Project Part II: TopicHive

This project file contains html and js files for all the following pages:

- login: Users or admins log in using their email and password to access their respective dashboards.
- signup: Users can create a new account by providing their email, password, display name, first name, and last name.
- home: Displays chatrooms the user is a member of, with options to enter or leave chatrooms. Admins can manage users and chatrooms.
- browse_chatrooms: Users can view a list of chatrooms they are not part of, along with the option to join them.
- chatroom: Users can view messages, send new messages, and interact with other participants within a specific chatroom.
- manage_chatrooms: Admins can view all chatrooms, delete existing chatrooms, and create new chatrooms with a name and description.
- view_users: Admins can view a list of all users, ban or unban users, and upgrade regular users to admins.

As well as java files:

- MakeBookClubDB: Initializes and sets up the database schema for the application, including creating tables such as USERS, CHATROOMS, MESSAGES, and USERTOCHATROOM.
- MyServer: Serves as the backend logic handler for the application, managing user authentication, chatroom interactions, admin functionalities, and database operations through defined actions.
- MyServlet:Acts as the central controller, handling HTTP requests and coordinating actions like user authentication, chatroom management, message handling, and database interactions based on client inputs.

To run this project:

1. Ensure that your h2 database is running

Run the database server in 1 terminal. We did the previous exercise and Assignment. Go to Desktop/myservers/h2

Code to run

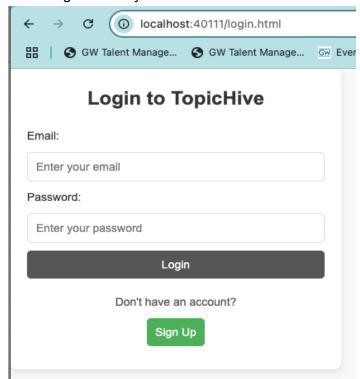
java -cp h2.jar org.h2.tools.Server -tcp -pg

```
Last login: Fri Dec 6 16:03:58 on ttys001
[dog@Doggys-MacBook-Pro ~ % java -cp h2.jar org.h2.tools.Server -tcp -pg
Error: Could not find or load main class org.h2.tools.Server
Caused by: java.lang.ClassNotFoundException: org.h2.tools.Server
[dog@Doggys-MacBook-Pro ~ % cd Desktop/myservers
[dog@Doggys-MacBook-Pro myservers % cd h2
[dog@Doggys-MacBook-Pro h2 % java -cp h2.jar org.h2.tools.Server -tcp -pg
TCP server running at tcp://localhost:55063 (only local connections)
PG server running at pg://localhost:55066 (only local connections)
```

Compile and run MakeTopicHiveDatabase.java

3. Compile and run MyServer.java

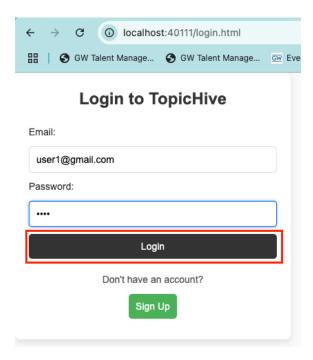
4. visit localhost:40111/login.html in your browser



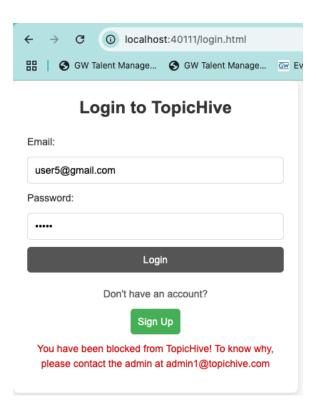
List of functionality test cases for my project, all of which I have personally tested:

Login Page

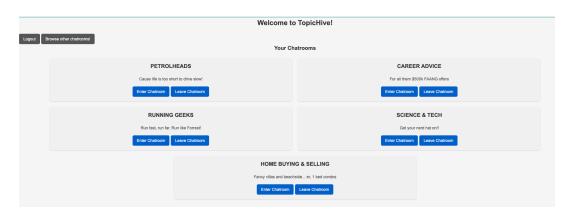
> Verify that users/admin can log in using valid email and password.



