

Analyzing User Engagement Patterns on Instagram

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Title: Instagram Engagement Analytics Dashboard

Goals/Objectives

The primary goal of this dashboard is to analyze user engagement on Instagram posts, providing insights that can enhance content strategy, optimize posting schedules, and improve audience interaction based on data-driven findings.

Description of the Dataset

a. Use of the Instagram _ Posts Dataset

The dataset is applicable across various fields:

- **Marketing and Business:** Companies can analyze engagement metrics to refine marketing strategies and tailor content to their audience's preferences.
- **Social Media Management:** Agencies can evaluate performance metrics for clients, helping them understand audience engagement trends.
- **Content Creation:** Influencers and content creators can optimize their content based on performance insights.
- **Analytics and Research:** Researchers can study social media trends and behaviors through engagement metrics.

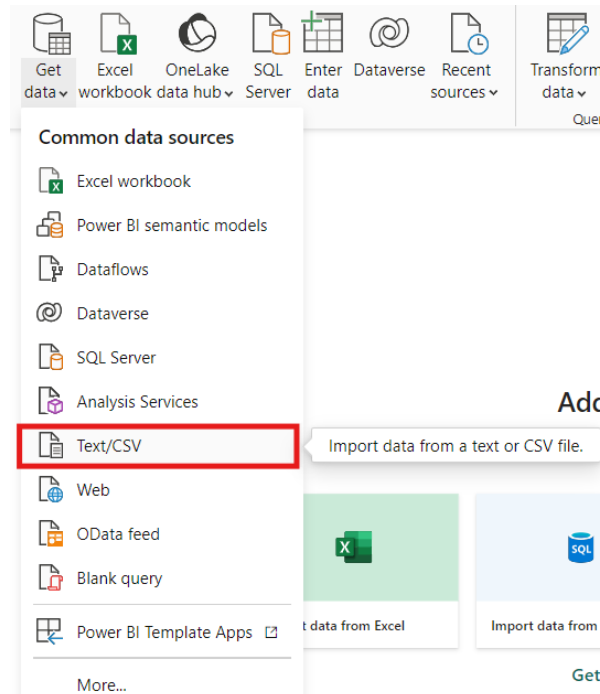
b. Types of Tables or Columns Present in the Instagram – Posts Dataset

The dataset comprises several data types:

- **Numerical Data:** Likes, comments, engagement scores, follower counts, video view counts.
- **Categorical Data:** Usernames, hashtags, content types, product types, user verification status.
- **Textual Data:** Descriptions, latest comments, partnerships.
- **Geographical Data:** Location of posts.
- **Time-related Data:** Date posted for temporal analyses.

Steps:

Get Data in form of Text/CSV. Upload Instagram – Posts.csv dataset as shown below.



Instagram - Posts.csv

File Origin: 65001: Unicode (UTF-8) | Delimiter: Comma | Data Type Detection: Based on first 200 rows

url	user_posted	description	hashtag
https://www.instagram.com/reel/DAG-D_Y52lu	609paysandu	JUAN es la NECESARIA RENOVACIÓN del FA Paysandú. "...	["#siempreconlagente", "#siempreconlagente"]
https://www.instagram.com/reel/DAGZPrCjJHu	espacioamplio929	En la tarde de ayer, tuvimos la oportunidad y el orgullo...	["#espacioamplio929", "#espacioamplio929"]
https://www.instagram.com/reel/C_K7AVPyD3d/?igsh=...	j._wonyy_	#협찬 @drmoon_official #닥터문 #닥터문프리미엄알...	["#협찬", "#닥터문", "#닥터문프리미엄알"]
https://www.instagram.com/reel/C_N3gcFyVi8/?igsh=...	in.the__angela	#협찬 #나인케어 @mako.pet 까다로운 양리도 잘먹...	["#협찬", "#나인케어", "#나인케어"]
https://www.instagram.com/reel/C_F3TsqhBw8/?igsh=...	ria._v	#협찬 @drmoon_official #닥터문 #닥터문프리미엄알...	["#협찬", "#닥터문", "#닥터문프리미엄알"]
https://www.instagram.com/reel/C_QZCXuyB38/?igsh=...	virabyeol	#협찬 #광고 @mako.pet #나인케어무스케이크 #고양이...	["#협찬", "#광고", "#나인케어무스케이크"]
https://www.instagram.com/reel/C_O3NFMyxJ8/?igsh=...	jcm9864	#협찬 @drmoon_official #닥터문 #닥터문프리미엄알...	["#협찬", "#닥터문", "#닥터문프리미엄알"]
https://www.instagram.com/reel/C_LK9OtyhGB/?igsh=...	black_mhk	#협찬 @mako.pet #나인케어무스케이크 #고양이캔...	["#협찬", "#나인케어무스케이크", "#고양이캔"]
https://www.instagram.com/reel/C_HPtAYRjr0/?igsh=...	reorosema	#협찬 @mako.pet #나인케어무스케이크 #고양이캔...	["#협찬", "#나인케어무스케이크", "#고양이캔"]
https://www.instagram.com/reel/C_NtuMCSHgD/	maybehappyend	#협찬 @mako.pet #나인케어무스케이크 #고양이캔...	["#협찬", "#나인케어무스케이크", "#고양이캔"]
https://www.instagram.com/reel/C_N8vdsV2V/?igsh=...	homecooker87	#협찬 @mako.pet #나인케어무스케이크 #고양이캔...	["#협찬", "#나인케어무스케이크", "#고양이캔"]
https://www.instagram.com/reel/C_N4Bxhy1ec/?igsh=...	margumja	#협찬 @drmoon_official #닥터문 #닥터문프리미엄알...	["#협찬", "#닥터문", "#닥터문프리미엄알"]
https://www.instagram.com/reel/C_P3Yt3SQ8K/?igsh=...	favorpia	#협찬 @mako.pet #나인케어무스케이크 #고양이캔...	["#협찬", "#나인케어무스케이크", "#고양이캔"]
https://www.instagram.com/reel/C_wPWzlyxqt/?igsh=...	luxurymami2	#협찬 @neomedix_beauty #아리알사크란크림 #120...	["#협찬", "#아리알사크란크림", "#120"]
https://www.instagram.com/reel/DAGWQeLp_VX	pvp_espacio567	Nuestro compañero y candidato a Diputado por Paysan...	["#Votã567EnPaysandú"]
https://www.instagram.com/reel/DAGtARcpZ5x	jfrenteamplio		null
https://www.instagram.com/reel/DAGZ9rltoK-	canal4_uy	¿Qué prefiere @noe_etcheverry? 🍷 Nuestra querida i...	["#ClásicoDelDomingo"]
https://www.instagram.com/reel/DAGY3p8tf9x	canal4_uy	¡Desafiamos a @noe_etcheverry con #ElPreguntómetro...	["#ElPreguntómetroDeL"]
https://www.instagram.com/reel/DAGX-3TN0KZ	canal4_uy	¡Salió karaoke sorpresa en #VamoArribaQueEsDomingo...	["#VamoArribaQueEsDo"]
https://www.instagram.com/reel/DAG87uKy30Z	fa_sanjose	Hoy vivimos una hermosa jornada de militancia en Kiyú...	null

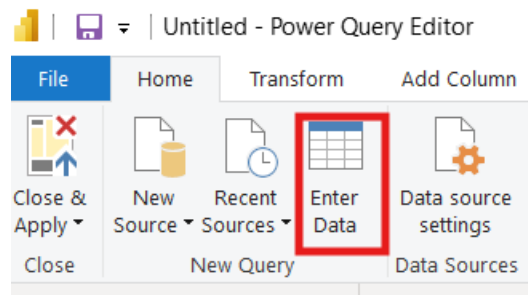
Extract Table Using Examples

Load

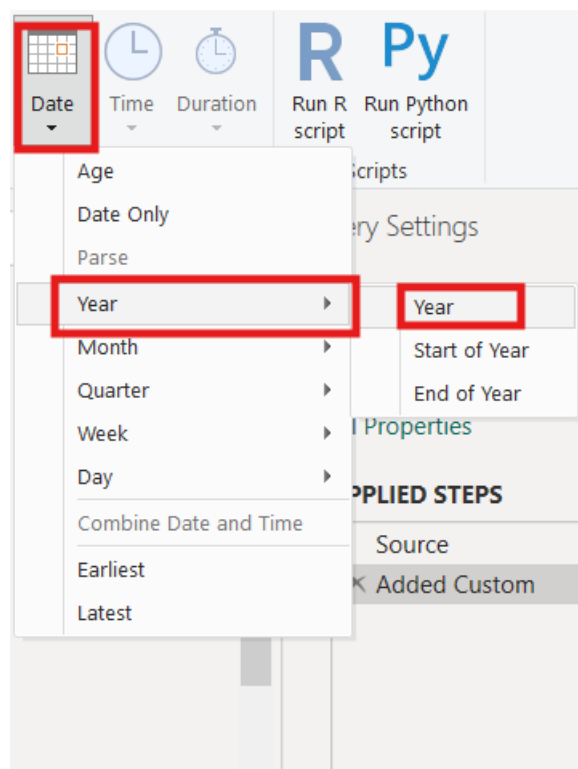
Transform Data

Cancel

Make new table for date in power query using enter data as shown below.



