Northeastern University
DAMG6210 - Data Management and Database Design

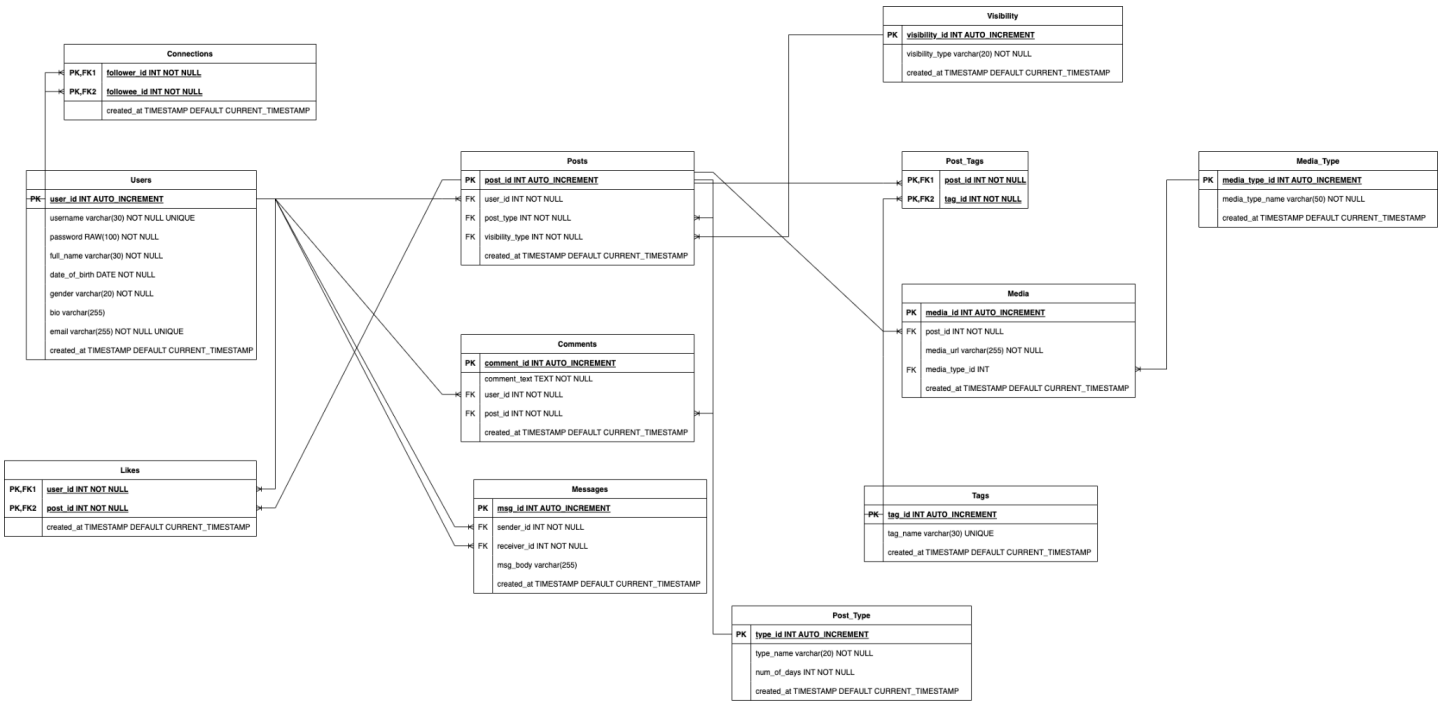
MEMBERS:

Name	NUID
Dheeraj	002709344
Shubham Jain	002771334
Dinesh Yelchuri	002760628
Nagendra babu Shakamuri	002771584

PROJECT TOPIC:

Social Marketing Platform

Updated ER diagram:



Business Rules

A business rule is a statement that specifies or restricts certain aspects of a business, returning true or false. These rules are used to define a company's structure and regulate definite processes, definitions and constraints that apply to an organization.

User on-boarding:

- Users must have a username and it should be unique.
- User details such as user **fullname**, **DOB**, **gender**, **email** shouldn't be null and **email** must be unique.
- The user-bio is optional and can be filled out based on the user's interests.
- All the users must set up a password while creating their account.
- User email/username along with password can be used as credentials while logging into their account.

