



BING NEWS DATA ANALYTICS

SENTIMENT ANALYSIS





BING SEARCH API V7

Leveraging the Bing Search API v7 solely for sentiment analysis within Bing News enhances understanding of public sentiment towards topics, events, or entities. It provides valuable insights for sentiment tracking and trend analysis, aiding in decision-making and understanding public perception.



DATA FACTORY

Data Factory seamlessly integrates with Bing Search API v7, enabling efficient extraction, transformation, and loading (ETL) of data from Bing search results. With its scalable infrastructure, it simplifies the ingestion process, empowering organizations to leverage Bing search data for various analytics and insights.



ONE LAKE

To store data efficiently, we utilize a data lake architecture. This centralized repository allows for the storage of structured, semi-structured, and unstructured data in its native format, facilitating flexibility and scalability for storing data collected from the Bing Search API v7.



SYNAPSE DATA ENGINEERING

Leveraging Synapse Data Engineering, we streamline data transformation processes in our project. Its scalable infrastructure enables efficient processing of data sourced from the Bing Search API v7, ensuring seamless integration and optimization for analytics and insights generation.



DATA SCIENCE

Utilizing Synapse ML for sentiment analysis on data enables automated extraction of sentiment from text data sourced from the Bing Search API v7. This facilitates efficient understanding of public sentiment towards various topics, aiding decision-making and trend analysis.



POWER BI

For reporting, Power BI offers a dynamic and intuitive platform. Integrating Synapse ML sentiment analysis results with Power BI enables visual representation of sentiment trends sourced from Bing Search API v7 data, empowering stakeholders with actionable insights through interactive dashboards and reports.



DATA ACTIVATOR

Utilizing Data Activator, we configure alerts for real-time monitoring of data sourced from the Bing Search API v7. This ensures timely notifications based on predefined criteria, enabling proactive response to significant changes or events in the data, enhancing decision-making and operational efficiency.



MICROSOFT TEAMS

To receive alerts on Microsoft Teams, we integrate Data Activator with Teams' notification system. This setup ensures that alerts triggered by significant events or changes in data sourced from the Bing Search API v7 are promptly delivered to relevant Teams channels or individuals, facilitating collaboration and timely decision-making within the organization.

BING SEARCH API V7

Microsoft Azure [Upgrade](#) [Search resources, services, and docs \(G+\)](#)

Home > Bing-data-TanishQ >

Bing-Data-Analytics-TanishQ

Bing Search

[Search](#) [Enable Bing Statistics](#) [Disable Bing Statistics](#) [Delete](#) [Refresh](#) [Open in mobile](#)

[Overview](#) [JSON View](#)

[Activity log](#)

[Access control \(IAM\)](#)

[Tags](#)

[Diagnose and solve problems](#)

[Favorites](#)

- [Keys and Endpoint](#)

[RESOURCE MANAGEMENT](#)

[Monitoring](#)

[Automation](#)

[Help](#)

[Essentials](#)

| | | | |
|-----------------|----------------------------|-----------------|---|
| Resource group | Bing-data-TanishQ | API type | Bing Search |
| Location | Global | Pricing tier | Free |
| Status | Active | Endpoint | https://api.bing.microsoft.com/ |
| Subscription | Free Trial | Manage keys | click here to manage keys |
| Subscription ID | 5-16abf4264915 | Bing Statistics | Disabled |
| Tags (edit) | tanishQ : Patil | | |

[Try me](#) [Sample code](#) [Tutorials](#)



WORK_SPACES

BING-DATA-ANALYTICS-TANISHQ

Power BI Bing-Data-Analytics-TanishQ [Search](#)

