Instagram User Analytics Project

A) MARKETING ANALYSIS:

1. Loyal User Reward : Identify the five oldest users on Instagram from the provided database.

MYSQL WORKBENCH QUERY

```
select id,username,created_at
from users
order by created_at asc
limit 5;
```

 # Answer: The five oldest users on Instagram from the provided database.

```
/*
  Id        Username              created_at
'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'
*/
```

Project Description

Analyzed the Instagram database to identify the platform's earliest adopters, providing recognition for user loyalty.

Approach

Executed a SQL query to sort users by account creation date and selected the top five to identify the oldest accounts.

Tech-Stack Used

Utilized MySQL Workbench for its reliability and efficiency in handling and querying large data sets.

Insights

The earliest user account (**Id-'80', Username-'Darby_Herzog', created_at-'2016-05-06 00:14:21'**) date back to May 2016, indicating the initial user base formation period.

Result

Successfully generated the five oldest user accounts, who can be give the loyal user reward.

2. Inactive User Engagement : Identify users who have never posted a single photo on Instagram.

MYSQL WORKBENCH QUERY

```
SELECT id AS user_id, username
FROM users
WHERE id NOT IN (SELECT DISTINCT user_id FROM photos);
```

 # Answer: Users who have never posted a single photo on Instagram.

```
/*
user_id     username
'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'
***/**

Project Description

We looked into our Instagram data to find users who signed up but haven't shared any photos.

Approach

Ran a query to list out all users and exclude those who appear in the photos list.

Tech-Stack Used

I used MySQL Workbench because it's great for organizing and running database queries quickly.

Insights

Discovered an number of users who have accounts but haven't uploaded any photos to Instagram.

Result

Identified users who may need encouragement or incentives to start engaging with the platform by posting photos.

3. Contest Winner Declaration : Determine the winner of the contest and provide their details to the team.

MYSQL WORKBENCH QUERY

```
select u.id as user_id,u.username,p.id as photo_id,count(l.photo_id) as Like_count
from users u
inner join photos p on p.user_id=u.id
inner join likes l on l.photo_id=p.id
group by u.id, p.id, username
order by Like_count desc
limit 1;
```

 # Answer: The winner of the contest and provide their details to the team.

```
#  user_id      username          photo_id    Like_count
--   '52',      'Zack_Kemmer93',    '145',          '48'
```

Project Description

This part of the project was about finding the most-liked photo on Instagram to decide who wins our
contest.

Approach

I combined user and photo data, then counted likes for each photo to see which got the most.

Tech-Stack Used

MySQL Workbench was the tool I chose because it's user-friendly for managing database queries and data analysis.

Insights

One user's photo received more likes than any other, making it the standout for our contest winner.

Result

user_id - 52, Username - Zack_Kemmer93 is the most liked photo, which means we can now announce our contest winner and reward him.

4. Hashtag Research : Identify and suggest the top five most commonly used hashtags on the platform.

MYSQL WORKBENCH QUERY

```
select t.id as tag_id,t.tag_name,count(pt.tag_id) as `counts`
from tags t
inner join photo_tags pt on pt.tag_id = t.id
group by t.id, t.tag_name
order by counts desc
limit 5;
```

 # Answer : the top five most commonly used hashtags on the platform.

```
/*

Tag_ID    Tag_Name    Count
 '21',        'smile',     '59'
 '20',       'beach',     '42'
 '17',        'party',     '39'
 '13',        'fun',       '38'
 '18',        'concert',   '24'

*/
```

Project Description

The task was to find out which hashtags are trending by seeing which ones are used the most.

Approach

Used tags table to join the photo_tags table and counted how many times each tag was used to find the most popular ones.

Tech-Stack Used

Chose MySQL Workbench for this task due to its features for sorting and analyzing data trends.

Insights

Noticed that positive and leisure-related hashtags like 'smile' and 'beach' are the most frequently
used.

Result

We now know the five hottest hashtags, which can help us understand user interests and behaviors.

5. Ad Campaign Launch : Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

MYSQL WORKBENCH QUERY

```
select*from users;

SELECT DAYNAME(created_at) AS day_of_week, COUNT(*) AS registration_count
FROM users
GROUP BY day_of_week
ORDER BY registration_count DESC
;
```

 # Answer :The day of the week when most users register on Instagram.