Newsfeed:

- Users who are logged into the platform can send a connection request to the other users.
- Users can see other profiles' feeds when connected with those users, as well as posts in public accounts, depending on the privacy settings.
- Users can like, comment and share a post depending on the post's privacy settings.
- Users can like a particular post only once but can make multiple comments'.
- Users can upload media(photo/video) and they can also set the time frame for that post to be visible.
- Users can create and use multiple hashtags on a post.
- Users can select the "PostType" during the creation of the post.
- Users can set/edit privacy for each post that is about to get published or already published.
- Users can delete their created posts'.
- Users cannot create a post without choosing a **visibility_type** and a **post_type.**

Messages:

- Users can send messages to any other user in the platform.
- Messages can be deleted/edited.

- Each message can contain no more than 255 characters.

Security

Security Constraints for DB Columns:

- During the registration process, user **‘password’** will be hashed with SHA256 and stored in the database. For each and every subsequent login, input data in the password field will be converted to hash and gets validated against the hash value present in the database.
- To control the exposure of user-generated data, the **'Visibility'** table is used.

Access Privileges in the application:

Admin:

- Has full access over **read**/**create**/**update**/**delete** operations for all the entities/attributes in the database
- Has access to **create/delete** the values in the “**visibility**” table for altering the privacy settings
- Has access to **create/delete** the values in the “**media_type**” and “**post_type**” tables

User:

- Has **create**, **update and delete** access to posts, messages, comments, connections, visibility_type on all the entities created by the user present in the application.
- Has **create**, **delete** access to likes entity.
- Has **create**, **update** access to tags.
- Has **read** access for all the entities that the user is associated with.
- Has **read** access for the non-connection profiles based on the profile’s privacy settings.
- **Tags** are automatically deleted if they're not referenced in at least one post.

Views

Profile:

- Displays user personal profile consisting of information about the user.

Post_Analytics:

- **User_view:** Displays the posts created by the user.
- **Public_view(Newsfeed):** Displays the posts created by the user connections.
- **Privacy_view**: Allows users to decide whether to show/hide posts from the connections.

Connection_Analytics:

- **Connections_count**: Displays the total number of followers and followees of a user.
- **Connections_details**: Displays the details about each followee and follower.

Comments_Analytics :

- **Comments_count:** Displays the total comments created on a post.
- **Comment_details:** Displays the details about each comment on a post.

Likes_Analytics:

- **Likes_count:** Displays the total number of likes given on a post.
- **Likes_details:** Displays the details about each like on a post.

Tag_Analytics: Displays the tag usage on a particular post.

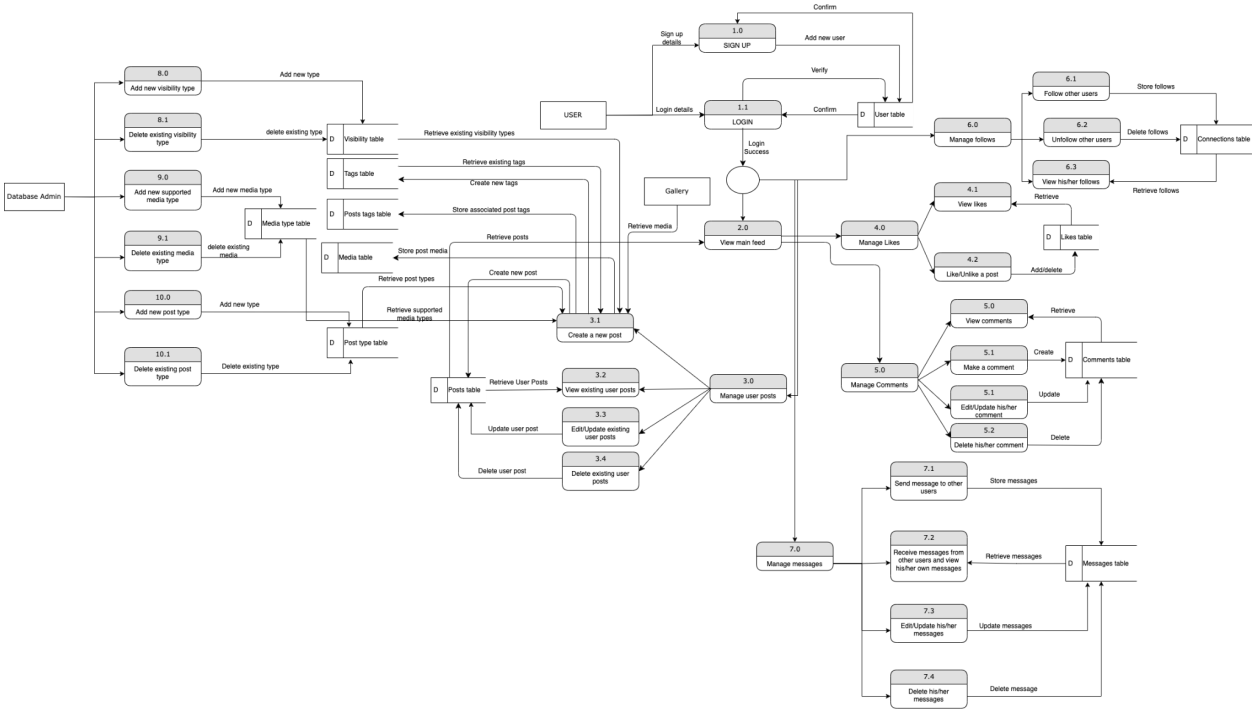
- **Tag_count:** Displays the total number of tags added on a post.
- **Tag_details:** Displays the details about each tag on a post.