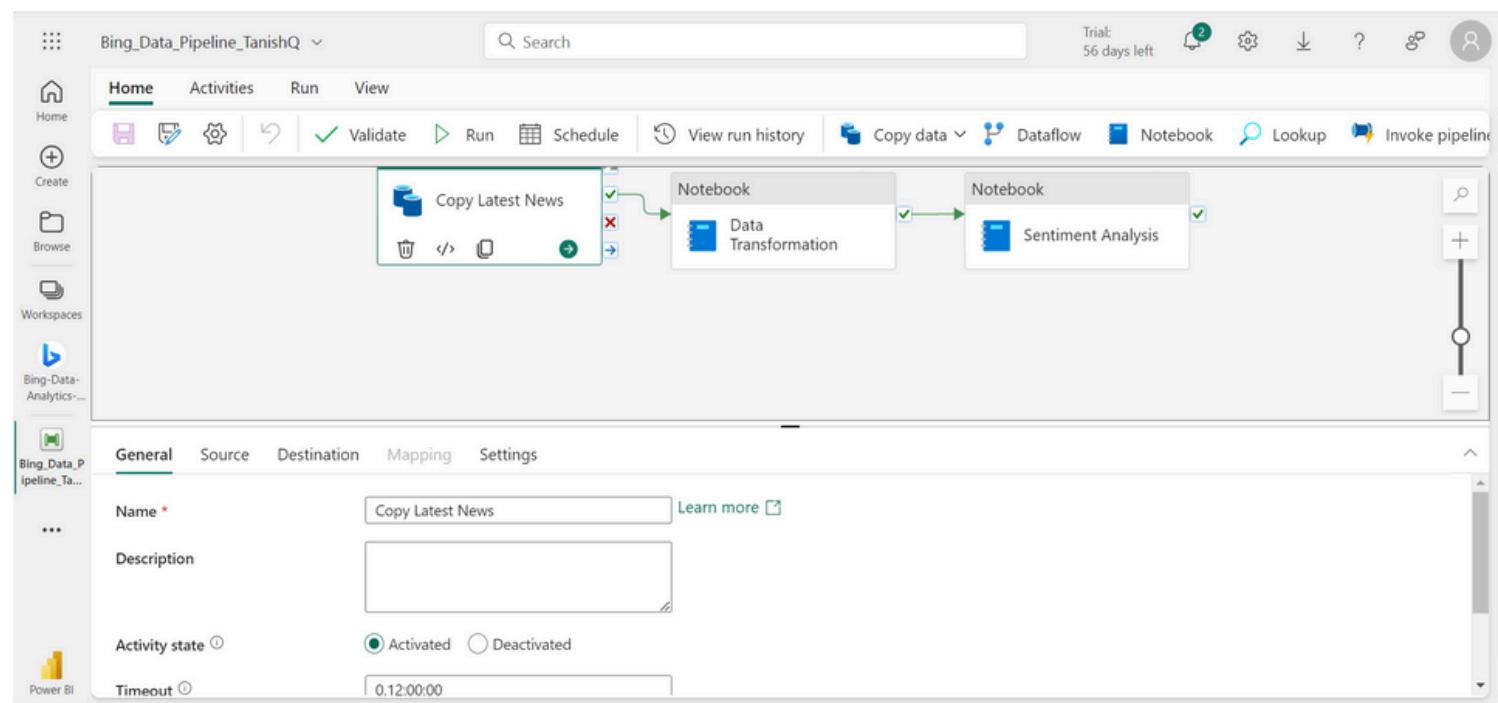
Trial: 56 days left

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[+ New](#) [Upload](#) [Create deployment pipeline](#) [...](#)

[Filter by keyword](#) [Filter](#)

| Name | Type | Owner | Refreshed | Next refresh | Endorsed |
|---------------------------------|----------------------|-----------------------|---------------------|--------------|----------|
| Bing_Data_Pipeline_TanishQ | Data pipeline | Tanishk Shinde | — | — | — |
| Bing_LakeHouse_TanishQ | Lakehouse | Tanishk Shinde | — | — | — |
| Bing_LakeHouse_TanishQ | Semantic model (...) | Bing-Data-Analytic... | 5/6/24, 10:44:22 AM | N/A | — |
| Bing_LakeHouse_TanishQ | SQL analytics end... | Bing-Data-Analytic... | 5/9/24, 2:05:15 PM | N/A | — |
| Bing_Notebook_TanishQ | Notebook | Tanishk Shinde | — | — | — |
| Bing_Sentiment_Analysis_TanishQ | Notebook | Tanishk Shinde | — | — | — |
| positive sentiment item | Reflex | Tanishk Shinde | — | — | — |
| PowerBI_TanishQ_Report | Report | Bing-Data-Analytic... | 5/9/24, 9:24:51 AM | — | — |



Azure Data Factory to make REST API calls to the Bing Search API v7 for retrieving information. This involves setting up a linked service in Azure Data Factory to connect to the Bing Search API v7 endpoint and defining appropriate activities within pipelines to invoke the REST API and retrieve the desired data. With this setup, you can efficiently integrate data from Bing Search API v7 into your data workflows within Azure Data Factory.

New connection

The screenshot shows the 'New connection' dialog for a REST API. On the left, there's a 'REST' icon and a 'Learn more' link. The main area is divided into two sections: 'Connection settings' and 'Connection credentials'. In 'Connection settings', there are fields for 'Base Url' (with an example of 'https://bing.com') and 'Token Audience Uri' (with an example of 'Not applicable at present'). In 'Connection credentials', there are dropdowns for 'Connection' (set to 'Create new connection'), 'Connection name' (set to 'Connection'), 'Data gateway' (set to '(none)'), and 'Authentication kind'. At the bottom of the dialog are buttons for 'Create', 'Back', and 'Cancel'.

The Web Search API lets you send a search query to Bing and get back search results that include links to webpages, images, and more. This section provides technical details about the query parameters and headers that you use to request web search results and the JSON response objects that contain them. For examples that show how to make requests, see [Bing Web Search overview](#).

Endpoints

To request web search results, send a GET request to:



The request must use the **HTTPS** protocol.

REQUEST HEADERS

| | | |
|---------------------------|-----|--|
| Ocp-Apim-Subscription-Key | Yes | The subscription key that you received when you signed up for this service in Azure Portal while creating a Bing resource. |
|---------------------------|-----|--|

KEYS AND ENDPOINT

A screenshot of the Microsoft Azure portal. The top navigation bar shows 'Microsoft Azure' and 'Upgrade'. The search bar contains 'Search resources, services, and docs (G+ /)'. The user is signed in as 'tanishqshinde123@outlook.com'.

The main content area shows a resource named 'Bing-Data-Analytics-TanishQ'. The left sidebar has sections like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Favorites', 'Keys and Endpoint' (which is selected and highlighted in blue), 'RESOURCE MANAGEMENT', 'Monitoring', 'Automation', and 'Help'.