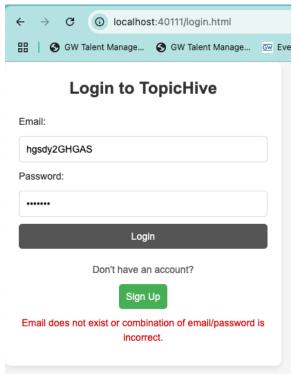
➤ Ensure that blocked users receive a message: "You have been blocked from TopicHive! To know why, please contact the admin."



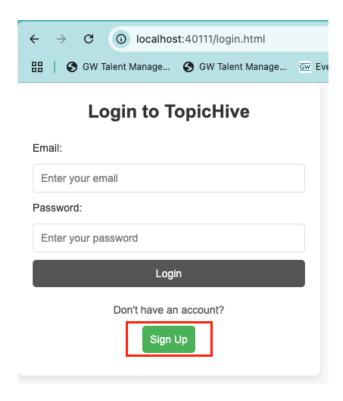
> Test redirection to the Home Page upon successful login.



➤ Ensure incorrect credentials display an error: "Email does not exist or combination of email/password is incorrect."

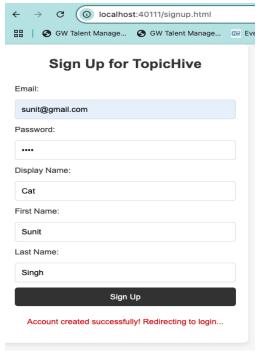


> Verify that the Sign-Up button redirects to the Sign-Up Page.

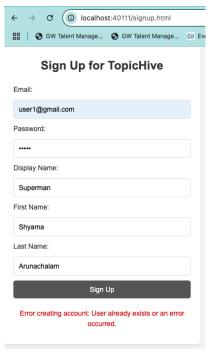


❖ Sign-Up Page

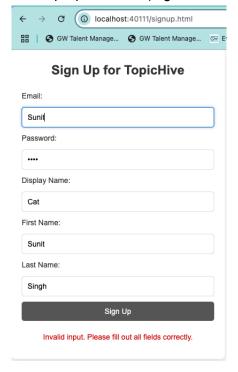
➤ Verify that users can successfully create an account by providing valid inputs (email, password, display name, first name, last name).



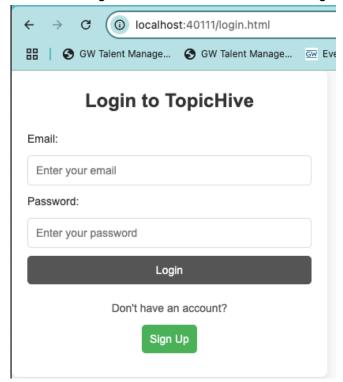
Ensure that duplicate email registration is prevented with an appropriate error message.



> Validate input fields for proper format (e.g., email format, non-empty fields).



> Confirm successful registration redirects users to the Login Page.



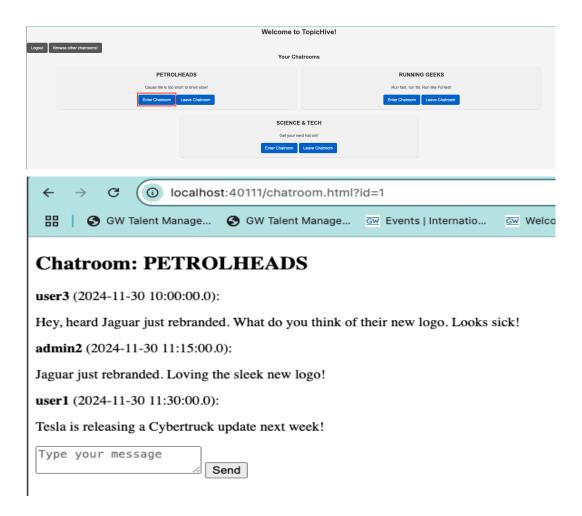
❖ Home Page

For Users:

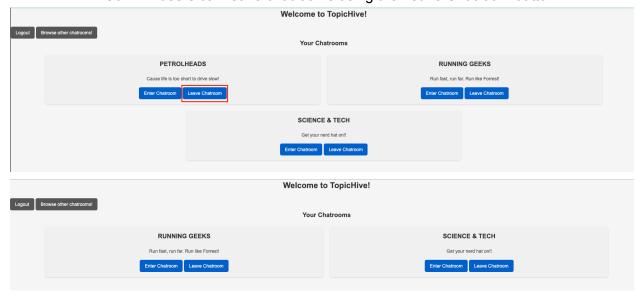
> Verify that logged-in users can see a list of chatrooms they are part of.



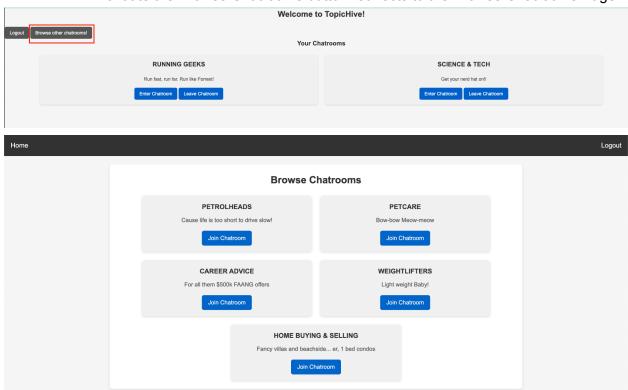
> Ensure the Enter Chatroom button redirects to the respective Chatroom Page.



> Confirm users can leave chatrooms using the Leave Chatroom button.

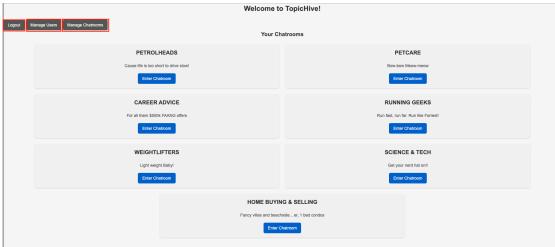


> Validate the Browse Chatrooms button redirects to the Browse Chatrooms Page.



For Admins:

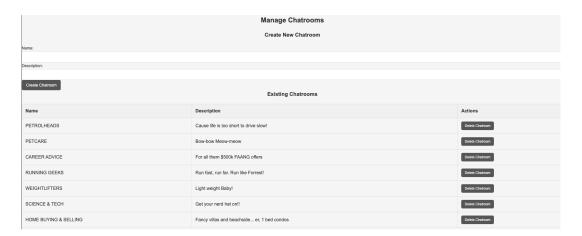
➤ Ensure the admin sees options for Manage Users, Manage Chatrooms, and Logout in the navigation bar.



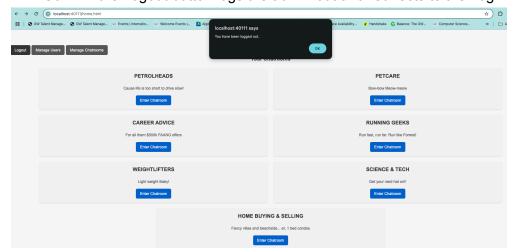
> Verify that clicking Manage Users redirects to the View Users Page.