Connection_bonding:

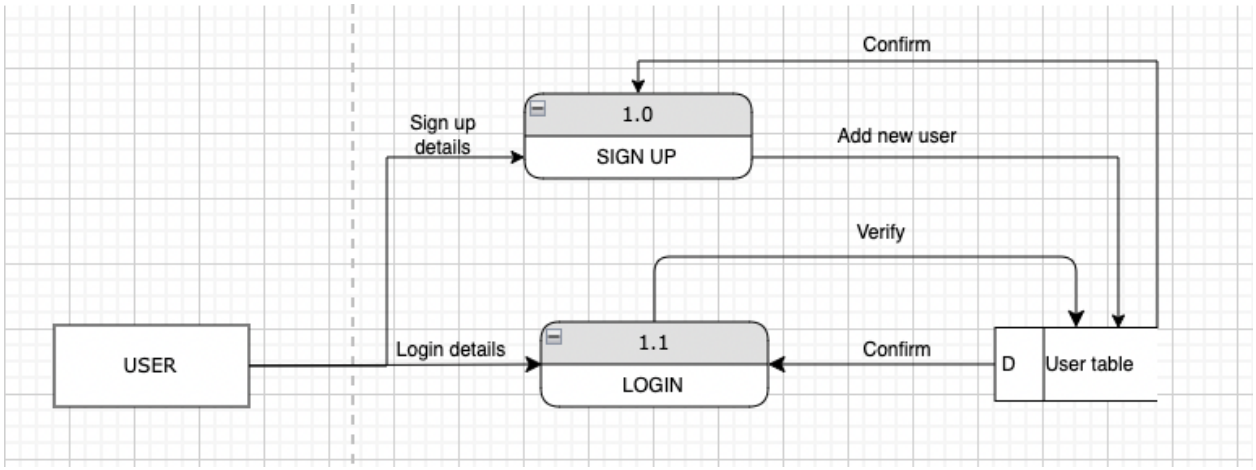
- Tells about the connection strength(*number of messages exchanged between each connection*) a user holds with each of their connections.