Add columns in date table, extract year, month, week of month, time, hour of the day as shown below.



Make a custom column to extract time from date posted column, as shown below.

Custom Column

Add a column that is computed from the other columns.

New column name

Time

Custom column formula

= Time.FromText(Text.Middle([date_posted], 12, 8))

Available columns

date_posted

date

Year

Month

Week of Month

<< Insert

Learn about Power Query formulas

✓ No syntax errors have been detected.

OK

Cancel

The final Date table is presented as shown below.

Instagram - Posts	date_posted	date	Year	Month	Week of Month	Time
Date	1	"2024-09-29T20:54:29.000Z"	9/29/2024	2024	9	5
	2	"2024-09-29T15:38:11.000Z"	9/29/2024	2024	9	5
	3	"2024-08-27T10:53:45.000Z"	8/27/2024	2024	8	5
	4	"2024-08-28T14:19:21.000Z"	8/28/2024	2024	8	5
	5	"2024-08-25T11:43:40.000Z"	8/25/2024	2024	8	5
	6	"2024-08-29T13:51:14.000Z"	8/29/2024	2024	8	5
	7	"2024-08-28T23:43:16.000Z"	8/28/2024	2024	8	5
	8	"2024-08-27T13:12:49.000Z"	8/27/2024	2024	8	5
	9	"2024-08-26T00:37:48.000Z"	8/26/2024	2024	8	5
	10	"2024-08-28T12:53:40.000Z"	8/28/2024	2024	8	5
	11	"2024-08-28T15:06:56.000Z"	8/28/2024	2024	8	5
	12	"2024-08-28T14:28:25.000Z"	8/28/2024	2024	8	5
	13	"2024-08-29T08:57:06.000Z"	8/29/2024	2024	8	5
	14	"2024-09-10T22:41:09.000Z"	9/10/2024	2024	9	2
	15	"2024-09-29T15:08:11.000Z"	9/29/2024	2024	9	5
	16	"2024-09-29T15:14:16.000Z"	9/29/2024	2024	9	5

PROPERTIES

Name

Date

All Properties

APPLIED STEPS

Source

Added Custom

Inserted Year

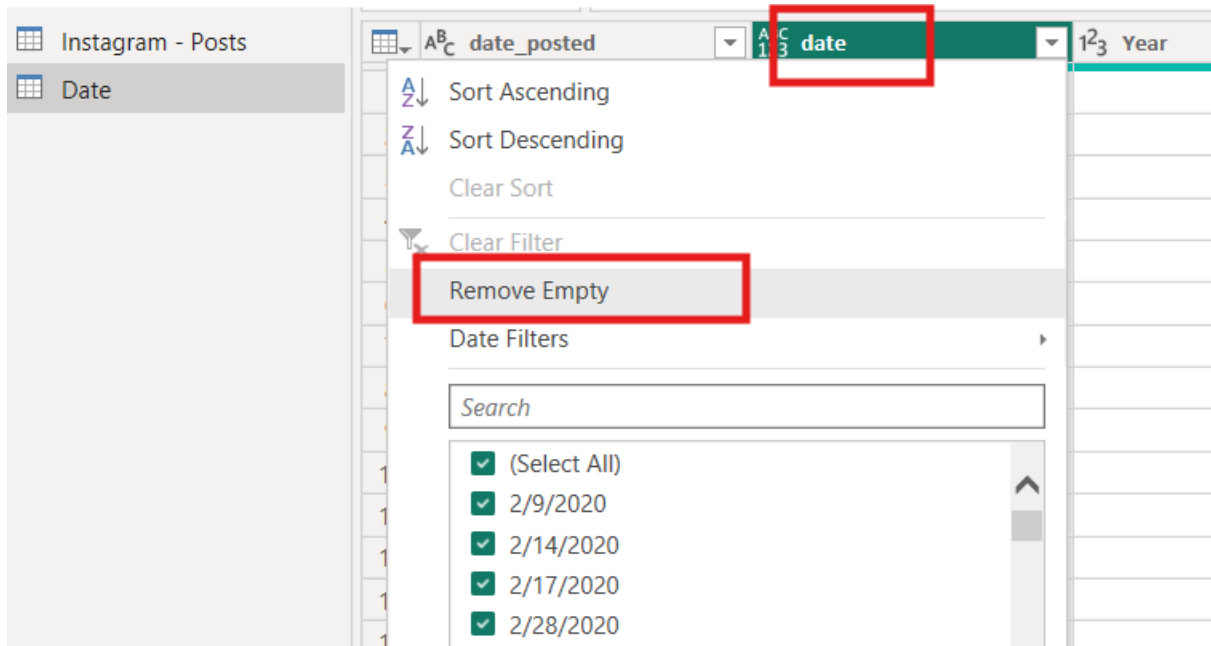
Inserted Month

Inserted Week of Month

Added Custom1

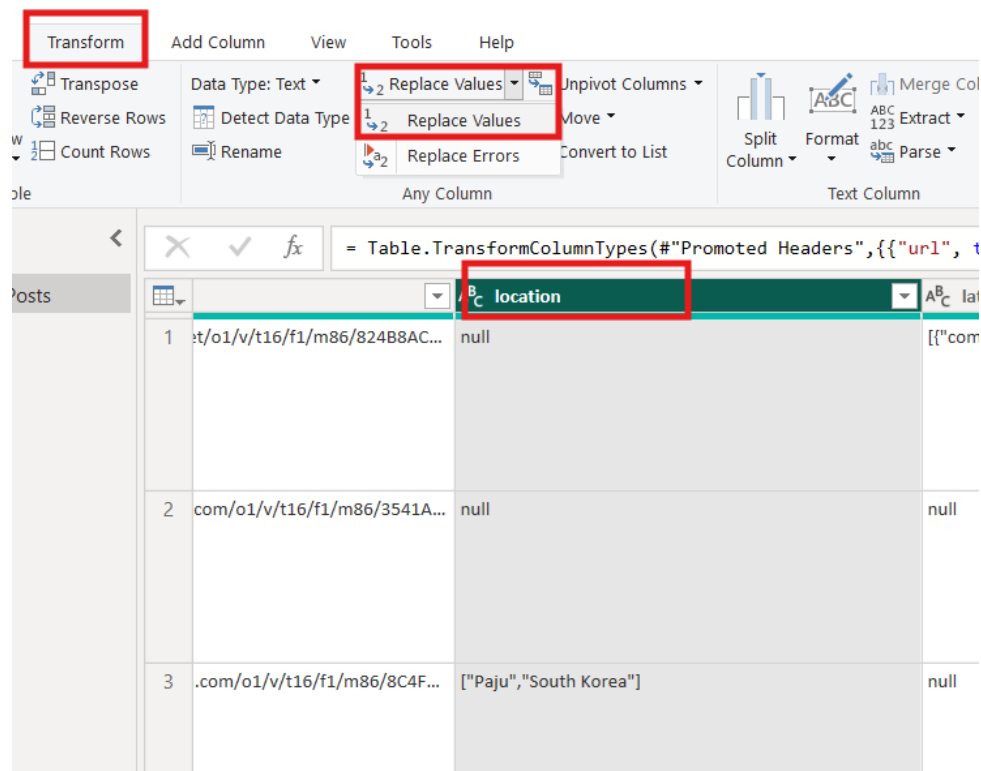
Inserted Hour

Remove empty rows from all the columns, followed same steps as shown below for all the columns.



