIONS DISMISS

The following response is based on your previous choices.

**Reach** NEW Explorin i ↻ ↕ ☰  
 2022-01-01 – 05-06 | Reach

Reach	51.42%
-------	--------

Data: Reach as of 2022-05-06  
 Generated in: 2.09 Sec  
 Source: FAS - Automation  
 Was this helpful? [Yes](#) [No](#)
# || ☰

Additional Information

show me sales for new york

✓  
**sales**  
(Metrics / Reach)

✓  
**new york**  
(City / New York)

Term **sales** 🔍 Search

TRX Metrics

Reach Metrics ✓

Apply

Additional Information

show me sales for new york

✓  
**sales**  
(Metrics / Reach)

✓  
**new york**  
(City / New York)

Term **new york** 🔍 Search

New York City ✓

New York State

New York District

Apply

Depending on the metric-dimension compatibility you see the results displayed based on the options you choose.

- Show me sales by product: Reach being incompatible metric with dimension product, the smart ambiguity ignores the metric, and thus no ambiguity box is seen.

**Scott** Thursday Mar 07, 2024 16:44  
Show me sales by product

**Whiz** Thursday Mar 07, 2024 16:44

**Top Products by TRx** NEW     

2022-01-01 – 05-06 | TRx  Search

	Product	TRx ↓
1	Arobi	10.96M
2	Trexine	9.80M
3	Plabenil	9.53M
4	Ofasan	2.54M
5	Emarun	2.43M
Total		35.26M

Data: TRx as of 2022-08-05  
Generated in: 2.06 Sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

- Show me sales for Boston: Sales being an ambiguous metric and Boston being an ambiguous dimension, it shows ambiguation options for both sales and Boston.

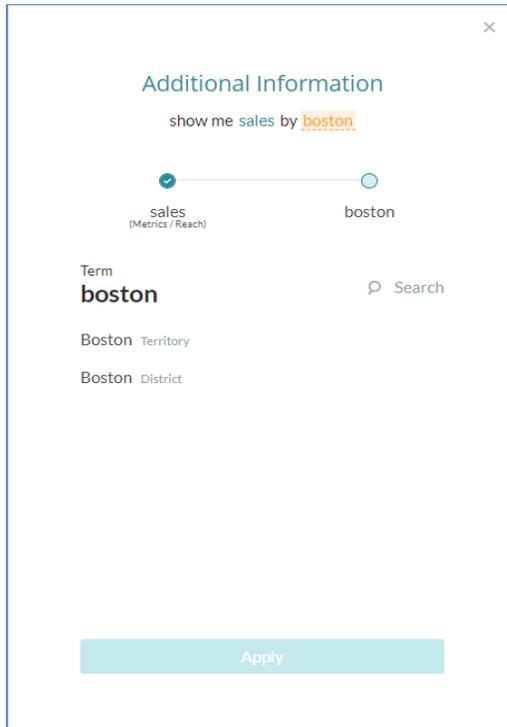
**Scott** Thursday Mar 07, 2024 16:46  
Show me sales by Boston

**Whiz** Thursday Mar 07, 2024 16:46

 We need some clarifications for the following terms: "sales", "boston". **VIEW OPTIONS**

The following response is based on your previous choices.

Was this helpful? [Yes](#) [No](#)



## Support for numeric filters in questions that have numeric dimensions

WhizAI allows you to filter entities based on numeric values or range. For example, if you want to get a list of customers within a specific range, you can ask Show me Trx of Customers between age 20 to 35. Based on the input, the top customers by Trx where age greater than or equal to 20 and less than or equal to 35 are displayed, as shown in the figure below:

Scott Sunday Dec 01, 2024 12:23  
 Show me TRx of Customers between age 20 to 35

whiz.ai Sunday Dec 01, 2024 12:23

**Top Customers by TRx where Age greater than or equals to 20 and Age less than or equals to 35**

 NEW

2022-01-01 – 05-06 | TRx

Data Controls
Search

Customer	TRx ↓
1 Tim Phillips	21.86K
2 Michael Moore	12.64K
3 Jeffrey Craig	10.92K
4 Mckenzie Surgery Center	10.46K
5 Yolanda Tran	10.19K
6 Nathan Jones	10.13K
7 Jonathan Smith	9.87K
8 Heidi Smith	9.81K
9 Devon Carlson	9.70K
10 Amy Vaughn	9.70K
Total	9.27M

Data: TRx as of 2022-05-06  
 Generated in: 4.60 sec  
 Source: FAS - Automation  
 Was this helpful?  Yes  No

When a response with numeric dimensions and filtering conditions is pinned to a board and you can add filter on the numeric dimension as shown in the figure below:

whiz.ai Explorer Pinboards Alerts Explain Admin

My Pinboard Summarize This Board Hide Filters

Add Filters +

**Top Customers by TRx where Age greater than or equals to 20 a...**  
 2022-01-01 – 05-06 | TRx

Customer	TRx ↓
1 Tim Phillips	21.86K
2 Michael Moore	12.64K
3 Jeffrey Craig	10.92K
4 Mckenzie Surgery Center	10.46K
5 Yolanda Tran	10.19K
6 Nathan Jones	10.13K
7 Jonathan Smith	9.87K
8 Heidi Smith	9.81K
9 Devon Carlson	9.70K
10 Amy Vaughn	9.70K
Total	9.27M

The screenshot shows the WhizAI interface with a 'My Pinboard' view. The board displays a table of top customers. The table has columns for rank, name, and value. The values are sorted in descending order, with the top customer being 'Herman Jones' with a value of 10.13K. The table is filtered for 'Age' and 'Greater than or equals to 20 a...'. The interface includes navigation tabs like 'Explorer', 'Pinboards', 'Alerts', 'Explain', and 'Admin'.

Rank	Name	Value
1	Herman Jones	10.13K
2	Jonathan Smith	9.87K
3	Heidi Smith	9.81K
4	Devon Carlson	9.70K
5	Amy Vaughn	9.70K
Total		9.27M

## Support for responses to show exact sequence of metrics and computations

WhizAI responses show the same order of metrics and computations as that of the question. For example, if you ask Top Customers by TRx, Growth TRx, TRx Market Share, Average TRx, Growth NRx, NRx Volume, you get a response in tabular form with columns in the same order.

**Scott** Sunday Dec 01, 2024 12:31  
Top Customers by TRx, Growth TRx, TRx Market Share, Average TRx, Growth NRx, NRx Volume

**whiz.ai** Sunday Dec 01, 2024 12:32

 Your query looks incomplete. We need more inputs to resolve your question. VIEW OPTIONS

**Top Customers by Growth TRx, Average TRx, Growth NRx, NRx Volume, TRx Market Share** NEW Expln

2022-01-01 – 05-06 | TRx, NRx | Growth, Average, Growth, Volume, Market Share | Emarun | AMARD

Data Controls Search

Customer	Growth TRx [%]	Average TRx	Growth NRx [%]	NRx Volume	TRx Market Share [%]
1 Anthony Crane	359.64	1.24K	129.86	2.90K	100.00
2 Antonio Salazar	302.66	1.22K	487.97	4.00K	100.00
3 Alex Jordan	736.25	937.88	218.30	2.87K	100.00
4 Anthony Arellano	835.64	928.98	217.80	3.29K	100.00
5 Andrea Beck	-	1.17K	-	2.84K	100.00
6 Andrew Gay	35.87	1.14K	95.20	3.51K	100.00
7 Allen Griffin	281.86	773.37	773.24	2.27K	100.00
8 Angela Munoz	-19.88	1.52K	-34.75	2.16K	100.00
9 Alan Johnson	618.70	722.79	744.81	1.75K	100.00
10 Antonio Thomas	68.44	570.38	188.38	3.54K	100.00
Total	10.67	135.13K	11.53	2.41M	6.90

Data: Growth TRx, Average TRx, Growth NRx, NRx Volume, TRx Market Share as of 2022-05-06  
Generated in: 3.66 sec  
Source: FAS - Automation

**Note!** Computations are only supported on calculated metrics created using the new metadata query aggregation formula. To support computations on old, calculated metrics, migrate the old calculated metrics to the new format. Old cards and pinboards remain unchanged. If you have done any custom ordering, it remains unchanged.

## Support for contextual conversations and co-referencing

Improved co-referencing support for list responses, that is, a new response is generated based on the previous query using certain keywords namely their, they, those, etc.

**Important!** Co-referencing works on NLQs that provide a 'list' as an output.

Following is the list of supported list responses:

- Top 5 regions <TopN/ BottomN>
- Top 5 growing regions <TopN Time Comparison/ BottomN Time Comparison>
- Top 5 regions by brands <Multi-dimensional>

- Top 5 regions by trend <Top N trend/ Bottom N trend>  
Following are some examples of co-referencing contextual conversations.
- Top 5 regions by TRx

**Scott** Sunday Dec 01, 2024 12:33  
Top 5 regions by TRx

**whiz.ai** Sunday Dec 01, 2024 12:33

**Top 5 Regions by TRx** NEW  
Expl<sup>n</sup>

2022-01-01 – 05-06 | TRx

Data Controls Search

	Region	TRx ↓
1	Mid-Atlantic	5.58M
2	Mid-Central	5.50M
3	West	5.00M
4	Midwest	4.96M
5	Southeast	4.73M
<b>Total</b>		<b>25.77M</b>

Data: TRx as of 2022-05-06  
Generated in: 3.68 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Follow up question: How are they performing? (PoP for same top 5 regions)

**Scott** Sunday Dec 01, 2024 12:34  
How are they performing?

**whiz.ai** Sunday Dec 01, 2024 12:34

### Referred Regions by TRx

2022-01-01 – 05-06 / 2021-01-02 – 05-07 | TRx

NEW Explorin

Data Controls Search

Region	YTD vs Prior YTD			
	Curr	Prev	Abs Chg ↓	% Chg [%]
1 Mid-Atlantic	5.58M	5.43M	+147.69K	+2.72%
2 West	5.00M	4.91M	+93.01K	+1.90%
3 Mid-Central	5.50M	5.50M	+5.07K	+0.09%
4 Midwest	4.96M	5.01M	-46.24K	-0.92%
5 Southeast	4.73M	4.78M	-50.95K	-1.07%
Total	25.77M	25.62M	+148.57K	+0.58%

Data: TRx as of 2022-05-06  
Generated in: 4.09 sec  
Source: FAS - Automation  
Was this helpful? Yes No

In the above-mentioned example, the list response of regions is contextualized to know how they are performing.

- Top 2 brands by NRx

**Scott** Sunday Dec 01, 2024 12:34  
Top 2 brands by NRx

**whiz.ai** Sunday Dec 01, 2024 12:34

**Top 2 Products by NRx** NEW Expln

2022-01-01 – 05-06 NRx

Search

	Product	NRx ↓
1	Arobi	10.79M
2	Trexine	9.64M
Total		20.44M

Data: NRx as of 2022-05-06  
Generated in: 3.08 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Show me their TRx. (Note that the NRx metric was included in the original NLQ, as a response for this question, WhizAI has switched the metric, and the TRx for top 2 brands is shown in the response)

**Scott** Sunday Dec 01, 2024 12:36  
Show me their TRx

**whiz.ai** Sunday Dec 01, 2024 12:36

**Referred Products by TRx** NEW Expln

2022-01-01 – 05-06 TRx Metric switched to TRx

Search

	Product	TRx ↓
1	Arobi	10.96M
2	Trexine	9.80M
Total		20.76M

Data: TRx as of 2022-05-06  
Generated in: 2.11 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

In the above example, as you can see, the contextualized conversation supports the metric switch. This allows you to instantaneously compare the values between two metrics.

- Show me the top regions by Arobi.

**Scott** Sunday Dec 01, 2024 12:38  
Show me the top regions by Arobi.

**whiz.ai** Sunday Dec 01, 2024 12:38

**Top Regions by TRx**  
2022-01-01 – 05-06 | TRx **Arobi**

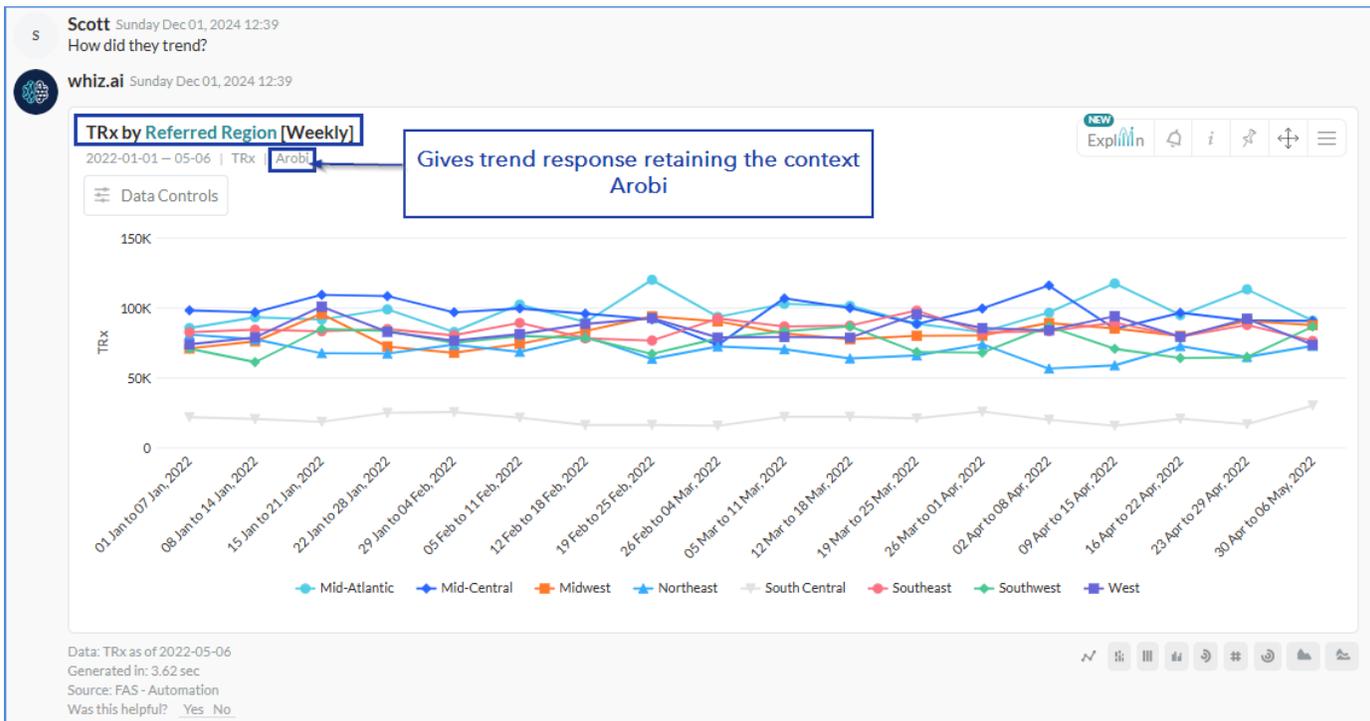
NEW Explorin

Data Controls Search

Region	TRx ↓
1 Mid-Atlantic	1.74M
2 Mid-Central	1.74M
3 Southeast	1.52M
4 West	1.51M
5 Midwest	1.47M
6 Southwest	1.35M
7 Northeast	1.25M
8 South Central	372.33K
<b>Total</b>	<b>10.96M</b>

Data: TRx as of 2022-05-06  
Generated in: 4.02 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

If you see, the context is set to Arobi. Now, you can ask follow-up query: How did they trend?



Thus, in the above-mentioned example, the context set earlier is persevered.

Follow up query: Show me their performance by trexine

Scott Sunday Dec 01, 2024 12:41  
Show me their performance by trexine

whiz.ai Sunday Dec 01, 2024 12:41

**Referred Regions by TRx** NEW Explorations

2022-01-01 – 05-06 / 2021-01-02 – 05-07 | TRx **Trexine** Context is switched to Trexine

Data Controls Search

Region	YTD vs Prior YTD			
	Curr	Prev	Abs Chg ↓	% Chg [%]
1 Mid-Central	1.60M	1.57M	+34.77K	+2.22%
2 West	1.32M	1.31M	+6.28K	+0.48%
3 South Central	325.30K	321.35K	+3.95K	+1.23%
4 Southeast	1.31M	1.31M	+3.13K	+0.24%
5 Southwest	1.24M	1.24M	-7.10K	-0.57%
6 Mid-Atlantic	1.54M	1.55M	-7.24K	-0.47%
7 Midwest	1.42M	1.48M	-58.25K	-3.94%
8 Northeast	1.04M	1.12M	-78.23K	-7.00%
<b>Total</b>	<b>9.80M</b>	<b>9.90M</b>	<b>-102.71K</b>	<b>-1.04%</b>

Data: TRx as of 2022-05-06  
Generated in: 3.10 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

In this example, the context set to Arobi is replaced with Trexine.

- Show me top regions by TRx.

**Scott** Sunday Dec 01, 2024 12:42  
Show me top regions by TRx.

**whiz.ai** Sunday Dec 01, 2024 12:43

### Top Regions by TRx

2022-01-01 – 05-06 | TRx

Data Controls

**NEW** Explorations

🔔 i 📌 ↔ ☰

🔍 Search

	Region	TRx ↓
1	Mid-Atlantic	5.58M
2	Mid-Central	5.50M
3	West	5.00M
4	Midwest	4.96M
5	Southeast	4.73M
6	Southwest	4.33M
7	Northeast	3.93M
8	South Central	1.23M
Total		35.26M

Data: TRx as of 2022-05-06  
Generated in: 2.70 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

# 🕒 📊 📈 📉 ☰ 🔄

Follow up query: Show me their NRx

**Scott** Sunday Dec 01, 2024 12:43  
Show me their NRx

**whiz.ai** Sunday Dec 01, 2024 12:43

**Referred Regions by NRx**  
2022-01-01 – 05-06 | NRx

NEW  
Explorations

Data Controls

Search

Context is switched to NRx

Region	NRx ↓
1 Mid-Atlantic	5.47M
2 Mid-Central	5.41M
3 West	4.92M
4 Midwest	4.88M
5 Southeast	4.66M
6 Southwest	4.25M
7 Northeast	3.90M
8 South Central	1.21M
<b>Total</b>	<b>34.72M</b>

Data: NRx as of 2022-05-06  
Generated in: 1.78 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Follow up query: Show me their performance

Scott Sunday Dec 01, 2024 12:44  
Show me their performance

whiz.ai Sunday Dec 01, 2024 12:44

The new response is sorted on the latest data

Referred Regions by NRx  
2022-01-01 – 05-06 / 2021-01-02 – 05-07 | NRx

Data Controls Search

Region	YTD vs Prior YTD			
	Curr	Prev	Abs Chg ↓	% Chg [%]
1 Mid-Atlantic	5.47M	5.26M	+210.06K	+3.99%
2 West	4.92M	4.83M	+87.57K	+1.81%
3 Mid-Central	5.41M	5.34M	+79.06K	+1.48%
4 Midwest	4.88M	4.83M	+55.46K	+1.15%
5 Southeast	4.66M	4.64M	+19.01K	+0.41%
6 Southwest	4.25M	4.29M	-44.49K	-1.04%
7 South Central	1.21M	1.27M	-57.77K	-4.54%
8 Northeast	3.90M	4.00M	-103.55K	-2.59%
Total	34.72M	34.47M	+245.34K	+0.71%

Data: NRx as of 2022-05-06  
Generated in: 4.25 sec  
Source: FAS - Automation  
Was this helpful? Yes No

In this example, the new response is sorted on the latest NLQ and not the 1st one.

**Important!** You cannot pin them for your references, as the pin icon is not available. Also, the entire context is lost if you reset the content, or a fresh question is asked which is out of context. The titles of these responses are always carried forward the latest intent and metric.

### Support for multi-metric entity comparison

WhizAI supports multi-metric entity comparison, that is, you can compare more than one metric for the entity or time comparison. For more information, refer to the following examples:

- TRx, NRx for Trexine vs Plabencil
- TRx, NRx for Trexine vs Plabencil by brands by regions
- TRx, NRx for Trexine vs Plabencil by brands

### Support for positive and negative expressions in queries

WhizAI understands positive and negative expressions from your queries.

- Positive expression: A query with a positive expression usually conveys a favorable result.

Example query:

Show me regions with positive sales.

- Negative expression: A query with a negative expression usually conveys an unfavorable result.

Example query:

Show me regions with negative sales.

### Support for different variations of the same query

WhizAI understands different variations of the same query. Different queries can have the same underlying meaning but can be structured and asked differently.

For example, consider the following queries that convey the same intent but have different phrasing:

- Show me comparison for Trexine and Plabenil
- How is Plabenil doing against Trexine?
- How are plabenil and trexine performing against one another?
- How are plabenil and trexine doing against each other?

WhizAI understands such questions that can be structured differently and renders the response accordingly.

**Note!** The above list of example queries is not a comprehensive list. The purpose of these examples is to show how the same question can be asked using a different variation and WhizAI still understands and supports the same.

### Support for interrogative questions

**Note!** You have to configure the business action for linguistic intent support queries. For more information refer to configuring business actions section in the NLP guide.

WhizAI also supports interrogative questions, providing even more versatility. This improvement includes the addition of following question types:

- Where: Now you can ask data for specific geographic locations such as regions, districts, or territories (which can be customized according to your needs). For example, "Where was Trexine sold the most?"
- When: This question type provides detailed information regarding timing or dates of certain events or actions. For instance, it can reveal when a patient was admitted or when a customer clicked on emails. For example, "When was the patient admitted to the hospital?"

Example query: When you ask show me 'Where was plabenil sold the most last year?', WhizAI filters results based on plabenil and automatically sorts them in descending order by default.

**Scott** Sunday Dec 01, 2024 12:46  
Where was plabencil sold the most last year?

**whiz.ai** Sunday Dec 01, 2024 12:47

**Top 1 Regions by TRx** NEW Expln

2021-01-02 – 12-31 TRx | Plabencil

Data Controls Search

Region	TRx ↓
1 Mid-Atlantic	4.30M
Total	4.30M

Data: TRx as of 2022-05-06  
Generated in: 5.44 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

### Support for multiple time periods with multiple metrics or entities

You can include multiple time periods, metrics, computations in your queries. For more information, refer to the following example queries with responses.

