Tech Instagram Influencer Analysis

SQL Driven Instagram Analytics

Presentation by : Aditya Sai V

Introduction

- **Who I Am ?**
  I am Aditya Sai , Data Analyst Intern at AtliQ Technologies

- **Objective**
  Analyze post performance and engagement to optimize content strategy

- **What I Did**
  Answered 10 Business questions to uncover trends and insights of Instagram posts

- **Goal**
  Provide data-driven recommendations to boost audience growth and engagement

Dataset Overview

Date: The date of the record.

Month Name: name of the month for the date.

Week Name: name of the week for the date.

Weekday | Weekend: Indicates whether the date falls on a weekday or a weekend.

Week No: Contains the week number for the date.

fact_account	
date	DATE
profile_visits	INTEGER
new_followers	INTEGER

Date: The date of the record.

Profile Visits: The number of times your profile was visited.

New Followers: The number of new accounts that started following your

dim_dates	
date	DATE
Month_name	varchar
weekday_name	varchar
weekday_or_weekend	varchar
week_no	char

fact_content	
date	DATE
post_category	varchar
post_type	varchar
video_duration	INTEGER
carousel_item_count	INTEGER
impressions	INTEGER
reach	INTEGER
shares	INTEGER
follows	INTEGER
likes	INTEGER
comments	INTEGER
saves	INTEGER

Date: This date of Record.

Post category / Segment: Category or segment of the post, such as Mobile, Smartwatch, Earphone, Laptop, Other Gadgets and Tech Tips.

Post type: The Type of post - IG video, IG carousel, IG Image, IG Reel.

Video Duration: The duration of the video in seconds.

Carousel Item Count: The number of items (images or videos) in each carousel.

Impressions: The number of times your post was viewed.

Reach: The number of accounts your post was reached.

Shares: The number of times your post was shared.

Follows: Number of new accounts that started following you from that post.

Likes: The number of likes on the post.

Comments: The number of comments on the post.

Saves: The number of saves on the post.

Data Challenges

1. How many unique post types are found in the 'fact_content' table?
2. What are the highest and lowest recorded impressions for each post type?
3. Filter all the posts that were published on a weekend in the month of March and April and export them to a separate csv file.
4. Create a report to get the statistics for the account. The final output includes the following fields: month_name, total_profile_visits, total_new_followers
5. Write a CTE that calculates the total number of 'likes' for each 'post_category' during the month of 'July' and subsequently, arrange the 'post_category' values in descending order according to their total likes.
6. Create a report that displays the unique post_category names alongside their respective counts for each month.
7. What is the percentage breakdown of total reach by post type?
8. Create a report that includes the quarter, total comments, and total saves recorded for each post category.
9. List the top three dates in each month with the highest number of new followers.
10. Create a stored procedure that takes the 'Week_no' as input and generates a report displaying the total shares for each 'Post_type'.

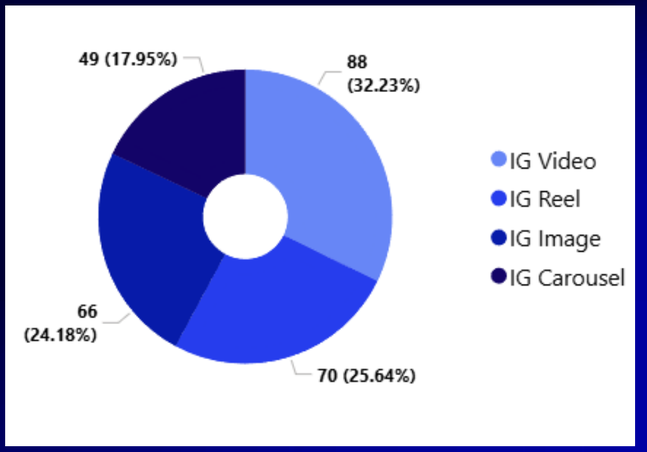
How many unique post types are found in the 'fact_content' table?

Query: SELECT DISTINCT(post_type) FROM fact_content;

post_type
IG Image
IG Reel
IG Carousel
IG Video

273
Total Posts

- **66** IG Image
- **70** IG Reel
- **49** IG Carousel
- **88** IG Video



- Instagram (IG) Video is the most common content type, accounting for 88 posts or 32.23% of the total.
- The second most popular content type is IG Image, with 70 posts (25.64%).
- IG Reel and IG Carousel are the least common content types, with 66 (24.18%) and 49 (17.95%) posts