- **Handle missing/Null values:**

Replace the null values in transform tab of power query.



Replace null with not specified in location column:

Replace Values

Replace one value with another in the selected columns.

Value To Find

null

Replace With

Not Specified

▸ Advanced options

OK

Cancel

Replace values [] to Unknown in coauthor producers column:

AB C coauthor_producers	
[]	
["tucamino_fa","1001canelones"]	
[]	

Replace Values

Replace one value with another in the selected columns.

Value To Find

[]

Replace With

['Unknown']

▸ Advanced options

OK

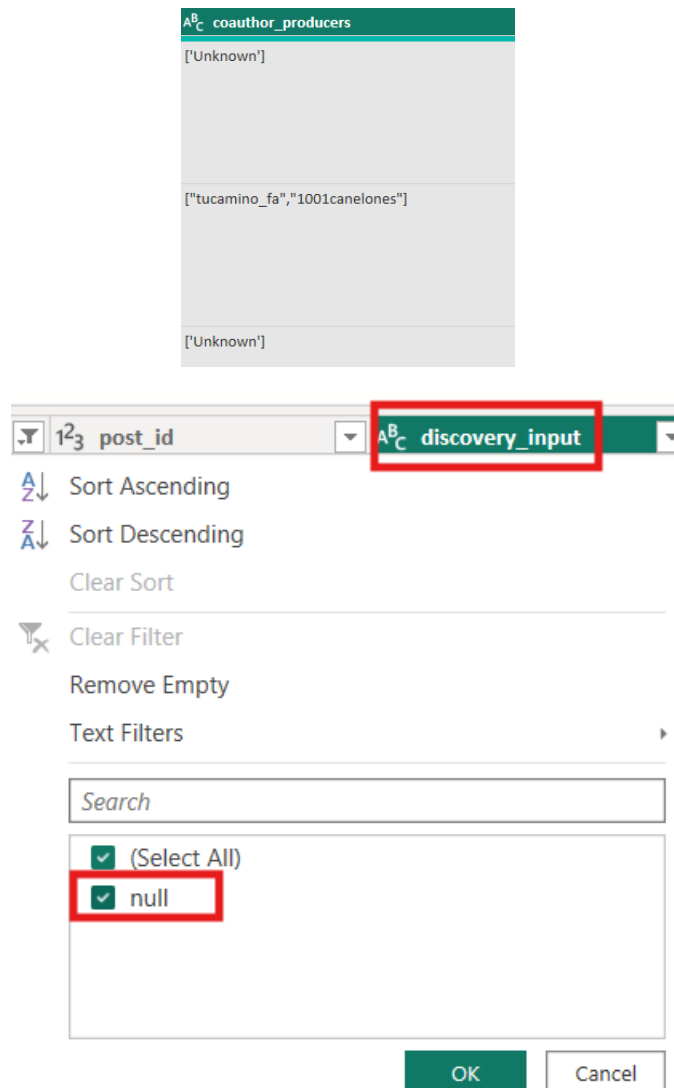
Cancel

- **Delete Columns:**

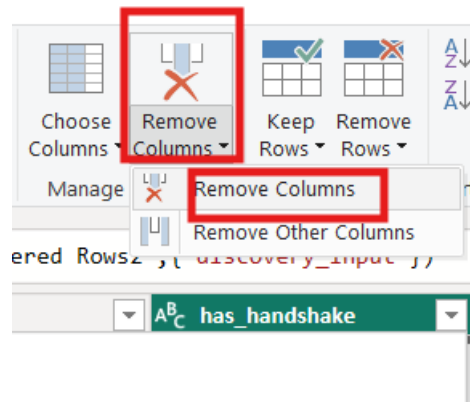
Removing the columns which are not useful.

The discovery_input columns has only null values as seen below so we can delete this column.

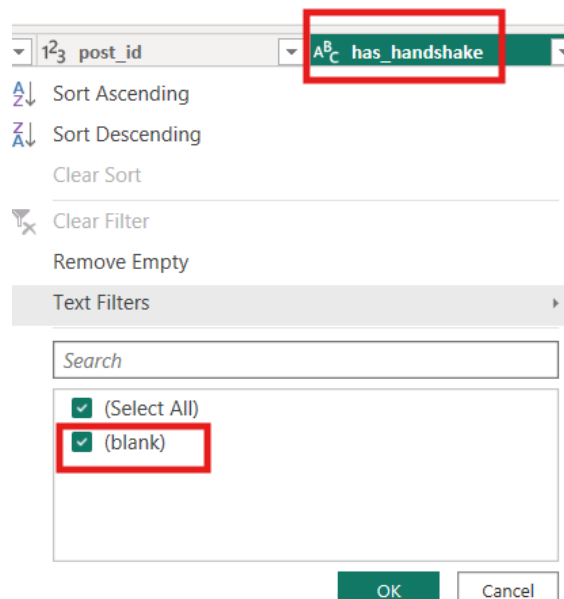
Changes values:



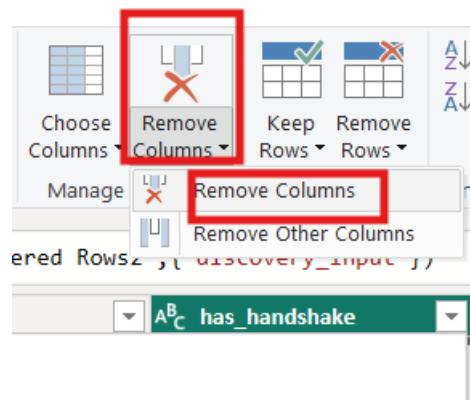
Remove Columns in power query editor, Home tab as shown below:



Similarly, has_handshake has all blank values, so we can drop that column as well.

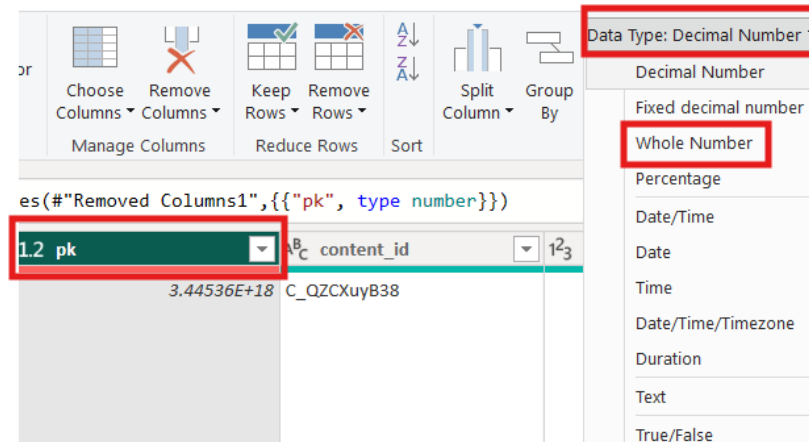


Remove columns:



- **Changing Datatype:**

Column pk from whole number to decimal number.



Make a custom column in Instagram- posts table to extract date from date posted as shown below.

Custom Column

Add a column that is computed from the other columns.