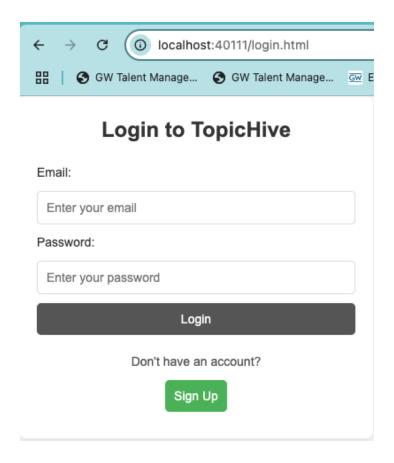


> Validate that Manage Chatrooms redirects to the Manage Chatrooms Page.



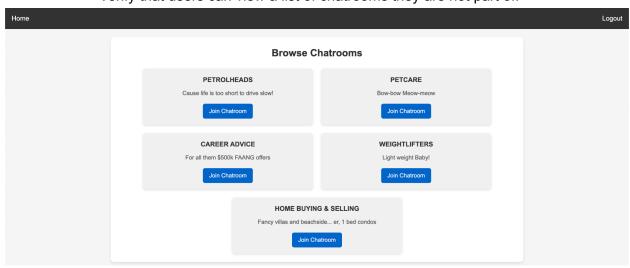
➤ Confirm the Logout button logs the admin out and redirects to the Login Page.





Browse Chatrooms Page

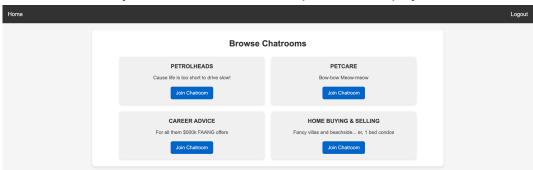
> Verify that users can view a list of chatrooms they are not part of.



> Confirm the Join Chatroom button successfully adds the user to the chatroom and redirects to the Home Page.

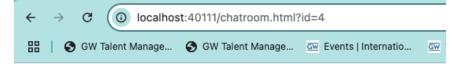
Welcome to TopicHive!						
Logout Browse ather chatroomst	Your Chatrooms					
RUNNING	G GEEKS	WEIGHTLIFTERS				
Run fast, run far.	Run like Forrest!	Light weight Babyl				
Enter Chatroom	Leave Chatroom	Enter Chatroom Leave Chatroom				
SCIENCE & TECH						
	Get your nerd hat onti					
	Enter Chatroom	Leave Chatroom				

> Ensure only chatrooms the user is not part of are displayed.

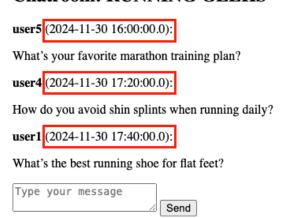


Chatroom Page

> Verify that users can see all messages in the chatroom, sorted chronologically.



Chatroom: RUNNING GEEKS



> Ensure users can send messages, which are displayed instantly in the chatroom.

Chatroom: RUNNING GEEKS						
user5 (2024-11-30 16:00:00.0):						
What's your favorite marathon training plan?						
user4 (2024-11-30 17:20:00.0):						
How do you avoid shin splints when running daily?						
user1 (2024-11-30 17:40:00.0):						
What's the best running shoe for flat feet?						
Nike Send						

Chatroom: RUNNING GEEKS

user5 (2024-11-30 16:00:00.0):					
What's your favorite marathon training plan?					
user4 (2024-11-30 17:20:00.0):					
How do you avoid shin splints when running daily?					
user1 (2024-11-30 17:40:00.0):					
What's the best running shoe for flat feet?					
user1 (2024-12-09 21:15:11.693):					
Nike					
Type your message					

> Validate that chatroom names are correctly displayed at the top.

Chatroom: RUNNING GEEKS

user5 (2024-11-30 16:00:00.0):

What's your favorite marathon training plan?

user4 (2024-11-30 17:20:00.0):

How do you avoid shin splints when running daily?

user1 (2024-11-30 17:40:00.0):

What's the best running shoe for flat feet?

