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| --- |
| Business Template |
| **Logo / Image** |

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# Business Description

## Business background

## Problems. Current Situation

## the Benefits of implementing a database. Project Vision

# Model description

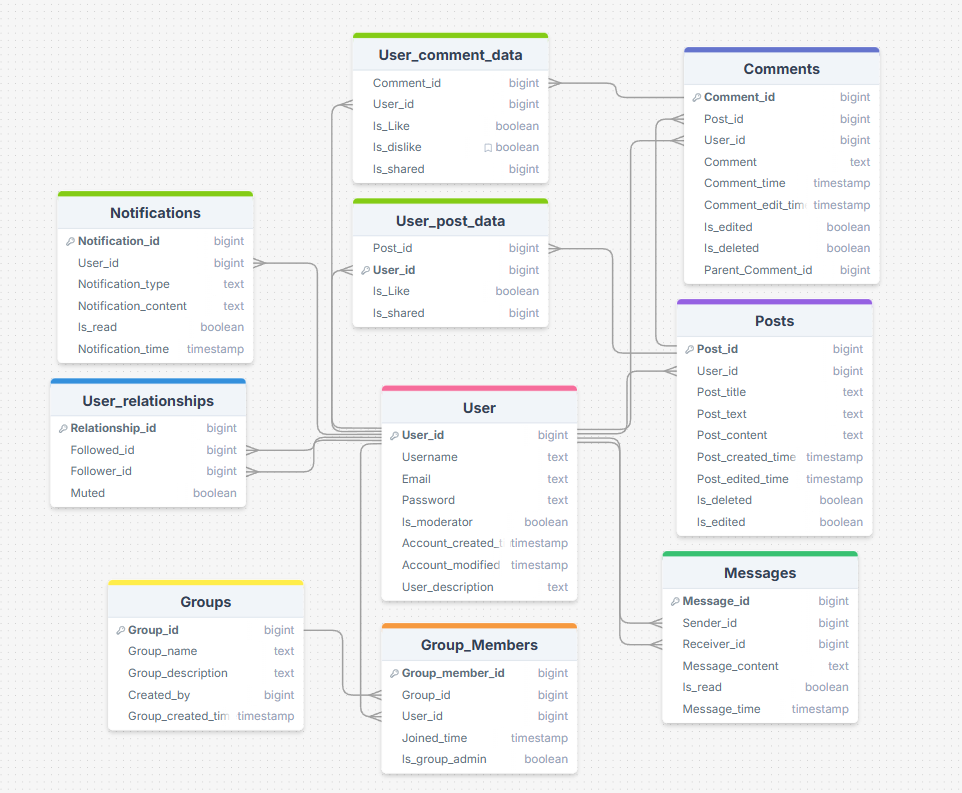
A rough sketch of how a logical scheme would look.

## 2.1 Definitions & Acronyms

The following terms and acronyms are used throughout this document:  
- PK: Primary Key  
- FK: Foreign Key  
- bigint: A data type used for storing large integer values  
- text: A data type used for storing long text strings  
- boolean: A data type used for storing binary values (True/False)

## 2.2 Logical Scheme

The logical scheme representing the database structure is shown below:



## 2.3 Objects

The following are the tables and fields included in the database:

### Table: User\_comment\_data

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constraints | Description |
| Comment\_id | bigint |  | Primary Key |
| User\_id | bigint |  | Foreign Key to User |
| Is\_Like | boolean |  | Indicates if the comment is liked |
| Is\_dislike | boolean |  | Indicates if the comment is disliked |
| Is\_shared | boolean |  | Indicates if the comment is shared |

### Table: Comments

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Comment\_id | bigint | Not Null (automatically generated) | Primary Key |
| Post\_id | bigint |  | Foreign Key to Posts |
| User\_id | bigint |  | Foreign Key to User |
| Comment | text(100( |  | Text of the comment |
| Comment\_time | timestamp | Not Null (automatically generated) | Time when the comment was made |
| Is\_edited | boolean |  | Indicates if the comment is edited |
| Is\_deleted | boolean |  | Indicates if the comment is deleted |
| Parent\_Comment\_id | bigint |  | Parent comment id |