New column name

date

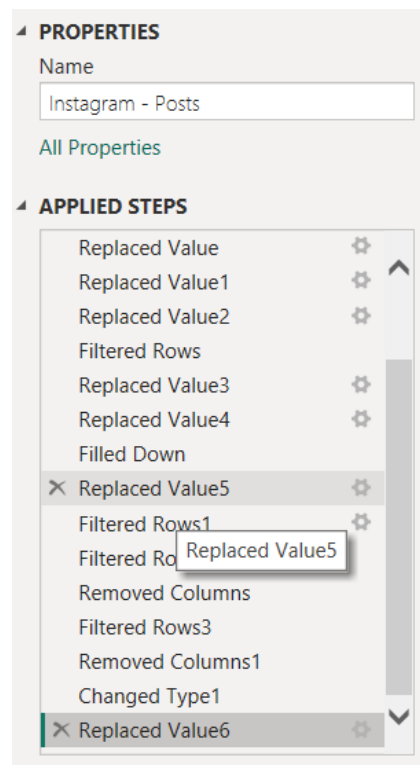
Custom column formula ⓘ

= Date.FromText(Text.Middle([date_posted], 1, 10))

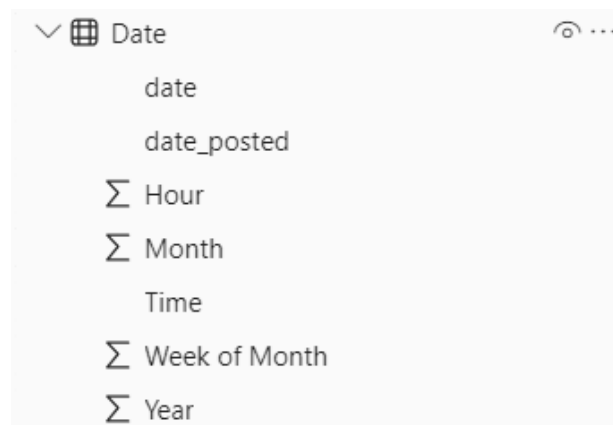
[Learn about Power Query formulas](#)

✓ No syntax errors have been detected.

All the applied changes in Instagram-Posts table:

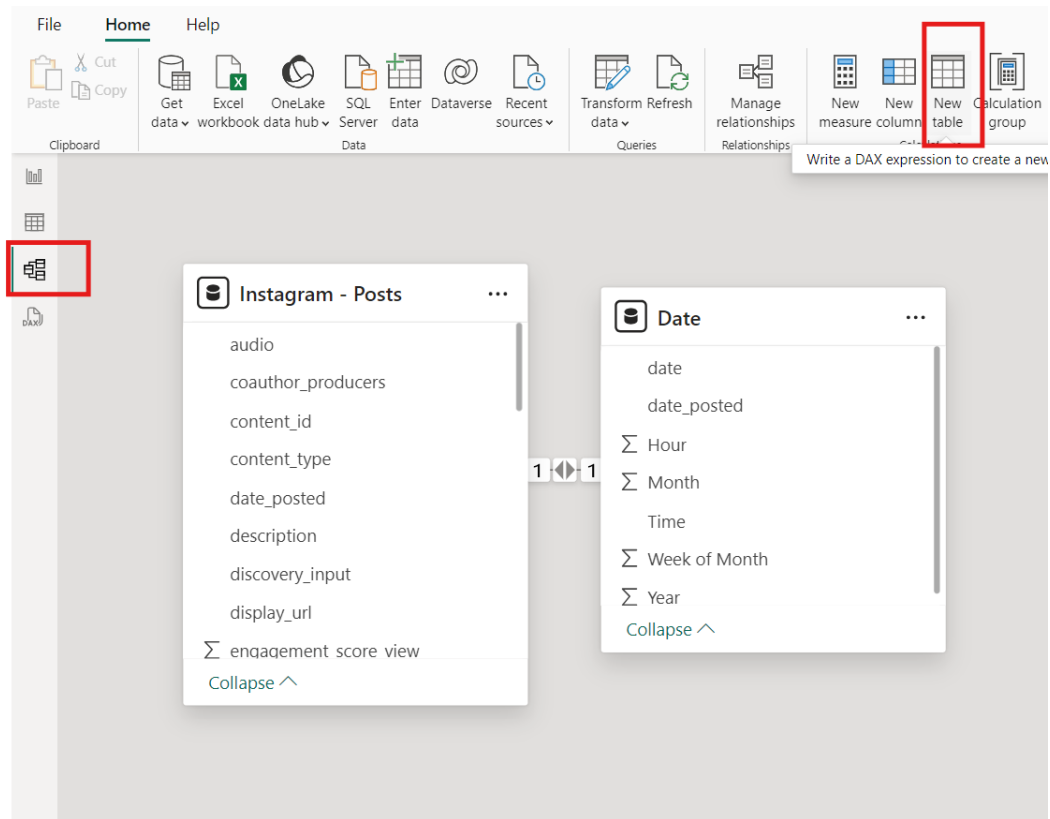


Date table:



To create a new table:

1. Go to the **Modeling** tab in Power BI.
2. Click **New Table**



3. Enter the DAX formula:

```
1 UserTable = DISTINCT(SELECTCOLUMNS('Instagram - Posts', "UserPosted", 'Instagram - Posts'[user_posted], "UserPostedID", 'Instagram - Posts'[user_posted_id]))
2
```

Make relationship between Instagram-Posts table and UserTable on column UserTable[UserPostedID] and InstagramPosts[user_posted_id] as shown below:

New relationship

×

Select tables and columns that are related.

From table

Instagram - Posts

mail	url	user_posted	user_posted_id	video_play_co...	video_view_c...	videos
instag...	https://www.i...	joescentme	3591620454	2228	1075	["https://insta...
instag...	https://www.i...	joescentme	3591620454	1183	459	["https://insta...
sconte...	https://www.i...	joescentme	3591620454	1457	510	["https://scon...

To table

UserTable

UserPosted	UserPostedID
joescentme	3591620454
aliceduparcq	242808540
perfume.realm	28415047823

Cardinality

Many to one (*:1)

☒ Make this relationship active

☐ Assume referential integrity

Cross-filter direction

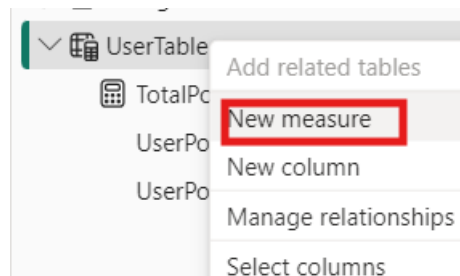
Both

☐ Apply security filter in both directions

Save

Cancel

- **Add calculated columns or measures:**



Add DAX query:

✖ ✓

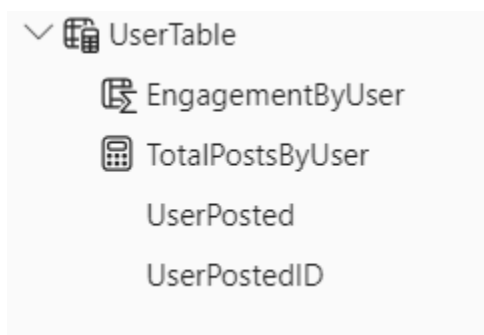
```
1 TotalPostsByUser = COUNTROWS(RELATEDTABLE('Instagram - Posts'))
2
```

Add a new column EngagementByUser:

Enter DAX query:

```
1 EngagementByUser = SUMX(RELATEDTABLE('Instagram - Posts'), 'Instagram - Posts'[engagement_score_view])
2
```

UserTable:



Create a new table of ContentType:

In the **Modeling** tab, create a new table:

Enter DAX Query:

```
1 ContentTypeTable = DISTINCT(SELECTCOLUMNS('Instagram - Posts', "ContentType", 'Instagram - Posts'[content_type]))
2
```

Create relationship:

New relationship

×

Select tables and columns that are related.

From table

Instagram - Posts

audio	coauthor_pro...	content_id	content_type	date_posted	description	discovery_
{"audio_asset..."}	[]	CjJ7canjPxU	Video	"2022-10-01T...	Day 1 - Rode...	null
{"audio_asset..."}	[]	CfMmD8PDx2g	Reel	"2022-06-24T...	We love all th...	null
{"audio_asset..."}	[]	Cd8fHNujjPE	Reel	"2022-05-24T...	🔴🔴 CALLING A...	null

To table

ContentTypeTable

ContentType
Reel
Video

Cardinality

Many to one (*:1)

Cross-filter direction

Single

☒ Make this relationship active

☐ Assume referential integrity

☐ Apply security filter in both directions

Save

Cancel

Add calculated columns or measures:

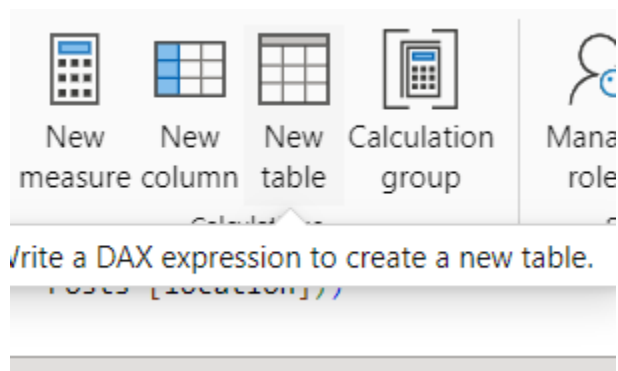
- A measure for Average Likes per Content Type:

```
1 AvgLikesByContentType = AVERAGEX(RELATEDTABLE('Instagram - Posts'), 'Instagram - Posts'[likes])
2
```

ContentTypeTable:

▼	ContentTypeTable
	AvgLikesByContentType
	ContentType
	TotalEngagementByContentType

Create a Location Table:



DAX Query to make location table:

```
1 LocationTable = DISTINCT(SELECTCOLUMNS('Instagram - Posts', "Location", 'Instagram - Posts'[location]))
2
```

Create relationship:

New relationship ×

Select tables and columns that are related.