The 'Keys and Endpoint' blade has a 'Show Keys' button. It displays two keys: 'Key 1' and 'Key 2'. Below each key is its corresponding 'Endpoint' (both listed as `https://api.bing.microsoft.com/`) and 'Location' (both listed as 'global'). There are copy icons next to each endpoint and location field.

A note in the blade states: 'These keys are used to access your Bing resource. Do not share your keys. Store them securely—for example, using Azure Key Vault. We also recommend regenerating these keys regularly. Only one key is necessary to make an API call. When regenerating the first key, you can use the second key for continued access to the service.'

The bottom of the screenshot shows the full URL of the page: `https://portal.azure.com/#tanishqshinde123outlook.onmicrosoft.com/resource/subscriptions/5f289e02-d893-4d7e-8fc5-16abf4264915/resourceGroups/Bing-data-TanishQ/providers/Microsoft.Bing/accounts/Bing-Data-Analytics-Ta...`

PREVIEW DATA

Preview data

```
[  
  {  
    "_type": "News",  
    "readLink": "https://api.bing.microsoft.com/api/v7/news/search?q=latest+news",  
    "queryContext": {  
      "originalQuery": "latest news",  
      "adultIntent": false  
    },  
    "totalEstimatedMatches": 32,  
    "sort": [  
      {  
        "name": "Best match",  
        "id": "relevance",  
        "isSelected": true,  
        "url": "https://api.bing.microsoft.com/api/v7/news/search?q=latest+news"  
      },  
      {  
        "name": "Most recent",  
        "id": "date",  
        "isSelected": false,  
        "url": "https://api.bing.microsoft.com/api/v7/news/search?q=latest+news&sortby=date"  
      }  
    ]  
  }]
```

PIPELINE EXPRESSION BUILDER

Pipeline expression builder

Add dynamic content below using any combination of expressions, functions and system variables.

```
?q=@{pipeline().parameters.search_term}&count=100&freshness=Day&mkt=en-IN
```

Explorer

Files

| Name | Date modified | Type | Size |
|-------------------------------|-------------------|------|-------|
| Bing-Latest-News-TanishQ.json | 5/9/2024 1:36:... | JSON | 39 KB |

Bing_Data_Pipeline_TanishQ

Home Activities Run View

Validate Run Schedule View run history Copy data Dataflow Notebook Lookup Invoke pipeline

Copy Latest News → Notebook Data Transformation → Notebook Sentiment Analysis

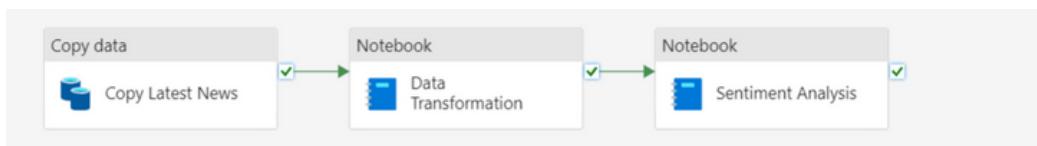
General Source Destination Mapping Settings

Name * Copy Latest News Learn more

Description

Activity state Activated Deactivated

Timeout 0:12:00:00





SYNAPSE DATA ENGINEERING

```
1 df = spark.read.option("multiline", "true").json("Files/Bing-Latest-News-TanishQ.json")
2 # df now is a Spark DataFrame containing JSON data from "Files/Bing-Latest-News-TanishQ.json".
3 display(df)
```

✓ - Command executed in 819 ms by Tanishk Shinde on 1:33:55 PM, 5/09/24

PySpark (Python) ▾

Table Chart | Showing rows 1 - 1 ⏪ ⏴

Inspect

Search

☰

| ABC _type | ANY queryContext | ABC readLink | ANY sort | 12L totalEstimatedMatches | ANY value | |
|-----------|---------------------------|--------------------|----------------------|---------------------------|-------------------|--|
| 1 News | {"adultIntent":false,"... | https://api.bin... | [[{"id": "relev...", | 39 | [[{"datePubli..." | |

```
1 df= df.select("value")
```

✓ - Command executed in 246 ms by Tanishk Shinde on 1:33:56 PM, 5/09/24

PySpark (Python) ▾

```
1 display(df)
```

✓ - Command executed in 261 ms by Tanishk Shinde on 1:33:57 PM, 5/09/24

PySpark (Python) ▾

Table Chart | Showing rows 1 - 1 ⏪ ⏴

Inspect

Search

☰

| ANY value |
|--------------------|
| 1 [{"datePubli..." |

```
1 from pyspark.sql.functions import explode
```

```
2 df_explode = df.select(explode(df["value"]).alias("json_Object"))
```

✓ - Command executed in 237 ms by Tanishk Shinde on 1:33:58 PM, 5/09/24

PySpark (Python) ▾

```
1 display(df_explode)
```

✓ - Command executed in 814 ms by Tanishk Shinde on 1:33:59 PM, 5/09/24

PySpark (Python) ▾

Table Chart | Showing rows 1 - 39 ⏪ ⏴

Inspect

Search

☰

| ANY json_Object |
|--------------------------|
| 1 {"datePublished": "... |
| 2 {"datePublished": "... |
| 3 {"datePublished": "... |
| 4 {"datePublished": "... |
| 5 {"datePublished": "... |
| 6 {"datePublished": "... |
| 7 {"datePublished": "... |
| 8 {"datePublished": "... |

```
1 json_list = df_explode.toJSON().collect()
✓ - Command executed in 812 ms by Tanishk Shinde on 1:34:00 PM, 5/09/24
```

