



# **Dhirubhai Ambani** **University** Technology

Formerly DA-IICT

**IT-314 Software Engineering**

**Object Design**

**Group-27**

**Connect-Sphere**

# 1. Profile Object

Represents a user account and their personal presence on Connect Sphere. This maps to the `public.profiles` and `public.privacy_settings` tables.

## Attributes:

- ID & Identity: `id` (UUID, PK), `username` (Unique), `display_name`
- Profile Info: `bio`, `avatar_url`, `website`, `location`
- Privacy & Status: `profile_visibility` (public/private), `show_online_status`, `allow_direct_messages`

## Behaviors:

- Register/Login: Creates an account and handles initial profile setup (via `public.handle_new_user` function)
- Update Profile: Changes display name, bio, or avatar
- Follow: Creates a record in the `public.follows` table
- Set Privacy: Modifies settings in the `privacy_settings` table

# 2. Post Object

Represents a permanent content piece created by a user, similar to an Instagram post. This maps to the `public.posts` table.

## Attributes:

- ID & Content: `id` (PK), `text` (text content), `media` (JSON array for images/videos)
- Metadata: `user_id` (Author FK), `hashtags`, `location`
- Counts: `like_count`, `share_count`, `save_count`, `comment_count`
- Visibility: `visibility` (public/private), `is_private`

## Behaviors:

- Create/Edit/Delete: Allows the author to manage the post lifecycle
- Collaborate: Initiate or accept a content collaboration request (Planned: EPIC 5)
- View Feed: Appears in user feed based on follow status and visibility rules

## 3. Story Object

Represents temporary, media-focused content that expires. This maps to the `public.stories` table.

### Attributes:

- ID & Content: `id` (PK), `user_id` (Author FK), `media_url`, `text`
- Lifecycle: `created_at`, `expires_at` (defaults to 24 hours after creation)

### Behaviors:

- React: Allows users to leave a reaction (via `public.story_reactions` table)
- Expire: Automatically becomes inaccessible after the `expires_at` timestamp

## 4. Comment Object

Represents a text response left on a post, implicit in the schema via the `update_comment_count` function.

### Attributes:

- Content: `text` (comment content)
- References: `user_id` (Commenter FK), `post_id` (Target Post FK)
- Metadata: `created_at` (timestamp)

### Behaviors:

- Post: Creates the comment record on a specific post
- Update Count: Triggers the `public.update_comment_count` function on creation/deletion

## 5. Engagement Object (Like, Save, Share)

Represents a many-to-many relationship between a Profile and a Post.

### Attributes:

- ID & References: `id` (PK), `post_id` (Target Post FK), `user_id` (Engaging User FK)
- Type: Implemented by one of three dedicated tables: `public.likes`, `public.bookmarks`, or `public.shares`

### Behaviors:

- Create Record: A user action creates a record in the corresponding table (e.g., `likes_pkey`)

- Update Count: Triggers a corresponding function (update\_like\_count, update\_save\_count, or update\_share\_count) to update the Post object's count fields

## 6. Notification Object

Represents an automatic alert sent to a user.

### Attributes:

- Recipients: recipient\_id (Target Profile FK)
- Source: sender\_id, source\_entity\_id (e.g., post\_id, story\_id)
- State: type (e.g., Like, Comment, Follow), message (content), is\_read

### Behaviors:

- Create: Triggered automatically by other object behaviors (e.g., a Like object creation triggers a Notification object)
- Mark as Read: User updates the is\_read status
- Push Alert: System sends a push notification to the client device (push notifications)

## 7. Report Object

Represents a complaint filed against inappropriate content or a user.

### Attributes:

- Parties: reporter\_id (User FK), target\_id (Target Post/Comment/Profile ID)
- Details: reason, description
- State: status (pending/under review/resolved)

### Behaviors:

- Submit: A user creates a report record (Reporting Content)
- Resolve: An admin updates the status to resolved (System Admin – Suspend a Violating User)

## 8. Community Object

Represents a group or channel for users with shared interests.

### Attributes:

- Identity: name, description

- Ownership: creator\_id (Owner Profile FK)
- Access: membership\_type (free/paid), privacy (public/private)

**Behaviors:**

- Create/Join: Allows users to create or enroll in a community
- Manage Members: An admin can add or remove members (Community Manager)
- Grant Access: Paid communities grant exclusive access to content and discussions