From table

Instagram - Posts

location	num_comme...	partnership_d...	photos	pk	post_content	post_id
["London","Un...	12	{"profile_id":n...	["https://insta...	2.9734620424...	[{"index":0,"ty...	2973462
["London","Un...	39	{"profile_id":n...	["https://scon...	2.9734474844...	[{"index":0,"ty...	2973447
["Florence","It...	22	{"profile_id":n...	["https://scon...	2.9656180762...	[{"index":0,"ty...	2965618

To table

LocationTable

Location

["Dongtan","S...
["Ciudad Las P...
["Fray Bentos"]

Cardinality

Many to one (*:1)

Cross-filter direction

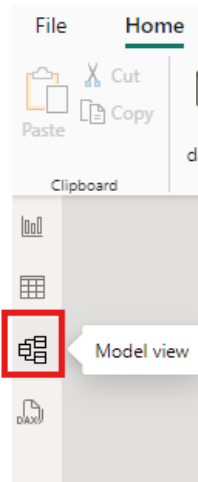
Single

☒ Make this relationship active

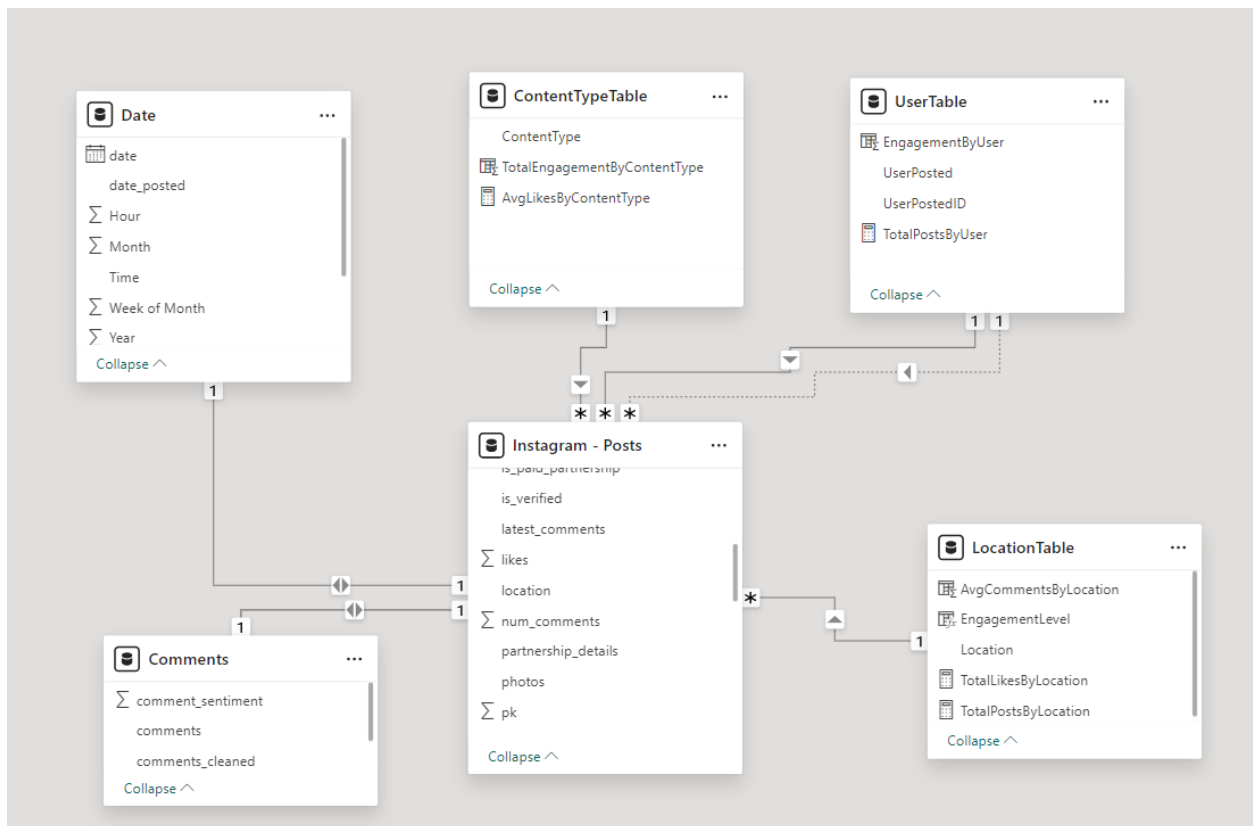
☐ Assume referential integrity

☐ Apply security filter in both directions

Viewing all the relations between tables using Model view tab in power bi as show below:



All the relations are as shown below.



Create new column in location table:

```
1 AvgCommentsByLocation = AVERAGEX(RELATEDTABLE('Instagram - Posts'), 'Instagram - Posts'[num_comments])
2
```


Engagement Level by Location:

```
1 EngagementLevel =  
2 IF('LocationTable'[AvgCommentsByLocation] > 50, "High", "Low")  
3
```

TotalLikesByLocation measure is created using following DAX Query:

```
1 TotalLikesByLocation =  
2 SUMX(  
3     FILTER(  
4         'Instagram - Posts',  
5         'Instagram - Posts'[location] = SELECTEDVALUE(LocationTable[Location])  
6     ),  
7     'Instagram - Posts'[likes]  
8 )  
9
```

TotalPostsByLocation Measure:

```
TotalPostsByLocation =  
COUNTROWS(  
    FILTER(  
        'Instagram - Posts',  
        'Instagram - Posts'[location] = SELECTEDVALUE(LocationTable[Location])  
    )  
)
```

Making new measures in Instagram – Posts (Main) table:

For analyzing user engagement patterns on Instagram, several useful measures can be created to provide deep insights into user behavior and content performance.

Engagement Metrics

1. Total Engagement Score

Combines likes, comments, and video views to provide a unified engagement metric.

```
1 TotalEngagement = SUM('Instagram - Posts'[engagement_score_view])  
2
```

2. Engagement Rate

Helps determine how engaging a post is relative to total followers.

```
1 EngagementRate =  
2 DIVIDE(  
3     [TotalEngagement],  
4     SUM('Instagram - Posts'[followers]),  
5     0  
6 )  
7
```

3. Video Engagement Rate

Measures how well videos perform compared to likes.

```
1 VideoEngagementRate =  
2 DIVIDE(  
3     SUM('Instagram - Posts'[video_view_count]),  
4     SUM('Instagram - Posts'[likes]),  
5     0  
6 )  
7
```

4. Comments-to-Likes Ratio

Identifies posts that generate more discussion compared to mere likes.

```
1 CommentsToLikesRatio =  
2 DIVIDE(  
3     SUM('Instagram - Posts'[num_comments]),  
4     SUM('Instagram - Posts'[likes]),  
5     0  
6 )  
7
```

Content Performance

5. Post Frequency by Content Type

Counts posts for each content type.

```

1 PostsByContentType =
2 COUNTROWS(
3 |     FILTER('Instagram - Posts', 'Instagram - Posts'[content_type])
4 )
5

```

User Activity

6. Posts per User

Measures how active each user is.

```

1 PostsPerUser =
2 CALCULATE(
3 |     COUNTROWS('Instagram - Posts'),
4 |     GROUPBY('Instagram - Posts', 'Instagram - Posts'[user_posted])
5 )
6

```

7. Influence of Paid Partnerships

Identifies the impact of paid partnerships on engagement.

```

1 PartnershipImpact =
2 DIVIDE(
3 |     CALCULATE(
4 |         SUM('Instagram - Posts'[engagement_score_view]),
5 |         'Instagram - Posts'[is_paid_partnership] = TRUE()
6 |     ),
7 |     SUM('Instagram - Posts'[engagement_score_view])
8 )
9

```

Post Type Comparisons

8. Video Engagement

```

1 AvgEngagementVideo =
2 AVERAGEX(
3 |     FILTER('Instagram - Posts', 'Instagram - Posts'[content_type] = "Video"),
4 |     'Instagram - Posts'[engagement_score_view]
5 )

```

Measures in Date table:

9. **Total Likes by Month:** This measure calculates the total likes for posts in each month.