Example query 1: Show me the YTD , HTD , QTD , current month and current week for TRx, NRx

**Scott** Tuesday Jan 23, 2024 00:42  
Show me the YTD , HTD , QTD , current month and current week for TRx, NRx

**Whiz** Tuesday Jan 23, 2024 00:42

**TRx & NRx** NEW Expln

2022-01-01 – 05-06, 2022-01-01 – 05-06, 2022-04-02 – 05-06, 2022-04-30 – 05-27, 2022-04-30 – 05-06 | TRx, NRx

Metric	YTD	HTD	QTD	Current Month	Current Week
TRx	35.26M	35.26M	9.77M	7.98M	1.94M
NRx	34.72M	34.72M	9.62M	7.81M	1.90M

Data: TRx, NRx as of 2022-08-05  
Generated in: 0.46 Sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Example query 2: QTD POP & YTD POP by regions for NRx, NBRx

**Scott** Sunday Dec 01, 2024 12:50  
QTD POP & YTD POP by regions for NRx, NBRx

**whiz.ai** Sunday Dec 01, 2024 12:50

### Top Regions by NBRx, NRx

2022-04-02 – 05-06 / 01-01 – 02-04, 2022-01-01 – 05-06 / 2021-01-02 – 05-07 | NBRx, NRx

Data Controls Search

Region	NBRx								NRx	
	QTD vs Prior QTD				YTD vs Prior YTD				QTD vs Prior QTD	
	Curr	Prev	Abs Chg	% Chg [%]	Curr	Prev	Abs Chg	% Chg [%]	Curr	Pr
1 Midwest	2.21K	2.17K	+38.47	+1.77%	7.58K	9.67K	-2.10K	-21.69%	1.42M	1.4
2 Mid-Atlantic	2.40K	2.38K	+23.91	+1.00%	8.20K	10.59K	-2.39K	-22.56%	1.51M	1.4
3 West	2.17K	2.14K	+29.86	+1.40%	7.54K	9.93K	-2.39K	-24.07%	1.38M	1.3
4 Southwest	1.81K	1.80K	+5.77	+0.32%	6.37K	8.56K	-2.19K	-25.58%	1.19M	1.1
5 Mid-Central	2.30K	2.34K	-42.28	-1.81%	8.22K	10.80K	-2.58K	-23.92%	1.47M	1.4
6 Southeast	2.12K	2.11K	+17.16	+0.81%	7.28K	9.27K	-1.99K	-21.51%	1.28M	1.2
7 Northeast	1.79K	1.76K	+25.46	+1.45%	6.18K	7.85K	-1.67K	-21.28%	1.06M	1.0
8 South Central	606.87	584.08	+22.79	+3.90%	2.03K	2.61K	-575.57	-22.05%	300.11K	36
Total	15.40K	15.28K	+121.14	+0.79%	53.40K	69.29K	-15.89K	-22.94%	9.62M	9.4

Data: NRx as of 2022-05-06  
Data: NBRx, NRx as of 2022-05-06  
Generated In: 7.54 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Example query 3: Show me MTD QTD YTD by brands for NRx and TRx

**Scott** Sunday Dec 01, 2024 12:51  
Show me MTD QTD YTD by brands for NRx and TRx

**whiz.ai** Sunday Dec 01, 2024 12:51

### Top Products by TRx, NRx

2022-04-30 – 05-06, 2022-04-02 – 05-06, 2022-01-01 – 05-06 | TRx, NRx

Data Controls Search

Product	TRx			NRx		
	MTD	QTD	YTD	MTD ↓	QTD	YTD
1 Arobi	606.95K	3.06M	10.96M	587.43K	3.02M	10.79M
2 Trexine	543.59K	2.74M	9.80M	535.00K	2.67M	9.64M
3 Plabenil	518.84K	2.62M	9.53M	514.95K	2.59M	9.35M
4 Ofasan	137.38K	663.00K	2.54M	133.62K	659.53K	2.52M
5 Emarun	135.62K	687.78K	2.43M	127.46K	679.12K	2.41M
Total	1.94M	9.77M	35.26M	1.90M	9.62M	34.72M

Data: TRx, NRx as of 2022-05-06  
Generated In: 6.07 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

Example query 4: QTD POP & YTD POP by brands by regions for NRx, NBRx

Scott Sunday Dec 01, 2024 12:51  
QTD POP & YTD POP by brands by regions for NRx, NBRx

whiz.ai Sunday Dec 01, 2024 12:51

**NBRx, NRx by Product, Region**  
2022-04-02 – 05-06 / 01-01 – 02-04, 2022-01-01 – 05-06 / 2021-01-02 – 05-07 | NBRx, NRx

Data Controls Search

Product ↑	Mid-Atlantic									
	NBRx								NRx	
	QTD vs Prior QTD				YTD vs Prior YTD				QTD vs Prior QTD	
	Curr	Prev	Abs Chg	% Chg [%]	Curr	Prev	Abs Chg	% Chg [%]	Curr	Pr
Arobi	729.95	703.80	+26.15	+3.72%	2.52K	3.28K	-754.71	-23.03%	483.73K	43
Emarun	173.91	177.08	-3.17	-1.79%	575.49	715.97	-140.49	-19.62%	96.00K	96
Ofasan	163.39	169.16	-5.77	-3.41%	551.27	703.48	-152.20	-21.64%	115.77K	12
Plabenil	688.05	657.39	+30.67	+4.66%	2.29K	2.96K	-666.38	-22.51%	406.78K	36
Trexine	648.02	671.99	-23.97	-3.57%	2.26K	2.93K	-674.38	-23.01%	403.59K	42
Total	2.40K	2.38K	+23.91	+1.00%	8.20K	10.59K	-2.39K	-22.56%	1.51M	1.

Data: NRx as of 2022-05-06  
Data: NBRx, NRx as of 2022-05-06  
Generated in: 5.13 sec  
Source: FAS - Automation  
Was this helpful? Yes No

## Support for complex time expressions

For example, if you ask WhizAI: “Show me sales for first 4 weeks of last quarter of last year”; in this question, you have included a combination of multiple time references (first 4 weeks, last quarter, last year) instead of asking the data for only specific time period or specific date range. In such cases, WhizAI comprehends such complex time period references and renders the response accordingly.

Thus, along with specific time periods or intervals, you can use relative time references in your queries and WhizAI identifies them with ease, processes them and renders the response accordingly.

Refer to the following additional example queries with such time expressions.

- Arobi sales in Boston for last month of last year
- Show me sales by brands for first 8 weeks of second quarter in 2021

Example queries:

- Q1 vs Q2 by brands for last year

In this query ‘last year’ is associated with time periods Q1 & Q2.

- Q2 vs Q3 by regions in 2020

In this query ‘2020’ is associated with time periods Q1 & Q2.

## Support for MAT expression in queries

MAT stands for Moving Annual Total. It is the total value of a variable over the past twelve months, as the twelve-month period moves forward with each month, the value from the latest month is added and the sales value from the oldest month is removed from the calculation. Meaning MAT considers the most recent month as the endpoint.

When you include MAT expression in the query, the response shows the sales value for the last twelve months with respect to the time period mentioned in the query. If you do not specify the time period, then by default, the last twelve months are considered. For more information, refer to the following examples.

Example NLQ	Response displayed on WhizAI
MAT 2021	Shows total sales for the current twelve months for the year 2021 (Jan 2021 to December 2021).
MAT Jan 2021	Shows total sales for the current twelve months including the month of January 2021 (Feb 2020 to Jan 2021).
MAT Q2 2021	Total sales for the current twelve months, Jun 2021 as the endpoint (Jul 2020 to Jun 2021)
MAT last month	Gives MAT Apr 2023 (assuming 11-May-2023 as the reference date)
MAT for Q3 last year	Gives value for MAT Q3 2022 (assuming 11-May-2023 as the reference date)
Monthly MAT last year	Gives 12 data points plotted across each month in 2022 (assuming 11-May-2023 as the reference date)
MAT 2022 PoP	Compares MAT 2022 to MAT 2021 and shows the results (absolute change and percent change)
MAT Jan 2022 PoP	Compares MAT Jan 2022 to MAT Dec 2022 and shows the results
MAT 2022 YoY	Compares MAT 2022 to MAT 2021 and shows the results
MAT Q3 2022 YoY	Compares MAT Q3 2022 to MAT Q3 2021 and shows the results

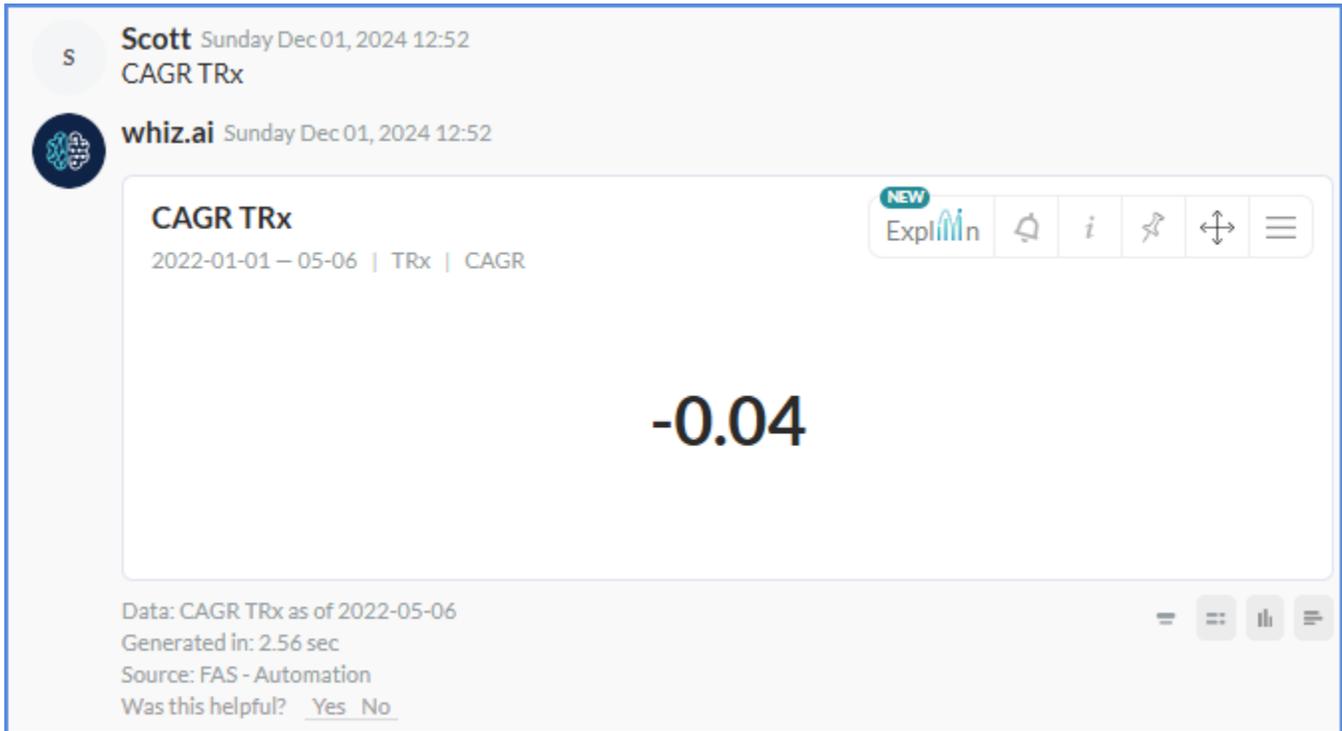
You can include the following types of expressions along with MAT in your questions:

- reference time periods such as 'last month', 'last quarter', last year etc. Example queries: MAT last month, MAT for Q3 last year, and so on.
- monthly, quarterly, yearly trend - Example queries: Monthly MAT 2022, Monthly MAT for Q3 2022, Yearly MAT for the last 5 years, and so on.
- period over period / year over year analysis - Examples queries: MAT Jan 2022 PoP, MAT Q3 PoP, MAT Jan 2022 YoY, MAT Q1 YoY and so on.

- Semester expressions - Examples queries: Second half of last year, Show me monthly trend for 2nd half of last year, Show me NBRx trend for the first half of 2021

## Support for CAGR (Compound Annual Growth Rate) computation

WhizAI supports CAGR computation. CAGR stands for Compound Annual Growth Rate. It is a widely used measure to evaluate the growth rate of a business over a specific period of time. It considers the compounding effect and gives you a clear picture of the annualized growth rate.



**Note!** This is a configurable feature. For more information, please contact WhizAI support team.

## Using 'Day' expression in queries

Similar to time granularities such as 'year', 'quarter', 'month', 'week' etc , WhizAI also supports 'Day' time granularity. You can use the following time expressions in your queries.

- Days
- Daily
- Day over day (dod)
- last <N> days
- previous <N> days.

Refer to the following example queries.

Query type	Example queries
Last/Previous/Current N days	Show me sales for the last 10 days <b>Note!</b> Last/Previous/Current N days will include ref date set in the context on the Explorer.

Trend - 'Daily'	Daily sales trend for Jan 2021 Show me daily sales for Q1 2022
Day over Day (DoD)	Show me dod query count Show me dod NRx for last 10 days

**Note!** Responses for these NLQs are rendered with reference to the date set in the context on the explorer.

**Note!** To use above mentioned expressions in your queries, you have to refresh the data daily.

Example NLQ: Show me sales for last 50 days

The screenshot shows a chat interface with the following elements:

- User **Scott** (Sunday Dec 01, 2024 12:53) asks: "Show me sales for last 50 days".
- AI assistant **whiz.ai** (Sunday Dec 01, 2024 12:53) responds with a clarification message: "We need some clarifications for the following terms: 'sales'. The following response is based on your previous choices." with buttons for "VIEW OPTIONS" and "DISMISS".
- The AI provides a data table titled "TRx & NRx" for the period "2022-03-17 - 05-05".
- The table shows TRx at 13.64M and NRx at 13.45M.
- Metadata at the bottom: "Data: TRx, NRx as of 2022-05-06", "Generated in: 1.87 sec", "Source: FAS - Automation", and a "Was this helpful?" prompt with "Yes" and "No" options.

TRx & NRx	
2022-03-17 - 05-05 TRx, NRx	
TRx	13.64M
NRx	13.45M

### Using 'My' expression in queries

You can ask personalized queries around dimensions (Products, Regions etc.) which are of interest to you. You can ask queries such as 'Show me sales trends in my region', 'Show me TRx for my products' etc. You can use 'my' expression in your queries in following scenarios:

Administrators can add and configure data models, where the user is a part of the source data. For more information, refer to the following example of source data.

Source data example:

Invoice	Creator	Approver
User A	C	B
User B (You)	A	B
User C	B	A

Example NLQs: 'Show me invoices approved by me', 'Show me invoices where I am the creator' etc.

**Note!** Ambiguous queries are not supported. For example: 'Show me my invoices'.

- Administrators can add and configure data models, where entities (product, region etc) from source data are mapped to the user. For more information, refer to the following example of source data.

Source data example:

User	Product	Region	TRx
A	Trexine	Northeast	1.07M
B (You)	Emarun	Southeast	2.43M
C	Crestor	Midwest	3.15M
C	Crestor	South	3.01M

Example NLQs: 'Show me sales trend in my region', 'Show me TRx for my product', 'How is my product growth for last month?', 'Show my top performing product' etc.

**Note!** 'My metric' or 'My performance' queries are not supported, only 'My Metadata' queries (for example: my product, my region etc) are supported.

There are three ways to customize MY metadata:

- Rosters (User defaults)
- My configuration
- Authorization

If my metadata is not set up using any of the methods mentioned above, the system will treat the entire dataset as my data and give a valid response as shown below:

Example query : My products

**Scott** Sunday Dec 01, 2024 12:54  
My products

**whiz.ai** Sunday Dec 01, 2024 12:54

**Top Products by TRx**  
2022-03-17 – 05-05 | TRx

NEW  
Explains     

Search

Product	TRx ↓
1 Arobi	4.26M
2 Trexine	3.84M
3 Plabenil	3.64M
4 Emarun	960.30K
5 Ofasan	943.84K
<b>Total</b>	<b>13.64M</b>

Data: TRx as of 2022-05-06  
Generated in: 2.81 sec  
Source: FAS - Automation  
Was this helpful? [Yes](#) [No](#)

#      

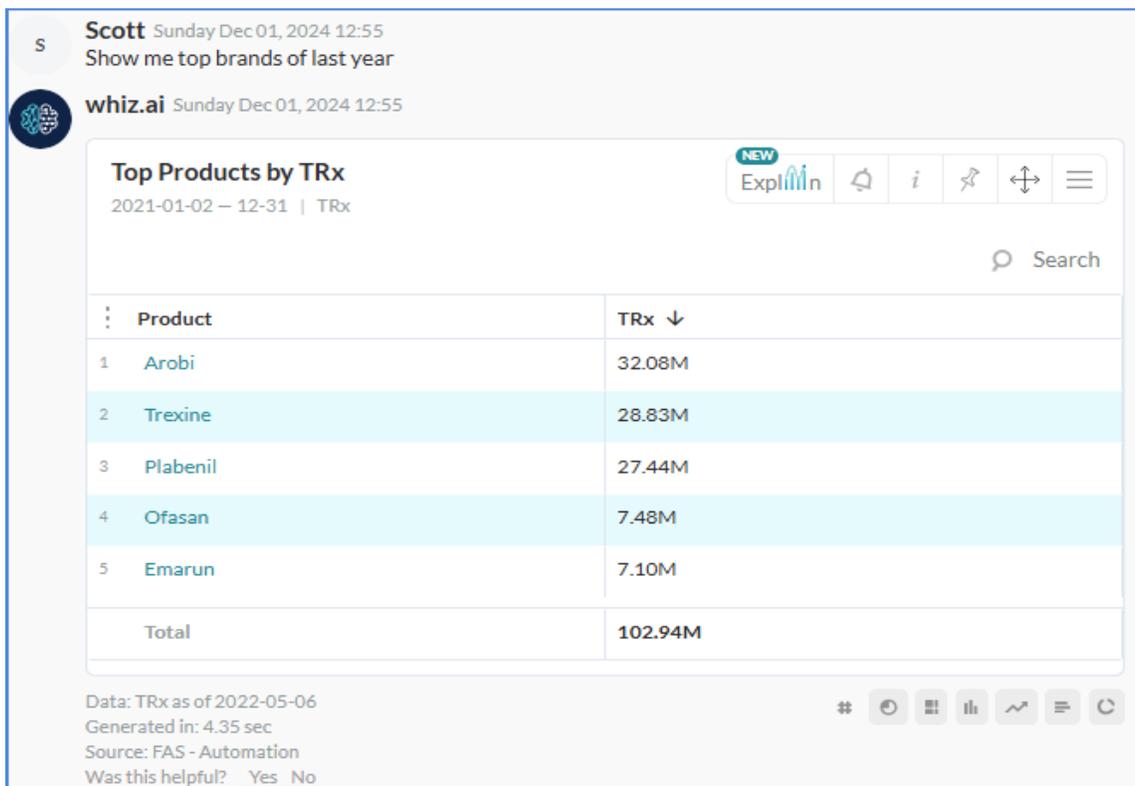
### Co-referencing: Asking follow up queries with reference to the previous query

You can ask follow-up queries by co-referencing the entities in the previous query. For example: If you have asked 'Show me top brands of last year', you can ask a follow-up query as 'How are they trending this year?' WhizAI understands this follow up query and co-refers the word 'they' with 'brands' asked in the previous query. You can use the following type of pronouns for co-referencing.

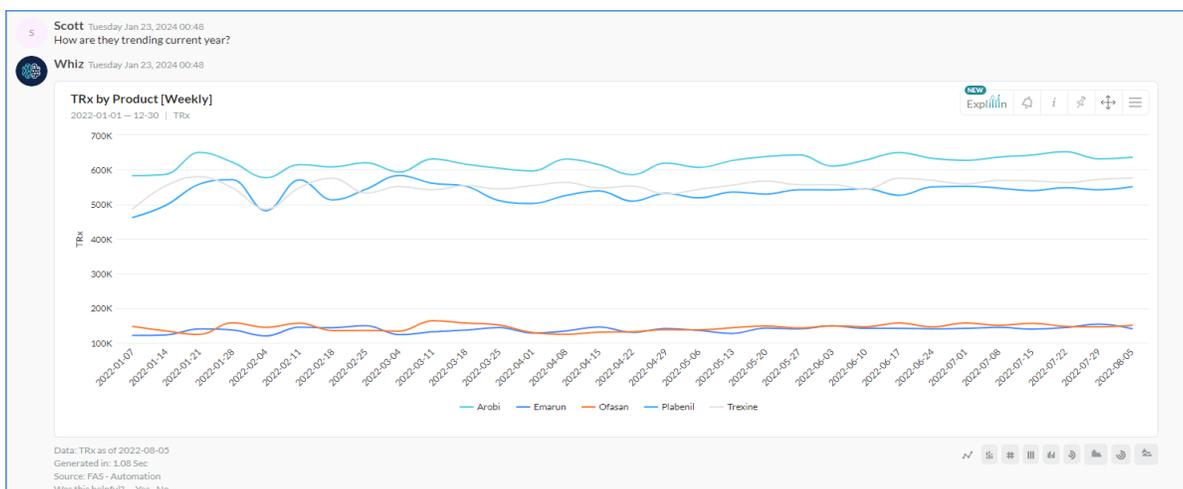
- the
- their
- this
- them
- these
- those
- it etc.

Example:

Initial query: Show me top brands of last year



Follow-up query: How are they trending current year?



For more information, refer to the following examples of follow up queries.

Example 1:

Initial query: Show me top Regions in last quarter

Follow-up query: How were they trending last year?

Example 2:

Initial query: Show me top accounts of last year

Follow-up query: Monthly sales for these accounts for current year

**Note!** You can use Co-referencing with 'my' expression queries as well.

### Support for Fiscal Year (FY) type calendars

WhizAI supports Gregorian-style calendars that will have fiscal years spanning from any month at the data model level. By default, the Gregorian calendar follows a fiscal year from January to December. However, with the added support you now have the ability to customize your Gregorian calendar by adjusting the fiscal year offset at the data model level.

**Note!** For more information on how to set fiscal year calendar, refer to the WhizAI admin manual.

### Support for Negation

WhizAI understands negations from your questions. Negation involves the use of words like 'not', 'no', 'non' and other similar words to express the negative form of a statement.

You can include the negative expression 'not' in your questions. You can use this negation to refine your questions to express specific requirements.

For example, consider the following questions with negation:

- Show me regions that are not growing
- Accounts with sales not more than 5000
- Show me accounts that are not growing

From these questions, WhizAI understands the nuances introduced by negation and provides appropriate responses.

### Support for computational filters

You can directly include computation filters in your queries and thereby request specific information from WhizAI. Meaning you can include computational filtering conditions in your queries.

For example:

You can ask WhizAI 'Show me regions by NRx where NRx growth is less than 5%'. In this query, 'NRx growth' is the computation, and 'is less than 5%' is the filtering condition.

Similarly, you can ask the following type of queries.

- Show me products by TRx growth, NRx growth where TRx growth is more than 10%
- Show me TRx market share by products by markets where TRx market share is < 20%
- Show me the TRx market share trend by brands in Boston where the TRx market share is < 10%
- Show me accounts with negative TRx growth
- Show me all accounts that declined by more than 5%
- Show me 4X4 by regions for trx and NRx declined by 5%

- Show me all customers where TRx declined by more than 5% in 2022

### Support for YoY, QoQ, MoM comparison by Quarterly, Monthly, Weekly

WhizAI supports time operator comparison (YoY-Year over Year, QoQ-Quarter over Quarter, MoM-Month over Month) by quarters, months, weeks.

You can compare smaller time periods (for example, weeks) across larger time periods (for example, current month and previous month). In this case, weeks from current month will be compared with weeks from previous month. For more information, refer to the following example queries.