PySpark (Python) ▾

+ Code + Markdown

```
1 print(json_list)
✓ - Command executed in 364 ms by Tanishk Shinde on 1:34:01 PM, 5/09/24
```

[{"json_Object": {"about": [{"name": "Pickleball", "readLink": "https://api.bing.microsoft.com/api/v7/entities/d6a2574a-9b44-74ee-6e04-ba1976d07181"}, {"name": "Table tennis", "readLink": "https://api.bing.microsoft.com/api/v7/entities/574f0ecc-043a-6f47-a383-39bd82059d6c"}, {"name": "Badminton", "readLink": "https://api.bing.microsoft.com/api/v7/entities/33a4342a-8aa1-5d93-45d5-5d8c27494e59"}, {"name": "Tennis", "readLink": "https://api.bing.microsoft.com/api/v7/entities/7a186152-36fa-501a-77a6-71b4f02f4c99"}], "category": "Sports", "datePublished": "2024-05-09T03:50:00.000000Z", "description": "Natekar Sports launches World Pickleball League with Sony Entertainment as strategic investor, aiming to promote sport globally.", "image": {"thumbnail": {"contentUrl": "https://www.bing.com/th?id=OVT.ppeiu8svQ-D91qPwUf4f9i&pid=News", "height": 393, "width": 700}}, "name": "Natekar Sports and Gaming set to launch World Pickleball League", "provider": [{"_type": "Organization", "image": {"thumbnail": {"contentUrl": "https://www.bing.com/th?id=ODF.nP2rzyfwERvAkqhL1eUBtg&pid=news", "height": 393, "width": 700}}}], "url": "https://www.outlookindia.com/sports/live-scores-today-may-7-2024-ipl-dc-vs-rr-ucl-psg-vs-dortmund-world-schedule-results"}

```
1 import json
2 news_json = json.loads(json_list[25])
✓ - Command executed in 246 ms by Tanishk Shinde on 1:34:02 PM, 5/09/24
```

PySpark (Python) ▾

```
1 print(news_json)
✓ - Command executed in 240 ms by Tanishk Shinde on 1:34:02 PM, 5/09/24
```

{"json_Object": {"category": "Sports", "datePublished": "2024-05-08T23:41:00.000000Z", "description": "From the cricket world, Mongolia will kickstart their seven-match tour of Japan with the first T20I at the Sano Cricket Ground. Meanwhile, Bangladesh will look to clinch the five-match T20I series against Zimbabwe with a win in the third game at Chattogram.", "name": "Sports Highlights: Dortmund Pip PSG 1-0 In Champions League, Enter Final", "image": {"thumbnail": {"contentUrl": "https://www.bing.com/th?id=ODF.nP2rzyfwERvAkqhL1eUBtg&pid=news"}, "name": "Outlookindia"}, "url": "https://www.outlookindia.com/sports/live-scores-today-may-7-2024-ipl-dc-vs-rr-ucl-psg-vs-dortmund-world-schedule-results"}}

```
1 print(news_json['json_Object']['description'])
✓ - Command executed in 275 ms by Tanishk Shinde on 1:34:03 PM, 5/09/24
```

PySpark (Python) ▾

From the cricket world, Mongolia will kickstart their seven-match tour of Japan with the first T20I at the Sano Cricket Ground. Meanwhile, Bangladesh will look to clinch the five-match T20I series against Zimbabwe with a win in the third game at Chattogram.

```
1 print(news_json["json_Object"]["name"])
2 print(news_json["json_Object"]["description"])
3 print(news_json["json_Object"]["category"])
4 print(news_json["json_Object"]["url"])
5
6 # Check if "image" key exists before accessing it
7 if "image" in news_json["json_Object"]["provider"][0]:
8     print(news_json["json_Object"]["provider"][0]["image"]["thumbnail"]["contentUrl"])
9 else:
10     print("Image not available")
11
12 print(news_json["json_Object"]["provider"][0]["name"])
13 print(news_json["json_Object"]["datePublished"])
14
```

```
✓ - Command executed in 262 ms by Tanishk Shinde on 1:34:03 PM, 5/09/24
```