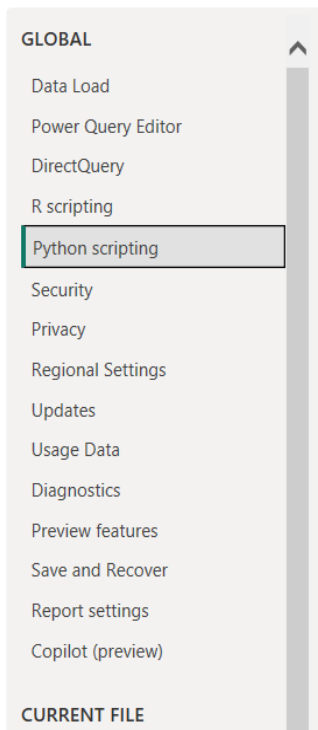
```
1 TotalLikesByMonth =
2 CALCULATE(
3     SUM('Instagram - Posts'[likes]),
4     FILTER(
5         'Instagram - Posts',
6         YEAR('Instagram - Posts'[date]) = YEAR(TODAY()) &&
7         MONTH('Instagram - Posts'[date]) = MONTH(TODAY())
8     )
9 )
10 )
```

10. **Posts Per Day** for all days: to count the number of posts on each day

```
1 PostsPerDay =
2 CALCULATE(
3     COUNTROWS('Instagram - Posts'),
4     FILTER(
5         'Instagram - Posts',
6         NOT(ISBLANK('Instagram - Posts'[date]))
7     )
8 )
9
10
```

Python script:

Options



Python script options

To choose a home directory for Python, select a detected Python installation from the drop-down the location you want.

Detected Python home directories:

C:\Users\DELL\anaconda3

[How to install Python](#)

To choose which Python integrated development environment (IDE) you want Power BI Desktop, from the drop-down list, or select Other to browse to another IDE on your machine.

Detected Python IDEs:

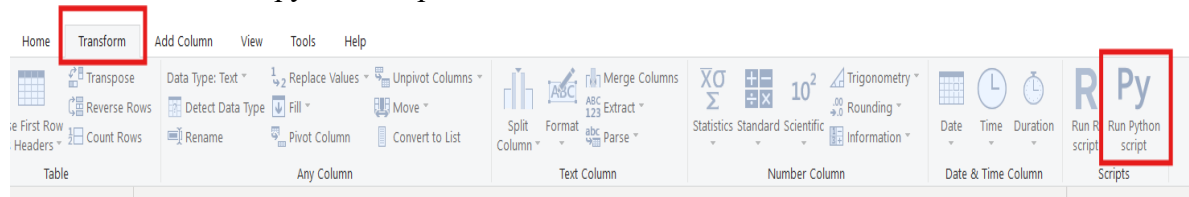
Default OS program for .PY files

[Learn more about Python IDEs](#)

[Change temporary storage location](#)

Note: Sometimes, Python custom visuals automatically install additional packages. For those to name must be written in Latin characters (letters in the English alphabet).

In transform tab run python script as shown below:



Run the python script

Run Python script

Enter Python scripts into the editor to transform and shape your data.

Script

```
# 'dataset' holds the input data for this script
from textblob import TextBlob
import pandas as pd

# Dataframe provided by Power BI
df = dataset

# Function to calculate sentiment
def analyze_sentiment(comment):
    if pd.isnull(comment):
        return "Neutral"
    analysis = TextBlob(comment)
    if analysis.sentiment.polarity > 0:
```

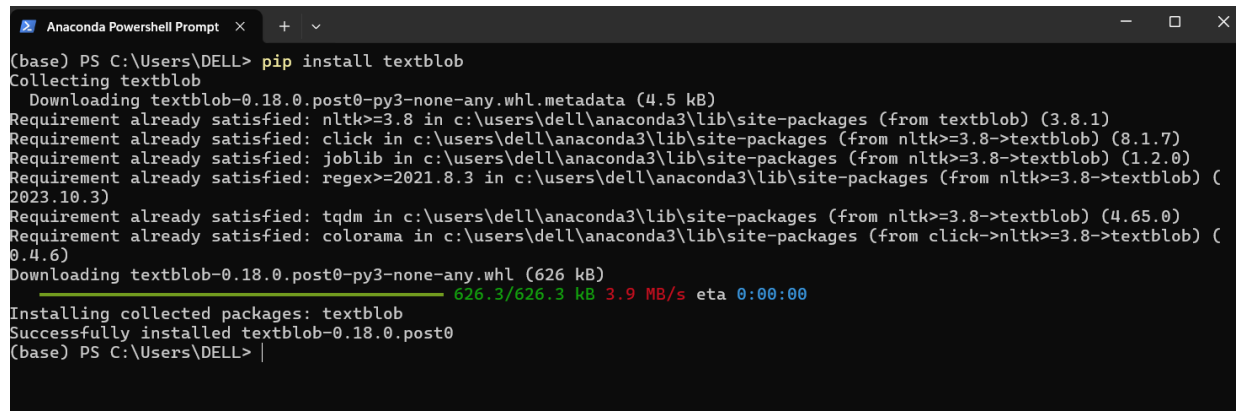
The script will run with the following Python installation C:\USERS\DELL\ANACONDA3.

To configure your settings and change which Python installation you want to run, go to Options and settings.

OK

Cancel

Install the required python libraries in anaconda powershell prompts shown below:



```
(base) PS C:\Users\DELL> pip install textblob
Collecting textblob
  Downloading textblob-0.18.0.post0-py3-none-any.whl.metadata (4.5 kB)
Requirement already satisfied: nltk>=3.8 in c:\users\dell\anaconda3\lib\site-packages (from textblob) (3.8.1)
Requirement already satisfied: click in c:\users\dell\anaconda3\lib\site-packages (from nltk>=3.8->textblob) (8.1.7)
Requirement already satisfied: joblib in c:\users\dell\anaconda3\lib\site-packages (from nltk>=3.8->textblob) (1.2.0)
Requirement already satisfied: regex>=2021.8.3 in c:\users\dell\anaconda3\lib\site-packages (from nltk>=3.8->textblob) (2023.10.3)
Requirement already satisfied: tqdm in c:\users\dell\anaconda3\lib\site-packages (from nltk>=3.8->textblob) (4.65.0)
Requirement already satisfied: colorama in c:\users\dell\anaconda3\lib\site-packages (from click->nltk>=3.8->textblob) (0.4.6)
Downloading textblob-0.18.0.post0-py3-none-any.whl (626 kB)
626.3/626.3 kB 3.9 MB/s eta 0:00:00
Installing collected packages: textblob
Successfully installed textblob-0.18.0.post0
(base) PS C:\Users\DELL>
```

Python Script:

```
# 'dataset' holds the input data for this script
# Import required libraries
import pandas as pd
import re
from textblob import TextBlob

# Load data into a DataFrame (Power BI automatically assigns the input table to 'dataset')
comments_df = dataset

# Step 1: Handle missing or null values in the 'latest_comments' column
comments_df['comments'] = comments_df['comments'].fillna("")

# Step 2: Clean the text in the 'latest_comments' column
# Remove special characters and convert text to lowercase
comments_df['comments_cleaned'] = comments_df['comments'].apply(lambda x:
re.sub(r'[^\w\s]', '', x).lower())

# Step 3: Perform sentiment analysis using TextBlob
# Calculate sentiment polarity for each comment
comments_df['comment_sentiment'] = comments_df['comments_cleaned'].apply(lambda
x: TextBlob(x).sentiment.polarity)

# Step 4: Categorize sentiment into Positive, Neutral, or Negative
def categorize_sentiment(polarity):
    if polarity > 0:
        return 'Positive'
    elif polarity < 0:
        return 'Negative'
```

```
comments_df['sentiment_category'] =
comments_df['comment_sentiment'].apply(categorize_sentiment)
```