### Table: Posts

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Post\_id | bigint | Not Null (automatically generated) | Primary Key |
| User\_id | bigint |  | Foreign Key to User |
| Post\_title | text(100) | Not Null | Title of the post |
| Post\_text | text(200) | Not Null | Main text content of the post |
| Post\_content | text(100) |  | Content or body of the post |
| Post\_created\_time | timestamp | Not Null (automatically generated) | Creation time of the post |
| Is\_deleted | boolean |  | Indicates if the post is deleted |
| Is\_edited | boolean |  | Indicates if the post is edited |

### Table: User

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| User\_id | bigint | Not Null (automatically generated) | Primary Key |
| Username | text(50) | Not Null Unique | User's username |
| Email | text(50) | Not Null Unique | User's email address |
| Password | text(100) | Not Null | User's password |
| Is\_moderator | boolean |  | Indicates if the user is a moderator |
| Account\_created\_time | timestamp | Not Null (automatically generated) | Time when the account was created |

### Table: User\_relationships

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Relationship\_id | bigint |  | Primary Key |
| Followed\_id | bigint |  | User being followed |
| Follower\_id | bigint |  | User following another user |
| Follow | boolean |  | Indicates if the relationship is a follow |
| Muted | boolean |  | Indicates if the relationship is muted |

### Table: User\_post\_data

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Post\_id | bigint |  | Foreign Key to Posts |
| User\_id | bigint |  | Foreign Key to User |
| Is\_Like | boolean |  | Optional Like = True Dislike = False |
| Is\_shared | boolean |  | Indicates if the post is shared |

### Table: Groups

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Group\_id | bigint | Not Null (automatically generated) | Primary Key |
| Group\_name | text(100) | Not Null | Name of the group |
| Group\_description | text(200) |  | Description of the group |
| Created\_by | bigint | Not Null | User ID of the group creator |
| Group\_created\_time | timestamp | Not Null (automatically generated) | Timestamp for when the group was created |

### Table: Group\_member\_id

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Group\_member\_id | bigint | Not Null (automatically generated) | Primary Key |
| Group\_id | bigint |  | Foreign Key to Groups |
| User\_id | bigint |  | Foreign Key to User |
| Joined\_time | timestamp | Not Null (automatically generated) | Timestamp for when the user joins group |
| Is\_group\_admin | boolean |  | Indicates if the user is group admin |

### Table: Messages

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Message\_id | bigint | Not Null (automatically generated) | Primary Key |
| Sender\_id | bigint | Not Null | Foreign Key to User |
| Receiver\_id | bigint | Not Null | Foreign Key to User |
| Message\_content | timestamp | Not Null | User sent message |
| Is\_read | boolean |  | Indicate if message has been read |
| Message\_time | timestamp | Not Null (automatically generated) | Timestamp for when the message was sent |

### Table: Notifications

|  |  |  |  |
| --- | --- | --- | --- |
| Field Name | Data Type | Constrainst | Description |
| Notification\_id | bigint | Not Null (automatically generated) | Primary Key |
| User\_id | bigint | Not Null | Foreign Key to User |
| Notification\_type | text | Not Null | The type of notification (message, event, ect) |
| Notification\_content | timestamp | Not Null | Text in the notification |
| Is\_read | boolean |  | Indicate if message has been read |
| Notification\_time | timestamp | Not Null (automatically generated) | Timestamp for when the notification was sent |

