



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