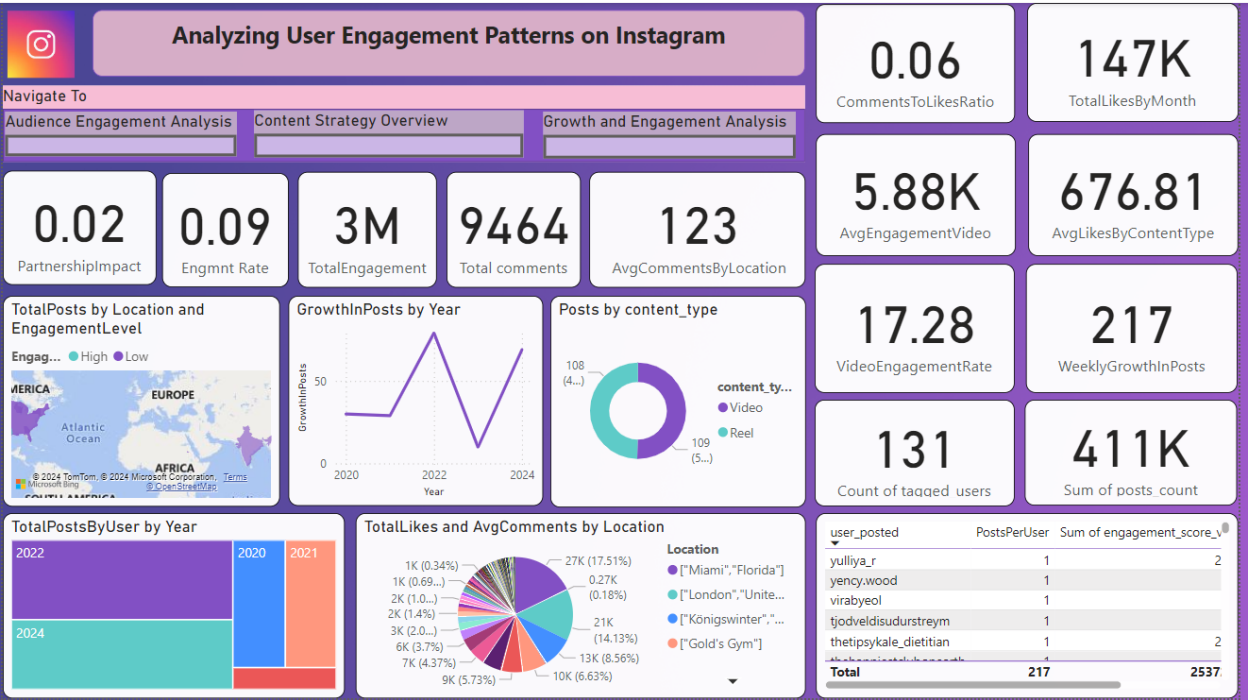
The final sentiment analysis is done and the result is generated as shown below:

= Python.Execute("# 'dataset' holds the input data for this script#(lf)# Import required libraries#(lf)import

	Name	Value
1	dataset	Table
2	df	Table
3	result	Table

	latest_comments_cleaned	comment_sentiment	sentiment_category
rnya rao bisa diajak endorse🙄👉📺,"likes":0,"user_	commentspintarnya rao bisa diajak endorselikes0user_commentingmegan	0.0	Neutral
👍👍👍,"likes":1,"user_commenting":"lavallejabar"},	commentslikes1user_commentinglavallejabarcommentsbuen provecholik	0.0	Neutral
likes":0,"user_commenting":"vivisiky"]}	commentslikes0user_commentingvivisiky	0.0	Neutral
lirse jamás Vamo arriba el FA junto a su gente Vamo a	commentsrendirse jamás vamo arriba el fa junto a su gente vamo arriba le	0.0	Neutral
👍👍👍uvuvuv👍👍❤️💕👍uvuvuv","likes":0,"us	comments likes0user_commentingcolazogustavocommentsvamos x la pr	0.0	Neutral
menting":"sofollow"},"{"comments":"Fajne, autoironi	likes6user_commentingsofollowcommentsfajne autoironiczne filmikinsza	0.5	Positive
:{"comments":"@28.bogdan.1👍👍👍","likes":0,"user_	likes18repliescomments28bogdan1 likes0user_commentingkompanickou	0.1	Positive
👍👍👍👍💕👍","likes":0,"user_commenting":"johan	commentslikes0user_commentingjohanny025commentszombilgirl i was d	0.0	Neutral
vemanguy99 I think so lmfaoo,"likes":0,"user_comme	commentsdavemanguy99 i think so lmfaolikes0user_commentinghaydenr	-0.3	Negative
sounds like a terrorist","likes":2,"user_commenting":"z	commentshe sounds like a terroristlikes2user_commentingzakm28commen	0.0	Neutral
think this was a long con","likes":1,"user_commentin	commentsdae think this was a long conlikes1user_commentingcatwizard	-0.07722222222222223	Negative

Major Key performance Indicators:
Analyzing User Engagement Patterns on Instagram

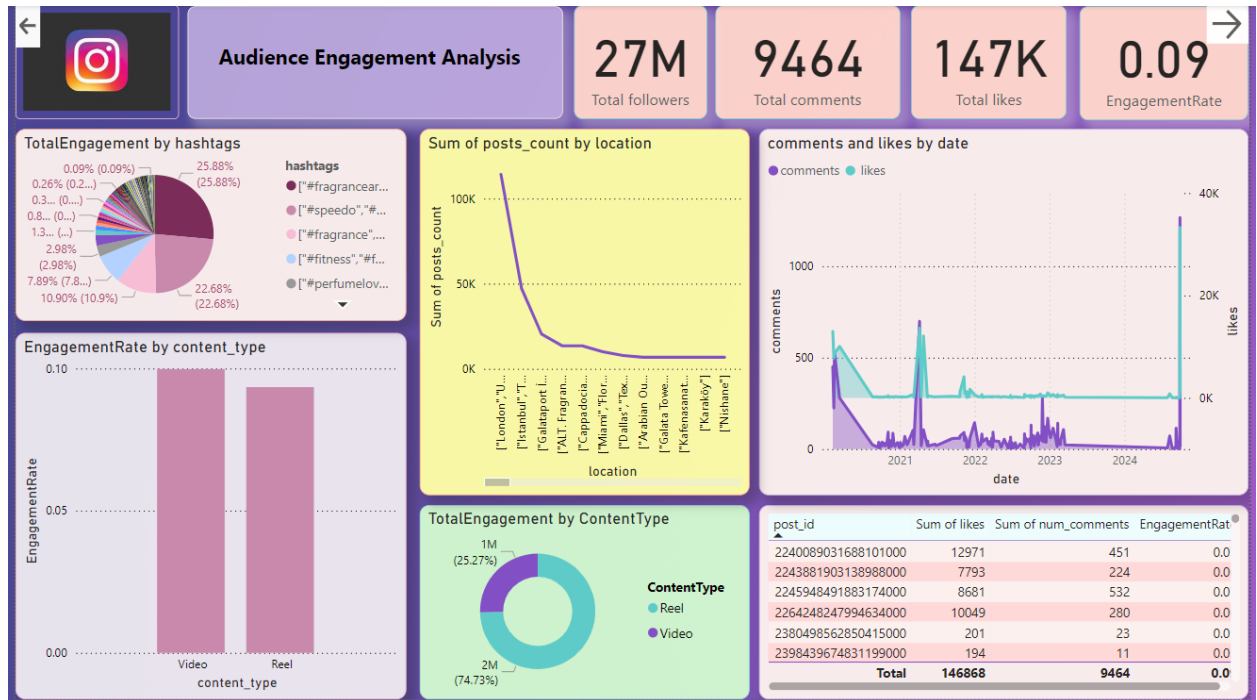


1. CommentsToLikesRatio: Highlights the relative engagement measured by comments compared to likes.
2. TotalLikesByMonth & TotalEngagement: Quantifies monthly likes and overall engagement levels.
3. PartnershipImpact is a kpi which measures the impact of collaborations with brands.
4. AvgEngagementVideo & AvgLikesByContentType: Indicates average engagement for videos and average likes per content type.
5. Total comments and AvgCommentsByLocation indicates the number of comments region wise.
6. Count of Tagged Users: Shows collaborations or mentions.
7. WeeklyGrowthInPosts: Tracks the weekly growth rate of posts.
8. GrowthInPosts by Year: A line chart showing an upward or fluctuating trend in the number of posts, suggesting growth.
9. PostsByContentType: Pie chart splitting engagement between content types like videos and reels.
10. PostsByLocation & EngagementLevel: A filled map depicting where posts receive high or low engagement, useful for targeting specific regions.
11. Likes and Comments Breakdown by User: Identifies the top-performing users contributing significantly to engagement.