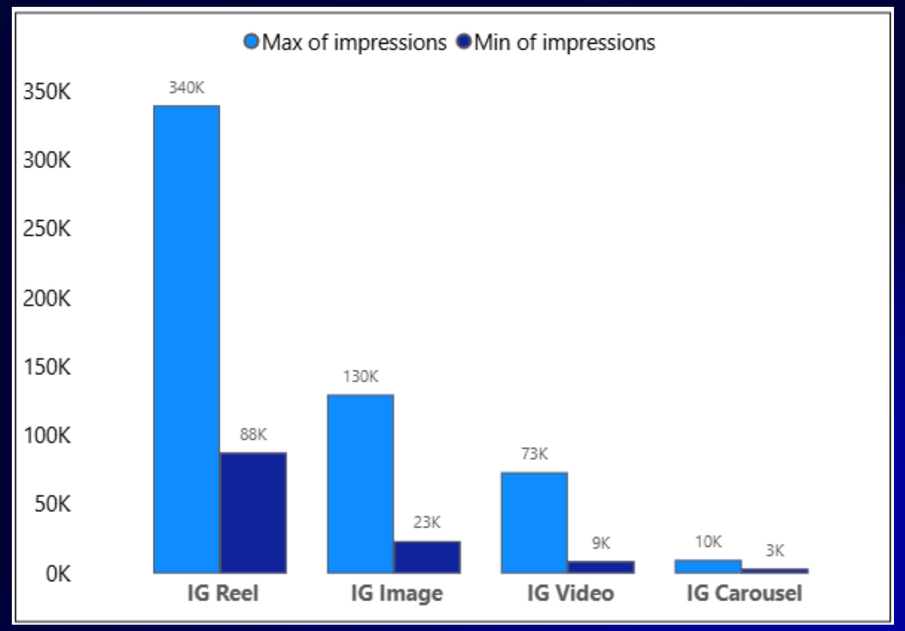
What are the highest and lowest recorded impressions for each post type?

Query :

```
SELECT
    post_type,
    MAX(impressions) as Highest_Rec_Impressions,
    MIN(impressions) as Lowest_Rec_Impressions
FROM fact_content
GROUP BY post_type;
```

Output :

post_type	Highest_Rec_Impressions	Lowest_Rec_Impressions
IG Image	129694	23367
IG Reel	339708	87570
IG Carousel	9677	3264
IG Video	73321	8741



- IG Reel content demonstrates a staggering reach, achieving the highest recorded impressions at 339K
- IG Carousel content suffers from a limited reach
- IG Image content shows a commendable performance
- IG Video content, while not the highest performer, still showcases a respectable reach

Filter all the posts that were published on a weekend in the month of March and April and export them to a separate csv file.

Query :

```
SELECT  *
FROM fact_content
WHERE
    MONTH(date) IN (3,4)
            AND
    dayofweek(date) IN (1,7);
```

- It selects all columns (SELECT *) from the fact_content table.
- It filters the results to include only records from March and April (MONTH(date) IN (3,4)).
- It further filters these results to only include records that fall on a Sunday or Saturday (dayofweek(date) IN (1,7)).
- The AND clause ensures that both of these conditions must be true for a record to be included in the final result set.

Output :

date	post_category	post_type	video_duration	carousel_item_count	impressions	reach	shares	follows	likes	comments	saves
2023-03-04	Earphone	IG Video	291	0	12265	3668	69	92	327	7	18
2023-03-05	Smartwatch	IG Image	0	0	62770	18001	273	360	1194	28	76
2023-03-11	Mobile	IG Carousel	0	3	5899	1093	45	12	53	0	6
2023-03-12	Laptop	IG Image	0	0	79416	23474	327	259	1235	69	204
2023-03-18	Mobile	IG Carousel	0	3	9157	2254	67	58	55	6	15
2023-03-19	Smartwatch	IG Carousel	0	3	4146	1079	42	17	43	1	6
2023-03-25	Earphone	IG Reel	22	0	132284	66721	1093	1482	3622	83	695

Create a report to get the statistics for the account. The final output includes the following fields: month_name, total_profile_visits, total_new_followers

Query :

```
SELECT
    DATE_FORMAT(date,'%M') as Month_name,
    SUM(profile_visits) as Total_Profile_Visits,
    SUM(new_followers) as Total_Followers
FROM fact_account
GROUP BY Month_name
```

Output :

Month_name	Total_Profile_Visits	Total_Followers
January	26512	17053
February	20628	15254
March	23132	18285
April	29852	21799
May	106571	66984
June	103350	76942
July	54352	33302
August	42094	24371
September	41522	28523

- Profile visits and follower growth experienced a monumental surge in May and continue to follow same till june.
- The data reveals a positive correlation between profile visits and follower gains
- As the momentum from May and June dwindles, resulting in a slump in both profile visits and follower counts from July through September.