Granularity + Comparison	WhizAI response
Monthly YoY	Each month from current year is compared to same month from previous year
Monthly QoQ	Each month from current quarter is compared to same month from previous quarter (M1 Current Quarter vs M1 Previous Quarter, and so on)
Weekly QoQ	Each Week from current quarter is compared to same week from previous quarter (W1 Current Quarter vs W1 Previous Quarter, W2 Current Quarter vs W2 Previous Quarter, and so on)
Weekly MoM	Each Week is compared to same week last month (W1 Current Month vs W1 Last Month, W2 Current Month vs W2 Last Month, and so on)

**Note!** Please note that the above list of example queries is not a comprehensive list. The purpose of these examples is to explain the enhancement.

### Support for Time operator (YoY, QoQ, MoM, WoW) with dimension

You can use the following time operators with dimensions in your queries.

- Year over Year (YoY)
- Quarter over Quarter (QoQ)
- Month over Month (MoM)
- Week over Week (WoW)

Example queries:

- MoM by regions
- QoQ by products
- WoW by districts

### Using Cohorts in NLQs

NLQs are capable of identifying and utilizing cohort names for analysis. This feature is available for owned and shared cohorts. Moreover, it can effectively resolve ambiguity in cohort names by allowing you to choose the right cohort name.

**Limitation!** In NLQs, you can use only a single cohort unless you intend to compare two cohorts. If you use multiple cohorts in NLQ with and operators, system does not give an aggregate response of both cohorts.

S Friday May 31, 2024 14:44  
show me testcohort by products

Whiz Friday May 31, 2024 14:44

**Top Products by TRx**  
2022-01-01 – 05-06 | TRx | TestCohort

NEW Explain

Search

Product	TRx ↓
1 Arobi	1.93M
2 Plabenil	1.56M
3 Trexine	1.46M
4 Emarun	430.50K
5 Ofasan	399.22K
Total	5.79M

Data: TRx as of 2022-05-06  
Generated in: 0.99 Sec  
Source: FAS - Field Analytics  
Was this helpful? Yes No

## Contextual cohort intelligence!

When a cohort is set in the context and you ask a question about any dimension, the system intuitively retains the context. It provides results from the selected cohort data set, ensuring you receive accurate responses without needing to repeatedly mention the cohort name in your queries.

Refer to the examples given below.

Example 1: You have Customer From West in the context and you ask a question to show results by accounts. The system displays account-wise TRx within the cohort data set, retaining the context.

2022-01-01 – 05-06 x TRx x **Customer From West** x Cohort

FAS - Automation v Ask me a question for FAS - Automation

**Scott** Tuesday Nov 12, 2024 12:01  
by accounts

**whiz.ai** Tuesday Nov 12, 2024 12:01

**Top Customers by TRx** NEW Explorin     

2022-01-01 – 05-06 | TRx **Customer From West**

Data Controls Search

Customer	TRx ↓
1 Michael Johnson	22.16K
2 Jonathan Smith	17.47K
3 Daniel Smith	16.43K
4 John Smith	14.74K
5 Richard Robinson	14.36K
6 David Brown	14.22K
7 Michael Brown	13.62K
<b>Total</b>	<b>6.44M</b>

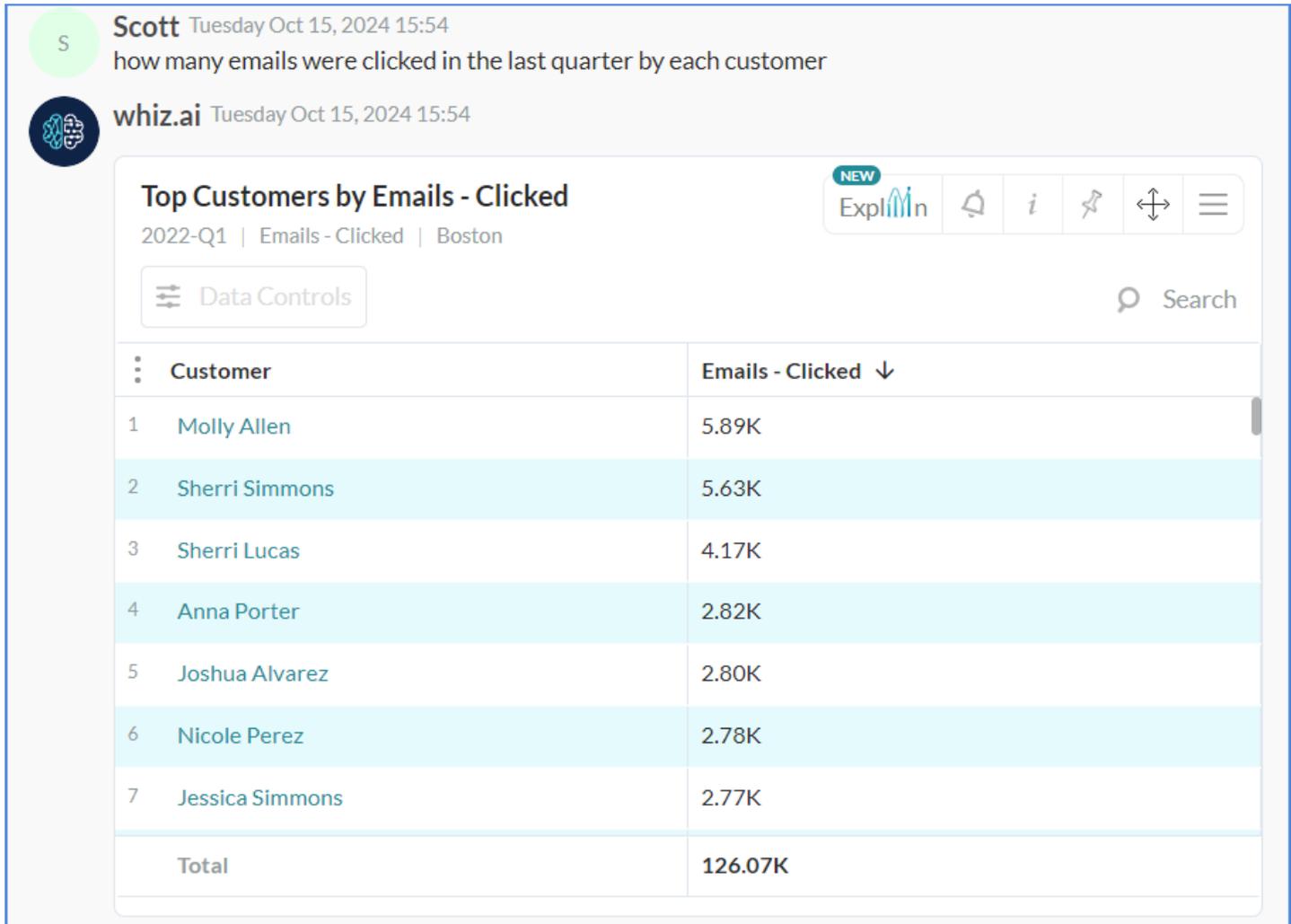
The screenshot shows a WhizAI interface with a search bar at the top. The search query is "Customer From West", which is highlighted with a blue box. The search results are displayed as a table titled "Top Customers by TRx". The table has two columns: "Customer" and "TRx". The data is as follows:

Customer	TRx
1 Michael Johnson	22.16K
2 Jonathan Smith	17.47K
3 Daniel Smith	16.43K
4 John Smith	14.74K
5 Richard Robinson	14.36K
6 David Brown	14.22K
7 Michael Brown	13.62K
<b>Total</b>	<b>6.44M</b>

### Enhancing natural language query capabilities

WhizAI understands and responds to a wider range of NLOs, accurately interpreting your intent no matter how you phrase your question. This upgrade highlights the NER Mapping - Metric and Metadata, which ensures that extracted entities (e.g., customers, regions, or products) are correctly linked to relevant metrics and data fields. Even if you rephrase or restructure a query, the system consistently maps the same entities to the right metadata and delivers precise and reliable results every time.

For example, if you ask how many emails were clicked in the last quarter by each customer, the system recognizes the metric in the question is Email - Clicked and gives you the right response as below:



In addition to NER mapping, WhizAI has developed a healthcare-specific pre-trained model that understands industry-specific language and provides relevant responses. For example, if you ask to provide the sales performance of all prescriptions in the west region, it will give you a sales performance of all three metrics - TRx, NRx, and NBRx.

### View certain dimensions in logical sequence

The solutions team to configure a meaningful order for values within certain dimensions. The results are displayed according to this configured sequence instead of alphabetical sort. This reduces confusion and accelerates data interpretation during analysis. It empowers users to view data in the logical sequence that best suits their analytical needs, improving clarity and efficiency in data-driven decision-making.

For example, the Product Decile group should be ordered as Low Decile, Medium Decile, High Decile, and Not Available.

To achieve this order, follow the configuration steps as given below:

Dimension - Product Decile Group

Instances - Low Decile, Medium Decile, High Decile, Not Available

In the data model loader file, for dimension Product Decile Group, replace Low Decile as 0, Medium Decile as 1, High Decile as 2, and Not Available as 3. Create the data model.

1. From Admin->Configuration, for model level, set Numeric Dimension Codes as dimension Product Decile group and save changes.

- From Admin-->Configuration, for data model level, set Common metadata properties for dimension Product Decile group. Replace the correct data model Name and save the changes.

```
{
  "Model Name": {
    "dimensions": [
      {
        "level": "Product Decile Group",
        "lookup": {
          "0": "Low Decile",
          "1": "Medium Decile",
          "2": "High Decile"
          "3": "Not Available"
        }
      }
    ]
  }
}
```

Load name in NLP - Download the Product Decile Group.csv file from NLP and update the 'Name' and 'Description'.

- In the Product Decile Group.csv, update Code, Name and Description as below:

Old Values	New Values
(Low Decile) 0, 0, 0	(Low Decile) 0, Low Decile, Low Decile
(Medium Decile) 1, 1, 1	(Medium Decile) 1, Medium Decile, Medium Decile
(High Decile) 2,2,2	(High Decile) 2,High Decile, High Decile
(Not Available) 3,3,3	(Not Available) 3, Not Available, Not Available

## Step 3: Natural Language Generation (NLG)

### Narratives

NLP engine analyzes, processes, and understands the natural language questions and the responses for those questions. Along with this, the NLP engine also provides narratives which is additional valuable information about the responses. This additional information gives you insights into what were the average sales, minimum sales, maximum sales, total sales, etc. Narratives provide contextual information around WhizAI response/visualizations and make responses more comprehensible. Narratives enable effective consumption of data/information that you are analyzing.

To view the Narratives in the response, click the 'Narratives' icon as shown in the following figure:

The screenshot shows the WhizAI interface with a table titled 'Top Regions by TRx' for the period 2021-01-02 to 12-31. The table lists eight regions and their total prescriptions (TRx) in millions. A 'Narratives' dialog box is open, displaying a detailed narrative for the data.

Region	TRx
1 Mid-Atlantic	13.91M
2 Mid-Central	12.78M
3 Midwest	11.77M
4 West	3.72M
5 Southeast	13.91M
6 Southwest	12.78M
7 Northeast	11.77M
8 South Central	3.72M
Total	102.94M

**Narratives**  
Powered by GPT

1. The Mid-Atlantic region recorded the highest total prescriptions (TRx) with a value of **15.95M**. This indicates a strong market presence or effective sales strategies in this area.
2. In contrast, the South Central region observed the lowest TRx, amounting to **3.72M**. This suggests challenges or lower performance in pharmaceutical sales within this region.
3. The combined TRx across all regions amounted to **102.94M**, showcasing the overall market activity for pharmaceutical products in the USA over the last year.
4. The average TRx across the regions was calculated at **12.87M**. This figure helps in understanding the typical performance per region, setting a benchmark for evaluating individual regional outcomes.

**Note!** The Narratives dialog shows the narrative generated for the response.

### Custom Narratives

Using the expanded NLP coverage offered by WhizAI, you can intelligently generate and automate custom narratives. This efficient feature allows you to design and generate more accurate and actionable narratives. You can customize the narratives according to the source data (metrics/metadata). If the system-generated narrative is complex, you can simplify it, using a custom template builder. If you want deeper insights, you can configure the narrative accordingly.

For example: When you ask for trends for a year, you might find short-term/medium-term trends very useful OR when you ask for top brands/regions, you might also want to know their brand/region performance as well. You can build such Custom Narratives from the Custom Narrative Templates page

For more information, refer to [Using Narrative Templates](#).

## Summarize Board Narratives

WhizAI displays a comprehensive summary of Pinboard narratives when you click the "Summarize This Board" link on the Pinboards page. This allows you to instantly summarize complex pinboards on-demand and extract key insights from dense datasets effortlessly, saving time and effort in data analysis.

The screenshot shows the WhizAI interface with a navigation bar (Explorer, Pinboards, Alerts, Explain, Admin) and a user profile (My Pinboard). A prominent "Summarize This Board" button is highlighted in a blue box. The main content area contains several data visualizations:

- TRx by Region, Product, Customer Tier:** A table showing TRx values for different regions and tiers.
 

Region ↑	Arobi		
	Tier 1 [\$]	Tier 2 [\$]	Tier 3 [\$]
Mid-Atlantic 123	692.56K	552.99K	342.1K
Mid-Central	703.05K	495.18K	355.2K
Midwest	594.20K	475.14K	254.3K
Northeast	497.34K	407.58K	221.4K
South Central	157.35K	102.82K	72.1K
Southeast	612.93K	362.18K	334.5K
<b>Total</b>	<b>4.39M</b>	<b>3.26M</b>	<b>2.1M</b>
- Comparison of Trexine v/s Arobi by TRx:** A table comparing Trexine and Arobi TRx.
 

Metrics	Trexine vs Arobi		Abs
	Trexine [\$]	Arobi [\$]	
TRx	9.80M	10.96M	-1.1
- Top 5 Products by Growth TRx:** A table listing products and their growth percentages.
 

Product	Growth TRx [%] ↓
1 Emarun	2.26
2 Plabeniil	1.54
3 Ofasan	-0.73
4 Arobi	-0.97
5 Trexine	-1.04
<b>Total</b>	<b>-0.09</b>
- TRx by Product, Region [Monthly]:** A table showing monthly TRx for different products and regions.
 

Product / Region ↑	Jan 22 [\$]	Feb 22 [\$]	Mar 22
> Arobi	2.44M	2.42M	3.04M
> Emarun	521.10K	558.50K	664.90
> Ofasan	563.89K	572.59K	735.61
> Plabeniil	2.09M	2.11M	2.71M
> Trexine	2.17M	2.14M	2.75M
<b>Total</b>	<b>7.79M</b>	<b>7.80M</b>	<b>9.90M</b>
- Top Products by TRx:** A bar chart showing TRx for three products: 10.96M \$, 9.80M \$, and 9.53M \$.

The narrative summary is generated as below:

**whiz.ai** Explorer Pinboards Alerts Explain Admin

**My Pinboard** Recent

Add Filters +

**Summary** Powered by WhizAI

The provided text contains information about the total number of prescriptions filled (TRx) for various products and regions. Here are some insights:

1. The total TRx for all products combined is \$35.26M\$.
2. Product Arobi has the highest contribution to the total TRx, accounting for 31.09% of the total.
3. Product Emarun has the lowest contribution to the total TRx, accounting for only 6.90% of the total.
4. The average TRx for all products is \$7.05M\$.
5. The top 3 products (Plabeniil, Trexine, Arobi) account for 85.91% of the total TRx.

Region ↑	Arobi		
	Tier 1 [S]	Tier 2 [S]	Tier 3 [S]
Mid-Atlantic 123	692.56K	552.99K	342.1K
Mid-Central	703.05K	495.18K	352.1K
Midwest	594.20K	475.14K	252.1K
Northeast	497.34K	407.58K	222.1K
South Central	157.35K	102.82K	72.1K
Southeast	612.93K	362.18K	332.1K
<b>Total</b>	<b>4.39M</b>	<b>3.26M</b>	<b>2.1M</b>

Metrics	Trexine vs Arobi		Abn
	Trexine [S]	Arobi [S]	
TRx	9.80M	10.96M	-1.1

Product	Growth TRx [%] ↓
1 Emarun	2.26
2 Plabeniil	1.54
3 Ofasan	-0.73
4 Arobi	-0.97
5 Trexine	-1.04
<b>Total</b>	<b>-0.09</b>

Product / Region ↑	TRx		
	Jan 22 [S]	Feb 22 [S]	Mar 22 [S]
> Arobi	2.44M	2.42M	3.04M
> Emarun	521.10K	558.50K	664.90K
> Ofasan	563.89K	572.59K	735.61K
> Plabeniil	2.09M	2.11M	2.71M
> Trexine	2.17M	2.14M	2.75M
<b>Total</b>	<b>7.79M</b>	<b>7.80M</b>	<b>9.90M</b>

Product	TRx
1 Arobi	12.5M

**Note!** Administrators can configure to send Pinboard summaries via email by triggering the email notification feature.

## Prerequisites to send Pinboard Summary via email

### Global configuration settings

- Auto Narratives Model > GPT 4 (For ChatGPT narratives)
- Chat GPT API key > <key>
- Pinboard Narratives > Enabled
- Pinboard Narratives Notifications > Enabled

### Model Configuration Settings

- Narratives > Enabled
- Default AutoNLG mapping > Code (For WhizAI Default narratives)

### Email notification API

- Admin user to run below API to send pinboard summary email for all pinboards.
  - GET <http://{BaseURL}/internal/whizBoards/narration/notification>
  - Email is sent out to email ids set in current user profile

## Step 4: Error handling

### Error messaging around metrics and computations

Metric and computations are validated against the mappings and provide clear guidance when mismatches occur. If a query involves a computation not configured for a given metric, the system displays an error message—"Computation and metric mismatch. Please try again with a valid combination".

Pinboard filters display only the computations that are correctly mapped to each metric. For pinned cards with multiple computations, if you select a new metric that is not compatible with all the existing computations, only the compatible values will be displayed.

For example, for Volume calculation, there are no compatible metrics as shown below.

The screenshot shows the 'Calculations' interface with the following table:

Code	Name	Description	Metrics	Calcula
<input type="checkbox"/>	Market Volume PY	DESC Market Volume PY	TRx,NBRX,NRx,Naive Volume,Switch Volume	Script
<input type="checkbox"/>	Previous Volume	DESC Previous Volume	TRx,NBRX,NRx,Naive Volume,Switch Volume	Script
<input type="checkbox"/>	Penetration	DESC Penetration	TRx,NBRX,NRx,Naive Volume,Switch Volume	Script
<input type="checkbox"/>	Volume	DESC Volume		Script
<input type="checkbox"/>	Volume PY	DESC Volume PY	TRx,NBRX,NRx	Script

On Explorer, when you ask a question Show me Trx Volume trend, you will get an error message as shown below.

The screenshot shows the Explorer interface with the following details:

- Model: FAS - Automation
- User: Scott
- Query: Show me Trx Volume trend
- Response: Computation and metric mismatch. Please try again with a valid combination.
- Timestamp: Tuesday Nov 12, 2024 15:40
- Feedback: Was this helpful? Yes No

### User typos in NLQ

If you resubmit the query without corrections, the query runs with understood context but gives a warning message "Please review the response as the system has detected unresolved words in your question."

Scott Sunday Dec 01, 2024 13:06  
Show me [regionswise trezine](#) product trend for last 5 months



whiz.ai Sunday Dec 01, 2024 13:06

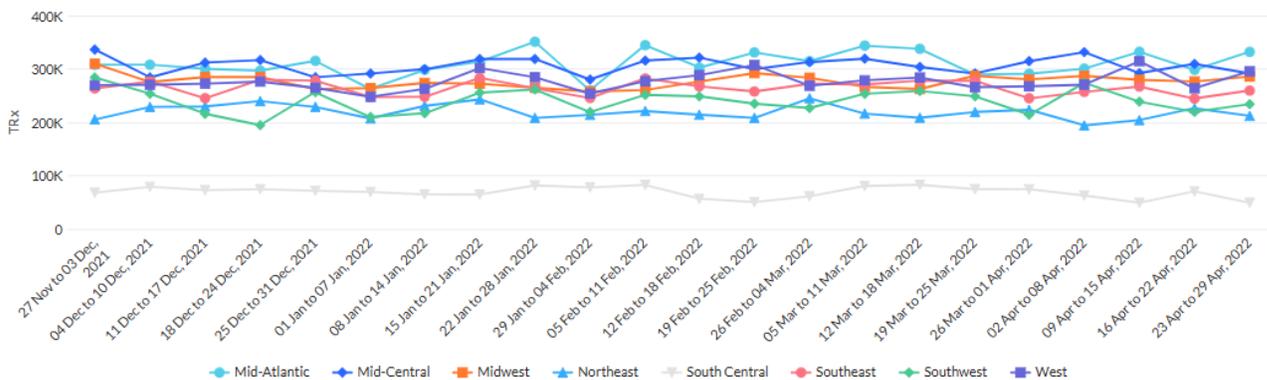
Please review the response as the system has detected unresolved words in your question.

### TRx by Region [Weekly]

2021-11-27 - 2022-04-29 | TRx

NEW  
Expl | i | ↻ | ⌂ | ☰

Data Controls



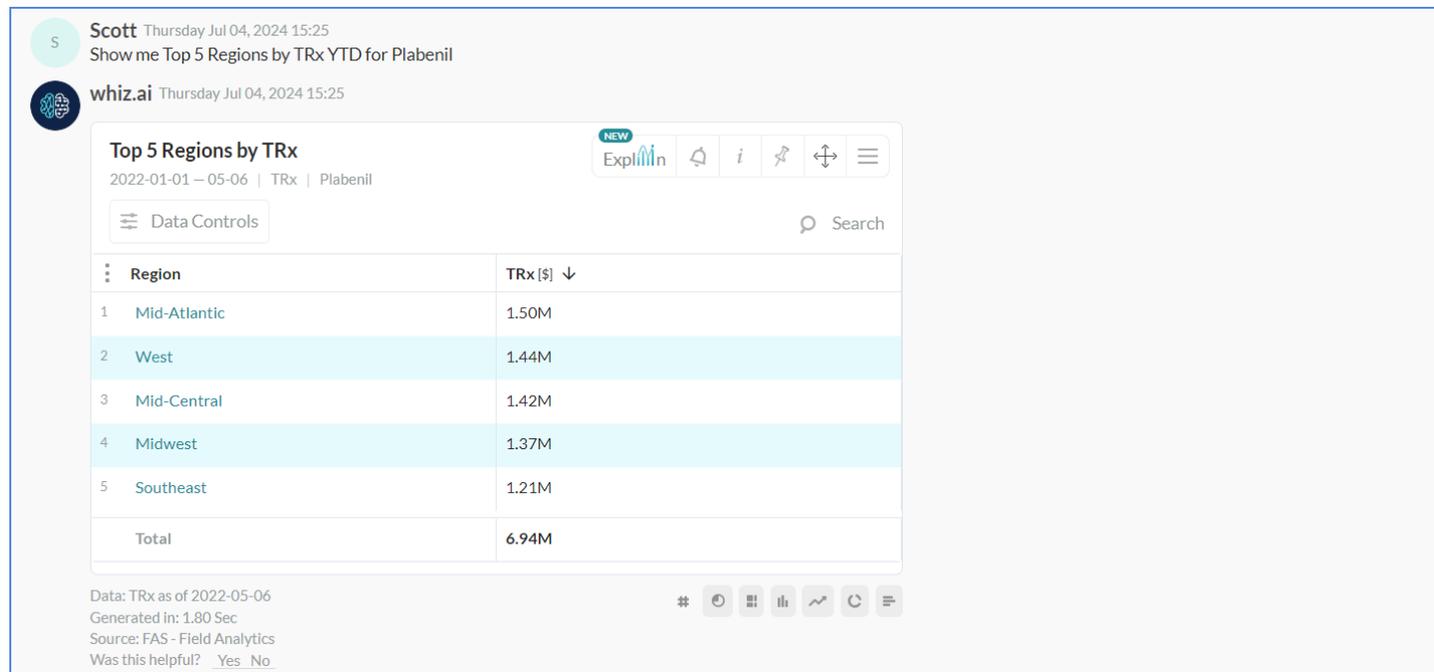
Data: TRx as of 2022-05-06  
Generated in: 6.03 sec  
Source: FAS - Automation  
Was this helpful? Yes No

↗ | 📊 | 📄 | 📌 | 🔄 | 🏠 | 🌐

## For contextual conversations using NLOs

When you ask a contextual NLO, responses include referred instances of the dimension. This helps you to correlate the response with contextual questions.

