

Database Design ER

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1. Social Media Platform

An ER diagram and Tables for a social media platform that tracks users, posts, interactions, groups, and advertising.

- **Entities and Description**

- **Users**

- **id** – Unique identifier for each user
- **name** – Full name of the user
- **email** – User's registered email address
- **profile_info** – Bio or profile description of the user
- **privacy_settings** – Defines visibility and privacy preferences
- **group_id** – Identifier of the group the user belongs to

- **Posts**

- **id** – Unique identifier for each post
- **content** – Textual content of the post
- **timestamp** – Time when the post was created
- **media** – Type of media attached to the post
- **user_id** – Identifier of the user who created the post
- **visibility** – Access level of the post (public/private/group)

- **Comments**

- **id** – Unique identifier for each comment
- **content** – Text content of the comment
- **timestamp** – Time when the comment was posted
- **post_id** – Identifier of the associated post
- **user_id** – Identifier of the user who made the comment

- **Likes**

- **id** – Unique identifier for each like
- **date** – Date and time when the like was made
- **user_id** – Identifier of the user who liked the content
- **comment_id** – Identifier of the liked comment
- **post_id** – Identifier of the liked post

- **Messages**

- **id** – Unique identifier for each message
- **content** – Text content of the message
- **timestamp** – Time when the message was sent
- **sender** – Identifier of the sending user
- **receiver** – Identifier of the receiving user
- **status** – Read or delivery status of the message

- **Connections**

- **id** – Unique identifier for each connection
- **follower** – Identifier of the user who follows
- **following** – Identifier of the followed user
- **timestamp** – Time when the connection was created

- **Groups**

- **id** – Unique identifier for each group
- **name** – Name of the group
- **description** – Description of the group's purpose
- **privacy_setting** – Visibility rules for the group
- **created_by** – Identifier of the user who created the group
- **post_id** – Identifier of posts associated with the group

- **Events**

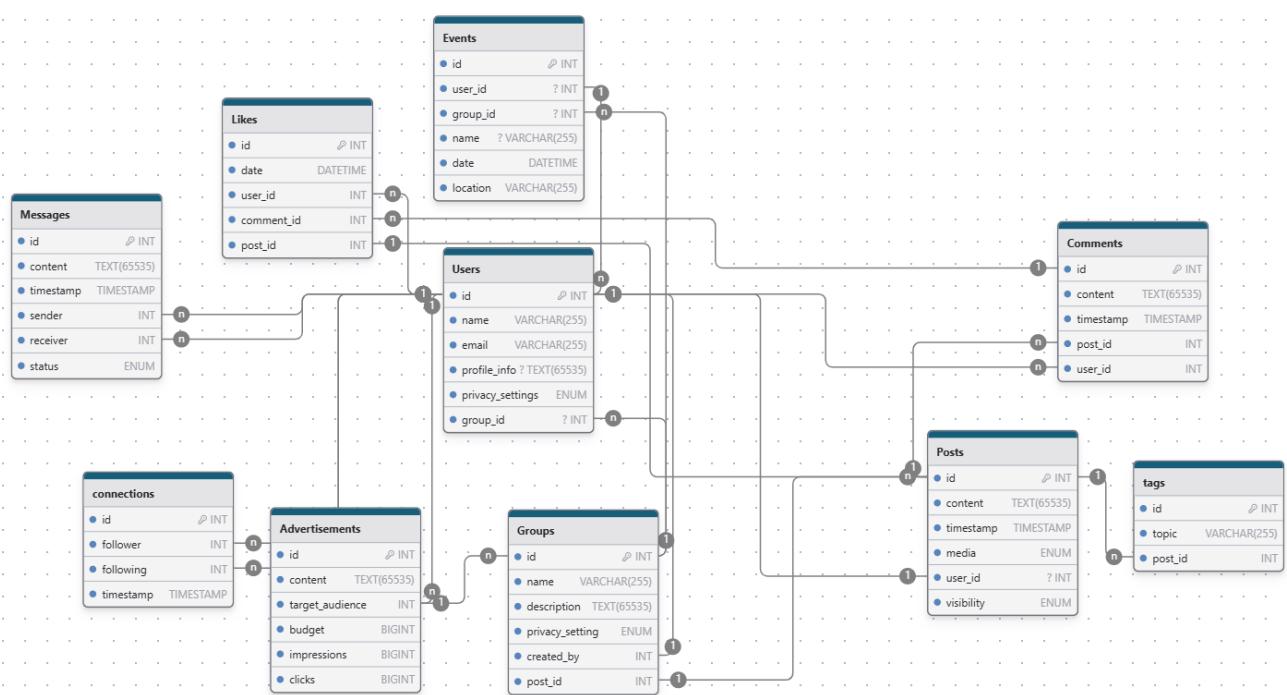
- **id** – Unique identifier for each event
- **user_id** – Identifier of the event creator
- **group_id** – Identifier of the group hosting the event
- **name** – Name of the event
- **date** – Date and time of the event
- **location** – Location where the event takes place

- **Tags**

- **id** – Unique identifier for each tag
- **topic** – Tag keyword or topic name
- **post_id** – Identifier of the associated post

• Advertisements

- **id** – Unique identifier for each advertisement
- **content** – Promotional content text
- **target_audience** – Intended audience identifier
- **budget** – Budget allocated for the advertisement
- **impressions** – Number of times the ad was displayed
- **clicks** – Number of clicks received



2. University Management System

An ER diagram for a university's management system that manages info about students, courses, professors, departments, and research projects.

- **Entities and Description**

- **Students**

- **id** – Unique identifier for each student
- **name** – Full name of the student
- **email** – Student's institutional email
- **course_id** – Identifier of the enrolled course
- **project_id** – Identifier of the research project
- **academic_advisor** – Identifier of the assigned professor
- **GPA** – Student's grade point average
- **major** – Academic major of the student

- **Professors**

- **id** – Unique identifier for each professor
- **name** – Full name of the professor
- **email** – Institutional email address
- **rank** – Academic rank (Assistant, Associate, Professor)
- **department_id** – Identifier of the department
- **course_id** – Identifier of the course taught
- **Leads_Project** – Identifier of the research project led

- **Departments**

- **id** – Unique identifier for each department
- **name** – Name of the department
- **head** – Name of the department head

- **Courses**

- **id** – Unique identifier for each course
- **name** – Course title
- **description** – Brief description of the course
- **number_of_credits** – Credit value of the course
- **department_id** – Identifier of the offering department

- **Course_Section**

- **id** – Unique identifier for each course section
- **course_id** – Identifier of the course
- **professor_id** – Identifier of the teaching professor

- **Grades**

- **id** – Unique identifier for each grade record
- **grade_value** – Numeric grade awarded
- **section_id** – Identifier of the course section
- **date_assigned** – Date when the grade was assigned
- **remarks** – Instructor comments on performance

• Prerequisite_Courses

- **id** – Unique identifier for prerequisite mapping
- **prerequisite_courses** – Identifier of prerequisite course

• Research_Projects

- **id** – Unique identifier for each research project
- **title** – Title of the research project
- **description** – Detailed project description
- **start_date** – Project start date
- **end_date** – Project end date
- **budget** – Allocated project funding