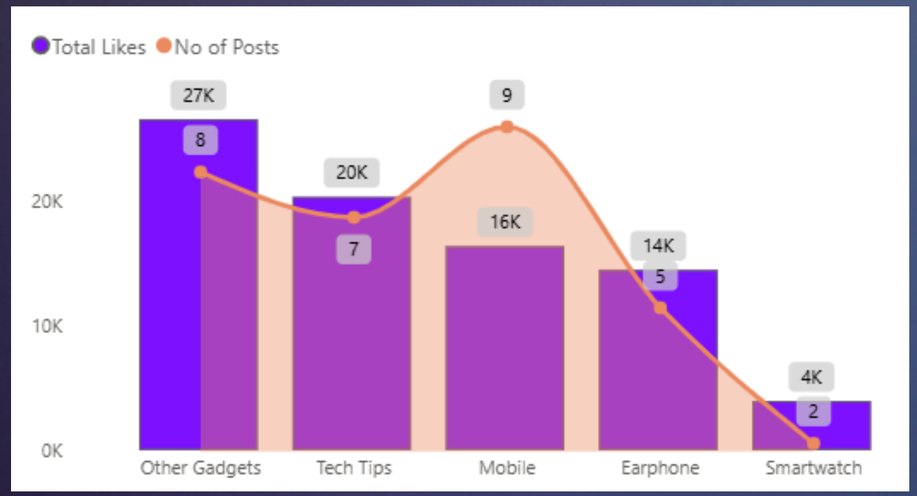
Write a CTE that calculates the total number of 'likes' for each 'post_category' during the month of 'July' and subsequently, arrange the 'post_category' values in descending order according to their total likes.

Query

```
WITH likes_cte AS (
SELECT
    post_category,
    SUM(likes) AS Total_Likes
FROM fact_content
WHERE MONTH(date) = 7
GROUP BY post_category
ORDER BY SUM(likes) DESC
)
SELECT * FROM likes_cte;
```

Output

post_category	Total_Likes
Other Gadgets	26519
Tech Tips	20296
Mobile	16338
Earphone	14435
Smartwatch	3918



- Content related to "Other Gadgets" garners the most favorable response
- "Tech Tips" content enjoys significant popularity, securing the second-highest number of likes at 20,296.
- "Smartwatch" content performs very poor
- There is a substantial disparity in engagement across categories, with "Other Gadgets" receiving nearly seven times more likes than "Smartwatch" content.

Create a report that displays the unique post_category names alongside their respective counts for each month.

Query

```
SELECT
    DATE_FORMAT(date, '%M') AS month_name,
    GROUP_CONCAT(DISTINCT post_category
    ORDER BY post_category SEPARATOR ',') AS
    post_category,
   COUNT(DISTINCT post_category) AS count
FROM fact_content
GROUP BY DATE_FORMAT(date, '%M'),MONTH(date)
ORDER BY MONTH(date);
```

Output

month_name	post_category	count
January	Earphone,Mobile,Smartwatch	3
February	Earphone,Laptop,Mobile,Smartwatch	4
March	Earphone,Laptop,Mobile,Smartwatch	4
April	Earphone,Laptop,Mobile,Other Gadgets,Smart...	5
May	Earphone,Laptop,Mobile,Other Gadgets,Smart...	6
June	Mobile,Other Gadgets,Smartwatch,Tech Tips	4
July	Earphone,Mobile,Other Gadgets,Smartwatch,T...	5
August	Earphone,Mobile,Other Gadgets,Smartwatch,T...	5
September	Mobile,Other Gadgets,Smartwatch,Tech Tips	4

- The variety of post categories consistently increases until May, where it peaks with six different types.
- Following this, the content strategy shifts, with the Laptop category being entirely dropped in the latter half of the year in favor of new Tech Tips content.

What is the percentage breakdown of total reach by post type?

Query

```
SELECT
    post_type,
    SUM(reach) as Total_Reach,
    ROUND(SUM(reach)*100.0/SUM(sum(reach)) over(),2)
    as Reach_percentage
FROM fact_content
GROUP BY post_type
ORDER BY Reach_percentage DESC;
```

Output

post_type	Total_Reach	Reach_percentage
IG Reel	5379091	61.63
IG Image	1866381	21.38
IG Video	1422300	16.30
IG Carousel	60465	0.69

- IG Reel posts exhibit a dominant reach, accounting for an overwhelming 61.63% of the total reach
- IG Carousel posts perform exceptionally poor
- IG Image and IG Video have a moderate, but secondary, role in overall reach, with their combined reach still falling short of the performance of IG Reel posts alone.

Create a report that includes the quarter, total comments, and total saves recorded for each post category.