For example, if you ask Show me Top 5 Regions by TRx YTD for Plabeniil, you get the following response:



**Scott** Thursday Jul 04, 2024 15:25  
Show me Top 5 Regions by TRx YTD for Plabeniil

**whiz.ai** Thursday Jul 04, 2024 15:25

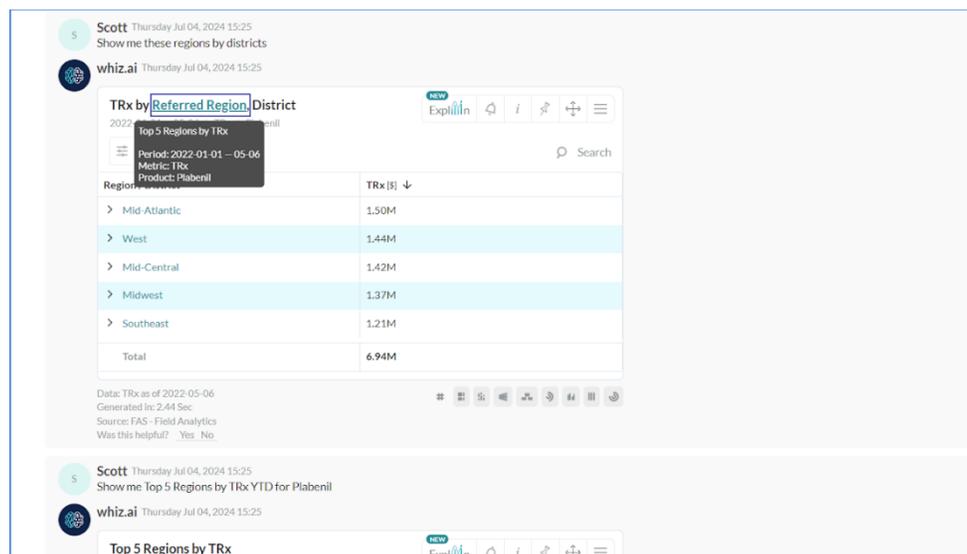
**Top 5 Regions by TRx**  
2022-01-01 – 05-06 | TRx | Plabeniil

Data Controls Search

Region	TRx [\$] ↓
1 Mid-Atlantic	1.50M
2 West	1.44M
3 Mid-Central	1.42M
4 Midwest	1.37M
5 Southeast	1.21M
<b>Total</b>	<b>6.94M</b>

Data: TRx as of 2022-05-06  
Generated in: 1.80 Sec  
Source: FAS - Field Analytics  
Was this helpful? [Yes](#) [No](#)

If you ask a contextual question such as Show me these regions by districts, the response title will mention Referred Regions. Hovering over the text will display a pop-out window showing the period, metric, and product name, as shown below:



**Scott** Thursday Jul 04, 2024 15:25  
Show me these regions by districts

**whiz.ai** Thursday Jul 04, 2024 15:25

**TRx by Referred Region District**  
2022-01-01 – 05-06 | TRx | Plabeniil

Period: 2022-01-01 – 05-06  
Metric: TRx  
Product: Plabeniil

Region	TRx [\$] ↓
> Mid-Atlantic	1.50M
> West	1.44M
> Mid-Central	1.42M
> Midwest	1.37M
> Southeast	1.21M
<b>Total</b>	<b>6.94M</b>

Data: TRx as of 2022-05-06  
Generated in: 2.44 Sec  
Source: FAS - Field Analytics  
Was this helpful? [Yes](#) [No](#)

**Scott** Thursday Jul 04, 2024 15:25  
Show me Top 5 Regions by TRx YTD for Plabeniil

**whiz.ai** Thursday Jul 04, 2024 15:25

**Top 5 Regions by TRx**

## In-house LLM Support

### High-quality board summary

WhizAI is continuously enhancing its LLM capabilities by employing various training methods to deliver more meaningful insights. This enables the platform to generate comprehensive board summaries that offer valuable, actionable information for informed decision-making.

Card-level narratives with augmented insights

WhizAI platform is constantly evolving to provide more user-friendly, meaningful, and business-focused narratives. By leveraging both our in-house LLM and ChatGPT, we enhance the quality of these narratives in smarter ways, providing actionable insights that drive better business decisions.

# NLP Workbench

The NLP technology helps computers understand Natural/human language. Workbench is a framework that supports the production of software by integrating a variety of activities to meet a specific need while limiting or eliminating the need for multiple programming languages. WhizAI NLP Workbench learns and improves automatically by using previous results, without being specifically programmed by a person.

NLP Workbench user interface:

The screenshot displays the WhizAI NLP Workbench user interface. The top navigation bar includes 'Explorer', 'Pinboards', 'Alerts', 'Explain', and 'Admin'. The left sidebar contains a menu with 'Performance Monitor', 'User & Security', 'Data Modeler', 'Content Manager', and 'NLP Workbench'. The 'NLP Workbench' section is expanded, showing 'Synonyms', 'Replacements', 'Business Actions', 'NLQ Analyzer', 'FAQ Training', and 'Narrative Templates'. The main content area is titled 'Synonyms' and shows a table of entities. The table has columns for 'ENTITY NAME', 'LEVEL', 'ENTITY CODE', and 'SYNONYMS'. The 'SYNONYMS' column contains 'Add +' buttons for each row. The table lists various entity types such as 'Active', 'Covered Restricted', 'Covered Unrestricted', 'Not Covered', 'Unknown', 'HCO', 'HCP', 'Low Dec Target', and 'Non - Low Dec Target'. The top right corner indicates '135462 entities in total' and a search bar is visible.

ENTITY NAME	LEVEL	ENTITY CODE	SYNONYMS
Active	ACTVFLG / ACTVFLG	Active	Add +
Covered Restricted	Access Category / Access Category	Covered Restricted	Add +
Covered Unrestricted	Access Category / Access Category	Covered Unrestricted	Add +
Not Covered	Access Category / Access Category	Not Covered	Add +
Unknown	Access Category / Access Category	Unknown	Add +
HCO	Account Type / Account Type	HCO	Add +
HCP	Account Type / Account Type	HCP	Add +
Low Dec Target	Additional Low Dec Target / Additional Low Dec Target	Low Dec Target	Add +
Non - Low Dec Target	Additional Low Dec Target / Additional Low Dec Target	Non - Low Dec Target	Add +

WhizAI NLP Workbench comprises:

- [Synonyms](#)
- [Replacements](#)
- [Business actions](#)
- [NLQ analyzer](#)
- [Narrative templates](#)

Refer to the following diagram, to get an overview of NLP Workbench and its capabilities.

# NLP Workbench

## Synonyms

For WhizAI to understand your intent, it refers to the synonyms configured for the entity. WhizAI matches the keywords in the question with all synonyms and then identifies the correct entity for your intent.

## Replacements

You can configure the replacements for specific and complex terms, so that WhizAI can understand these terms while generating the response. The replacement terms can be for simple texts or regular expressions.

## Business actions

NLP engine allows you to configure various actions and connect subjects and objects to these actions. Business Actions help in getting the correct response when the question contains only subject and action or only object and action.

## NLQ analyzer

WhizAI NLQ Analyzer, provides the option to run queries and get the result in a code and JSON format. This feature is provided for advanced-level users to debug the NLP engine used in the platform.

## Narrative templates

You can create your own narratives around the responses generated by WhizAI. You can use our template manager, to add specific information or to add more information in system generated narratives.

## Synonyms

Synonyms are the additional terms that refer to an entity, and it is an important concept in Natural Language processing.

ENTITY NAME	LEVEL	ENTITY CODE	SYNONYMS
Active	ACTVFLG / ACTVFLG	Active	<a href="#">Add +</a>
Covered Restricted	Access Category / Access Category	Covered Restricted	<a href="#">Add +</a>
Covered Unrestricted	Access Category / Access Category	Covered Unrestricted	<a href="#">Add +</a>
Not Covered	Access Category / Access Category	Not Covered	<a href="#">Add +</a>
Unknown	Access Category / Access Category	Unknown	<a href="#">Add +</a>
HCO	Account Type / Account Type	HCO	<a href="#">Add +</a>
HCP	Account Type / Account Type	HCP	<a href="#">Add +</a>
Low Dec Target	Additional Low Dec Target / Additional Low Dec Target	Low Dec Target	<a href="#">Add +</a>
Non - Low Dec Target	Additional Low Dec Target / Additional Low Dec Target	Non - Low Dec Target	<a href="#">Add +</a>
Not Applicable	Additional Low Dec Target / Additional Low Dec Target	Not Applicable	<a href="#">Add +</a>

For example, the 'Central California Foundation' is an entity in WhizAI, which represents the hospital, and 'California' as a state. Now, when you ask your question that contains the word 'California', 'CA', or CCF, you might want to find either California as a state or as the Central California Foundation hospital.

For WhizAI to understand your intent, it refers to the synonyms configured for the entity. WhizAI matches the keywords in the question with all synonyms and then identifies the correct entity for your intent.

So, in the example, if 'California' and 'CCF' are configured as synonyms for the 'Central California Foundation' entity, WhizAI displays the 'Central California Foundation' entity when the question contains those synonyms.

You can configure the synonyms for the entities in the selected data model and the selected dimension.

## Adding a synonym for an entity

To add a synonym for an entity:

1. On the Synonym page, select the Data Model, Levels, and Language to list the entities.
2. Search for the entity for which you want to add synonyms.
3. In the Search Entity field, enter the entity name.

The Synonyms page is updated for the searched entity name.

ENTITY NAME	LEVEL	ENTITY CODE	SYNONYMS
Active	ACTVFLG / ACTVFLG	Active	syn1 × Syn × <span style="border: 1px solid blue; padding: 2px;">Add +</span>
Covered Restricted	Access Category / Access Category	Covered Restricted	Covered_Restricted × <span style="border: 1px solid blue; padding: 2px;">Add +</span>

4. In the Synonyms column, click the Add+ button. WhizAI allows you to enter a synonym, as required.

ENTITY NAME	LEVEL	ENTITY CODE	SYNONYMS
Active	ACTVFLG / ACTVFLG	Active	syn1 × Syn × <input style="width: 50px; border: 1px solid blue;" type="text"/>

5. Enter the synonym, as required, and press Enter key or a Tab key to save the synonym.
6. (Optional) Delete the unwanted synonyms.
  1. Press the Esc key to discard the synonym that you are typing.
  2. Click the cross icon for the synonym you want to delete after adding it.

**Note!** WhizAI automatically adds the plural forms of the synonyms you add. For example, if you add tablet as a synonym; WhizAI also adds tablets as a synonym.

## Updating synonyms for an entity

When you update synonyms in one language, make sure to apply the changes in other languages as well. Of course, WhizAI shows a warning message about this, as shown in the following figure:

ENTITY NAME	LEVEL	ENTITY CODE	SYNONYMS
Active	ACTVFLG / ACTVFLG	Active	syn1 × Syn × syn 3 × <span style="border: 1px solid blue; padding: 2px;">Add +</span>

Reminder to apply changes in other languages

ⓘ Make sure to apply the same changes for other languages

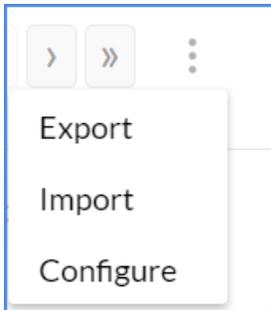
## Migrating synonyms

You can migrate user-added synonyms within environments. For example, from the 'QA' environment to the 'Dev' environment, from the 'Dev' environment to the 'Production' environment etc. For this you have to export the synonyms from the selected data model of the source environment, and then import these synonyms for the same data model on the target environment.

## Exporting Synonyms

To export synonyms:

1. From the Synonyms page, click the Menu icon to open the drop-down list.



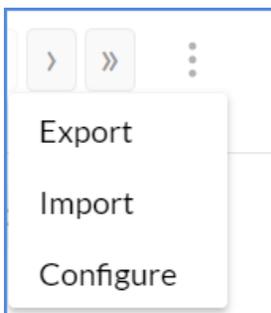
2. Click Export. WhizAI shows the Export Synonyms dialog.
3. Select the Data Model.  
WhizAI shall export all the user-added synonyms from the data model you select from this list.
4. Click Download. WhizAI downloads a JSON file having all the user added synonyms.

**Note!** Only user added synonyms are exported. System-generated synonyms are not exported.

## Importing Synonyms

To import synonyms:

1. From the Synonyms page, click the Menu icon to open the drop-down list.



2. Click Import.

WhizAI shows the dialog box where you can drag and drop a JSON file containing synonyms.

3. You can drag and drop a JSON file or click Browse files to browse and select the file from your local drive.
4. Click Got it! to import the JSON.  
WhizAI imports the synonyms and shows a success message.

**Note!** Two-character synonyms (for example, TX for Texas) are case-sensitive and must be used as-is in the NLP to get desired.

## Synonyms with context for clearer queries

WhizAI displays the dimension or metric name against the synonyms for better understanding of the context.. If you ask a question that contains a synonym used across multiple dimensions or metrics, the auto-suggestion feature displays the synonym along with the actual object in brackets. For example, if Sales is a synonym for both TRx and NRx and you ask a question - show me sales trend for last month, the system will show Sales (TRx) and Sales (NRx) in auto-suggestion and let you choose between the two. This feature helps you to correctly select the suggestions provided by the system.

The screenshot shows the WhizAI interface with a search bar containing 'show me sales'. A dropdown menu titled 'Did you mean:' is open, displaying a list of suggestions with their corresponding categories. The suggestions are:

Suggestion	Category
Sales (NRx)	Metrics
sales (TRx)	Metrics
sales (Reach)	Metrics
sales (HCP TRx Average)	Metrics
sales (Sample quantity)	Metrics
sales channels (Sales Channel)	Dimension
sales goals (Sales Goal)	Metrics
sales attainments (Sales Attainment)	Metrics
Sales Rep (Employee Name)	Dimension
SALESFORCE INC	Plan Name
Sales Joseph Hmd	Customer Name
SALESFORCE INC - COMM	Payer Name

## Replacements

The replacement page displays the list of original tokens and their replacement to be considered when generating the response. In the industry, there are specific terms used for a specific purpose. These terms are known only to a specific set of people in that industry.

In WhizAI, the Administrator can configure the replacement word for such terms so that WhizAI can correctly understand those terms while generating the response. You can manage the Replacements in all the G5 languages, that is, you can add, edit, and delete them, as required. There are two ways to do this:

- You may switch to French from the Profile settings, thereby switching the entire platform's UI to French, then go to the Replacements page (which gets displayed in French) to add it.

OR

- You may continue to use the platform in English and open the Replacements page. From this page, you can switch to French, as shown in the following figure, and add the Replacement, as required

The replacement terms can be for text terms or regular expressions.

## Text terms

- Som report - full-stack by product group by months for share for last 6 months
- Ytw - ytd

## Regular Expressions

- `([0-9]+\s?[xX]\s?[0-9]+` - POP for last \$1 weeks

## Adding the replacement term

- On the Replacement page, click the plus icon at the lower-right corner of the page.

The screenshot shows the Whizai Replacements page. The page has a sidebar on the left with various navigation options, and a main content area with a table of replacements. The table has columns for ORIGINAL TOKEN, REPLACEMENT, TYPE, MODEL, and DESCRIPTION. A plus icon is visible in the bottom right corner of the page.

ORIGINAL TOKEN	REPLACEMENT	TYPE	MODEL	DESCRIPTION
<	less than	regex		Internal bundled replacement
>	greater than	regex		Internal bundled replacement
<code>([0-9]+\s?[xX]\s?[0-9]+</code>	PoP for last \$1 weeks	regex		Internal bundled replacement
improve	growing	text	FAS - Automation	Description
(MoM mom)	Month Over Month	text	FAS - Automation-LLM	
(mtd MTD)	Month Till Date	text	FAS - Automation-LLM	
[N]egative	less than 0	regex		Internal bundled replacement
[P]ositive	greater than 0	regex		Internal bundled replacement
(qoq QoQ)	Quarter Over Quarter	text	FAS - Automation-LLM	
(qtd QTD)	Quarter Till Date	text	FAS - Automation-LLM	
reducing	declining	text	FAS - Automation	
rejected rejecting reject	bad	regex	FAS - Automation	EditedDescription
<code>{?&lt;= s *}(COc coc CoC){?=&lt;= s }</code>	cycle over cycle	text		test
(std STD)	start till date	text	FAS - Automation-LLM	
(wow WoW)	Week Over Week	text	FAS - Automation-LLM	

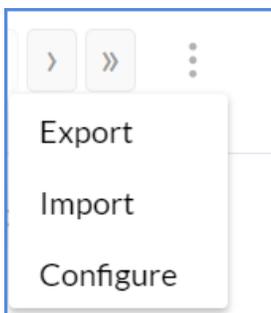
- In the Add Replacement dialog box, select and add appropriate values.

- Select the Text or Regex option for the type of replacement term that you want to add.
  - Click the Model drop-down list and select the model.
  - From the Language drop-down list, select the language for the replacement.
  - In the Original field, enter the original token or term.
  - In the Replacement for the original text field, enter the replacement term for the specified original text.
3. Click the Add button.

## Exporting Replacements

To export replacements:

1. From the Replacements page, click the Menu icon to open the drop-down list.



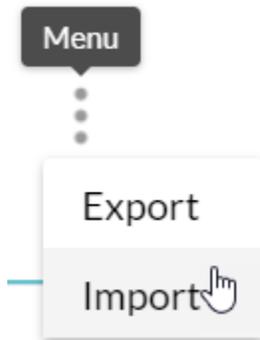
2. Click Export. WhizAI shows the Export Replacements dialog.
3. Select the Data Model. WhizAI shall export all the replacements from the data model you select from this list.

4. Click Download. WhizAI downloads a JSON file having all the replacement terms.

## Importing Replacements

To import replacements:

1. From the Replacements page, click the Menu icon to open the drop-down list.



2. Click Import. WhizAI shows the dialog box where you can drag and drop a JSON file containing replacements from other data models.
3. You can drag and drop a JSON file or click Browse files to browse and select the file from your local drive.
4. Click Got it! to import the JSON file. WhizAI imports the replacements and shows a success message.

## Business Actions

In an organization, many people perform various business actions on various objects, like products, product groups, etc.

In WhizAI, Business Actions captures the business actions and then connects the subject and object to these actions. Here the subject is an entity who is performing an action, and an object is an entity for which the subject performs the action.

You can manage your business actions also in German, French, Italian, and Spanish. Thus, you can add, edit, and delete them, as required. There are two ways to do this:

- You may switch to - from the Profile settings, thereby switching the entire platform's UI to French, then go to the Business Actions page (which gets displayed in French) to add it.

OR

- You may continue to use the platform in English and open the Business Actions page. From this page, you can switch to French, as shown in the following figure, and add the Business Action

For example, an employee (Subject) sells (action) product name (object). Here both employee and product names are connected to the sell action.

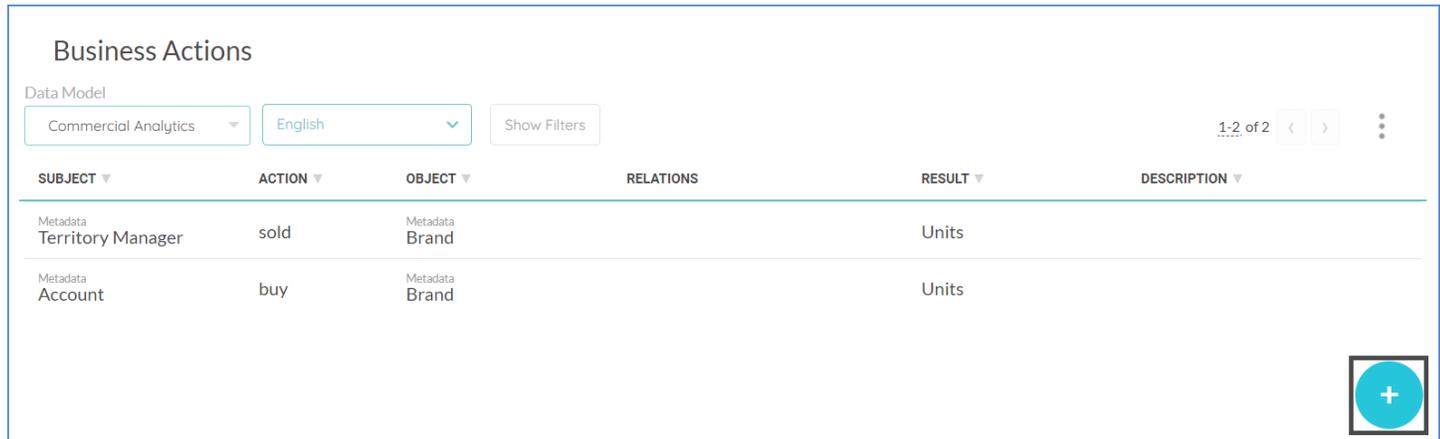
Business Actions allows you to configure various actions and connect subjects and objects to these actions. Business Actions helps in getting the correct response when the question contains only subject and action or only object and action.

For example, who sold the most, top products bought in the last two months.

## Configuring business actions

To configure business actions:

1. On the Business Actions page, click the Data Model drop-down list and select the data model for which you want to configure the business actions.
2. At the lower-right corner of the page, click the plus icon.