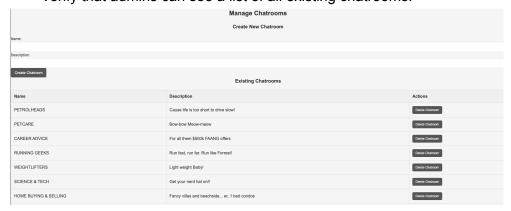
user1 (2024-12-09 21:15:11.693):

Nike

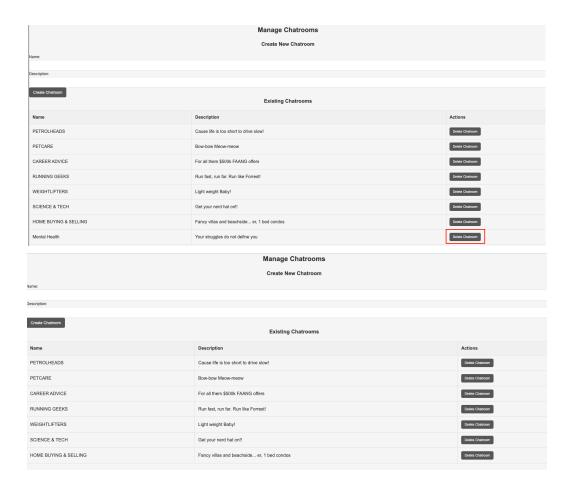
Type your message Send

Manage Chatrooms Page (Admin Only)

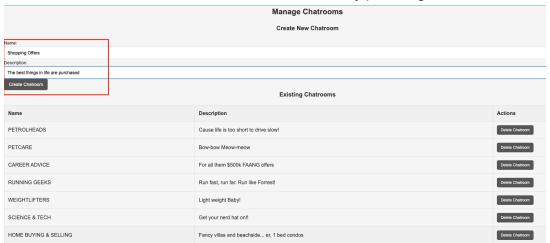
> Verify that admins can see a list of all existing chatrooms.

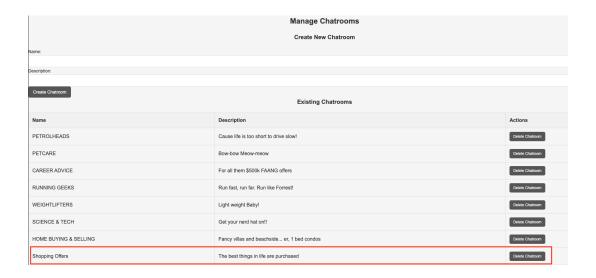


➤ Ensure the Delete Chatroom button successfully removes the chatroom and its messages.

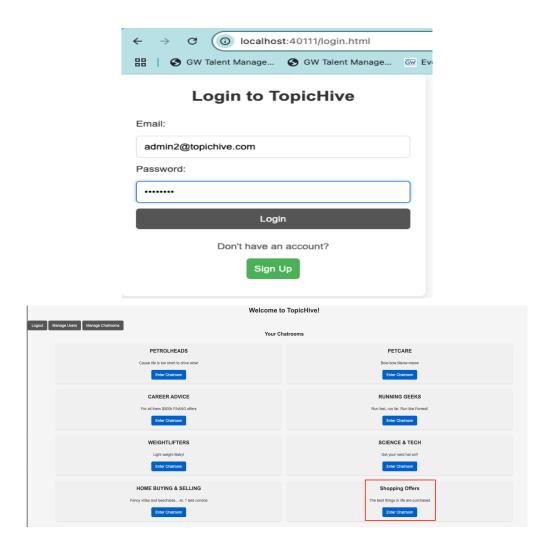


> Confirm admins can create a new chatroom by providing a name and description.





> Validate that new chatrooms automatically add all admin users as members.

