## Coding Challenge: SocialScape Platform Metrics

### Introduction

Welcome to your SQL data analysis challenge! In this task, you'll step into the role of a data analyst at SocialScape, a fast-growing social media platform. The product team needs your help to understand user behavior and engagement to make data-driven decisions. Your challenge is to analyze a dataset of user activity using SQL queries to uncover key insights.

### Scenario

SocialScape has three main tables: users, posts, and comments. The team wants to understand platform growth, content performance, and user engagement. They've provided you with a sample of their data and a series of questions they need answered. Your ability to write efficient and accurate SQL queries will be key to helping them succeed.

### Data Description

You will be working with three tables. Assume these tables are already populated in a SQL database.

- users table:
    - user_id (INTEGER, PRIMARY KEY): Unique identifier for each user.
    - username (TEXT): The user's chosen username.
    - join_date (DATE): The date the user joined the platform.
    - country (TEXT): The user's country of origin.
- posts table:
    - post_id (INTEGER, PRIMARY KEY): Unique identifier for each post.
    - user_id (INTEGER, FOREIGN KEY): The ID of the user who created the post.
    - post_date (DATETIME): The date and time the post was published.
    - content (TEXT): The content of the post.
    - likes (INTEGER): The number of likes the post has received.
- comments table:
    - comment_id (INTEGER, PRIMARY KEY): Unique identifier for each comment.

- post_id (INTEGER, FOREIGN KEY): The ID of the post the comment is on.
- user_id (INTEGER, FOREIGN KEY): The ID of the user who made the comment.
- comment_date (DATETIME): The date and time the comment was made.
- comment_text (TEXT): The content of the comment.

### The Challenge: Key Questions

Use SQL to write queries that answer the following questions.

1. **User Growth**: Write a query to find the **total number of new users per month** for the last two years. The result should show the year, month, and the count of new users.
2. **Top Content**: Identify the **top 10 most liked posts** of all time. The result should include the post's content, the username of the creator, and the number of likes.
3. **Engagement Rate**: Calculate the **average number of comments per post**. Then, find the user who has **created the most comments** and show their username and the total count of comments they've made.
4. **Power Users**: Identify **"power users"** who have created at least 10 posts and 20 comments. The result should show the username and their total count of posts and comments.
5. **Geographic Analysis**: Determine which **countries have the highest average number of likes per post**. The query should return the top 5 countries along with their average likes per post, rounded to two decimal places.

### Deliverables

Submit a single file (e.g., a .sql file or a text document) containing all of your SQL queries, clearly labeled with the question number they answer. The queries should be well-formatted and easy to read.

Good luck!

### Dataset

Here are the SQL CREATE TABLE statements and INSERT statements to generate the data for the SocialScape challenge. This will provide you with a working dataset of 15 records for each of the three tables: users, posts, and comments.

SQL

```
-- Create the users table
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CREATE TABLE users (
    user_id INT PRIMARY KEY,
    username VARCHAR(50),
    join_date DATE,
    country VARCHAR(50)
);

-- Insert 15 records into the users table
INSERT INTO users (user_id, username, join_date, country) VALUES
(1, 'johndoe', '2023-01-15', 'USA'),
(2, 'janedoe', '2023-02-20', 'Canada'),
(3, 'alice', '2023-03-10', 'UK'),
(4, 'bobsmith', '2023-04-05', 'USA'),
(5, 'charlie', '2023-05-22', 'Australia'),
(6, 'dianne', '2023-06-18', 'Germany'),
(7, 'edward', '2023-07-30', 'Brazil'),
(8, 'fiona', '2023-08-01', 'France'),
(9, 'george', '2023-09-12', 'USA'),
(10, 'helen', '2024-01-01', 'Japan'),
(11, 'ivan', '2024-02-14', 'India'),
(12, 'julie', '2024-03-25', 'Canada'),
(13, 'karen', '2024-04-10', 'USA'),
(14, 'leo', '2024-05-18', 'UK'),
(15, 'mia', '2024-06-03', 'Australia');

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-- Create the posts table
CREATE TABLE posts (
    post_id INT PRIMARY KEY,
    user_id INT,
    post_date DATETIME,
    content TEXT,
    likes INT,
    FOREIGN KEY (user_id) REFERENCES users(user_id)
);

-- Insert 15 records into the posts table
INSERT INTO posts (post_id, user_id, post_date, content, likes) VALUES
(101, 1, '2023-02-01 10:00:00', 'Hello, World! My first post.', 5),
(102, 2, '2023-03-05 14:30:00', 'Loving this new app!', 15),
(103, 3, '2023-04-01 09:15:00', 'SQL is my favorite language.', 25),
(104, 4, '2023-04-20 11:00:00', 'Just finished a marathon!', 50),
(105, 1, '2023-05-10 18:00:00', 'Coffee and code on a Friday.', 12),
(106, 5, '2023-06-01 12:00:00', 'Check out my new project.', 30),
(107, 6, '2023-07-07 08:30:00', 'Travel is the best.', 8),
(108, 7, '2023-08-15 16:00:00', 'Beautiful sunset in Brazil.', 60),
(109, 8, '2023-09-20 19:00:00', 'New recipe I tried today.', 20),
(110, 9, '2023-10-25 21:00:00', 'Happy Halloween!', 40),
(111, 10, '2024-02-05 10:30:00', 'Exploring Tokyo.', 75),
(112, 11, '2024-03-01 11:45:00', 'Coding for a cause.', 90),
(113, 12, '2024-04-15 13:00:00', 'Feeling grateful today.', 35),
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(114, 13, '2024-05-01 15:00:00', 'May the 4th be with you!', 110),
(115, 14, '2024-06-10 17:00:00', 'Enjoying the UK countryside.', 18);

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-- Create the comments table
CREATE TABLE comments (
    comment_id INT PRIMARY KEY,
    post_id INT,
    user_id INT,
    comment_date DATETIME,
    comment_text TEXT,
    FOREIGN KEY (post_id) REFERENCES posts(post_id),
    FOREIGN KEY (user_id) REFERENCES users(user_id)
);

-- Insert 15 records into the comments table
INSERT INTO comments (comment_id, post_id, user_id, comment_date, comment_text) VALUES
(1001, 101, 2, '2023-02-01 10:15:00', 'Welcome to the platform!'),
(1002, 101, 3, '2023-02-01 10:20:00', 'Excited to have you here.'),
(1003, 102, 1, '2023-03-05 14:45:00', 'Me too! It is great.'),
(1004, 103, 4, '2023-04-01 09:30:00', 'I agree, SQL is powerful.'),
(1005, 104, 1, '2023-04-20 11:30:00', 'Awesome, congrats!'),
(1006, 104, 5, '2023-04-20 11:40:00', 'Inspirational!'),
(1007, 105, 6, '2023-05-10 18:15:00', 'What are you working on?'),
(1008, 106, 1, '2023-06-01 12:30:00', 'Looks interesting!'),
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(1009, 106, 7, '2023-06-01 12:45:00', 'Can you share the link?'),

(1010, 108, 8, '2023-08-15 16:30:00', 'So beautiful!'),

(1011, 110, 9, '2023-10-25 21:30:00', 'Great costume!'),

(1012, 111, 1, '2024-02-05 11:00:00', 'Tokyo is amazing!'),

(1013, 111, 12, '2024-02-05 11:15:00', 'I love Japan.'),

(1014, 112, 13, '2024-03-01 12:00:00', 'This is a great initiative.'),

(1015, 114, 1, '2024-05-01 15:30:00', 'Best day of the year!');