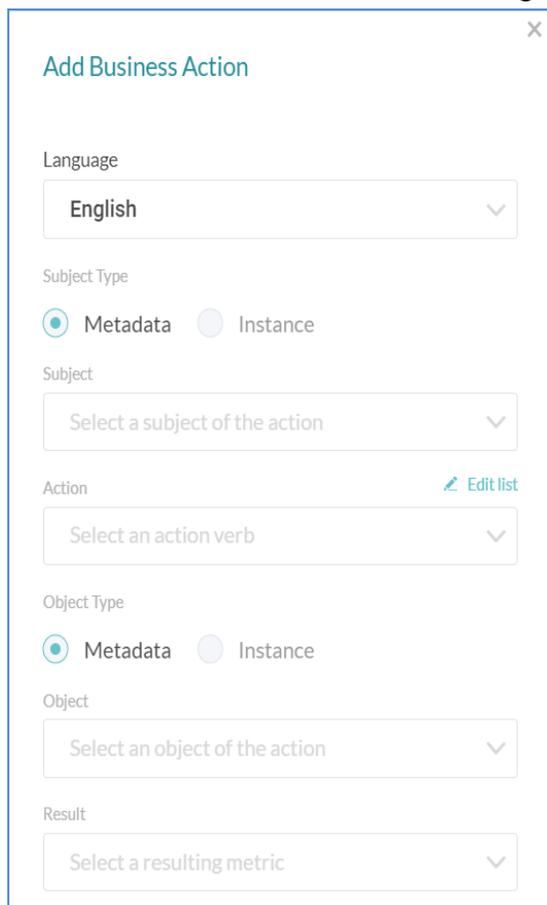


The screenshot shows the 'Business Actions' interface. At the top, there is a 'Data Model' section with a dropdown menu set to 'Commercial Analytics', a language dropdown set to 'English', and a 'Show Filters' button. Below this is a table with the following columns: SUBJECT, ACTION, OBJECT, RELATIONS, RESULT, and DESCRIPTION. The table contains two rows of data:

SUBJECT	ACTION	OBJECT	RELATIONS	RESULT	DESCRIPTION
Metadata Territory Manager	sold	Metadata Brand		Units	
Metadata Account	buy	Metadata Brand		Units	

In the bottom right corner of the page, a blue circular plus icon is highlighted with a black square.

3. In the Add Business Action dialog box, select and add appropriate values.



The 'Add Business Action' dialog box is shown with the following fields and options:

- Language:** English (dropdown)
- Subject Type:** Metadata (selected), Instance
- Subject:** Select a subject of the action (dropdown)
- Action:** Select an action verb (dropdown), with an [Edit list](#) link
- Object Type:** Metadata (selected), Instance
- Object:** Select an object of the action (dropdown)
- Result:** Select a resulting metric (dropdown)

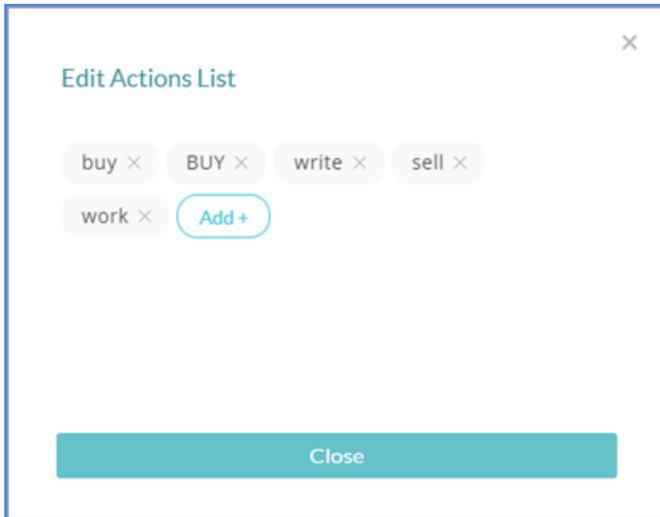
4. In the Subject Type section, connect the business action to the subject.

1. Click the Subject field and select who is performing an action.
2. Click the Action column and select the action that you want to associate.

If required action is not listed, add an action.

1. Click the Edit list link.

In the Edit Actions List dialog box, click Add to add a new action.



Enter the action name and click the OK button.

2. In the Object Type section, connect the business action to the object.
  1. Click the Object field and select the option on whom the action is performed.
  2. Click the Result drop-down list and select the result expected for the selected subject-to-object relationship through action
3. (Optional) In the Description field, enter the description for the relation.
4. Click the Add Action button. The action is added on the Business Actions page.

## NLQ Analyzer

NLQ Analyzer is an option in WhizAI that is provided for advanced-level users to debug the NLP engine used in the platform.

The NLQ Analyzer page provides the option to run queries and get the result in a code and JSON format.

**Note!** Only users with advanced-level programming knowledge can access this feature.

1. On the NLQ Analyzer page, click the Data Model drop-down field and select the data model for which you want to perform debugging.
2. In the Query field, enter the query.
3. Click Post or press Enter key. WhizAI displays the response of the query in a code format.

The screenshot shows the Whiz.ai NLQ Analyzer interface. The left sidebar contains navigation options: Performance Monitor, Dashboard, User Logs, Audit Logs, User & Security, Data Modeler, Content Manager, NLP Workbench, Synonyms, Replacements, Business Actions, NLQ Analyzer (selected), FAQ Training, Narrative, and Templates. The main area is titled 'NLQ Analyzer' and has two tabs: 'Simple mode' (selected) and 'Advanced mode'. Below the tabs, there is a 'Data Model' dropdown set to 'FAS - Automation' and a 'Query' input field containing 'TRx volume'. A 'POST' button is located to the right of the query field. Below the query field, there is a 'Verbose' checkbox. The 'Response' section displays a JSON object with the following structure:

```

1  [
2  {
3    "entity": "NLQ",
4    "type": "NLQ",
5    "input": "Trx volume",
6    "value": {
7      "responses": [],
8      "suggestions": []
9    }
10 },
11 {
12   "entity": "DynamicIntent",
13   "type": "Calculation",
14   "input": "Trx volume",
15   "value": {
16     "relatedMetrics": [
17       {
18         "coreference": {},
19         "entity": "Metrics",
20         "type": "DictTerm",
21         "input": "Trx",
22         "value": {
23           "id": 10000001302986,
24           "class": "Metrics",
25           "name": "TRx",
26           "code": "TRx",
27           "level": "Base",
28           "parent": "",
29           "desc": "TRx",

```

**Note!** Use Verbose option to get more detailed response.

## Narrative Templates

### Narratives

NLP engine analyzes, processes, and understands the natural language questions and the responses to those questions. Along with this, the NLP engine also provides narratives which is additional valuable information about the responses. This additional information gives you insights into what were the average sales, minimum sales, maximum sales, total sales, etc. Narratives provide contextual information around WhizAI response / visualizations and make responses more comprehensible. Narratives enable effective consumption of data/information that you are analyzing.

To view the Narratives in the response, click the 'Narratives' icon as shown in the following figure:

The screenshot displays the WhizAI interface for a report titled 'Top Regions by TRx'. The main content is a table with the following data:

Region	TRx
1 Mid-Atlantic	13.91M
2 Mid-Central	12.78M
3 Midwest	11.77M
4 West	3.72M
5 Southeast	13.91M
6 Southwest	12.78M
7 Northeast	11.77M
8 South Central	3.72M
Total	102.94M

The 'Narratives' dialog box, titled 'Narratives Powered by GPT', contains the following text:

1. The **Mid-Atlantic region** recorded the highest total prescriptions (TRx) with a value of **15.95M**. This indicates a strong market presence or effective sales strategies in this area.
2. In contrast, the **South Central region** observed the lowest TRx, amounting to **3.72M**. This suggests challenges or lower performance in pharmaceutical sales within this region.
3. The combined TRx across all regions amounted to **102.94M**, showcasing the overall market activity for pharmaceutical products in the USA over the last year.
4. The average TRx across the regions was calculated at **12.87M**. This figure helps in understanding the typical performance per region, setting a benchmark for evaluating individual regional outcomes.

**Note!** The Narratives dialog shows the narrative generated for the response.

### Custom Narratives

Using the expanded NLP coverage offered by WhizAI, you can intelligently generate and automate custom narratives. This efficient feature allows you to design and generate more accurate and actionable narratives. You can customize the narratives according to the source data (metrics/metadata). If the system-generated narrative is complex, you can simplify it, using a custom template builder. If you want deeper insights, you can configure the narrative accordingly.

For example: When you ask for trends for a year, you might find short-term/medium-term trends very useful OR when you ask for top brands/regions, you might also want to know their brand/region performance as well. You can build such Custom Narratives from the Custom Narrative Templates page

## Understanding the Custom Narrative Templates page

This page shows a list of the templates added to WhizAI for a selected data model. You can manage the custom narrative template/s from this page.

Template Name	Intent	Scope	Source	Source ID	Last Updated	Language	Status
					dd-mm-yyyy		
<input type="checkbox"/> Trx	Data Point		Model		14.11.2024	English	<input checked="" type="checkbox"/>

The following table explains the different columns on the Custom Narrative Templates page:

Column Name	Description
Template Name	This column has a list of all the available templates in the system. The template name is given by the user while template creation. Template names can be modified later on as well.
Intent	The intent of the NLQs
Scope	The scope of the NLQs is defined by metrics, dimensions, entities, and computation.
Source	Displays the source of the template, whether it is Data Model template or card template
Source ID	ID of the template
Last Updated	Date when the template was last updated.
Language	Languages in which template is supported.
Status	You can check the status of existing templates. <ul style="list-style-type: none"> <li>• Draft status: The template is not ready yet; work is ongoing on the template.</li> <li>• Inactive status: Work on the template is complete but the template is not quite ready yet.</li> <li>• Active status: The template is ready.</li> </ul> Note: Only 'Active' status templates will be triggered.

You can apply filters to above-mentioned columns to find specific templates. To do this, enter the filtering condition in the search box or click on the filter icon.

Template Name	Intent	Scope				Last Updated	Language	Status
		Metric	Dimension	Entities	Computation			
<input type="text" value="Search Template"/>	<input type="text" value="Search"/>							

You can add a custom narrative template in two ways:

1. You can select intent such as Top N, Bottom N, Data point, Time comparison, etc, based on this selected intent, the system suggests NLQ, and the response for this NLQ becomes available, then you can add a custom narrative based on this response.

**Note!** For every data model, sample NLQ must be mapped to each available intent. For more information, refer to the WhizAI Configuration guide.

2. You can enter NLQ, and based on this NLQ, the system automatically sets the intent, and the response for this NLQ becomes available, then you can add a custom narrative based on this response.

## Adding a custom narrative template by adding NLQ

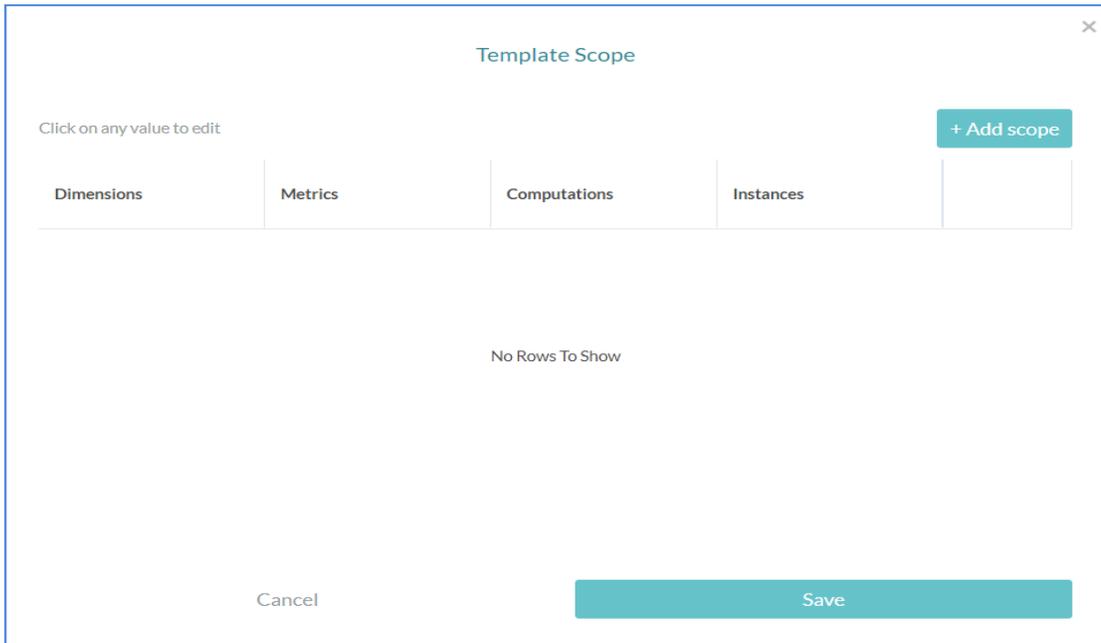
1. From the Admin console go to NLP workbench > Narrative templates. The Custom Narrative Templates page displays.

Template Name	Intent	Scope	Source	Source ID	Last Updated	Language	Status
<input type="checkbox"/> TopN_TimeCompariso...	Top N Time Comparison		Model		12.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> MultiD_RO	Multidimensional		Model		12.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> TopN_RO	Top N	> 1 scope(s) applied	Model		17.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> Trend_RO	Time series		Model		17.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> 02-TopN	Top N		Model		22.11.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> From Card2	Top N		Card Level Template	6115	21.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> Frpm VCard	Data Point		Card Level Template	6114	21.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> 01-Data Point	Data Point		Model		16.11.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> TopNTrend_RO	Top N Time series		Model		08.01.2024	English	<input checked="" type="checkbox"/>

2. From the top-left side of this page, select the data model for which you want to create a narrative template.
3. Click New Template. The new template creation page displays.

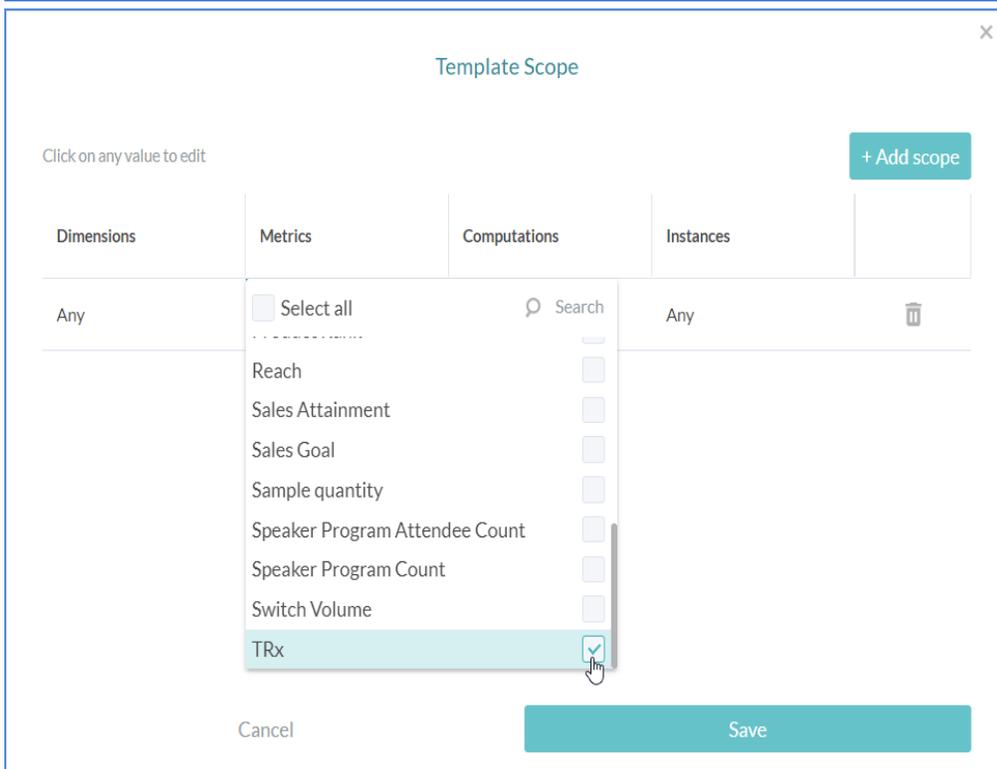
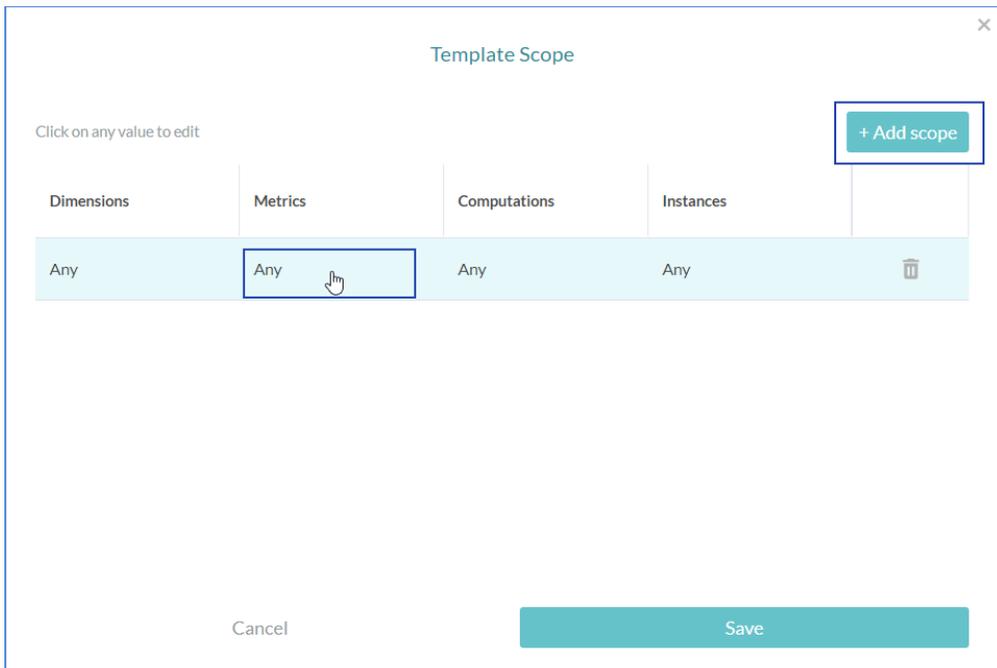
4. On the new template creation page, enter:
  1. Name for the template
  2. Enter your query in the Natural Language Query field.
5. Click Proceed. WhizAI identifies the intent of the NLQ and sets it in the Intent drop-down list and also displays the response.

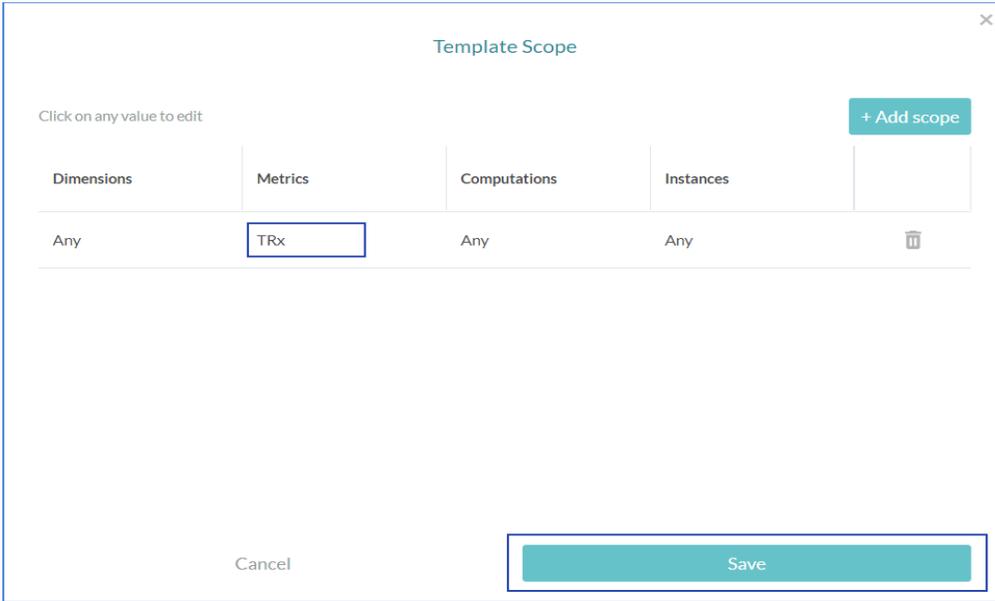
6. Click +Add Scope to add scope objects to your template. The following Template Scope page displays.



**Note!** By adding scopes, you can apply a narrative for a specific metric, dimension, computation, or instance. Also, you can combine and add multiple scope objects for different metrics, dimensions, computations or instances. If the added NLQ has an object defined in the Scope, then the custom template associated with that scope object is triggered. If scope is not added to a template, then the default template mapped for the intent is triggered. Computations are only supported on calculated metrics created using the new metadata query aggregation formula. To support computations on old calculated metrics, migrate the old calculated metrics to the new format

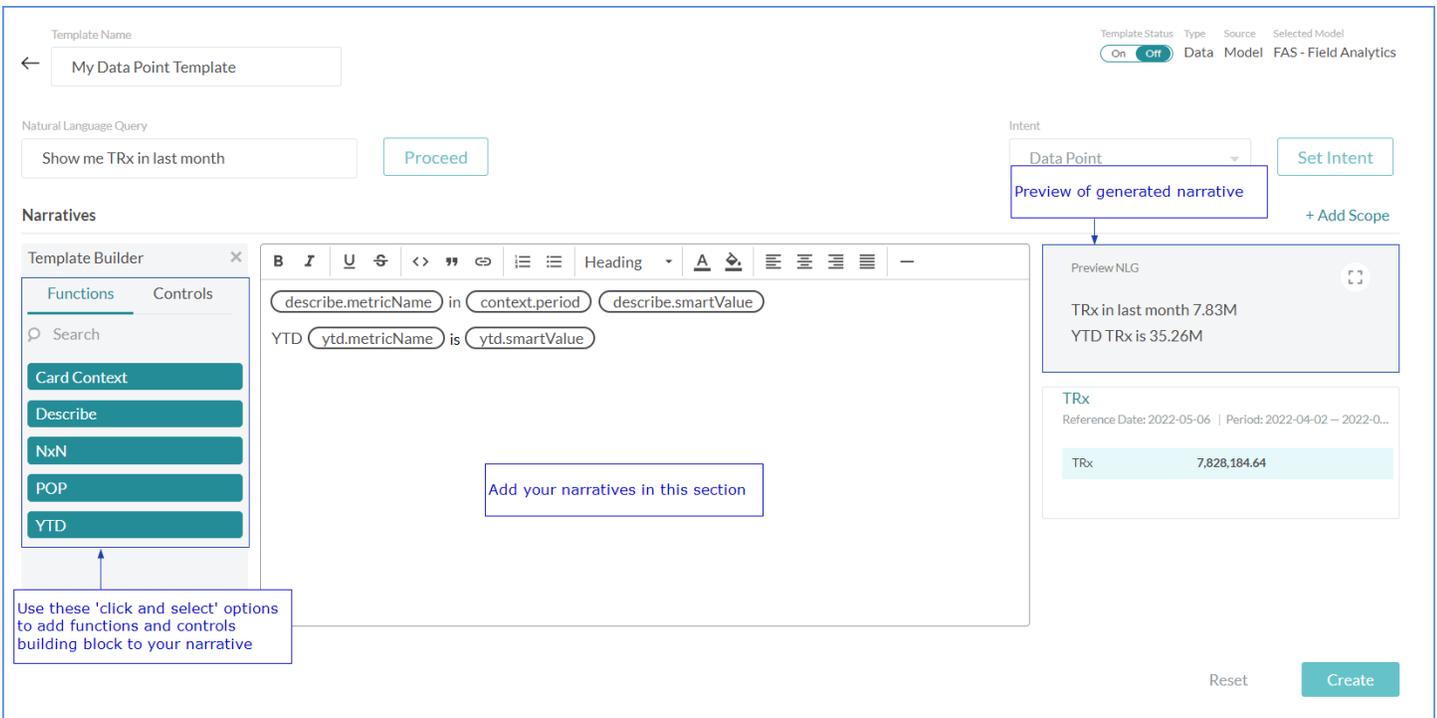
7. Click +Add Scope.
8. From the table, click the individual cells to add dimensions, metrics, computations, and instance level scope to your template.