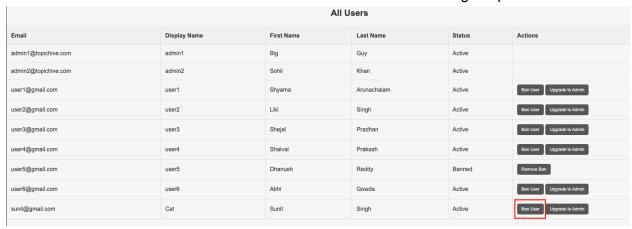


❖ View Users Page (Admin Only)

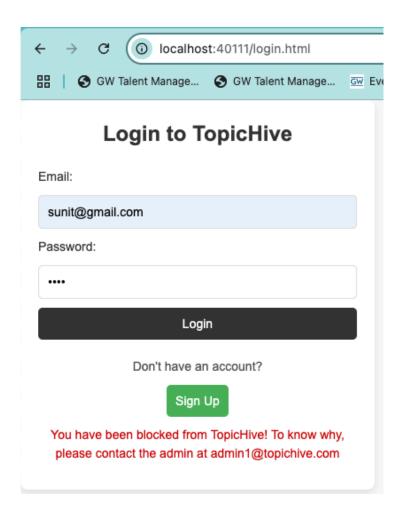
> Verify that admins can see all users along with their email, display name, first name, last name, and status (Active/Banned).

All Users						
Email	Display Name	First Name	Last Name	Status	Actions	
admin1@topichive.com	admin1	Big	Guy	Active		
admin2@topichive.com	admin2	Sohil	Khan	Active		
user1@gmail.com	user1	Shyama	Arunachalam	Active	Ban User Upgrade to Admin	
user2@gmail.com	user2	Liki	Singh	Active	Ban User Upgrade to Admin	
user3@gmail.com	user3	Shejal	Pradhan	Active	Ban User Upgrade to Admin	
user4@gmail.com	user4	Shaival	Prakash	Active	Ban User Upgrade to Admin	
user5@gmail.com	user5	Dhanush	Reddy	Banned	Remove Ban	
user6@gmail.com	user6	Abhi	Gowda	Active	Ban User Upgrade to Admin	
sunit@gmail.com	Cat	Sunit	Singh	Active	Ban User Upgrade to Admin	

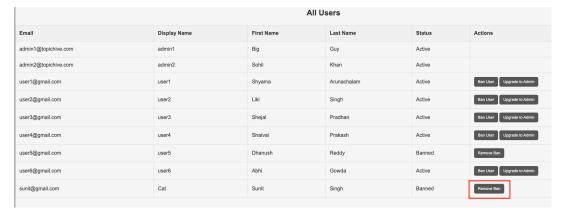
> Ensure the Ban User button blocks users from accessing the platform.