Sports Highlights: Dortmund Pip PSG 1-0 In Champions League, Enter Final
From the cricket world, Mongolia will kickstart their seven-match tour of Japan with the first T20I at the Sano Cricket Ground. Meanwhile, Bangladesh will look to clinch the five-match T20I series against Zimbabwe with a win in the third game at Chattogram.
Sports
<https://www.outlookindia.com/sports/live-scores-today-may-7-2024-ipl-dc-vs-rr-ucl-psg-vs-dortmund-world-schedule-results>
<https://www.bing.com/th?id=ODF.nP2rzyfwERvAkqhL1eUBtg&pid=news>
Outlookindia
2024-05-08T23:41:00.000000Z

```

1  title = []
2  description = []
3  category = []
4  url = []
5  image = []
6  provider = []
7  datePublished = []
8
9  for json_str in json_list:
10     try:
11         article = json.loads(json_str)
12
13         if "json_Object" in article:
14             if "name" in article["json_Object"]:
15                 title.append(article["json_Object"]["name"])
16             else:
17                 title.append(None)
18
19             if "description" in article["json_Object"]:
20                 description.append(article["json_Object"]["description"])
21             else:
22                 description.append(None)
23
24             if "category" in article["json_Object"]:
25                 category.append(article["json_Object"]["category"])
26             else:
27                 category.append(None)
28
29             if "url" in article["json_Object"]:
30                 url.append(article["json_Object"]["url"])
31             else:
32                 url.append(None)
33
34             if "image" in article["json_Object"] and "thumbnail" in article["json_Object"]["image"]:
35                 image.append(article["json_Object"]["image"]["thumbnail"].get("contentUrl"))
36             else:
37                 image.append(None)
38
39             if "provider" in article["json_Object"] and len(article["json_Object"]["provider"]) > 0:
40                 provider.append(article["json_Object"]["provider"][0].get("name"))
41             else:
42                 provider.append(None)
43
44             if "datePublished" in article["json_Object"]:
45                 datePublished.append(article["json_Object"]["datePublished"])
46             else:
47                 datePublished.append(None)
48
49     except Exception as e:
50         print(f"Error processing Json object: {e}")
51

```

✓ - Command executed in 260 ms by Tanishk Shinde on 1:34:04 PM, 5/09/24

```

1  description
✓ - Command executed in 250 ms by Tanishk Shinde on 1:34:05 PM, 5/09/24
[Natekar Sports launches World Pickleball League with Sony Entertainment as strategic investor, aiming to promote sport globally.',  

'ROASTING THE GOAT – Former NFL star Shawne Merriman told Fox News Digital he thought Netflix's "Greatest Roast of All Time: Tom Brady" was one of  

the best roasts he'd ever seen. Continue reading...',  

"Welcome to ESPN India's daily blog, where we aim to bring you all the news from the dynamic world of Indian sports: from the wide variety of  

Olympic sports to franchise leagues. May has plenty of sporting action taking place - which you can find listed out in ESPN India's sporting  

calendar.",  


```

PySpark (Python) ▾

```

from pyspark.sql.types import StructType,StructField,StringType
# combine list
data = list(zip(title,description,category,url,image,provider,datePublished))
# define schema

schema = StructType([
    StructField("title",StringType(),True),
    StructField("description",StringType(),True),
    StructField("category",StringType(),True),
    StructField("url",StringType(),True),
    StructField("image",StringType(),True),
    StructField("provider",StringType(),True),
    StructField("datePublished",StringType(),True)
])
df_cleaned = spark.createDataFrame(data,schema=schema)

```



```
1 df = spark.sql("SELECT * FROM Bing_LakeHouse_TanishkShinde.tbl_latest_news LIMIT 1000")
2 display(df)
✓ - Command executed in 1 sec 532 ms by Tanishk Shinde on 1:34:36 PM, 5/09/24
```

Table Chart | Showing rows 1 - 68 ↴ ↓

| | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | ABC datePublished |
|---|----------------|----------------------|--------------|---------------|----------------|-----------------|-------------------|
| 1 | Fox News S... | ROASTING THE ... | Sports | https://ww... | https://www... | Fox News on ... | 08-May-2024 |
| 2 | Indian Spor... | Welcome to ESP... | Sports | https://ww... | https://www... | ESPN | 09-May-2024 |
| 3 | Alderson Br... | Visit ESPN for Al... | NULL | https://ww... | https://www... | ESPN | 09-May-2024 |
| 4 | Natekar Sp... | Natekar Sports la... | Sports | https://ww... | https://www... | Business Line | 09-May-2024 |

```
1 %%sql
2 SELECT count(*) FROM tbl_latest_news
```

✓ - Command executed in 1 sec 467 ms by Tanishk Shinde on 1:34:38 PM, 5/09/24

Table Chart | ↓

| | 12L count(1) |
|---|--------------|
| 1 | 68 |



DATA SCIENCE

SENTIMENT ANALYSIS USING SYNAPSE MLC

```
1 df = spark.sql("SELECT * FROM Bing_LakeHouse_TanishQ.tbl_latest_news LIMIT 1000")
2 display(df)
```

✓ - Command executed in 14 sec 634 ms by Tanishk Shinde on 1:49:42 PM, 5/09/24

Table Chart | Showing rows 1 - 76 ⬆ ⬇

| # | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | ABC datePubli... | |
|---|-----------------|-----------------|--------------|----------------|---------------|----------------|------------------|--|
| 1 | Ex-interpret... | LOS ANGEL... | NULL | https://abc... | https://ww... | ABC | 08-May-2024 | |
| 2 | Today in Sp... | LeBron Jam... | Sports | https://apn... | NULL | Associated ... | 08-May-2024 | |
| 3 | Alderson Br... | Visit ESPN f... | NULL | https://ww... | https://ww... | ESPN | 09-May-2024 | |
| 4 | Indian Spor... | Welcome t... | Sports | https://ww... | https://ww... | ESPN | 09-May-2024 | |
| 5 | Michigan S... | Michigan b... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | |
| 6 | Virginia Sp... | The legal s... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | |

```
1 # APPLY THE MODEL TO OUR DATAFRAME
2 result = model.transform(df)
```