**Note!** User authorization is considered when you add scope to your narrative template.

9. Click Save. The scope gets added to the template.
10. Add the custom narrative in the Narratives section.



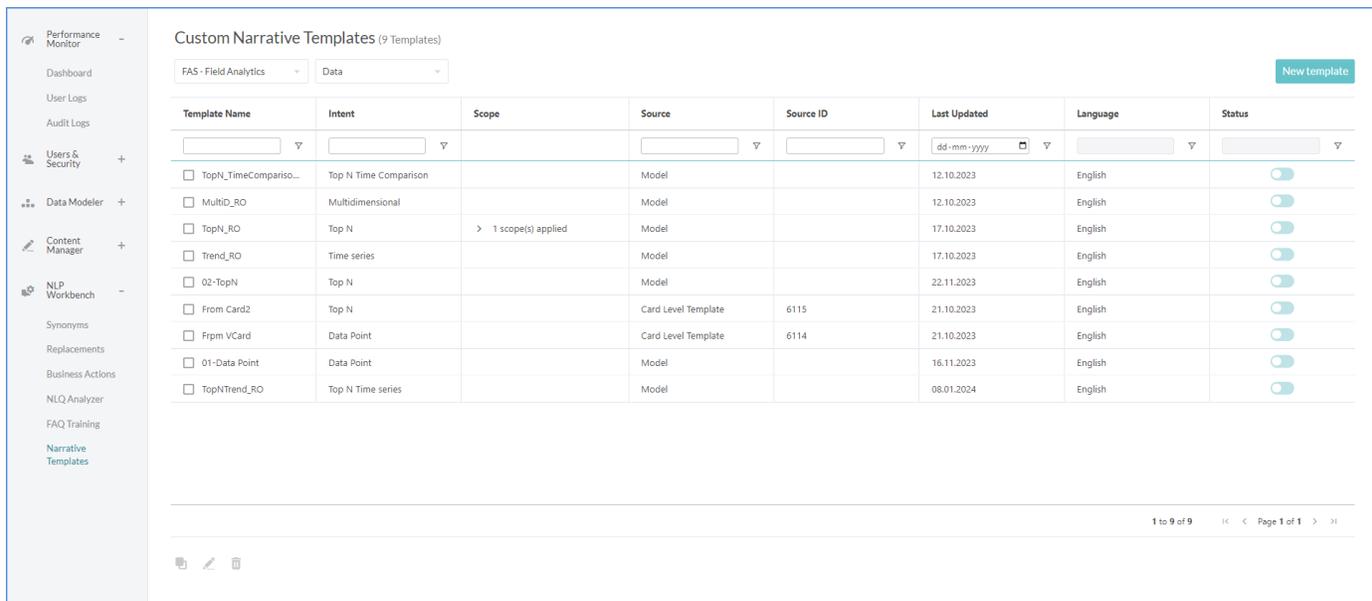
**Note!** As you add your narrative text, you can preview the generated narrative in the Preview NLG section as shown in the following figure.

You have to configure this custom narrative. For more information on how to configure the custom narratives, go to the Configuring Narratives for Intents section.

11. Click Create. The template gets added to the custom narrative template page.

## Adding a custom narrative template by setting the intent

1. From the Admin console go to NLP workbench > Narrative templates. The Custom Narrative Templates page displays.



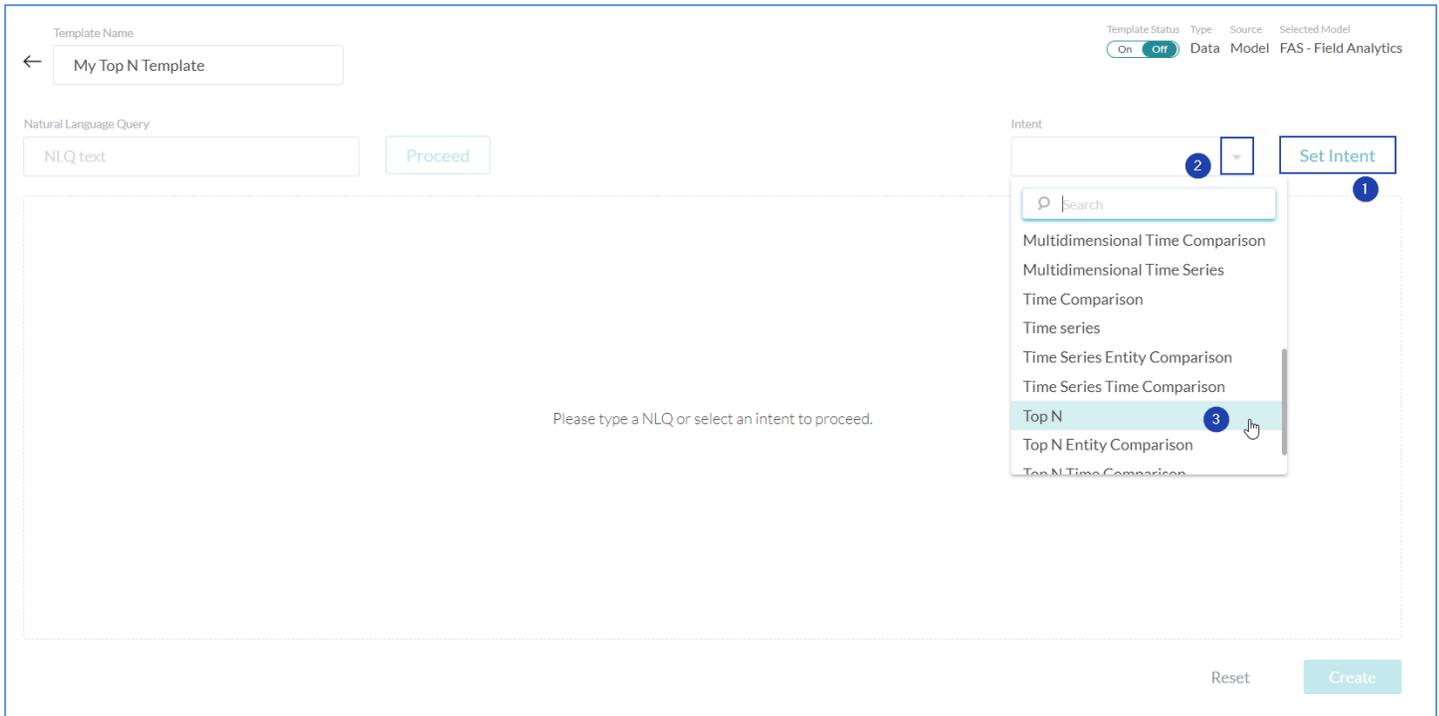
Custom Narrative Templates (9 Templates)

FAS - Field Analytics Data New Template

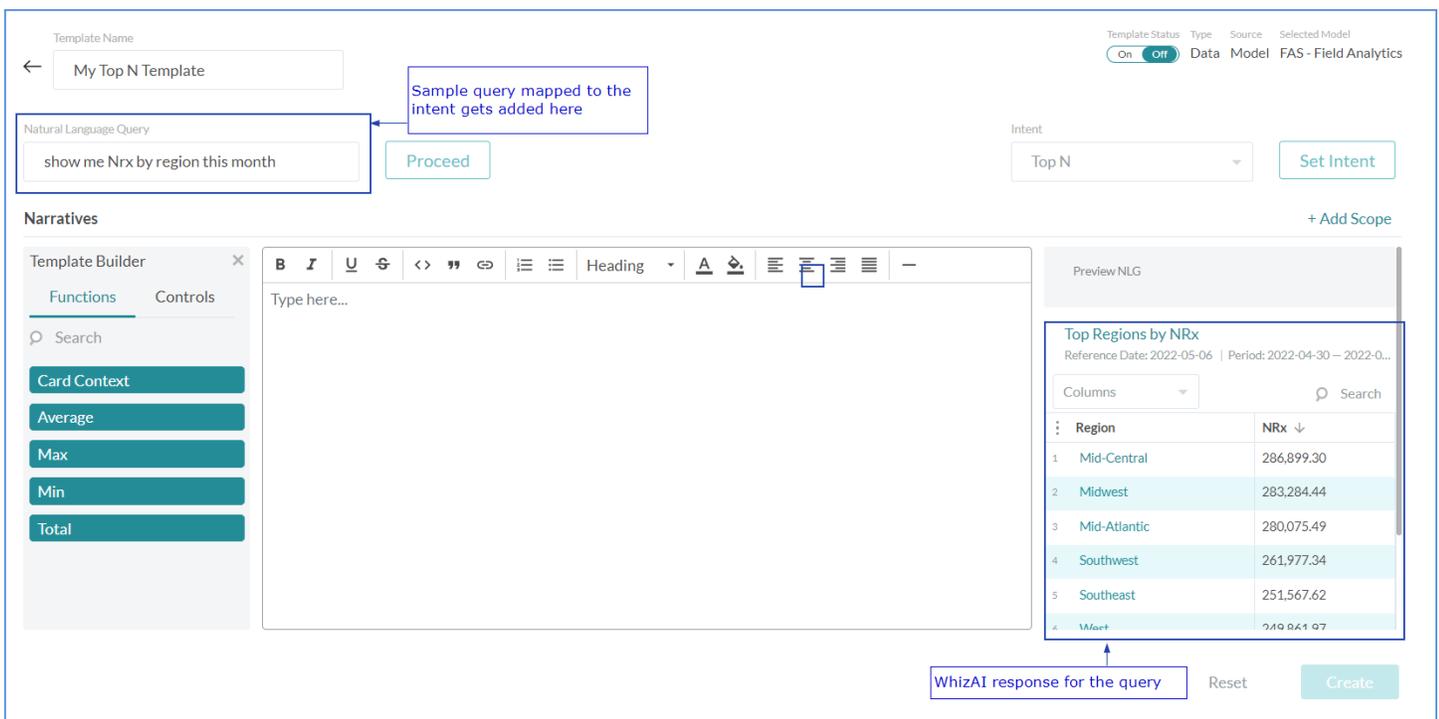
Template Name	Intent	Scope	Source	Source ID	Last Updated	Language	Status
<input type="checkbox"/> TopN_TimeCompariso...	Top N Time Comparison		Model		12.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> MultiID_RO	Multidimensional		Model		12.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> TopN_RO	Top N	> 1 scope(s) applied	Model		17.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> Trend_RO	Time series		Model		17.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> 02-TopN	Top N		Model		22.11.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> From Card2	Top N		Card Level Template	6115	21.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> Frpm VCard	Data Point		Card Level Template	6114	21.10.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> 01-Data Point	Data Point		Model		16.11.2023	English	<input checked="" type="checkbox"/>
<input type="checkbox"/> TopNTrend_RO	Top N Time series		Model		08.01.2024	English	<input checked="" type="checkbox"/>

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2. Click New template. The new template creation page displays.
3. Enter Name for the template.
4. Click Set Intent to enable the Intent drop-down list.
5. From the Intent drop-down list, select the intent for which you want to create the custom narrative template.



- Click Set Intent. Sample query mapped to the selected intent gets added to the Natural Language Query field. Response to this query is also displayed as shown in the following figure.



- Click +Add Scope to add scope objects to your template. The following Template Scope page displays.

Template Scope

Click on any value to edit

+ Add scope

Dimensions	Metrics	Computations	Instances
No Rows To Show			

Cancel Save

**Note!** By adding scopes, you can apply a narrative for a specific metric, dimension, computation, or instance. Also, you can combine and add multiple scope objects for different metrics, dimensions, computations, or instances.

8. Click +Add Scope.
9. From the table, click the individual cells to add dimensions, metrics, computations, and instance-level scope to your template.

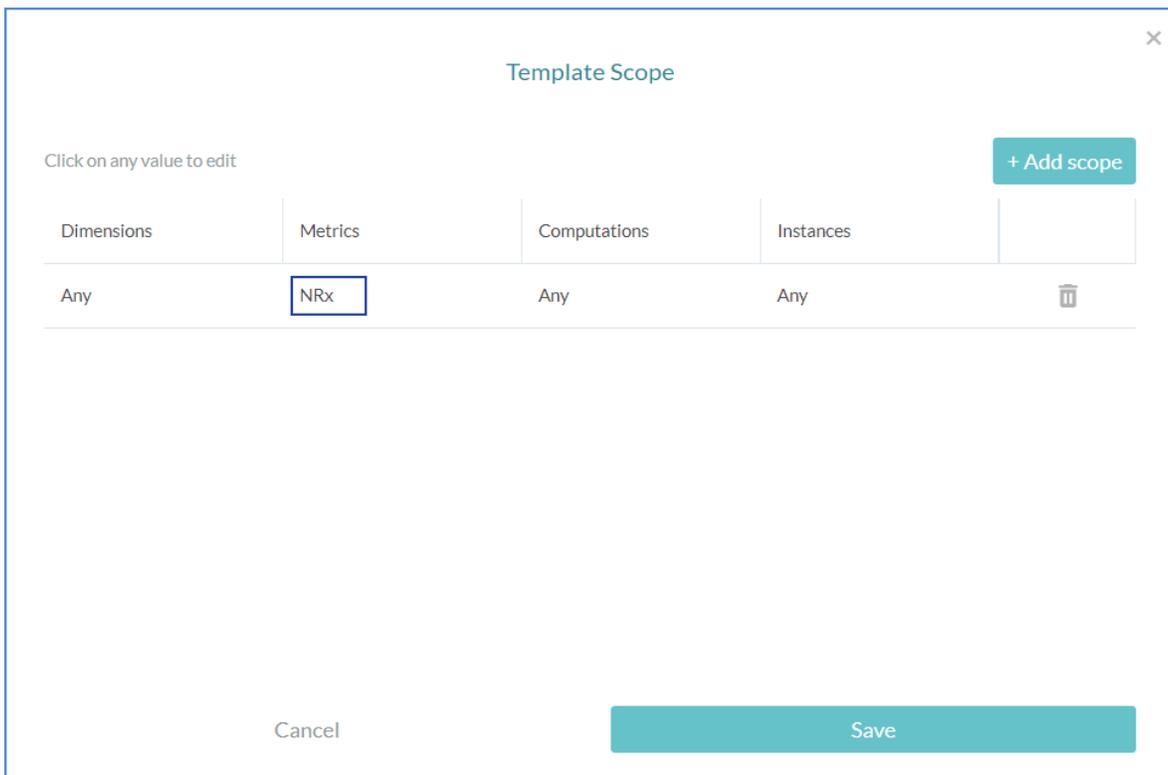
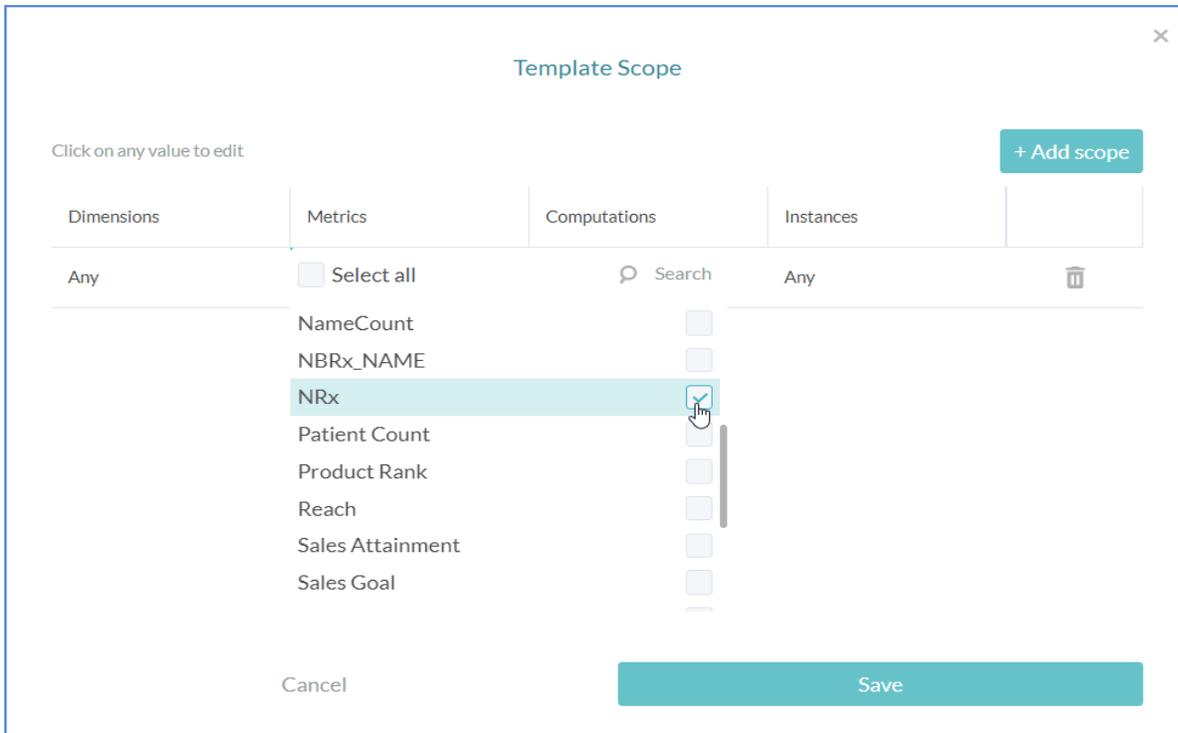
Template Scope

Click on any value to edit

+ Add scope

Dimensions	Metrics	Computations	Instances
Any	Any	Any	Any

Cancel Save



10. Click Save. The scope gets added to the template.

11. Add the custom narrative in the Narratives section.

**Note!** As you add your narrative text, you can preview the generated narrative in the Preview NLG section as shown in the following figure. You have to configure this custom narrative. For more information on how to configure the custom narratives, go to the Configuring Narratives for Intents section.

### Template Selection for narrative generation

If you have multiple templates created for one intent, template selection for narrative generation will be based on the scope added to the template. For more information, refer to the following table.

Intent	Scope: Metric	Custom Template	Example NLQs	Template Selection For Narrative Generation
Top N	TRx	T1	TRx by brands	T1 is triggered
			NRx by brands	T1 is not triggered. Default will be triggered for NRx
			TRx, NRx by brands	T1 is triggered for TRx. Default will be triggered for NRx
Top N	NRx	T2	TRx by brands	T2 is not triggered. Default will be triggered for TRx
			NRx by brands	T2 is triggered
			TRx, NRx by brands	T2 is triggered for NRx. Default will be triggered for TRx
Top N	TRx, NRx	T3	TRx by brands	T3 is triggered
			NRx by brands	T3 is triggered
			TRx, NRx by brands	T3 is triggered

## Supported intents

Following are the intents that are detected from your natural language queries (NLQs).

- Bottom N
- Bottom N Entity Comparison
- Bottom N Time Comparison
- Bottom N Time Series
- Data Point
- Entity Comparison
- Multi Series Time Comparison
- Multidimensional
- Multidimensional Time Comparison
- Multidimensional Time Series
- Time Comparison
- Time Series
- Time Series Entity Comparison
- Time Series Time Comparison
- Top N
- Top N Entity Comparison
- Top N Time Comparison
- Top N Time

## Functions supported for Intents

Following table lists the functions supported for different intents.