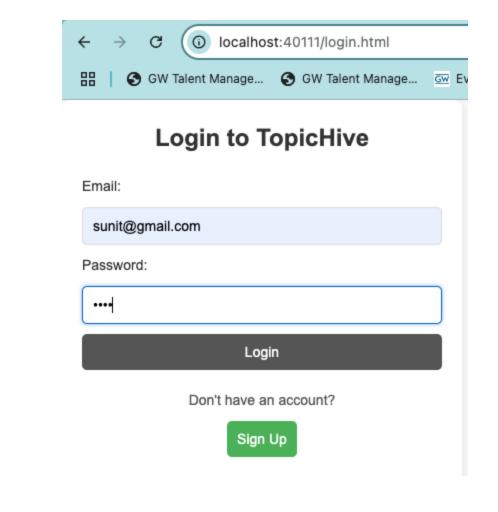


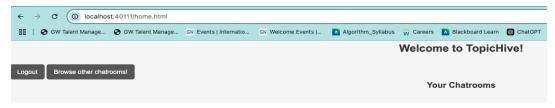
All Users						
Email	Display Name	First Name	Last Name	Status	Actions	
admin1@topichive.com	admin1	Big	Guy	Active		
admin2@topichive.com	admin2	Sohil	Khan	Active		
user1@gmail.com	user1	Shyama	Arunachalam	Active	Ban User Upgrade to Admin	
user2@gmail.com	user2	Liki	Singh	Active	Ban User Upgrade to Admin	
user3@gmail.com	user3	Shejal	Pradhan	Active	Ban User Upgrade to Admin	
user4@gmail.com	user4	Shaival	Prakash	Active	Ban User Upgrade to Admin	
user5@gmail.com	user5	Dhanush	Reddy	Banned	Remove Ban	
user6@gmail.com	user6	Abhi	Gowda	Active	Ban User Upgrade to Admin	
sunit@gmail.com	Cat	Sunit	Singh	Banned	Remove Ban	



> Confirm that the Remove Ban button restores access for banned users.



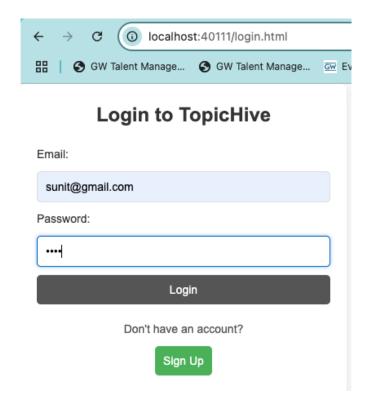


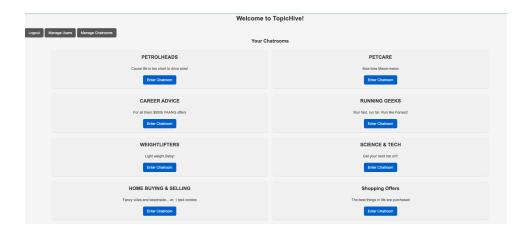


> Validate that the Upgrade to Admin button upgrades a user to admin privileges and adds them to all chatrooms.

All Users						
Email	Display Name	First Name	Last Name	Status	Actions	
admin1@topichive.com	admin1	Big	Guy	Active		
admin2@topichive.com	admin2	Sohil	Khan	Active		
user1@gmail.com	user1	Shyama	Arunachalam	Active	Ban User Upgrade to Admin	
user2@gmail.com	user2	Liki	Singh	Active	Ban User Upgrade to Admin	
user3@gmail.com	user3	Shejal	Pradhan	Active	Ban User Upgrade to Admin	
user4@gmail.com	user4	Shaival	Prakash	Active	Ban User Upgrade to Admin	
user5@gmail.com	user5	Dhanush	Reddy	Banned	Remove Ban	
user6@gmail.com	user6	Abhi	Gowda	Active	Ban User Upgrade to Admin	
sunit@gmail.com	Cat	Sunit	Singh	Active	Ban User Upgrade to Admin	

All Users						
Email	Display Name	First Name	Last Name	Status	Actions	
admin1@topichive.com	admin1	Big	Guy	Active		
admin2@topichive.com	admin2	Sohil	Khan	Active		
user1@gmail.com	user1	Shyama	Arunachalam	Active	Ban User Upgrade to Admin	
user2@gmail.com	user2	Liki	Singh	Active	Ban User Upgrade to Admin	
user3@gmail.com	user3	Shejal	Pradhan	Active	Ban User Upgrade to Admin	
user4@gmail.com	user4	Shaival	Prakash	Active	Ban User Upgrade to Admin	
user5@gmail.com	user5	Dhanush	Reddy	Banned	Remove Ban	
user6@gmail.com	user6	Abhi	Gowda	Active	Ban User Upgrade to Admin	
sunit@gmail.com	Cat	Sunit	Singh	Active		





❖ Logout Functionality

> Verify that the Logout button logs out users and redirects them to the Login Page.