Dataflow diagram

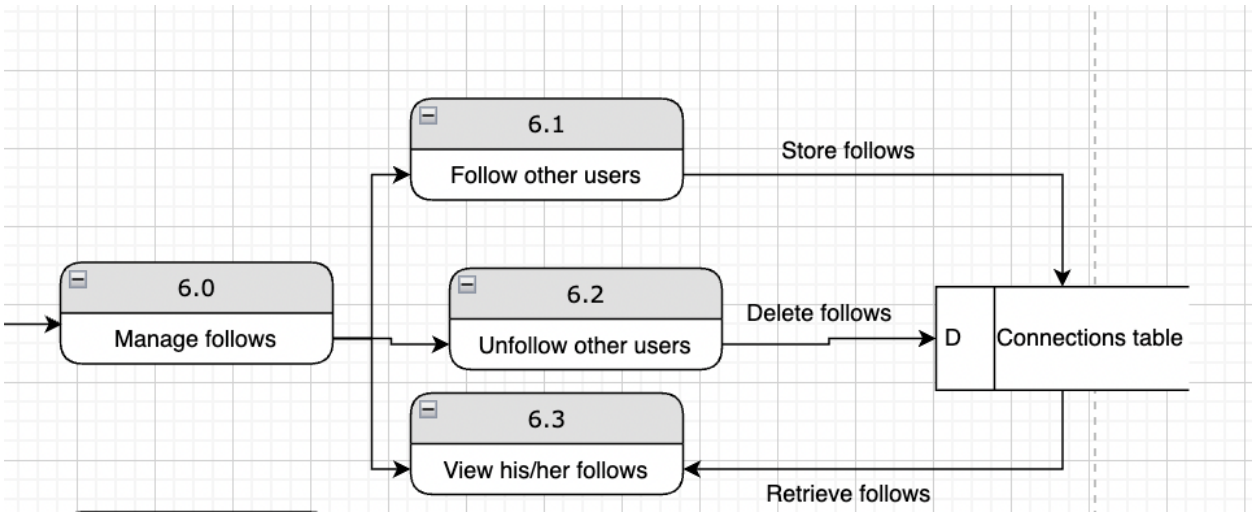
Full application data flow diagram



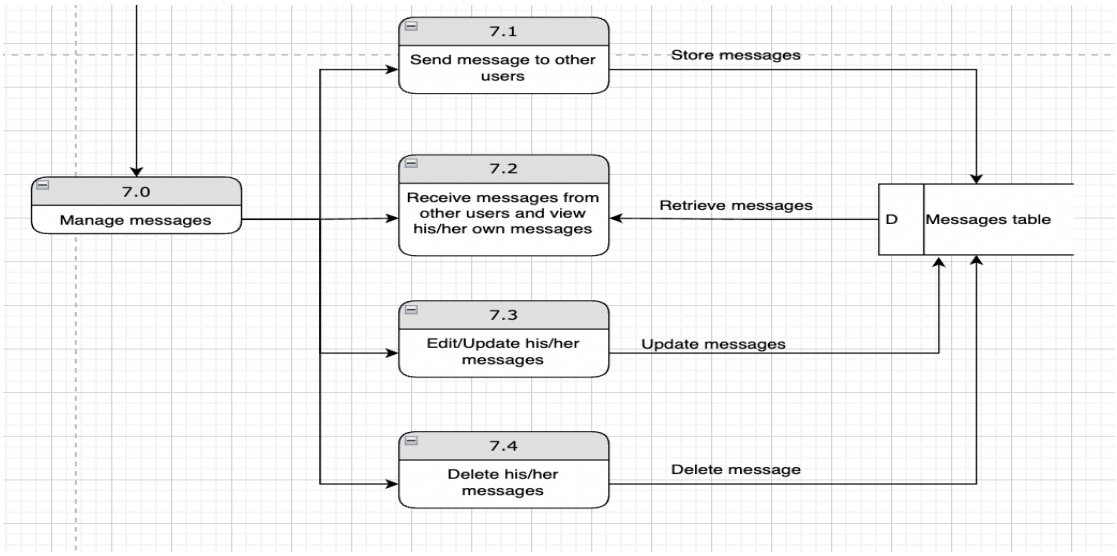
User registration/login data flow diagram