✓ - Command executed in 786 ms by Tanishk Shinde on 1:49:45 PM, 5/09/24

PySpark (Python) ▾

```
1 import synapse.ml.core
2 from synapse.ml.services import AnalyzeText
```

✓ - Command executed in 243 ms by Tanishk Shinde on 1:49:43 PM, 5/09/24

PySpark (Python) ▾

```
1 # IMPORT THE MODEL AND CONFIGURE THE INPUT AND OUTPUT COLUMNS
2
3 model = (AnalyzeText()
4     .setTextCol("description")
5     .setKind("SentimentAnalysis")
6     .setOutputCol("response")
7     .setErrorCol("error"))
```

✓ - Command executed in 248 ms by Tanishk Shinde on 1:49:43 PM, 5/09/24

PySpark (Python) ▾

```
1 display(result)
```

✓ - Command executed in 6 sec 324 ms by Tanishk Shinde on 1:49:51 PM, 5/09/24

Table Chart | Showing rows 1 - 76 ⬆ ⬇

| # | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | ABC datePubli... | ANY error | ANY response |
|---|-----------------|-----------------|--------------|----------------|---------------|----------------|------------------|-----------|-----------------|
| 1 | Ex-interpret... | LOS ANGEL... | NULL | https://abc... | https://ww... | ABC | 08-May-2024 | NULL | {"document..."} |
| 2 | Today in Sp... | LeBron Jam... | Sports | https://apn... | NULL | Associated ... | 08-May-2024 | NULL | {"document..."} |
| 3 | Alderson Br... | Visit ESPN f... | NULL | https://ww... | https://ww... | ESPN | 09-May-2024 | NULL | {"document..."} |
| 4 | Indian Spor... | Welcome t... | Sports | https://ww... | https://ww... | ESPN | 09-May-2024 | NULL | {"document..."} |
| 5 | Michigan S... | Michigan b... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | NULL | {"document..."} |
| 6 | Virginia Sp... | The legal s... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | NULL | {"document..."} |
| 7 | The Sports ... | Yoshinobu ... | Sports | https://ww... | NULL | Los Angele... | 08-May-2024 | NULL | {"document..."} |

```

1 # CREATE SENTIMENT COLUMN
2 from pyspark.sql.functions import col
3
4 sentiment_df = result.withColumn("sentiment", col("response.documents.sentiment"))

```

✓ - Command executed in 235 ms by Tanishk Shinde on 1:49:52 PM, 5/09/24

```
1 display(sentiment_df)
```

✓ - Command executed in 3 sec 534 ms by Tanishk Shinde on 1:49:56 PM, 5/09/24

Table Chart | Showing rows 1 - 76

| | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | ABC datePublished | ANY error | ANY response | ABC sentiment |
|---|-----------------|-----------------|--------------|----------------|---------------|----------------|-------------------|-----------|------------------|---------------|
| 1 | Ex-interpret... | LOS ANGEL... | NULL | https://abc... | https://ww... | ABC | 08-May-2024 | NULL | [{"document..."] | negative |
| 2 | Today in Sp... | LeBron Jam... | Sports | https://apn... | NULL | Associated ... | 08-May-2024 | NULL | [{"document..."] | neutral |
| 3 | Alderson Br... | Visit ESPN f... | NULL | https://ww... | https://ww... | ESPN | 09-May-2024 | NULL | [{"document..."] | neutral |
| 4 | Indian Spor... | Welcome t... | Sports | https://ww... | https://ww... | ESPN | 09-May-2024 | NULL | [{"document..."] | neutral |
| 5 | Michigan S... | Michigan b... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | NULL | [{"document..."] | neutral |
| 6 | Virginia Sp... | The legal s... | Sports | https://ww... | https://ww... | Forbes | 08-May-2024 | NULL | [{"document..."] | neutral |
| 7 | The Sports ... | Yoshinobu ... | Sports | https://ww... | NULL | Los Angele... | 08-May-2024 | NULL | [{"document..."] | neutral |

```
1 sentiment_df_final = sentiment_df.drop("error", "response")
```

✓ - Command executed in 251 ms by Tanishk Shinde on 1:49:57 PM, 5/09/24

```
1 display(sentiment_df_final)
```

✓ - Command executed in 3 sec 521 ms by Tanishk Shinde on 1:50:00 PM, 5/09/24

Table Chart | Showing rows 1 - 76

| | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | ABC datePublished | ABC sentiment |
|---|-----------------|----------------------|--------------|----------------|----------------|------------------|-------------------|---------------|
| 1 | Ex-interpret... | LOS ANGELES -- ... | NULL | https://abc... | https://www... | ABC | 08-May-2024 | negative |
| 2 | Today in Sp... | LeBron James sc... | Sports | https://apn... | NULL | Associated Pr... | 08-May-2024 | neutral |
| 3 | Alderson Br... | Visit ESPN for AI... | NULL | https://ww... | https://www... | ESPN | 09-May-2024 | neutral |
| 4 | Indian Spor... | Welcome to ESP... | Sports | https://ww... | https://www... | ESPN | 09-May-2024 | neutral |
| 5 | Michigan S... | Michigan became... | Sports | https://ww... | https://www... | Forbes | 08-May-2024 | neutral |
| 6 | Virginia Sp... | The legal sports ... | Sports | https://ww... | https://www... | Forbes | 08-May-2024 | neutral |

```

1 from pyspark.sql.functions import col, to_date
2
3 sentiment_df_final = sentiment_df_final.withColumn("datePublished", to_date(col("datePublished"), "dd-MMM-yyyy"))