Query

```
SELECT
    post_category,
    CONCAT('Q',QUARTER(date)) as Quarter,
    SUM(comments) as Total_Comments,
    SUM(saves) as Total_Saves
FROM fact_content
GROUP BY post_category,Quarter;
```

Output

post_category	Quarter	Total_Comments	Total_Saves
Mobile	Q1	1836	9843
Smartwatch	Q1	600	2860
Earphone	Q1	351	2230
Laptop	Q1	418	2837
Mobile	Q2	2313	17207
Earphone	Q2	589	3602
Smartwatch	Q2	1358	12581
Other Gadgets	Q2	1622	12041
Laptop	Q2	452	2248
Tech Tips	Q2	2201	17649
Other Gadgets	Q3	964	4457
Smartwatch	Q3	971	3326
Earphone	Q3	427	3247
Tech Tips	Q3	1596	12976
Mobile	Q3	1134	5285

- The Mobile post category emerges as a powerhouse, dominating with the highest total saves and second-highest comments across all quarters.
- Q2 represents a pinnacle of engagement, with both comments and saves soaring to their highest quarterly totals
- Tech Tips content garnered the most saves in Q2

List the top three dates in each month with the highest number of new followers.

Query

```
WITH top3dates AS (
SELECT
   MONTH(date) as Month,
   DATE_FORMAT(date,'%M') as Month_name,
   date,
   SUM(new_followers) as Total_Followers,
   ROW_NUMBER() OVER(partition by MONTH(date) order
   by sum(new_followers) DESC) as Ranking
FROM fact_account
GROUP BY date
)

SELECT Month_name,date,Total_Followers
FROM top3dates
WHERE Ranking<4
ORDER BY Month ASC,Total_followers DESC
```

Output

Month_name	date	Total_Followers
January	2023-01-30	3186
January	2023-01-03	2959
January	2023-01-23	1003
February	2023-02-01	4106
February	2023-02-24	2383
February	2023-02-02	1989
March	2023-03-21	5421
March	2023-03-28	2513
March	2023-03-25	2356
April	2023-04-25	3736
April	2023-04-30	2753
April	2023-04-06	2500
May	2023-05-08	8872
May	2023-05-20	6169
May	2023-05-12	6051
June	2023-06-30	8804

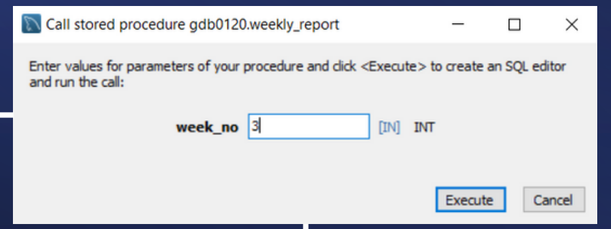
- The query's main strategy is to first rank all dates within each month based on their total new followers, then it selects only the top three ranked days from that list to show the highest-performing days for follower growth each month.
- The month of June exhibits a spectacular surge in follower acquisition
- A single day in May (2023-05-08) stands out as a colossal anomaly, yielding a staggering 8,872 new followers
- March showcases the most profound disparity in daily performance

Create a stored procedure that takes the 'Week_no' as input and generates a report displaying the total shares for each 'Post_type'

Query

```
CREATE DEFINER=`root`@`localhost` PROCEDURE `weekly_report`(IN week_no INT)
BEGIN
    SELECT
        post_type,
        SUM(shares)
    FROM fact_content
    WHERE WEEK(date) = week_no
    GROUP BY post_type;
END
```

Output



post_type	SUM(shares)
IG Carousel	111
IG Video	318
IG Image	198

318
IG Video

111
IG Carousel

198
IG Image

Key Insights and Recommendations

Insights

- IG Reels dominate with 62% of total reach and peak impressions at 339K.
- Mobile content leads in comments and saves, especially in Q2.
- May and June drive peak profile visits and follower growth.
- Other Gadgets and Tech Tips top likes in July, while Smartwatches lag.
- Weekend posts in March/April show higher engagement.
- Content diversity peaks in May with six categories; Laptops dropped later.
- May 8th saw an anomalous 8,872 new followers, tied to viral content.
- Shares vary by post type, with Reels likely leading in high-traffic weeks.

Recommendations

- Prioritize IG Reels to maximize reach and impressions.
- Focus on Mobile and Tech Tips content for engagement and saves.
- Promote Other Gadgets content; rethink Smartwatch strategy.
- Post on weekends, especially in March/April, to boost engagement.
- Maintain diverse categories, dropping low-performers like Laptops.

Thank you For Watching

Email

adityacodecom@gmail.com

Github

https://github.com/AdityaSaiV