**INSTAGRAM USER ANALYTICS**

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| **Project Description** | Analysing how user engage and interact in Instagram in order make the business more profitable, desirable, and satisfactory. This analysis will be shared with marketing, product, and development team to build an app or new features by tracking user interactions. |
| **Approach** | I have created ERR diagram to understand the tables clearly. Gone through all the attributes and its connection with the other tables. Whenever I approach each question, I first execute code (SELECT \* FROM table) which contain all the attributes and its values to understand better. |
| **Tech-Stack Used** | MySQL Workbench 8.0 CE – SQL query can be executed easily and provides more clarity about tables visually by representing in ERR diagram etc. |
| **Insights** | Knowledge, I gained   1. We can’t use two aggregate functions over one attribute. Instead, we can use nested query. 2. In group by function aggregate function is not allowed. 3. How we can use aggregate function and got more clarity on left join, right join. 4. How to interact with inactive user like by sending them a mail to post 1st photo. 5. Rewarding user to gain more user engagement. 6. With help of these data, analysing which day would be appropriate to launch an ad campaign like on which day the user engagement is more. |
| **Result** | I have tried to answer to all questions that are asked. While doing this project, explored many functions and its syntax as well. I have executed those functions in this project. Practising more questions, helped me to finish this project. |

**You are required to provide a detailed report answering the questions below :**

**A) Marketing:**The marketing team wants to launch some campaigns, and they need your help with the following

1. **Rewarding Most Loyal Users:** People who have been using the platform for the longest time.  
   Your Task: Find the 5 oldest users of the Instagram from the database provided

select id,username,created\_at from users order by created\_at limit 5;

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| 80 | Darby\_Herzog | 2016-05-06 00:14:21 |
| 67 | Emilio\_Bernier52 | 2016-05-06 13:04:30 |
| 63 | Elenor88 | 2016-05-08 01:30:41 |
| 95 | Nicole71 | 2016-05-09 17:30:22 |
| 38 | Jordyn.Jacobson2 | 2016-05-14 07:56:26 |
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1. **Remind Inactive Users to Start Posting:** By sending them promotional emails to post their 1st photo.  
   Your Task: Find the users who have never posted a single photo on Instagram

select distinct a.id, a.username from users a

left join photos b

on a.id = b.user\_id where b.user\_id is null;

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| --- | --- |
| 5 | Aniya\_Hackett |
| 7 | Kasandra\_Homenick |
| 14 | Jaclyn81 |
| 21 | Rocio33 |
| 24 | Maxwell.Halvorson |
| 25 | Tierra.Trantow |
| 34 | Pearl7 |
| 36 | Ollie\_Ledner37 |
| 41 | Mckenna17 |
| 45 | David.Osinski47 |
| 49 | Morgan.Kassulke |
| 53 | Linnea59 |
| 54 | Duane60 |
| 57 | Julien\_Schmidt |
| 66 | Mike.Auer39 |
| 68 | Franco\_Keebler64 |
| 71 | Nia\_Haag |
| 74 | Hulda.Macejkovic |
| 75 | Leslie67 |
| 76 | Janelle.Nikolaus81 |
| 80 | Darby\_Herzog |
| 81 | Esther.Zulauf61 |
| 83 | Bartholome.Bernhard |
| 89 | Jessyca\_West |
| 90 | Esmeralda.Mraz57 |
| 91 | Bethany20 |

1. **Declaring Contest Winner:** The team started a contest and the user who gets the most likes on a single photo will win the contest now they wish to declare the winner.  
   Your Task: Identify the winner of the contest and provide their details to the team

select b.id, b.username

from (select user\_id as auser\_id ,count(photo\_id) as count\_photo from likes group by user\_id) a

join users b

on auser\_id = b.id

where count\_photo = (select max(count\_photo) from (select user\_id as auser\_id ,count(photo\_id) as count\_photo from likes group by user\_id) c)

group by b.id, b.username

order by count\_photo desc;

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| 41 | Mckenna17 |
| 54 | Duane60 |
| 57 | Julien\_Schmidt |
| 66 | Mike.Auer39 |
| 71 | Nia\_Haag |
| 75 | Leslie67 |
| 76 | Janelle.Nikolaus81 |
| 91 | Bethany20 |

1. **Hashtag Researching:** A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform.  
   Your Task: Identify and suggest the top 5 most used hashtags on the platform

select b.tag\_name, count(b.tag\_name)

from photo\_tags a

join tags b

on a.tag\_id = b.id

group by b.tag\_name

order by count(b.tag\_name) desc

limit 5;

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| Hashtag  smile | 59 |
| beach | 42 |
| party | 39 |
| fun | 38 |
| concert | 24 |

1. **Launch AD Campaign:** The team wants to know, which day would be the best day to launch ADs.  
   Your Task: What day of the week do most users register on? Provide insights on when to schedule an ad campaign

select most\_users from (select dayofweek(created\_at) as most\_user, count(dayofweek(created\_at)) as count\_week from users group by dayofweek(created\_at) order by count(dayofweek(created\_at)) desc) a

where count\_week = (select max(count\_week) from (select dayofweek(created\_at) as most\_users, count(dayofweek(created\_at)) as count\_week from users group by dayofweek(created\_at)) b);

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| 0 = Monday, 1 = Tuesday, 2 = Wednesday, 3 = Thursday, 4 = Friday, 5 = Saturday, 6 = Sunday.  Day\_of\_week  5 |
| 1  Sunday would be best day to launch ads since it’s a holiday many people would be using their phone to relax.  **B) Investor Metrics:**Our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to assess the app on the following grounds   1. **User Engagement:** Are users still as active and post on Instagram or they are making fewer posts Your Task: Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users   select count(a.user\_id) from photos a  join users b  on a.user\_id = b.id  where a.user\_id = (select round(avg(count\_id)) as avg\_id from (select user\_id as uid, count(user\_id) as count\_id from photos group by user\_id) a)  Answer : count = 4  select count(b.id)/count(distinct(a.id)) from users a left join photos b on a.id = b.user\_id;  Answer : total = 2.57   1. **Bots & Fake Accounts:** The investors want to know if the platform is crowded with fake and dummy accounts Your Task: Provide data on users (bots) who have liked every single photo on the site (since any normal user would not be able to do this).   select uid, b.username from  (select user\_id as uid, count(user\_id) as cid  from likes  group by user\_id  order by count(\*) desc) a  join users b  on b.id = a.uid  where cid = (select max(cid) from (select count(user\_id) as cid  from likes  group by user\_id  order by count(\*) desc)b)  id username   |  |  | | --- | --- | | 21 | Rocio33 | | 71 | Nia\_Haag | | 5 | Aniya\_Hackett | | 66 | Mike.Auer39 | | 41 | Mckenna17 | | 14 | Jaclyn81 | | 57 | Julien\_Schmidt | | 24 | Maxwell.Halvorson | | 76 | Janelle.Nikolaus81 | | 75 | Leslie67 | | 54 | Duane60 | | 91 | Bethany20 | | 36 | Ollie\_Ledner37 | |