Function And Supported Intents	Sample NLQ And Narrative
Max (To create a narrative around Maximum value) Supported Intents: All intents are supported except data point	NLQ: Top Regions this month Narrative: NORTHEAST region has the highest NRx of 24.16K this month
Min (To create a narrative around Minimum value) Supported Intents: All intents are supported except data point	NLQ: Top Regions this month Narrative: WEST region has the lowest NRx of 15.26K this month.
Average (To create a narrative around Average value) Supported Intents: All intents are supported except data point	NLQ: Top Regions this month Narrative: Average TRx recorded per region is 19.89K this month. (Global Average)
Total (To create a narrative around Total value) Supported Intents: All intents are supported except data point	NLQ: Top Regions this month Narrative: Total TRx recorded across all regions is 10M
Describe (To create a narrative around a single data point summary) Supported Intents: Datapoint, Time Comparison, Entity Comparison	NLQ: TRx in Boston MA last week Narrative: TRx growth was 5% last week

Function And Supported Intents	Sample NLQ And Narrative
Contribution_MaxEntity (To create a narrative around contribution (%) of top performing entity) Supported Intents: Top N, Bottom N	NLQ: NRX for Top Regions this month Narrative: NORTHEAST region has the highest NRx of 33% (24.16K) this month
Contribution_MinEntity (To create a narrative around contribution (%) of least performing entity) Supported Intents: Top N, Bottom N	NLQ: NRX for Top Regions this month Narrative: WEST region has the lowest NRx of 20%(15.26K) this month.
Contribution_TopN_Entities (To create a narrative around contribution (%) of a group of top 'n' entities) Supported Intents: Top N, Bottom N	NLQ: NRX for Top Regions this month Narrative: Top 3 regions contribute 50% of the total NRx in this month.
Contribution_BottomN_Entities (To create a narrative around contribution (%) of a group of bottom 'n' entities) Supported Intents: Top N, Bottom N	NLQ: NRX for Top Regions this month Narrative: Bottom 3 regions contribute 10% of the total NRx in this month.
Contribution_MaxEntity (To create a narrative around contribution (%) of top performing entity in the overall time period) Supported Intents: Top N Time Series, Bottom N Time Series	NLQ: NRX for Top Regions by months Narrative: The NORTHEAST region has the highest NRx of 33% (24.16K) in this time period.
Contribution_MinEntity (To create a narrative around contribution (%) of least performing entity in the overall time period) Supported Intents: Top N Time Series, Bottom N Time Series	NLQ: NRX for Top Regions by months Narrative: WEST region has the lowest NRx of 20%(15.26K) in this time period.
Contribution_TopN_Entities (To create a narrative around contribution (%) of a group of top 'n' entities in the overall time period) Supported Intents: Top N Time Series, Bottom N Time Series	NLQ: NRX for Top Regions by months Narrative: Top 3 regions contribute 50% of the total NRx in this time period.
Contribution_BottomN_Entities (To create a narrative around contribution (%) of a group of bottom 'n' entities in the overall time period) Supported Intents: Top N Time Series, Bottom N Time Series	NLQ: NRX for Top Regions by months Narrative: Bottom 3 regions contribute 10% of the total NRx in this time period.
Growth_MaxAbsChange (To create a narrative around highest Absolute change growth in a given time period) Supported Intents: All types of Time Series intents	NLQ: TRx monthly trend last year

Function And Supported Intents	Sample NLQ And Narrative
	Narrative: TRx recorded the highest growth of 2.46M (32.26%) in March 2021
Growth_MinAbsChange (To create a narrative around slowest Absolute change growth in a given time period) Supported Intents: All types of Time Series intents	NLQ: TRx monthly trend last year Narrative: TRx recorded the lowest growth of -2.41M (-23.81%) in April 2021
Growth_MaxPercentChange (To create a narrative around highest Percent change growth in a given time period) Supported Intents: All types of Time Series intents	NLQ: TRx monthly trend last year Narrative: TRx recorded the highest growth of 2.46M (32.26%) in March 2021
Growth_MinPercentChange (To create a narrative around slowest Percent change growth in a given time period) Supported Intents: All types of Time Series intents	NLQ: TRx monthly trend last year Narrative: TRx recorded the lowest growth of -2.41M (-23.81%) in April 2021
NxN (To create a narrative around weeks comparison (4x4 or 13x13)) Supported Intents: Datapoint, Time Comparison, Entity Comparison, Time Series, Time Series Time Comparison	NLQ: TRx monthly trend last year Narrative: TRx declined by -0.91% in last 4 weeks
NxN_MaxEntity (To create a narrative around weeks comparison for top performing entity) Supported Intents: Top N, Bottom N, Top N Time Series, Bottom N Time Series, Top N Time Comparison, Bottom N Time Comparison	NLQ: Top Regions by TRx Narratives: South Central declined by -17.62% (-50.06K) in last 4 weeks South Central declined by -10.17% (-95.9K) in last 13 weeks
NxN_MinEntity (To create a narrative around weeks comparison for least performing entity) Supported Intents: Top N, Bottom N, Top N Time Series, Bottom N Time Series, Top N Time Comparison, Bottom N Time Comparison	NLQ: Top Regions by TRx Narratives: Mid-Central declined by -5.17% (-63.07K) in last 4 weeks Mid-Central grew by 2.07% (79.93K) in last 13 weeks
MaxPrimary (To create a narrative around Maximum value in 1st column of a comparison response. This could be Current Period for a time comparison or 1st entity in an entity comparison) Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison	NLQ: Top Growing Brands Narrative: Arobi was the top Product with 2.41M NRx with a -0.22% decline in this time.
MinPrimary (To create a narrative around Minimum value in 1st column of a comparison response. This could be Current Period for a time comparison or 1st entity in an entity comparison) Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison	NLQ: Top Growing Brands Narrative: Emarun was the highest declining Product with -43.76K (-7.68%) NRx

Function And Supported Intents	Sample NLQ And Narrative
<p>TotalPrimary (To create a narrative around Total value in 1st column of a comparison response. This could be Current Period for a time comparison or 1st entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Total TRx in 2022 was 1M while in 2021 it was 590K</p>
<p>AveragePrimary (To create a narrative around Average value in 1st column of a comparison response. This could be Current Period for a time comparison or 1st entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Average TRx in 2022 was 100K while in 2021 it was 80K</p>
<p>MaxSecondary (To create a narrative around Maximum value in the 2nd column of a comparison response. This could be Previous Period for a time comparison or 2nd entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p>
<p>MinSecondary (To create a narrative around Minimum value in the 2nd column of a comparison response. This could be Previous Period for a time comparison or 2nd entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p>
<p>TotalSecondary (To create a narrative around Total value in the 2nd column of a comparison response. This could be Previous Period for a time comparison or 2nd entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Total TRx in 2022 was 1M while in 2021 it was 590K</p>
<p>AverageSecondary (To create a narrative around Average value in 2nd column of a comparison response. This could be Previous Period for a time comparison or 2nd entity in an entity comparison)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Average TRx in 2022 was 100K while in 2021 it was 80K</p>
<p>MaxAbsChange (To create a narrative around Maximum Absolute Change value in a comparison response)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Plabenil was the highest growing Product with 2.98K change (0.14%) NRx</p>
<p>MinAbsChange (To create a narrative around Minimum Absolute Change value in a comparison response)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: Trexine was the highest declining Product with -40.3K change (-1.86%) NRx</p>
<p>MaxPercentChange (To create a narrative around Maximum Percentage Change value in a comparison response)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: The biggest % growth of 0.14% was seen by Plabenil</p>

Function And Supported Intents	Sample NLQ And Narrative
<p>MinPercentChange (To create a narrative around Minimum Percentage Change value in a comparison response)</p> <p>Supported Intents: Top N/ Bottom N Time Comparison, Top N/ Bottom N Entity Comparison</p>	<p>NLQ: Top Growing Brands</p> <p>Narrative: The biggest % decline of -10.14% was seen by Trexine</p>
<p>YTD</p> <p>To create a narrative around YTD data</p> <p>Supported Intents: Datapoint, Time Series, Time Comparison, Time Series Time Comparison</p>	<p>NLQ: TRx monthly trend last year</p> <p>Narrative: YTD TRx was 100M</p>
<p>YTD_MaxEntity</p> <p>To create a narrative around YTD data for top performing entity</p> <p>Supported Intents: Top N, Top N Time Series, Bottom N, Bottom N Time Series</p>	<p>NLQ: NRx for Top Regions this month</p> <p>Narrative: YTD Mid-Central recorded 5.41M NRx</p>
<p>YTD_MinEntity</p> <p>To create a narrative around YTD data for least performing entity</p> <p>Supported Intents: Top N, Top N Time Series, Bottom N, Bottom N Time Series</p>	<p>NLQ: NRx for Top Regions this month</p> <p>Narrative: YTD South-Central recorded 5.41M NRx</p>
<p>MaxOfDimension(N)</p> <p>To create a narrative around Maximum value for Nth dimension in a multi-dimensional NLQ</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: Arobi was the highest contributing Product with 606.95K TRx</p>
<p>MinOfDimension(N)</p> <p>To create a narrative around Minimum value for Nth dimension in a multi-dimensional NLQ</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: Emarun was the least contributing Product with 135.62KTRx</p>
<p>ContributionOfMaxEntityOfDimension(N) - (To create a narrative around contribution (%) of top performing entity of Nth dimension)</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: Arobi was the highest contributing Product with 20% (606.95K) TRx</p>
<p>Contribution_MinEntity_Dimension(N) - (To create a narrative around contribution (%) of least performing entity of Nth dimension)</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: Emarun was the least contributing Product with 5% (135.62K) TRx</p>
<p>YTD_MaxEntity_Dimension(N) - (To create a narrative around YTD data for top performing entity of Nth Dimension)</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: YTD Mid-Central recorded 5.41M NRx</p>
<p>YTD_MinEntity_Dimension(N) - (To create a narrative around YTD data for least performing entity of Nth Dimension)</p> <p>Supported Intents: Multi-dimensional, Multi-dimensional time series</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: YTD South-Central recorded 5.41M NRx</p>
<p>Contribution_MaxEntity_Of_Dimension1_In_MaxEntity_Of_Dimension2</p> <p>To create a narrative around contribution (%) of top performing entity of Dimension 1 in top entity in Dimension 2</p>	<p>NLQ: Brands By Regions</p> <p>Narrative: Arobi contributed 20% (606.95K) TRx in Midwest</p>

Function And Supported Intents	Sample NLQ And Narrative
Supported Intents:	
Contribution_MaxEntity_Of_Dimension2_In_MaxEntity_Of_Dimension1 To create a narrative around contribution (%) of top performing entity of Dimension 2 in top entity in Dimension 1 Supported Intents:	NLQ: Brands By Regions Narrative: Midwest contributed 25% (606.95K) TRx in Arobi

## Configuring Narratives for Intents

Refer to the following configuration of narratives for data point intent. You can follow similar steps for other intents.

### Configuring narratives for Data Point intent

You can configure narratives for 'Data point' intent using the Describe, NxN, and YTD functions. For more information on the use of these functions, refer to the following example NLQ and configured narrative for the same.

Example NLQ: Show me TRx in last month

**Note!** Following example is for reference only. You can refer to this example to configure different narratives.

To configure the custom narrative:

1. Go to the new template creation page and enter NLQ. For example: 'Show me TRx in last month' and click Proceed.

WhizAI detects intent in your query and displays a response to your query as shown in the following figure.

The screenshot displays the WhizAI configuration interface for a new template. At the top, the 'Template Name' is 'My Data Point Template'. The 'Natural Language Query' field contains 'Show me TRx in last month', and a 'Proceed' button is visible. A callout box states 'WhizAI detects the intent from the entered query'. The 'Intent' dropdown is set to 'Data Point', with a 'Set Intent' button. Below, the 'Narratives' section shows a 'Template Builder' with a list of functions: Card Context, Describe, NxN, POP, and YTD. A 'Preview NLG' section displays a narrative for 'TRx' with a value of 7,828,184.64. A callout box points to this preview with the text 'WhizAI response for the entered query'. At the bottom right, there are 'Reset' and 'Create' buttons.

You can add narrative text and Describe, NxN, POP, and YTD function blocks in the template Narratives section, and based on this text and the function code, narrative is displayed in the Preview NLG section.

- To add narrative around the Describe function, click Describe. Click and select options are displayed as shown in the following figure.

The screenshot displays the 'Template Builder' interface for a template named 'My Data Point Template'. The 'Natural Language Query' is 'show me TRx in west this week'. The 'Intent' is 'Data Point'. The 'Narratives' section is active, showing a 'Describe' function block. A callout box points to the 'Describe' options: 'Metric Name', 'Computation', 'Metric Value', and 'Metric Smart Value'. The 'Preview NLG' section shows the resulting narrative: 'TRx' with a value of '264,608.24'.

Template Name: My Data Point Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me TRx in west this week | Proceed

Intent: Data Point | Set Intent

Narratives: + Add Scope

Template Builder: Functions | Controls

Search: [Search]

Card Context

Describe

Metric Name  
Computation  
Metric Value  
Metric Smart Value

NxN

POP

Use these options to add metric name, computation, and metric value to your narrative

Preview NLG

TRx  
Reference Date: 2022-05-06 | Period: 2022-04-30 - 2022-0...

TRx 264,608.24

Reset | Create

- Click Metric Name; the building block for the metric name gets added to your narrative and the metric name gets added to the Preview NLG section as shown in the following figure.

Template Name: My Data Point Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me TRx in west this week

Intent: Metric name (TRx) gets added to the narrative

Narratives: + Add Scope

Template Builder: describe.metricName

Building block for metric name

Preview NLG: TRx

TRx  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-0...

TRx 264,608.24

Reset Create

4. Add narrative text and the building block for metric value. For example, refer to the following figure.

Template Name: My Data Point Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me TRx in west this week

Intent: Narrative text and metric value gets added to your narrative

Narratives: + Add Scope

Template Builder: describe.metricName in this period is describe.smartValue

Narrative text

Building block for metric value

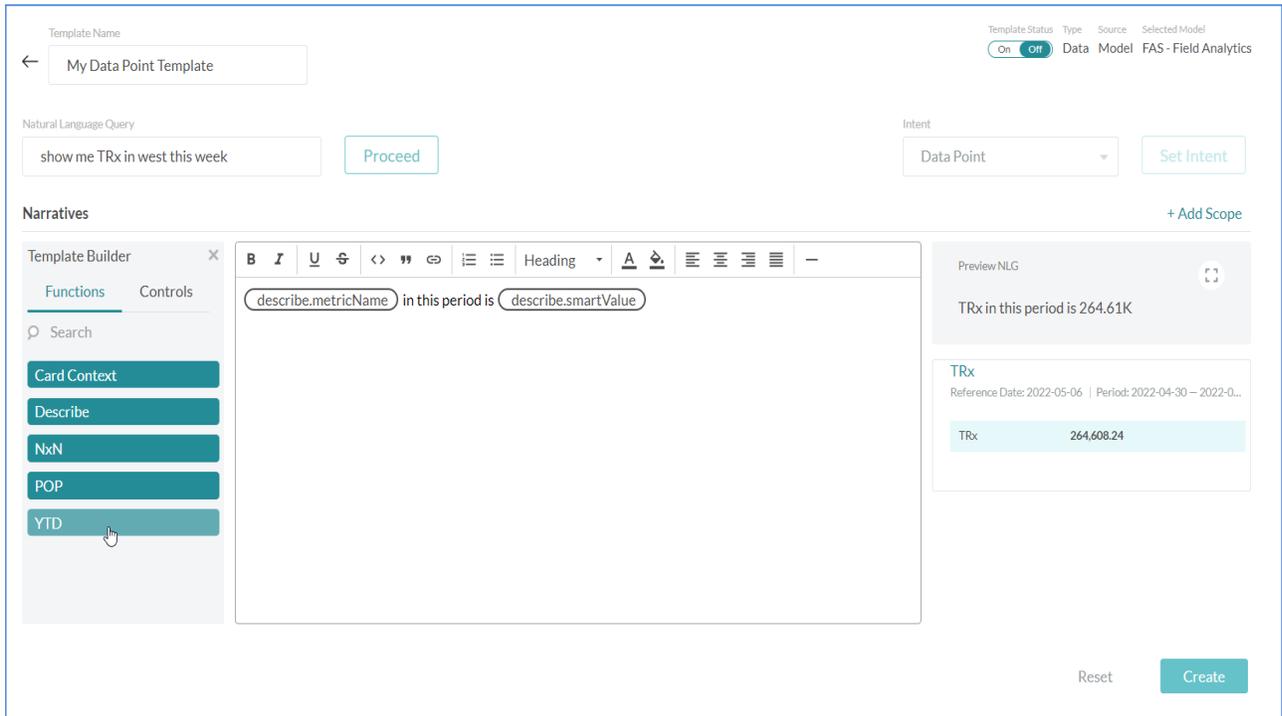
Preview NLG: TRx in this period is 264.61K

TRx  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-0...

TRx 264,608.24

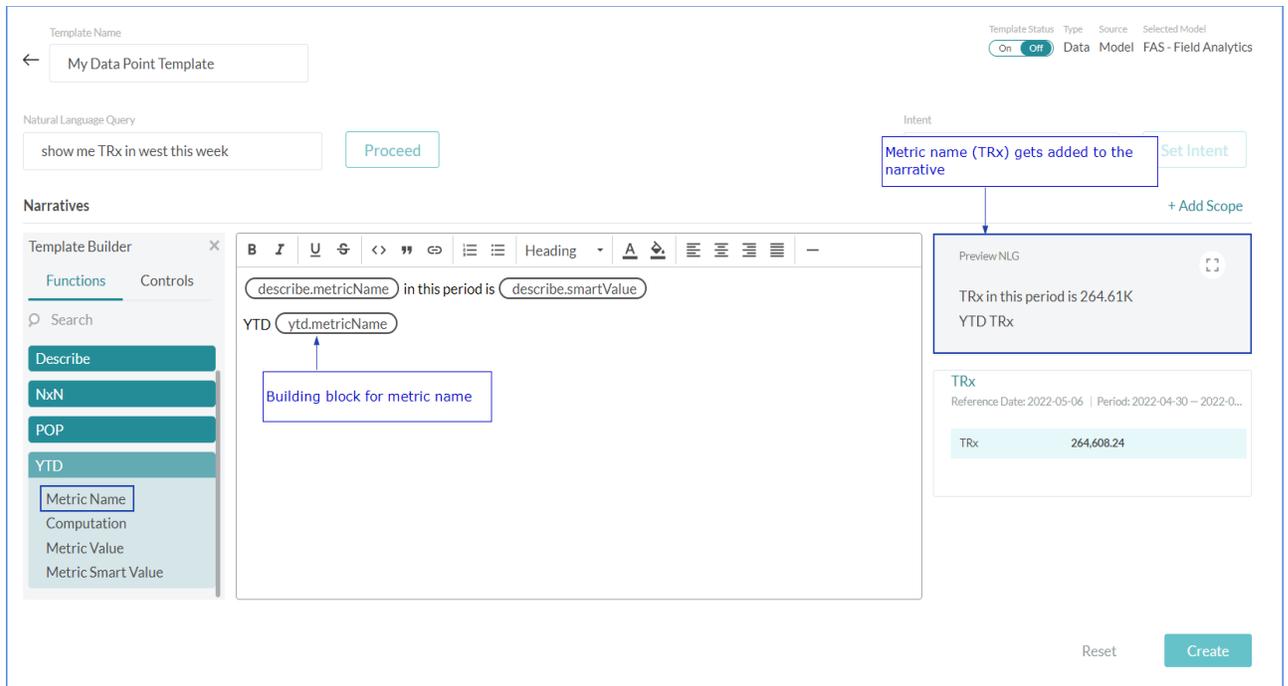
Reset Create

5. To add narrative around the YTD function, click YTD.



6. Click YTD > Metric Name.

The building block for the metric name gets added to your narrative and the metric name gets added to the Preview NLG section as shown in the following figure.



7. Add narrative text and the building block for metric value and click Create. For example, refer to the following figure.

The screenshot displays the 'My Data Point Template' interface. At the top, the 'Template Name' is 'My Data Point Template'. The 'Natural Language Query' is 'show me TRx in west this week'. The 'Intent' is 'Narrative text and metric value gets added to your narrative'. The 'Template Builder' shows the following template:

```
describe.metricName in this period is describe.smartValue .
YTD (ytd.metricName) is (ytd.smartValue) .
```

The 'Functions' list includes Describe, NxN, POP, and YTD. The 'Controls' list includes Metric Name, Computation, Metric Value, and Metric Smart Value. The 'Preview NLG' shows the resulting narrative: 'TRx in this period is 264.61K. YTD TRx is 5M.' Below the preview, a table shows the TRx value: 264,608.24. The 'Create' button is highlighted.

## Configuring narrative for Top N intent

You can use the following functions to create narratives for Top N intent.

- Average
- Max.
- Min.
- Total

Refer to the following example to configure a narrative:

Example NLQ: Show me NRx by region this month

**Note!** Following example is for reference only. You can refer to this example to configure different narratives.

To configure the custom narrative:

1. To add narrative around the Max functions, click Max.

The screenshot shows the NLP interface with the following elements:

- Template Name:** My New Top N Template
- Template Status:** On (Off)
- Type:** Data
- Source:** Model
- Selected Model:** FAS - Field Analytics
- Natural Language Query:** show me Nrx by region this month
- Proceed:** Button
- Intent:** Top N
- Set Intent:** Button
- Narratives:** +Add Scope
- Template Builder:**
  - Functions:** Card Context, Average, Max (selected), Min, Total
  - Controls:** Search
- Preview NLG:** Top Regions by NRx
 

Region	NRx
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34
5 Southeast	254,447.45
- Reset:** Button
- Create:** Button

2. Click and select options are displayed as shown in the following figure.

The screenshot shows the NLP interface with the following elements:

- Template Name:** My New Top N Template
- Template Status:** On (Off)
- Type:** Data
- Source:** Model
- Selected Model:** FAS - Field Analytics
- Natural Language Query:** show me Nrx by region this month
- Proceed:** Button
- Intent:** Top N
- Set Intent:** Button
- Narratives:** +Add Scope
- Template Builder:**
  - Functions:** Max (selected), Contribution\_MaxEntity, Contribution\_TopN\_Entities, Max, Max\_TopN\_Entities, NxN\_MaxEntity, YTD\_MaxEntity
  - Controls:** Search
- Preview NLG:** Top Regions by NRx
 

Region	NRx
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34
5 Southeast	254,447.45
- Reset:** Button
- Create:** Button

3. To create a narrative around weeks comparison for top performing entity; click NxN\_MaxEntity.

Template Name: My New Top N Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me Nrx by region this month [Proceed]

Intent: Top N [Set Intent]

Narratives: + Add Scope

Template Builder: Functions | Controls

Search: Max

- Contribution\_MaxEntity
- Contribution\_TopN\_Entities
- Max
- Max\_TopN\_Entities
- Nxn\_MaxEntity**
- YTD\_MaxEntity

Preview NLG: Mid-Central

Top Regions by NRx  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-05-2...

Region	NRx ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

Reset [Create]

- Enter number of weeks for comparison and then click Entity Name from the Datarow Context.

Template Name: My New Top N Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me Nrx by region this month [Proceed]

Intent: Max entity from the response gets added to your narrative [Set Intent]

Narratives: + Add Scope

Template Builder: Functions | Controls

Search: Nxn\_MaxEntity

Enter No. of weeks: 4

No. of weeks which will be used for non analysis

Datarow Context

- Entities: Entity Name | Dimension Name
- Primary
- Secondary

Building block for max entity name

Preview NLG: Mid-Central

Top Regions by NRx  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-05-2...

Region	NRx ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

Reset [Create]

- To use if else conditions to add narrative around growth or decline; click Controls.

Template Name: My New Top N Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me Nr<sub>x</sub> by region this month | Proceed

Intent: Top N | Set Intent

Narratives: + Add Scope

Template Builder: Functions | **Controls**

Search: NxN\_MaxEntity  
Enter No. of weeks: 4  
No. of weeks which will be used for non analysis

4x4maxentity.context.entityName recorded

Preview NLG: Mid-Central recorded

Top Regions by NR<sub>x</sub>  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-05-2...

Region	NR <sub>x</sub> ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

Reset | Create

6. Click Controls and then click If-else.

Template Name: My New Top N Template

Template Status: On | Type: Data | Source: Model | Selected Model: FAS - Field Analytics

Natural Language Query: show me Nr<sub>x</sub> by region this month | Proceed

Intent: Top N | Set Intent

Narratives: + Add Scope

Template Builder: Functions | **Controls**

Search: if-else

4x4maxentity.context.entityName recorded

Preview NLG: Mid-Central recorded

Top Regions by NR<sub>x</sub>  
Reference Date: 2022-05-06 | Period: 2022-04-30 – 2022-05-2...

Region	NR <sub>x</sub> ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

Reset | Create

7. Select root level function, function, and operator from the respective dropdowns.

Condition builder

if (    )

8. Enter the condition argument, and number of weeks for comparison and then click Insert. Condition gets added to your narrative.

Condition builder

if (       )

Enter No. of weeks  
  
No. of weeks which will be used for non analysis.

Enter No. of weeks  
  
No. of weeks which will be used for non analysis.

9. Now you have to define the added condition by adding narrative text and/or function building blocks. Refer to the following figures.