```

PySpark (Python) ▾

✓ - Command executed in 263 ms by Tanishk Shinde on 1:50:59 PM, 5/09/24

```

1  from pyspark.sql.utils import AnalysisException
2
3  try:
4
5      table_name = 'Bing_LakeHouse_TanishQ.tbl_Sentiment_Analysis'
6
7      sentiment_df_final.write.format("delta").saveAsTable(table_name)
8
9  except AnalysisException:
10
11     print("Table Already Exists")
12
13     sentiment_df_final.createOrReplaceTempView("vw_sentiment_df_final")
14
15     spark.sql(f"""
16         MERGE INTO {table_name} target_table
17             USING vw_sentiment_df_final source_view
18
19             ON source_view.url = target_table.url
20
21             WHEN MATCHED AND
22                 source_view.title <> target_table.title OR
23                 source_view.description <> target_table.description OR
24                 source_view.category <> target_table.category OR
25                 source_view.image <> target_table.image OR
26                 source_view.provider <> target_table.provider OR
27                 source_view.datePublished <> target_table.datePublished
28
29             THEN UPDATE SET *
30
31             WHEN NOT MATCHED THEN INSERT *
32         """
33     )

```

```

1  df = spark.sql("SELECT * FROM Bing_LakeHouse_TanishQ.tbl_sentiment_analysis LIMIT 1000")
2  display(df)

```

✓ - Command executed in 1 sec 584 ms by Tanishk Shinde on 1:57:02 PM, 5/09/24

Table Chart | Showing rows 1 - 76

| # | ABC title | ABC description | ABC category | ABC url | ABC image | ABC provider | datePublished | ABC sentiment |
|---|-----------------|---------------------|------------------|-----------------|----------------|------------------|---------------|---------------|
| 1 | Ex-interpret... | LOS ANGELES -- ... | NULL | https://abc... | https://www... | ABC | 2024-05-08 | negative |
| 2 | Today in Sp... | LeBron James sc... | Sports | https://apn... | NULL | Associated Pr... | 2024-05-08 | neutral |
| 3 | PSU bank s... | PSU bank stocks.... | Business | https://eco... | https://www... | Indiatimes | 2024-05-06 | negative |
| 4 | iSportz Ann... | ORLANDO, FL / ... | ScienceAndTec... | https://fina... | https://www... | YAHOO!Finance | 2024-05-09 | neutral |
| 5 | PRESS DIGE... | The following ar... | LifeStyle | https://fina... | NULL | YAHOO!Finance | 2024-05-06 | negative |
| 6 | Israel Move... | The order—whic... | World | https://tim... | https://www... | Time | 2024-05-06 | negative |



PowerBI_TanishQ_ReportT

Pages < Page 1 Page 2

File Export Share Chat in Teams Explore this data Get insights Subscribe to report Create alert Edit ...

| provider | url | category | datePublished | sentiment |
|--|---|----------------------|---------------|-----------|
| highlights - ESPN | https://www.espn.com/college-football/team/_id/2017/widerson-broadus/battier&c=8324550483863509284 | | 09/05/2024 | neutral |
| would be Fox News on MSN.com | https://www.foxnews.com/sports/other/anything-less-than-a-win-is-a-loss-for-sports-stu-holden-says-a-881m1xZG | Sports | 08/05/2024 | neutral |
| raves vs Cubs Sports Illustrated | https://www.si.com/mlb/braves/news/daily/sports-bringing-back-legends-booth-chicago-cubs | Sports | 08/05/2024 | positive |
| :- S4E6, The National Basketball Association | https://www.nba.com/cavaliers/videos/cleveland-cavss-access-the-road-back-to-best-best-new-york-sports | Sports | 09/05/2024 | neutral |
| Suryakumar CNN-News18 on MSN.com | https://www.msn.com/en-in/news/other/comes-from-local-tennis-ball-cricket-mi-star-suryakumar-yadav-peens-ive-on-opening-of-supla-shot-an-81m1n3MV | Sports | 08/05/2024 | neutral |
| imcast Wants Channels NextTV on MSN.com | https://www.msn.com/en-gb/money/other/diamond-sends-letter-to-sports-fans-says-comcast-wants-to-make-them-pay-more-to-watch-bally-sports-channels/a-881m3nVM | ScienceAndTechnology | 08/05/2024 | neutral |
| y for blackout Detroit Free Press on MSN.com | https://www.msn.com/en-us/news/other/comcast/blamed-sports-group-blames-comcast-randy-for-blackout-in-open-letter-to-subscribers/a-881m2TPQ | | 08/05/2024 | neutral |
| ning.Tech NextTV on MSN.com | https://www.msn.com/en-gb/money/other/disney-s-cta-ferro-is-banking-on-sports-streaming-tech/a-881m3nVH | | 08/05/2024 | neutral |

datePublished All

19.15 Negative Sentiment %

0.00 Mixed Sentiment %

65.96 Neutral Sentiment %

14.89 Positive Sentiment %

OPEN DATA MODEL

tbl_sentiment_analysis ...