```
/*
   Day            registration_count
'Thursday',            '16'
'Sunday',              '16'
'Friday',              '15'
'Tuesday',             '14'
'Monday',              '14'
'Wednesday',           '13'
'Saturday',            '12'
```

Thursday and Sunday have the most number of registration_count.

***/**

Project Description

This project aimed to find the best day to start an ad campaign by identifying when most users sign up on Instagram.

Approach

I looked at user registration dates, grouped them by day of the week, and counted registrations for each day.

Tech-Stack Used

MySQL Workbench was my go-to because it effectively handles date-related queries and data aggregation.

Insights

Found that Thursdays and Sundays are the peak days for new user registrations, suggesting the best days to launch ads.

Result

This data informs our ad scheduling, letting us to start the ad campaign for days with the highest sign-up rates.

B) Investor Metrics:

1. User Engagement : Calculate the average number of posts per user on Instagram.

MYSQL WORKBENCH QUERY

```
select avg(Post_count) as `Average Post Per User`
from  ( select user_id,count(*) as Post_count
        from photos
        group by user_id) as User_Post_Count;
```

 # Answer : The average number of posts per user on Instagram.

 # Average Post Per Use is 3.4730 .

```
-- Also, provide the total number of photos on Instagram divided by the total number of users.

select (select count(image_url)from photos)/(select count(username) from users) as `The total number of photos on Instagram divided by the total number of users`;
```

 # Answer : The total number of photos on Instagram divided by the total number of users is 2.5700 .

Project Description

The project runs query for user engagement by averaging the number of posts each user makes on Instagram, providing insight into the platform's activity level for investors.

Approach

We executed a two SQL query: first, we calculated the average number of posts by individual users, and second, we computed the overall photo-to-user ratio on the platform.

Tech-Stack Used

MySQL Workbench was chosen for its analytical capabilities, allowing for precise and complex calculations necessary for the investor metrics.

Insights

The average posts per user are approximately 3.47, which indicates a moderate engagement level among users. The photo-to-user ratio of 2.57 suggests a diverse user activity range, with some users posting more frequently than others.

Result

The calculated value provides valuable insights for investors, showing a decent engagement level that could influence marketing strategies and investment decisions.

2. Bots & Fake Accounts : Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

MYSQL WORKBENCH QUERY

```
select id
from photos;

select u.username,l.user_id,count(*) as Photos_like
from likes l
inner join users u on u.id =l.user_id
group by user_id,username
having Photos_like = 257
order by Photos_like desc;
```

-- Answer : Users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user are

```
/*
      username            user_id        Photos_like
  'Aniya_Hackett',          '5',             '257'
  'Jaclyn81',               '14',            '257'
  'Rocio33',                '21',            '257'
  'Maxwell.Halvorson',      '24',           '257'
  'Ollie_Ledner37',         '36',            '257'
  'Mckenna17',              '41',            '257'
  'Duane60',                '54',           '257'
  'Julien_Schmidt',         '57',            '257'
  'Mike.Auer39',            ’66',            ‘257'
  'Nia_Haag',               ’71',            '257'
  'Leslie67',               '75',            '257'
  'Janelle.Nikolaus81',     '76',            '257'
  'Bethany20',              '91',            '257'

*/
```

Project Description

A study to find accounts that have liked every photo on Instagram, which could indicate bots or fake users.

Approach

Executed a SQL query to count likes per user and identified any that matched the total photo count, indicating potential automated liking behavior.

Tech-Stack Used

MySQL for running the complex SQL queries due to its querying capabilities and efficient handling of large datasets.

Insights

Several users were found to have liked every photo (total of 257), which is unusual for genuine user behavior and flags them as potential bots.

Result

We compiled a list of user accounts that may require further investigation for authenticity, which is crucial for maintaining user trust and platform integrity.

Impact on Investors

This finding helps investors evaluate the genuine engagement levels on the platform and the health of the user base.