Instagram User Analytics

ANALYSING USER BEHAVIOUR FOR MARKETING AND INVESTOR STRATEGIES

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Project Description

Purpose:

Analyse Instagram user data to uncover insights for targeted marketing and investor confidence.

Approach:

Using SQL queries on Instagram's database (tables: users, photos, likes, tags) to extract actionable insights.

Goal:

Provide data-driven strategies to enhance user engagement and demonstrate platform vitality.

APPROACH

Step 1 -	Step 2 -	Step 3 -	Step 4 -
Started by looking at the dataset to understand its structure. Addressing missing values, duplication, and inconsistencies was part of the process. Column names were changed for better readability.	Examined the cleaned dataset to identify trends and data distribution. examined changes across various columns.	Responded to the essential questions that guided the analysis. Throughout the process, I focused on the project's objectives.	To analyze the dataset, tables and visuals were created. evaluated data and provided significant concepts.

Technology-Stack Utilized

In this project, I worked with a moderate-sized Instagram dataset that fit well into a relational database and simple spreadsheet tools. I chose:

MySQL

- Easy to write and run SQL queries against our user, photo, like, and tag tables
- Built-in visual tools to explore table relationships and optimize queries

Microsoft Excel

- Quickly turned raw query results into charts (bar, pie, line) with a few clicks
- Simple pivot-tables for ad-hoc breakdowns (e.g. active vs. inactive users)

Loyal User Reward

Objective -

- Identify the 5 oldest Instagram users from the given database of 100 users.

Approach -

- Analyzing user sign-up data and pulled out the first 5 users who registered on the platform. These users were selected based on the earliest account creation dates.

Data Presented -

- id
- username
- Created_at

id	username	Created at
138	Jordyn.Jacobson2	14-05-2016
95	Nicole71	09-05-2016
163	Elenor88	08-05-2016
367	Emilio_Bernier52	06-05-2016
80	Darby_Herzog	06-05-2016

Inactive User Engagement

Objective -

- To identify Instagram users who have never posted a single photo.

Approach -

- Analyzing the user data and filtered out individuals with no associated photos in the database highlighting users with zero posts since joining.

Data Presented -

- username
- image_url

username	image_url
Aniya_Hackett	NULL
Arely_Bogan63	NULL
Bartholome.Bernhard	NULL
Bethany20	NULL
Darby_Herzog	NULL
David.Osinski47	NULL
Duane60	NULL
Esmeralda.Mraz57	NULL
Esther.Zulauf61	NULL
Franco_Keebler64	NULL
Harley_Lind18	NULL
Hulda.Macejkovic	NULL
Jaclyn81	NULL
Janelle.Nikolaus81	NULL
Jessyca_West	NULL
Julien_Schmidt	NULL
Kasandra_Homenick	NULL
Kenton_Kirlin	NULL
Leslie67	NULL
Linnea59	NULL
Maxwell.Halvorson	NULL
Mckenna17	NULL
Mike.Auer39	NULL
Morgan.Kassulke	NULL
Nia_Haag	NULL
Ollie_Ledner37	NULL
Pearl7	NULL
Rocio33	NULL
Tierra.Trantow	NULL

Contest Winner Declaration

Objective -

- To identify the user with the highest number of likes on a single photo as part of a contest.

Approach -

- I analyzed the photos table to find the most liked post and then retrieved the corresponding user details.

Data Presented -

- username - Zack_Kemmer93
- id - 145
- image_url - https://jarret.name
- total likes - 48