Insights:

- The engagement ratio indicates users engage more with specific content types, such as videos.
- Locations like North America and Europe show higher engagement levels, suggesting targeted campaigns in these regions.
- The most active years (based on post counts) can inform when campaigns are more impactful.

1) Audience Engagement Analysis



- TotalFollowers: Represents the audience size.
- TotalComments & Likes: Measures the volume of interactions with content.
- Engagement by Hashtags: Pie chart identifying the most used and engaging hashtags.
- EngagementRate by Content Type: Compares engagement rates between video and reel content types, showing which performs better.
- Post Counts by Location: Indicates regional interest or activity hotspots.
- Comments and Likes by Date: Time series chart to track engagement trends, identifying spikes or dips.
- Totalengagement based on content type is depicted using a donut chart, which shows that Reel content type is the most affecting the total engagement.
- A table consisting of postid, likes, num_comments, engagement rate is useful to get insights about the engagement according to posts.

Insights:

- Certain hashtags, such as fragrance-related ones, drive higher engagement, useful for hashtag optimization strategies.
- Videos have a higher engagement rate compared to reels, guiding content creation efforts.
- Locations like New York dominate post activity, making them prime targets for campaigns.

2) Content Strategy Overview

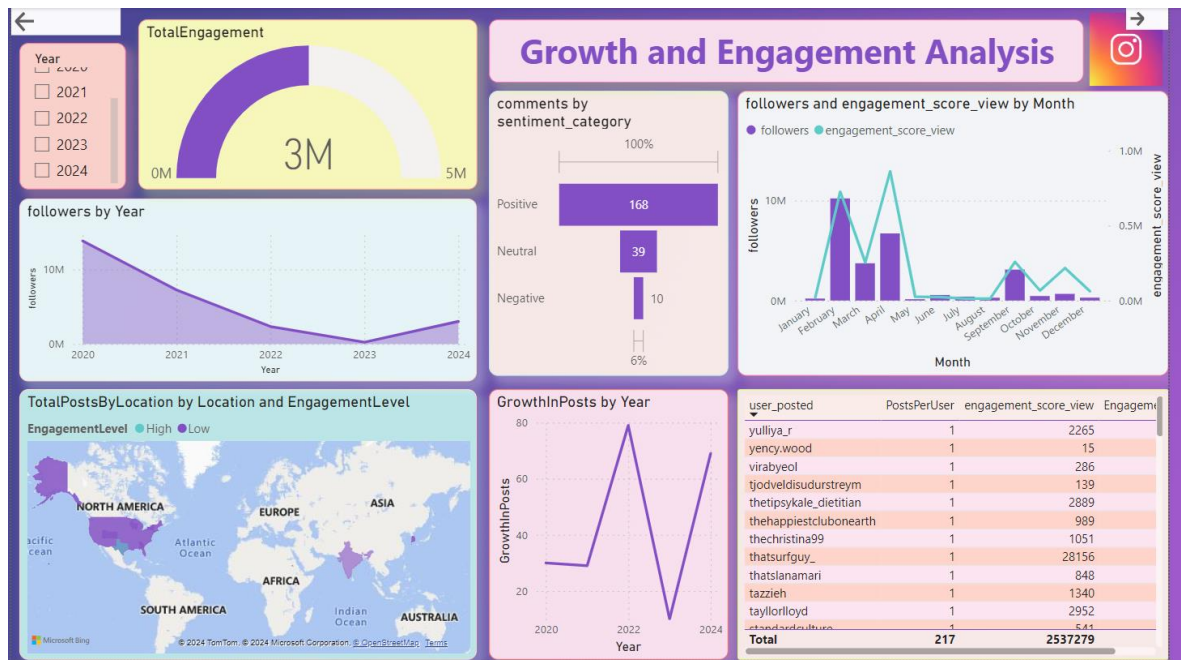


1. Avg Posts Count, Video View Count and video_play_count measures average content production and the reach of video content.
2. PartnershipImpact by ContentType assesses the contribution of partnerships to engagement.
3. Count of hashtags, EngagementRate and TotalEngagementByContentType shows the engagement of users on Instagram based on most liked content.
4. Filled map represents Average Posts Count by Location and Content Type to identify how geographically the content performs.
5. A donut chart depicts the PartnershipImpact by content_type, showing that video being the most impactful due to partnership or collaboration with brands.
6. Likes by year based on the content_type is displayed using a line chart, depicting that reels being most liked in 2020, 2021 with a decline in year 2022, 2023 and a rise in the year 2024.
7. A Word Cloud is used to display the Occurrence of all the unique hashtags used by users in their posts.
8. Comments by Sentiment Category a Pie chart classifies comments into positive, negative, or neutral categories.
9. Posts Count by Hashtags: Bar chart analyzing hashtag usage with content types.

Insights:

- Positive sentiment dominates, showing an overall favorable audience response.
- Partnership impacts vary, with videos yielding greater influence.
- Visual content strategies should target regions with higher engagement on specific content types like videos.

3) Growth and Engagement Analysis



This dashboard visualizes a Growth and Engagement Analysis for Instagram performance, summarizing data trends in follower growth, engagement, and post activity over the years.

1. Total Engagement

A Gauge chart displays the total engagement as 3 million, compared to a potential 5 million, indicating room for improvement in overall engagement.

2. Followers by Year

An area chart shows a decline in followers from 2020 to 2023 but an increase in 2024, suggesting a recent recovery or renewed activity.

3. Comments by Sentiment Category

A Water fall chart divides comments into sentiment categories:

- Positive: 168 comments (majority, 81%)
- Neutral: 39 comments (19%)
- Negative: 10 comments (6%)

Indicates generally favorable feedback.

4. Followers and Engagement Score by Month

A combination line and clustered column chart shows monthly fluctuations in:

- Followers (bar chart): Peaks in February and April, with dips in other months.
- Engagement score (line chart): High in February, aligned with follower trends.

5. Total Posts by Location and Engagement Level

A map categorizes engagement levels (high/low) by region:

- High engagement: Concentrated in North America, parts of Europe, and Asia.
- Low engagement: Dominant in Africa and other parts of the world.

6. Growth in Posts by Year

A line chart highlights post frequency growth:

- Minimal growth from 2020 to 2022.
- A sharp increase from 2022 to 2024.

7. User Posting Activity

A table lists user-posting metrics, including:

- Users, the number of posts, engagement scores, and engagement levels.
- A user with the highest engagement score (28,156).

Insights:

- Engagement is steadily improving, especially in 2024, after a decline in followers from earlier years.
- Positive sentiment dominates comments, reflecting a healthy community.
- Regional focus on high engagement may highlight opportunities to expand into underperforming areas.
- Certain months are key for engagement spikes, suggesting seasonal trends or successful campaigns.

References:

1. <https://www.datacamp.com/tutorial/power-bi-dashboard-tutorial>
2. <https://learn.microsoft.com/en-us/training/modules/create-dashboards-power-bi/>
3. <https://medium.com/@vishnukanthvis/unveiling-the-power-bi-instagram-influencers-dashboard-dive-into-influencer-insights-052c8f4c2be5>