- category
- datePublished
- description
- image
- provider
- sentiment
- title
- url

[Collapse ^](#)



DATA ANALYSIS EXPRESSIONS (DAX)

```
1 Mixed Sentiment % =
2 IF (
3     COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "mixed")) > 0,
4     DIVIDE (
5         CALCULATE (
6             COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "mixed"))
7         ),
8         COUNTROWS ('tbl_sentiment_analysis')
9     )*100,
10     0
11 )
12
```

```
1 Negative Sentiment % =
2 IF (
3     COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "negative")) > 0,
4     DIVIDE (
5         CALCULATE (
6             COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "negative"))
7         ),
8         COUNTROWS ('tbl_sentiment_analysis')
9     )*100,
10     0
11 )
12
```

```
1 Neutral Sentiment % =
2 IF (
3     COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "neutral")) > 0,
4     DIVIDE (
5         CALCULATE (
6             COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "neutral"))
7         ),
8         COUNTROWS ('tbl_sentiment_analysis')
9     )*100,
10     0
11 )
12
```

```
1 Positive Sentiment % =
2 IF (
3     COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "positive")) > 0,
4     DIVIDE (
5         CALCULATE (
6             COUNTROWS ( FILTER ('tbl_sentiment_analysis', 'tbl_sentiment_analysis'[Sentiment] = "positive"))
7         ),
8         COUNTROWS ('tbl_sentiment_analysis')
9     )*100,
10     0
11 )
12
```



Screenshot of the Data Activator interface showing the creation of a trigger.

The top navigation bar includes: positive sentiment item, Search, Trial: 59 days left, and various icons for New Property, New Trigger, Custom Actions, Delete, Save, Start, Update, Stop, and Send me a test alert.

The left sidebar shows the workspace structure:

- Home
- Create
- Browse
- OneLake data hub
- Monitoring hub
- Workspaces
- Mrk Talks Tech Dev
- positive sentiment...
- news-ingestion...
- news-dashboard
- Data Activator

The main area displays a trigger configuration:

Positive Sentiment % becomes greater than 0

Let's get started! Take a tour to learn how to create your first trigger using Data Activator

0 of 1 ID | Last Hour |

Act: Send Teams message

Recipients: kumarsr@mrktalkstechgmail.onmicrosoft.com

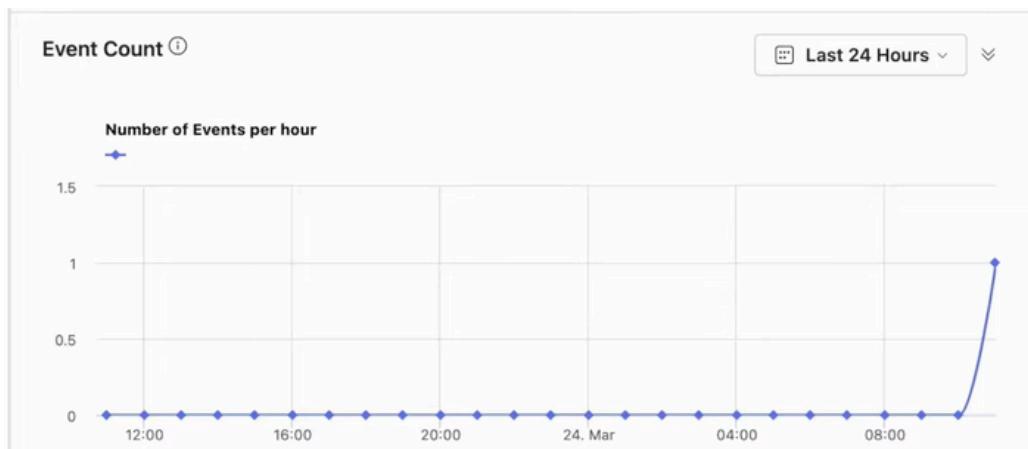
Headline: Positive Sentiment % becomes greater than 0

Optional message: The trigger condition has been met for your Power BI report

Additional information: Positive Sentiment %

Limit of 5.

At the bottom, tabs for Data and Design are visible.





MICROSOFT TEAMS

Stay in the know. Turn on desktop notifications.

Chat

Recent

Data Activator 11:43 PM
Positive Sentiment % becomes greater than 0

Data Activator Chat About

Package: Sample Package
Modified by Sample User on Mar 21, 2024 9:58:19 UTC, UID: 2bc34c05

Last read Today

Sample User via Data Activator 11:43 PM

This notification is a test action.

Positive Sentiment % becomes greater than 0

The trigger condition has been met for your Power BI report

View details

Trigger Time: Mar 24, 2024 10:42:58 UTC
Package: Sample Package
Positive Sentiment %: Sample Value
Modified by Sample User on Mar 24, 2024 10:42:58 UTC, UID: 37408551

You cannot send messages to this bot.

Sample User via Data Activator 11:43 PM

This notification is a test action.

Positive Sentiment % becomes greater than 0

The trigger condition has been met for your Power BI report

View details

Trigger Time: Mar 24, 2024 10:42:58 UTC
Package: Sample Package
Positive Sentiment %: Sample Value
Modified by Sample User on Mar 24, 2024 10:42:58 UTC, UID: 37408551