

CMPT 353 Final Project – Design Report

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Database Design Decisions:

Users Table

<u>userid</u> (PRIMARY KEY)	<u>username</u>	<u>password</u>
int	varchar(20)	varchar(20)
unsigned	NOT NULL	NOT NULL
NOT NULL		
auto_increment		

- Contains system user entries
- Each entry consists of a username and password (20 characters max each)
- On creation, a system admin is added with id: 1, username: sys, and password: admin

Channel Table

<u>channelid</u> (PRIMARY KEY)	<u>title</u>
int	varchar(200)
unsigned	NOT NULL
NOT NULL	
auto_increment	

- Contains system channel entries
- Each entry consists of a channel title

Message Table

<u>messageid</u> (PRIMARY KEY)	<u>channelid</u>	<u>userid</u>	<u>parentid</u>	<u>text</u>	<u>username</u>
int	int	int	int	varchar(280)	varchar(20)
unsigned	unsigned	unsigned	NOT NULL	NOT NULL	NOT NULL
NOT NULL	NOT NULL	NOT NULL			
auto_increment					

- Contains system message entries (all messages, replies, and nested replies)
- Each entry consists of the channel id of the channel the message is in, the user id of the user that posted the message, the parent id corresponding to the messages parent message (-1 if the message does not have a parent message), the message text content, and the username of the user that posted the message.
- When retrieving these messages, a JSON tree is constructed by following the parent id path
- When deleting these messages, all child messages are recursively deleted as well

Ratings Table

<u>ratingid</u> (PRIMARY KEY)	<u>channelid</u>	<u>messageid</u>	<u>userid</u>	<u>username</u>	<u>rating</u>
int	int	int	int	varchar(20)	int
unsigned	unsigned	unsigned	unsigned	NOT NULL	unsigned
NOT NULL	NOT NULL	NOT NULL	NOT NULL		NOT NULL
auto_increment					

- Contains system rating entries (each individual upvote/downvote is added to this table)
- Each entry consists of the channel id of the channel the ratings message is in, the ratings message id, the user id of user that made the rating, the username of the user that made the rating, and the rating value (1 for an upvote, 2 for a downvote, and 0 for neither)

React Application Architecture:

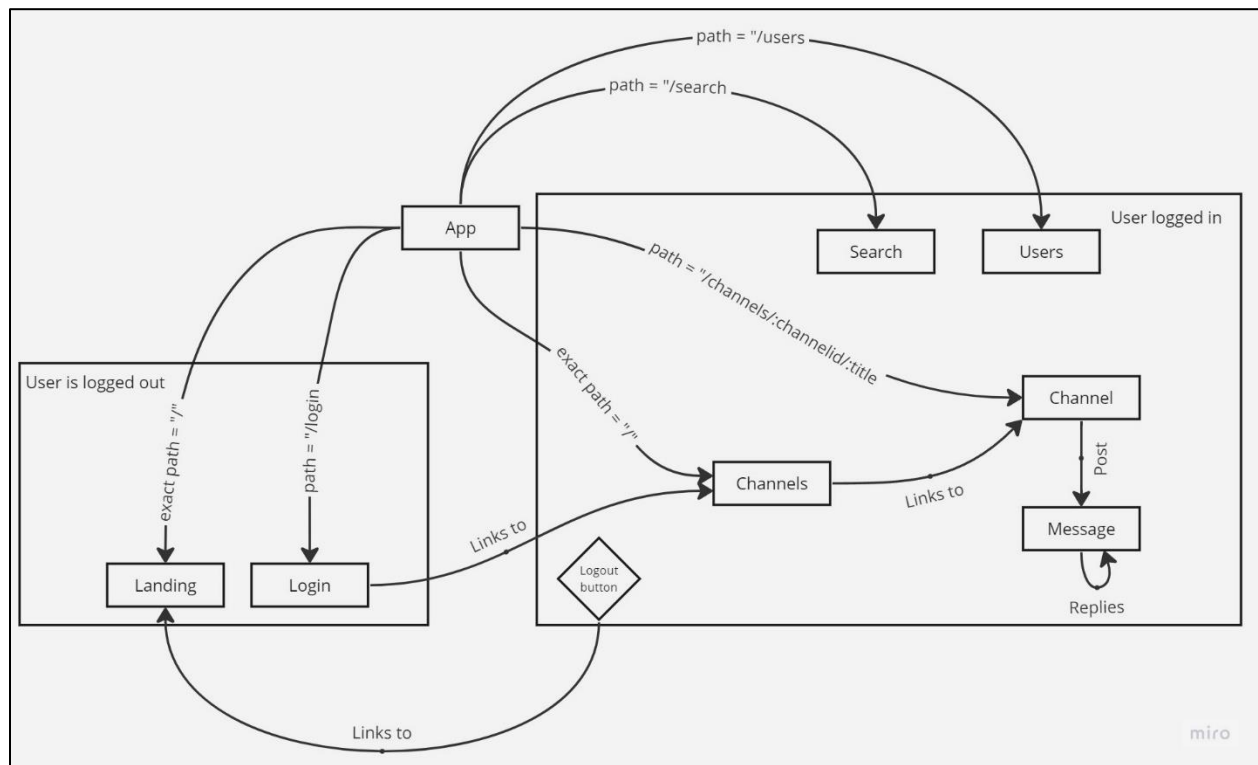


Figure 1: React Application Component Hierarchy (built using Miro)

- Routing is controlled by the App component
- When a user is logged out, they can only see the components in the left box of Figure 1
- When a user logs in, they can only see the components in the right box of Figure 1
- The Channel component displays all root messages in a channel as Message components, and each Message component displays child messages as additional Message components
- When the logged in user is the system admin, they have the power to delete users, channels, and any type of message from the system
- The search feature allows the user to search by a query string, by username, and for the user with the most posts, least posts, highest rating, and lowest rating
- There is an additional login persistence feature that saves the currently logged in user to local storage. This means that if you exit the application or refresh, then you will still be logged in when the application loads up again. Logging out will remove this entry from local storage

Note to the markers:

Make sure you look at the README.md to see how to setup the React application.