Relationships Descriptions:  
---------------------------

* **User to Comments**: One-to-many relationship. A user can make many comments, but each comment is made by one user.
* **User to Posts**: One-to-many relationship. A user can create multiple posts, but each post is created by one user.
* **Posts to Comments**: One-to-many relationship. A post can have many comments, but each comment belongs to one post.
* **User to User\_relationships**: Many-to-many relationship. A user can follow many other users, and each user can have many followers. The User\_relationships table tracks the follow relationships.
* **User to User\_comment\_data**: Many-to-many relationship. A user can interact (like, dislike, share) with many comments, and each comment can have multiple user interactions.
* **User to User\_post\_data**: Many-to-many relationship. A user can interact (like, dislike, share) with many posts, and each post can have multiple user interactions.
* **Groups to Group\_Members**: One-to-many relationship. A group can have many members, but each member belongs to one group.
* **User to Groups**: One-to-many relationship. A user can create many groups, but each group is created by one user.
* **Groups to User**: Many-to-many relationship (via Group\_Members). A user can be a member of many groups, and each group can have many members.
* **User to Messages**: One-to-many relationship. A user can send many messages, but each message is sent by one user (Sender\_id).
* **User to Messages (Receiver)**: One-to-many relationship. A user can receive many messages, but each message is received by one user (Receiver\_id).
* **User to notification**: One-to-many relationship. A user can receive many notifications, but each notification is received by one user (User\_id).

## User Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| User\_id | Username | Email | Password | Is\_moderator | Account\_created\_time |
| 1 | johndoe | johndoe@example.com | hashed(password1) | True | 2025-03-20 08:30:00 |
| 2 | Deerclops | deerclops@example.com | hashed(password) | False | 2025-03-21 08:30:00 |

## Posts Table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Post\_id | User\_id | Post\_title | Post\_text | Post\_content | Post\_created\_time | Is\_deleted | Is\_edited |
| 101 | 1 | My First Post | This is a post! |  | 2025-03-20 08:35:00 | False | False |
| 102 | 2 | I don’t like cats! | Cats are EVIL |  | 2025-03-20 09:35:00 | False | False |

## Comments Table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Comment\_id | Post\_id | User\_id | Comment | Comment\_time | Is\_edited | Is\_deleted | Parent\_Comment\_id |
| 1001 | 101 | 2 | Cats ARE EVIL! | 2025-03-20 08:40:00 | False | False | None |
| 1002 | 101 | 1 | CATS ARE GOOD | 2025-03-20 09:00:00 | False | False | 1001 |

## User\_comment\_data Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comment\_id | User\_id | Is\_Like | Is\_dislike | Is\_shared |
| 1002 | 2 | False | True | True |

## User\_relationships Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Relationship\_id | Followed\_id | Follower\_id | Follow | Muted |
| 1 | 2 | 1 | True | False |

## User\_post\_data Table

|  |  |  |  |
| --- | --- | --- | --- |
| Post\_id | User\_id | Is\_Like | Is\_shared |
| 101 | 2 | False | True |

## Groups Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group\_id | Group\_name | Group\_description | Created\_by | Group\_created\_time |
| 1 | Cat Group | A group for cat lovers | 1 | 2025-03-20 08:50:00 |

## Group\_member\_id Table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group\_member\_id | Group\_id | User\_id | Joined\_time | Is\_group\_admin |
| 1 | 1 | 1 | 2025-03-20 08:55:00 | True |
| 2 | 1 | 2 | 2025-03-20 04:20:00 | False |

## Messages Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Message\_id | Sender\_id | Receiver\_id | Message\_content | Is\_read | Message\_time |
| 5001 | 1 | 2 | Hello! | False | 2025-03-20 09:00:00 |
| 5002 | 2 | 1 | Why do you like cats? | True | 2025-03-20 09:20:00 |

## Notifications Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Notification\_id | User\_id | Notification\_type | Notification\_content | Is\_read | Notification\_time |
| 3001 | 1 | Event | A new event is happening!!! | False | 2025-03-20 09:05:00 |
| 3002 | 2 | message | Hello! | True | 2025-03-20 09:01:00 |

2025-03-20 09:01:00