Template Name: My New Top N Template

Natural Language Query: show me Nrx by region this month

Intent: Top N

Functions:   Else

End of if-else

Add narrative text and/or function blocks here to define your condition further

Preview NLP: Mid-Central recorded [placeholder for else]

Top Regions by NRx

Region	NRx
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

Reset

Similarly, you can configure the following types of example narratives:

- Short term (4 weeks) TRx growth 4.65% 50.61 K was higher than medium-term (13 weeks) 3.32 %
- Short term TRx growth was higher than log-term (52 weeks) 0.29% 41.68K

For information on use of if-else blocks refer to the following narrative examples.

The screenshot shows the Narrative Builder interface for a template named "My New Top N Template". The Natural Language Query is "show me Nrx by region this month". The intent is set to "Top N". The narrative editor contains the following code:

```

4x4maxentity.context.entityName recorded 4x4maxentity.absChange.smartValue > 0 4x4maxentity.percentChange.smartValue (
4x4maxentity.absChange.smartValue ) growth Else 4x4maxentity.percentChange.smartValue ( 4x4maxentity.absChange.smartValue
) decline End of if-else in last 4 weeks.
    
```

Annotations indicate that if the condition `4x4maxentity.absChange.smartValue > 0` is true, the narrative "Mid-Central recorded -5.17% (-63.07K) decline in last 4 weeks." is displayed. If the condition is not true, the narrative "Top Regions by Nrx" is displayed, which includes a table of regions and their Nrx values.

Region	Nrx ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44
3 Mid-Atlantic	280,075.49
4 Southwest	261,977.34

10. Similarly, you can configure narrative around Min functions. Refer to the following configured narrative.

The screenshot shows the Narrative Builder interface for the same template. The Natural Language Query is "show me Nrx by region this month". The intent is "Top N". The narrative editor contains two configurations:

```

4x4maxentity.context.entityName recorded 4x4maxentity.absChange.smartValue > 0 4x4maxentity.percentChange.smartValue (
4x4maxentity.absChange.smartValue ) growth Else 4x4maxentity.percentChange.smartValue (
4x4maxentity.absChange.smartValue ) decline End of if-else in last 4 weeks.

4x4minentity.context.entityName recorded 4x4minentity.absChange.smartValue > 0 4x4minentity.percentChange.smartValue (
4x4minentity.absChange.smartValue ) growth Else 4x4minentity.percentChange.smartValue (
4x4minentity.absChange.smartValue ) decline End of if-else in this period.
    
```

Annotations indicate that the first narrative is configured using functions Max, NxN\_MaxEntity, and the second is configured using functions Min, NxN\_MinEntity. The Preview NLG shows two narratives: "Mid-Central recorded -5.17% (-63.07K) decline in last 4 weeks." and "South Central recorded -17.62% (-50.06K) decline in this period." The "Top Regions by Nrx" table is also visible.

Region	Nrx ↓
1 Mid-Central	286,899.30
2 Midwest	283,284.44

11. Click Create, to save your template.

Similarly, you can follow the same steps to add templates for the following intents.

- Entity comparison
- Time Comparison
- Time Series

- Time Series Entity Comparison
- Time Series Time Comparison
- Multidimensional
- Multidimensional Time Series
- Top N
- Top N Entity Comparison
- Top N Time comparison
- Top N Time Series
- Bottom N
- Bottom N Entity Comparison
- Bottom N Time comparison
- Bottom N Time Series

For more information, you can refer to the following examples of configured narratives.

- Example 1: Narratives for Top-N Time comparison intent

Example NLQ: 4x4 by brands for NRx

The screenshot displays the Narrative Builder interface for a 'Top N-Time Comparison template'. At the top, the template name is 'Top N-Time Comparison template' and it is currently 'Off'. The Natural Language Query (NLQ) is '4x4 by brands for NRx'. The interface shows several narrative templates with their corresponding NLG outputs. The preview shows the following NLG text:

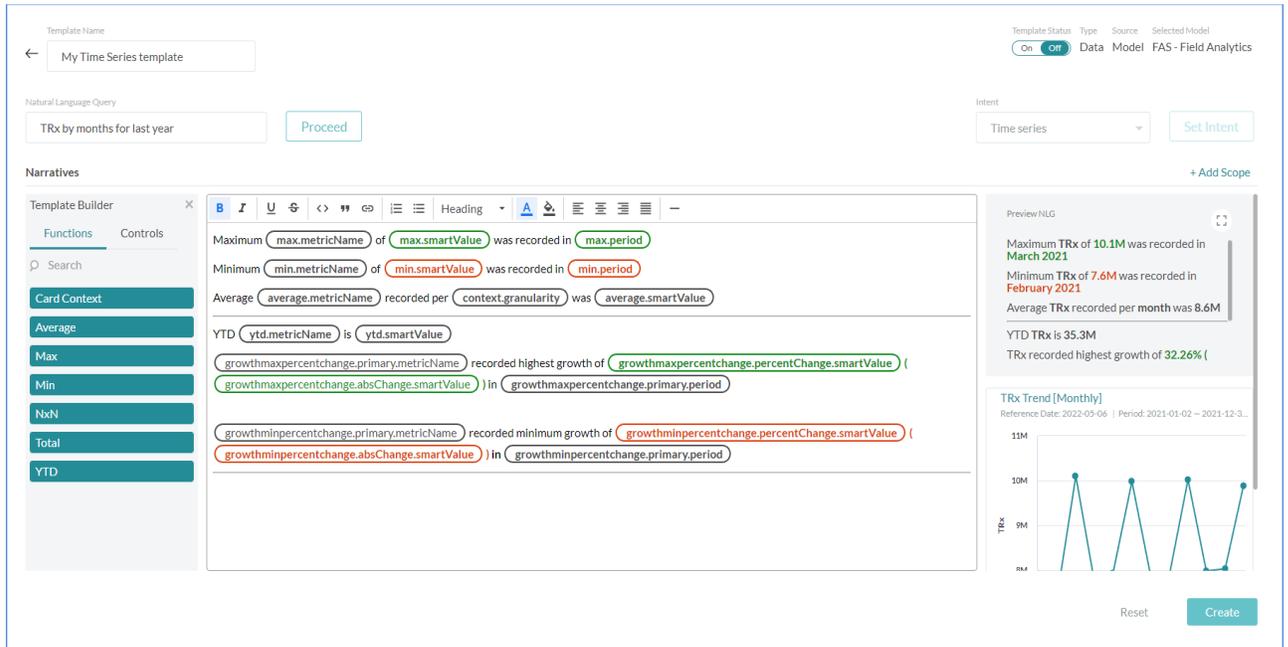
Arobi was the top Product with 2.41M NRx and -0.22% (-5.2K) decline  
 In absolute change terms, Plabeni was the highest growing Product with 0.14% (2.98K) change while Trexme was the highest declining Product with -1.86% (-40.3K) change  
 Arobi declined by -0.22% (-17.23K) in last 13 weeks

Below the NLG text is a table titled 'Top Products by NRx' with columns for Product, Curr, and Prev. The table shows data for Plabeni and Arobi.

Product	Curr	Prev
1 Plabeni	2,063,724...	2,060,743...
2 Arobi	2,409,441...	2,414,639...

- Example 2: Narratives for Time Series intent

Example NLQ: TRx by months for last year



## Editing a narrative template

1. From the Admin console go to the NLP Workbench > Narrative Templates.
2. Select the template that you want to edit and click the Edit option at the bottom as shown in the following figure.

Custom Narrative Templates (12 Templates)

FAS - Field Analytics | Data

Template Name	Intent	Scope	Source	Sour...	Last Updated ↓	Language	Status
<input checked="" type="checkbox"/> My Multidimensional tem...	Multidimensional	> 1 scope(s) applied	Model		16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> My Time Series template	Time series	> 1 scope(s) applied	Model		16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Top N-Time Comparison ...	Top N Time Comparison	> 1 scope(s) applied	Model		16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> My New Top N Template	Top N	> 1 scope(s) applied	Model		16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_TopN_Trend	Top N Time series		Model		15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_Summary	Data Point		Model		15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_TopN_Time...	Top N Time Comparison		Model		15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_Multidimen...	Multidimensional		Model		15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_Trend	Time series		Model		15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahul_Demo_TopN	Top N		Model		13.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> 02-Top N	Top N	> 1 scope(s) applied	Model		13.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Anomaly narrative	Anomaly		Model		22.12.2022	English	<input type="checkbox"/>

1 to 12 of 12 | Page 1 of 1

3. Add or remove information in the Narratives section.  
You can also change the template scope to include different dimensions, metrics, entities, or instances.

The screenshot shows the Narrative Builder interface. At the top, there's a 'Template Name' field with 'MyMultidimensional template'. Below it, a 'Natural Language Query' field contains 'Trx by brand by region'. To the right, 'Intent' is set to 'Multidimensional'. The main area is a rich text editor with a toolbar and two paragraphs of narrative text. The first paragraph describes 'maxofdimension1.entityName' as the best contributing product. The second paragraph describes 'maxofdimension2.entityName' as the best contributing region. On the right, the 'Preview NLG' section shows the rendered narrative and a table titled 'TRx by Product, Region'.

Product	Mid-Atlantic TRx	Mid-Central TRx
Arabi	4,881,749.6	5,006,138.7
Emarun	1,055,649.0	1,051,667.0
Ofasan	1,205,098.5	1,102,590.6

4. Click Save.

## Cloning a narrative template

You can also clone a template, using the clone option you can copy the attributes and other data of the selected template, and you can create a new narrative template from this selected template.

To clone a template:

1. Select the template that you want to clone and click the Clone option at the bottom as shown in the following figure.

The screenshot shows the 'Custom Narrative Templates' list. The table has columns: Template Name, Intent, Scope, Source, Last Updated, Language, and Status. The 'My Top N Trend template' is selected. At the bottom left, there is a 'Clone' icon.

Template Name	Intent	Scope	Source	Last Updated	Language	Status
<input checked="" type="checkbox"/> My Top N Trend template	Top N Time series	> 1 scope(s) applied	Model	16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> My Multidimensional te...	Multidimensional	> 1 scope(s) applied	Model	16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> My Time Series template	Time series	> 1 scope(s) applied	Model	16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Top N-Time Comparison ...	Top N Time Comparison	> 1 scope(s) applied	Model	16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> My New Top N Template	Top N	> 1 scope(s) applied	Model	16.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_TopN_Trend	Top N Time series		Model	15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_Summary	Data Point		Model	15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_TopN_Time...	Top N Time Comparison		Model	15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_Multidimen...	Multidimensional		Model	15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_Trend	Time series		Model	15.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> Rahu_Demo_TopN	Top N		Model	13.03.2023	English	<input type="checkbox"/>
<input type="checkbox"/> 02-Top N	Top N	> 1 scope(s) applied	Model	13.03.2023	English	<input type="checkbox"/>

2. New template creation page opens, here you must add a new unique name for the template, and then you can change the narrative according to the requirement and click Create option to create a new template.

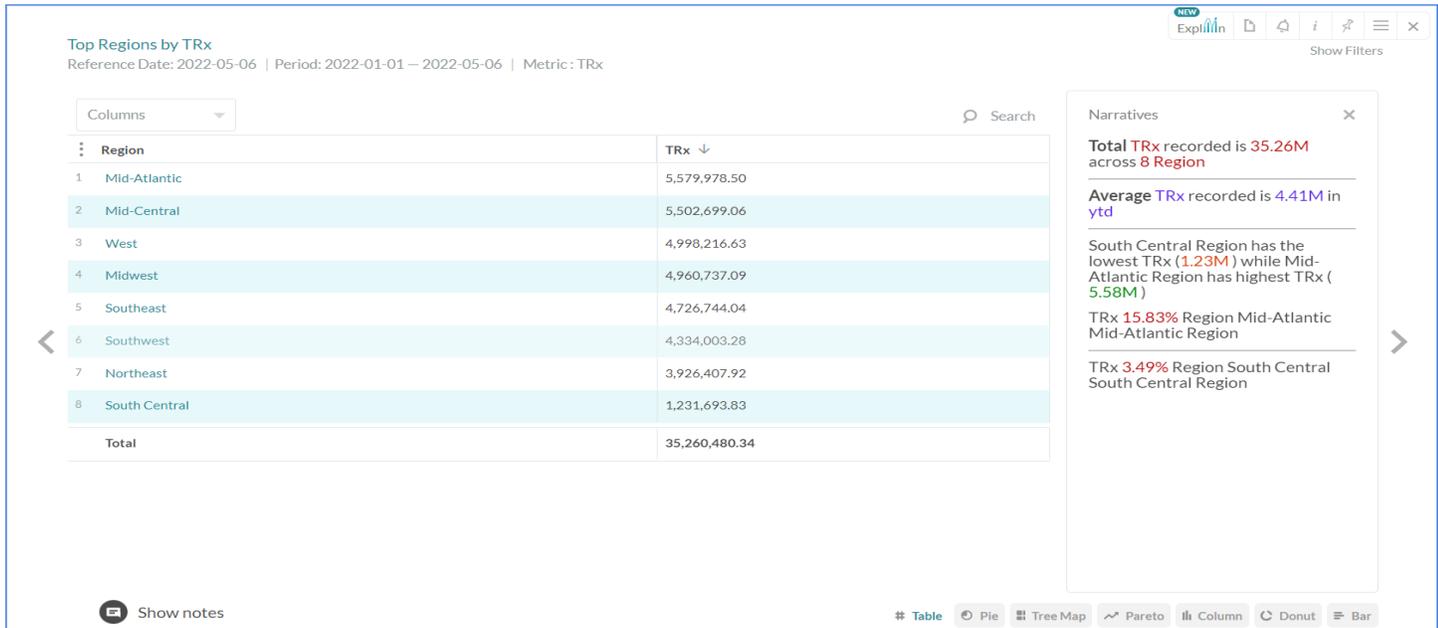
## Customizing narratives displayed on a specific card on a pinboard

WhizAI allows you to customize the narratives shown on individual cards.

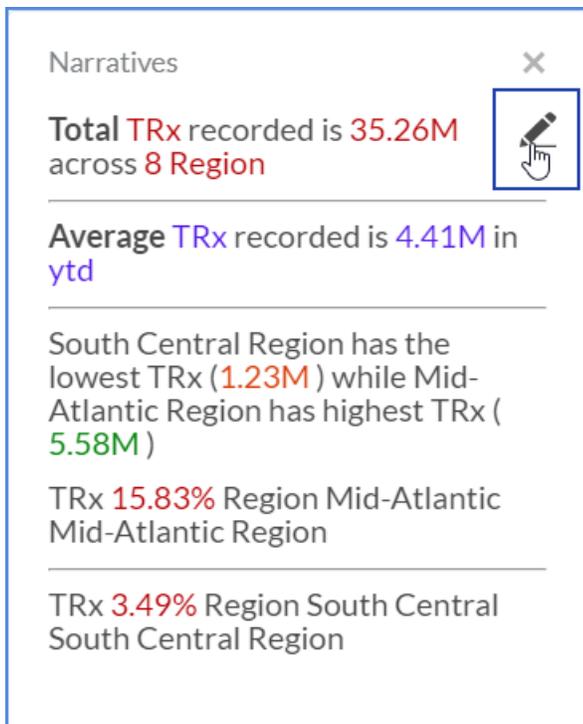
**Note!** These changes can be initiated from the Narratives options displayed on cards in pinboards only, not from responses.

To customize the narrative from the card:

1. Go to the card on the pinboard and click the Narratives icon . Narrative is displayed as shown in the following figure.

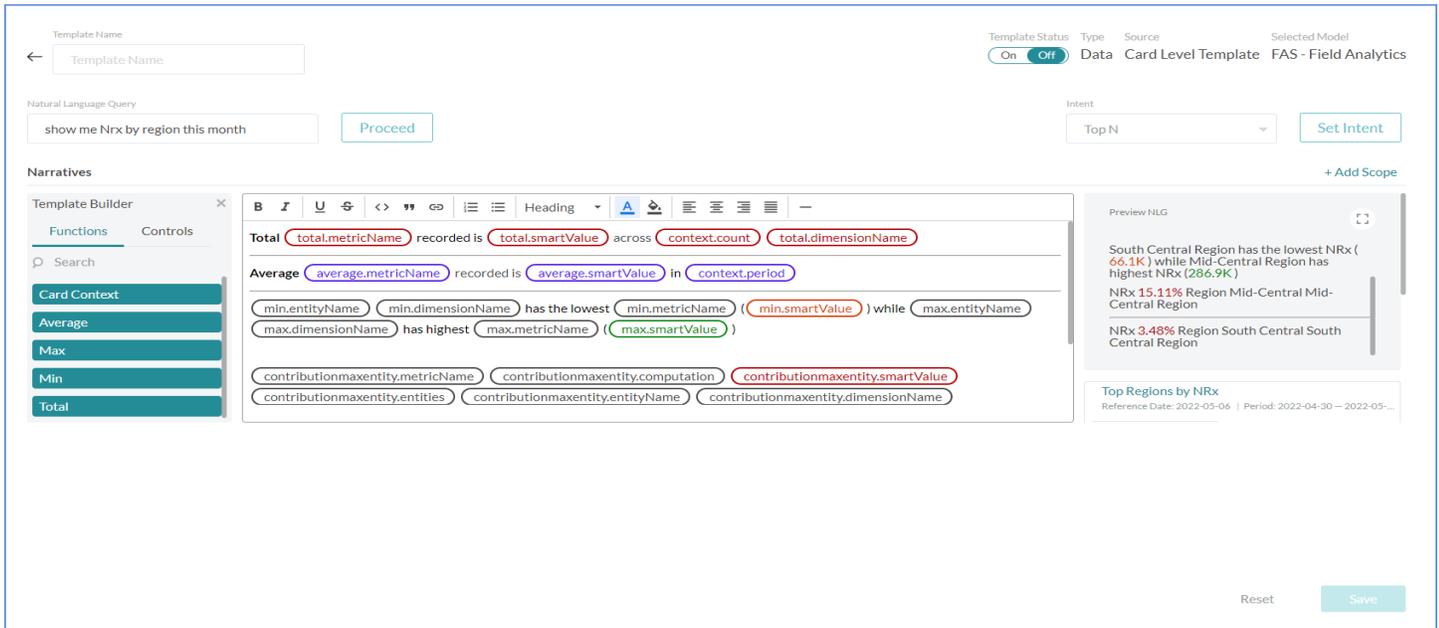


2. Hover the cursor on the narrative; Edit option displays.



3. Click the Edit icon.

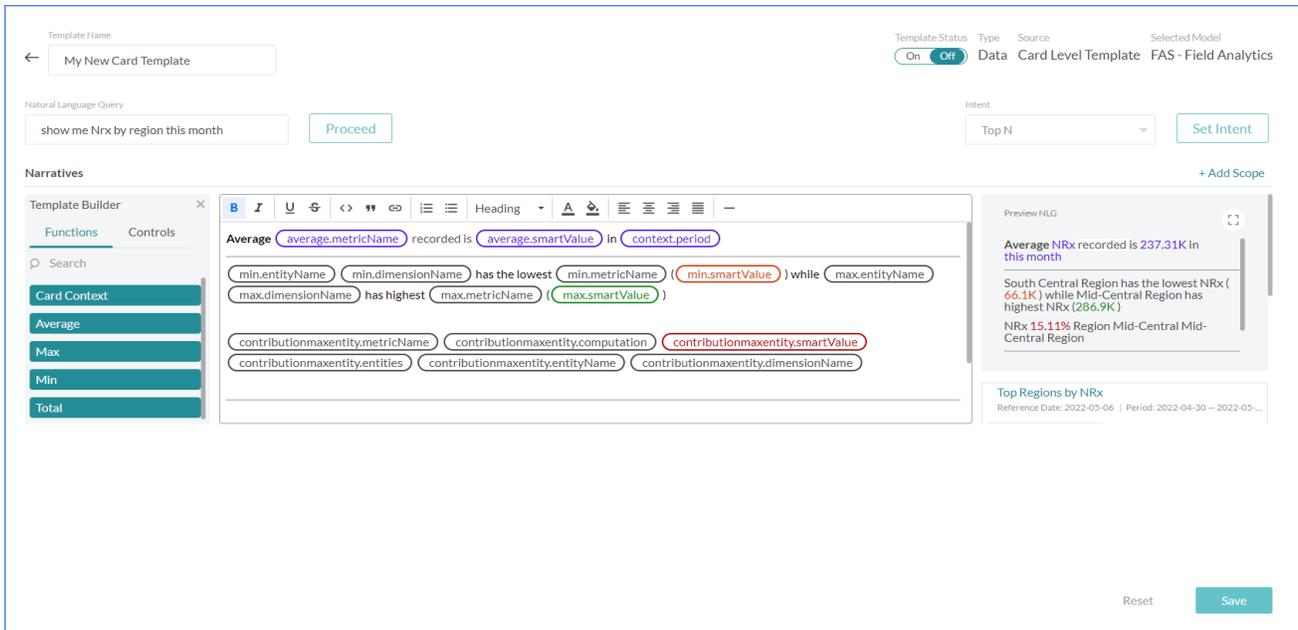
The custom template that triggered the custom narrative opens as shown in the following figure.



If the card has Auto generated narrative, and you click the Edit icon; a blank narrative template opens, and you can create a new card-level custom narrative using this template.

4. Edit the narrative, as required, and click Save.

Change the template status to Active.



5. Go back to the card and open the narrative. The updated Narrative is displayed as shown in the following figure.

Top Regions by TRx  
Reference Date: 2022-05-06 | Period: 2022-01-01 - 2022-05-06 | Metric: TRx

Region	TRx
Mid-Atlantic	5,579,978.30
Mid-Central	5,502,699.06
West	4,998,216.63
Midwest	4,960,737.09
Southwest	4,726,744.04
South	4,334,000.28
Northwest	3,926,407.92
South Central	1,231,693.83
Total	35,260,486.34

Narratives

Average TRx recorded is 4.41M in ytd

South Central Region has the lowest TRx (1.23M) while Mid-Atlantic Region has highest TRx (5.58M)

TRx 15.83% Region Mid-Atlantic Mid-Atlantic Region

TRx 3.49% Region South Central South Central Region

Save

**Note!** If updated narrative is not displayed immediately, close the narrative dialog and open it again.

6. Click Save to save the card change.

Now, this updated narrative is attached to this card only.

Top Regions by TRx  
Reference Date: 2022-05-06 | Period: 2022-01-01 - 2022-05-06 | Metric: TRx

Region	TRx
Mid-Atlantic	5,579,978.30
Mid-Central	5,502,699.06
West	4,998,216.63
Midwest	4,960,737.09
Southwest	4,726,744.04
South	4,334,000.28
Northwest	3,926,407.92
South Central	1,231,693.83
Total	35,260,486.34

Narratives

Average TRx recorded is 4.41M in ytd

South Central Region has the lowest TRx (1.23M) while Mid-Atlantic Region has highest TRx (5.58M)

TRx 15.83% Region Mid-Atlantic Mid-Atlantic Region

TRx 3.49% Region South Central South Central Region

Save

**Note!** If any action is performed on the card (for example: filter, drill down, etc.), you have to refresh the narrative by closing the narrative dialog and opening it again.