username	id	Image_url	total Likes
Zack_Kemmer93	145	https://jarret.name	48

Hashtag Research

Objective -

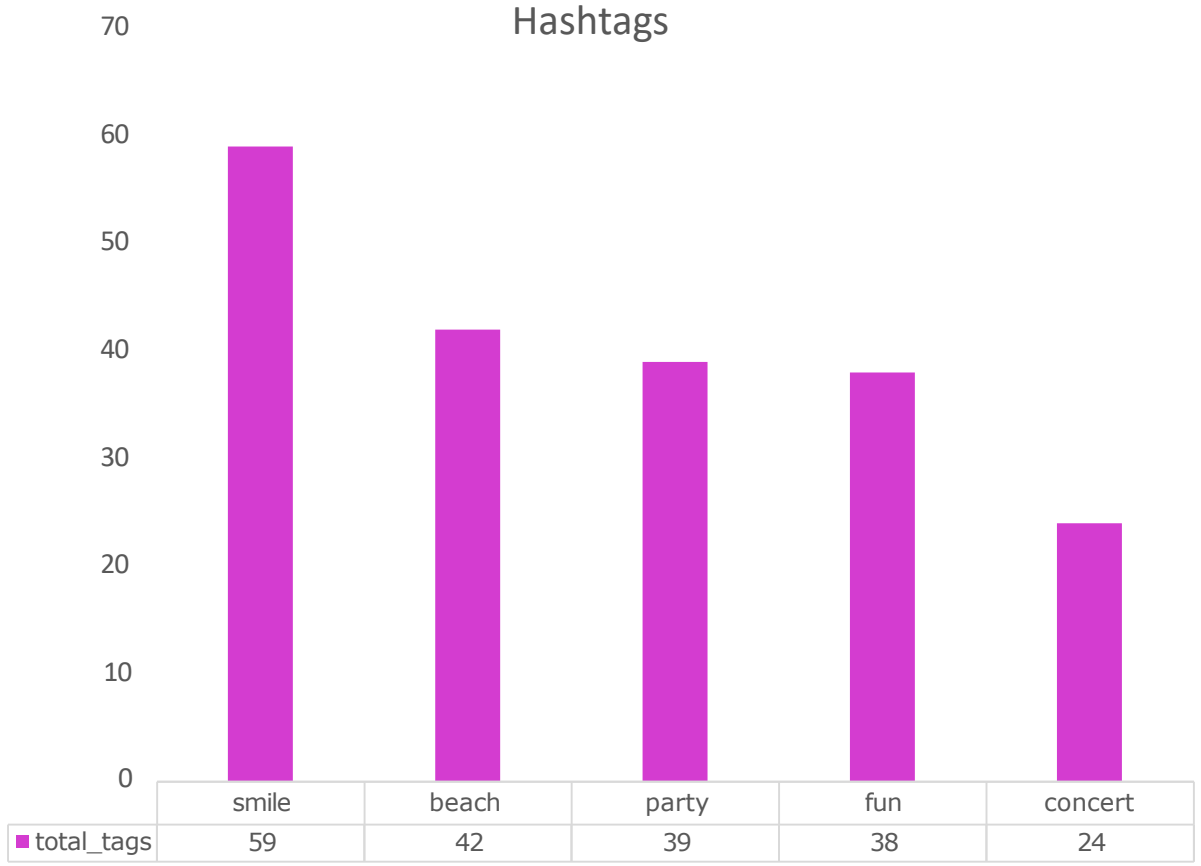
- To identify the top 5 most commonly used hashtags on the platform, helping a partner brand improve its reach and visibility.

Approach -

- I analyzed hashtag usage data across posts to uncover the most frequently appearing hashtags.

Data Presented -

- tag_name
- total_tag



User Engagement

Objective -

- To determine the most effective days of the week to launch Instagram ad campaigns, based on user registration patterns.

Approach -

- I analyzed the created_at timestamps of all users and grouped them by day of the week
- Thursday has the highest number of new user registrations indicating peak user activity.

Data Presented -

- Day_of_Week (Thursday)
- Total (64)

Day_of_Week	Total
Thursday	64

Bots & Fake Accounts

Objective-

- Identify users who may be bots by detecting those who have liked every photo on the platform.

Approach-

- I analyzed like activity per user and compared it against the total photo count to flag users whose number of likes matched the number of photos posted.

Data Presented-

- Username
- Number_of_likes

username	Number_of_likes
Aniya_Hackett	257
Jaclyn81	257
Rocio33	257
Maxwell.Halvorson	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257
Julien_Schmidt	257
Mike.Auer39	257
Nia_Haag	257
Leslie67	257
Janelle.Nikolaus81	257
Bethany20	257

Result

Through this project, I was able to transform raw Instagram data into actionable insights. I successfully identified the most committed and inactive users, discovered the top-performing hashtags, established the optimum day to begin ad campaigns, and even reported suspicious accounts that acted like bots.

This experience not only improved my SQL and data analysis abilities, but it also given me a better understanding of how data can affect business choices, such as enhancing user engagement and marketing efficacy.

By mixing technical tools like MySQL and Excel with business thinking, I learnt how to ask the appropriate questions, extract the correct data, and turn it into meaningful solutions. This project allowed me to witness the full power of data in action.