**Problem Statement:**

The rise of social media platforms has brought about a wealth of user-generated content and

interactions. Businesses and organizations are keen to understand and leverage this data to

improve their marketing strategies, understand customer sentiments, and identify key

influencers. The challenge lies in effectively analyzing and interpreting the vast amount of social

media data available.

**Objectives:**

1. Data Collection and Storage: Develop a robust database system to store social media

interactions, user profiles, content engagement metrics, and network connections.

2. Analytics and Insights: Create SQL queries to analyze user engagement patterns,

identify influencers, measure the impact of social media campaigns, and perform

sentiment analysis on user-generated content.

3. Optimization and Strategy: Leverage historical data to forecast future trends, optimize

content strategies, and tailor marketing efforts to target specific demographics.

**Database Schema:**

The database schema includes the following tables:

1. **Users:** Stores information about social media users, including user\_id, username, email,

and date\_joined.

2. **Posts:** Contains details about user-generated posts, including post\_id, user\_id (foreign

key from Users table), content, and post\_date.

3. **Comments:** Stores comments made by users on posts, with comment\_id, post\_id

(foreign key from Posts table), user\_id (foreign key from Users table), comment\_text,

and comment\_date.

4. **Likes:** Tracks user likes on posts, with like\_id, post\_id (foreign key from Posts table),

user\_id (foreign key from Users table), and like\_date.

5. **Followers:** Manages user following relationships, with follower\_id, follower\_user\_id

(foreign key fromusers table) following\_user\_id (foreign key from Users table), and

follow\_date.

**Users:**

* **user\_id**: Unique identifier for each user.
* **username**: User's username.
* **email**: User's email address.
* **date\_joined**: Date when the user joined the social media platform.

**Posts:**

* **post\_id**: Unique identifier for each post.
* **user\_id**: User who created the post (foreign key referencing Users table).
* **content**: Text content of the post.
* **post\_date**: Date when the post was created.

**Comments:**

* **comment\_id**: Unique identifier for each comment.
* **post\_id**: Post to which the comment is related (foreign key referencing Posts table).
* **user\_id**: User who made the comment (foreign key referencing Users table).
* **comment\_text**: Text content of the comment.
* **comment\_date**: Date when the comment was made.

**Likes:**

* **like\_id**: Unique identifier for each like.
* **post\_id**: Post that received the like (foreign key referencing Posts table).
* **user\_id**: User who liked the post (foreign key referencing Users table).
* **like\_date**: Date when the like was made.

**Followers:**

* **follower\_id**: Unique identifier for each follower relationship.
* **follower\_user\_id**: User who is following (foreign key referencing Users table).
* **following\_user\_id**: User who is being followed (foreign key referencing Users table).
* **follow\_date**: Date when the following relationship was established.