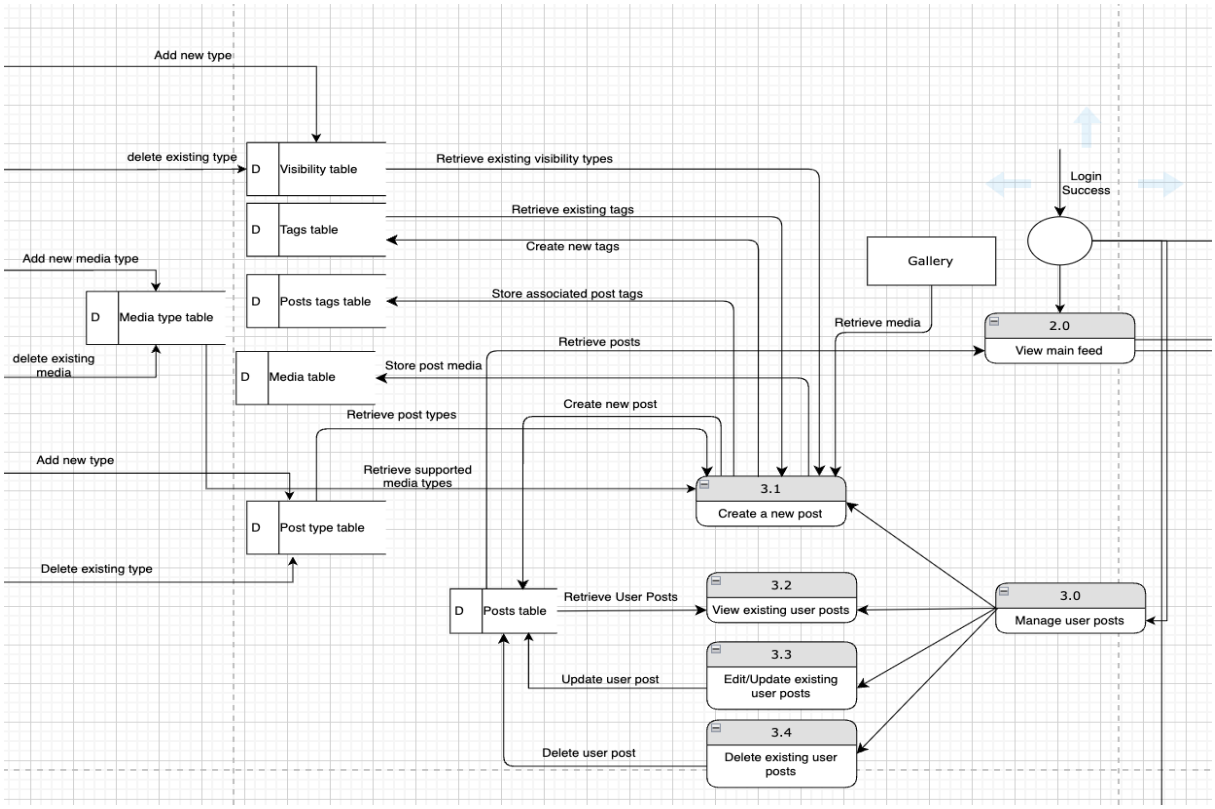
User connections data flow diagram



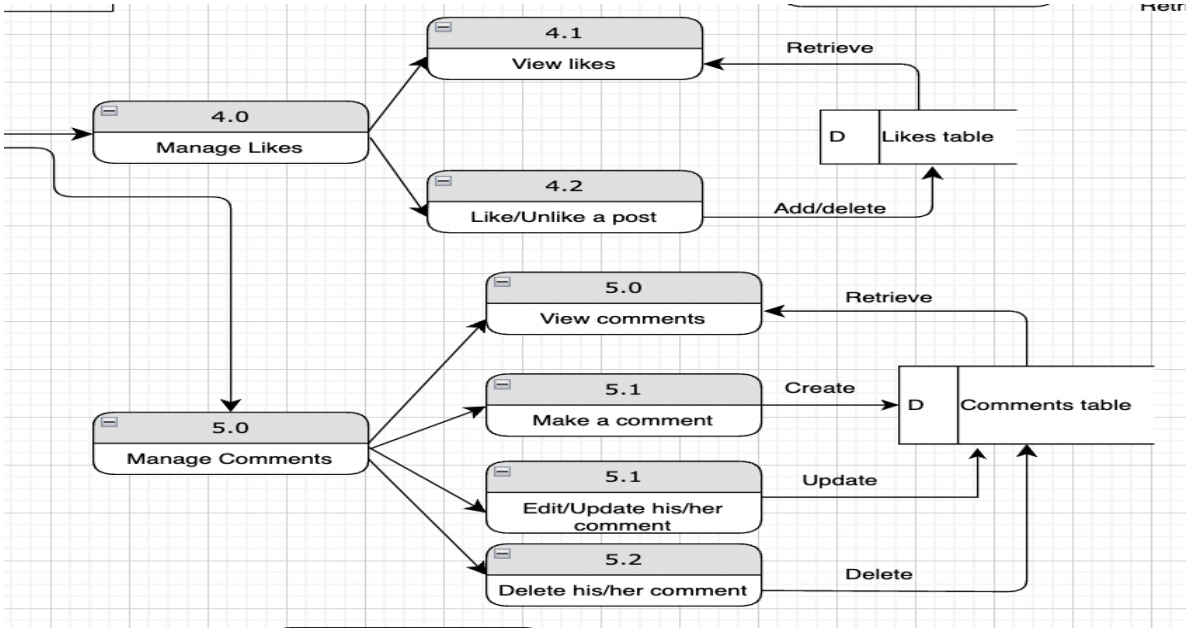
Messages data flow diagram



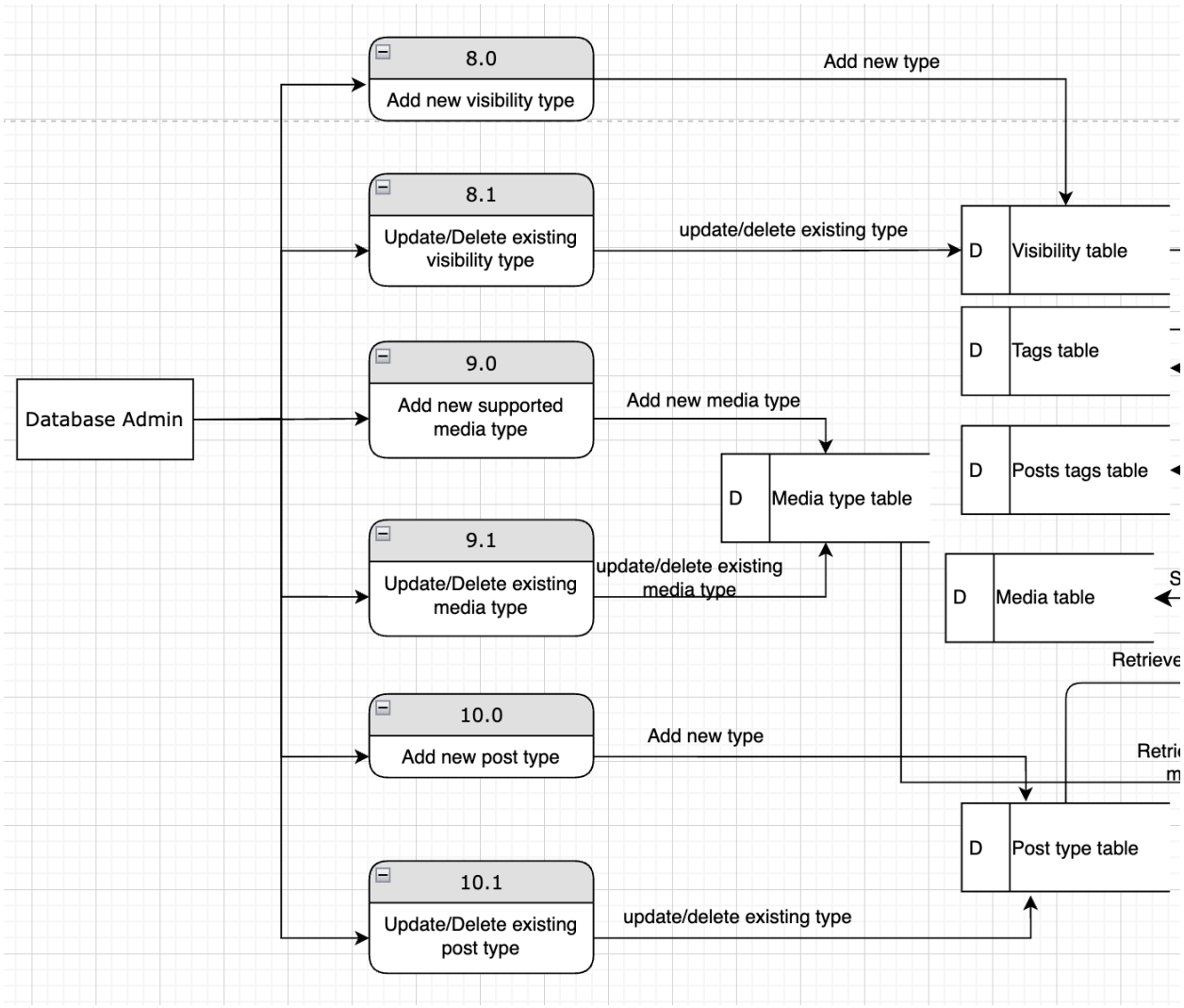
Posts data flow diagram



User Interactions data flow diagram



Database admin data flow diagram


8.0
Add new visibility type
Add new type
8.1
Update/Delete existing visibility type
update/delete existing type
D
Visibility table
D
Tags table
9.0
Add new supported media type
Add new media type
Database Admin
D
Media type table
D
Posts tags table
9.1
Update/Delete existing media type
update/delete existing media type
D
Media table
Retrieve
10.0
Add new post type
Add new type
D
Post type table
10.1
Update/Delete existing post type
update/delete existing type