

## **Split Among Friends**

### **Team Members:**

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### **Project Title:** Split Among Friends

### **Name of the Website:** Split Among Friends

### **Project Description:**

Split Among Friends is a web application for splitting expenses with your friends. It lets you and your friends add various bills and keep track of who owes who, and then it helps you to settle up with each other.

After logging in to the application, the user is shown the list of groups that he is part of. And, the user can create different groups with different members to segregate their spendings.

In the individual group screen, we show the user the amount of money owed by him to the other members and the amount of money he is yet to receive from the other members of the group. The group screen also displays the expenses of the whole group with the charts of weekly and monthly expenses. Only the admin of the group can add a new member to the group. Only the user who created the expense can delete that particular expense. The application allows users to add an expense and later settle up the debts with add expense and clear debt functionalities in the group section. All the users can track their actions in the Activity section of the web application.

### **Database Design:**

We used MongoDB as a database. In total, we have 3 collections: Users, Groups, AND Activities.

#### **1. Users:**

Key	Type
-----	------

<code>_id</code>	ObjectId
<code>displayName</code>	String
<code>email</code>	String
<code>password</code>	String
<code>groups</code>	Array

Passwords are stored in a ‘bcrypt’ encrypted form.

```

_id: ObjectId("61ad68d7f9b5feba3b408755")
displayName: "test1"
email: "test1@gmail.com"
password: "$2b$10$MY.yZnjLY7PVQ61pMC0pMep81Wo7GYkW18Ijd6yQVhmFY9Pco/sje"
groups: Array
  0: "61ad692ff9b5feba3b408761"
  1: "61ad6942f9b5feba3b40876d"
  2: "61ad694ff9b5feba3b40877c"
__v: 0

```

## 2. Groups:

Key	Type
<code>_id</code>	ObjectId
<code>name</code>	String
<code>admin</code>	String
<code>members</code>	Array

expenses	Array
is_archived	Boolean
connections	Object

```

> _id: ObjectId("61ac4247b141a5e9704ba3fb")
  name: "debts test"
  admin: "61aacf793b4626c872dc9e8c"
  > members: Array
  < expenses: Array
    > 0: Object
      name: "test"
      < division: Array
        > 0: Object
          lender: "61aacf793b4626c872dc9e8c"
          borrower: "61aacf873b4626c872dc9e8e"
          amount: 50
          is_settled: false
        > 1: Object
          lender: "61aacf793b4626c872dc9e8c"
          borrower: "61aad41d6de211650341bb22"
          amount: 50
          is_settled: false
        amount: 100
        is_payment: false
      _id: ObjectId("61ac4264b141a5e9704ba41b")
      is_deleted: false
      timestamp: 1638679140825
      date: "4-11-2021"
    > 1: Object
    > 2: Object
    > 3: Object
    > 4: Object
    > 5: Object
    > 6: Object
    > 7: Object
    > 8: Object
    > 9: Object
    > 10: Object
    > 11: Object
    > 12: Object
    is_archived: false
  > connections: Object
  __v: 0

```

### 3. Activities:

Key	Type
_id	ObjectId

user	String
activities	Array

```

_id: ObjectId("61ad692ff9b5feba3b408768")
user: "61ad68d7f9b5feba3b408755"
activities: Array
  0: Object
    activity: "You created the Demo 1 group"
    timestamp: "11-5-2021"
  1: Object
    activity: "You created the Demo 2 group"
    timestamp: "11-5-2021"
  2: Object
    activity: "You created the Demo 3 group"
    timestamp: "11-5-2021"
__v: 0

```

## Screenshots for Main Functionalities:

### 1. Home Page

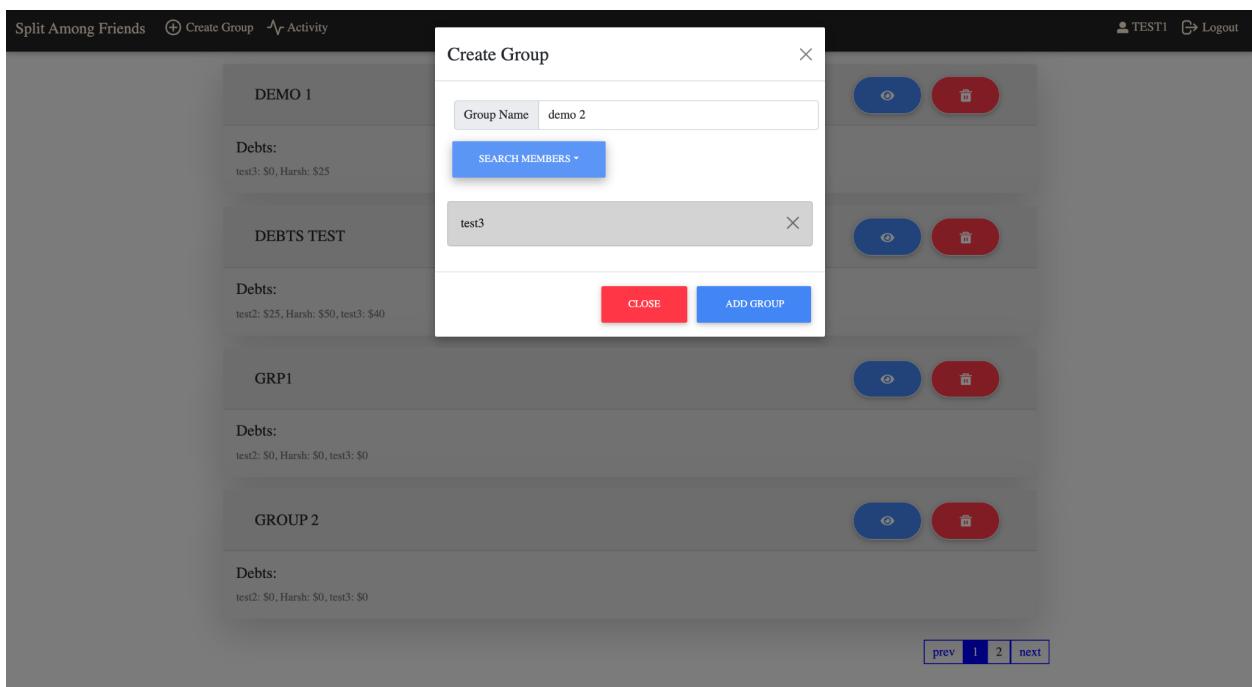
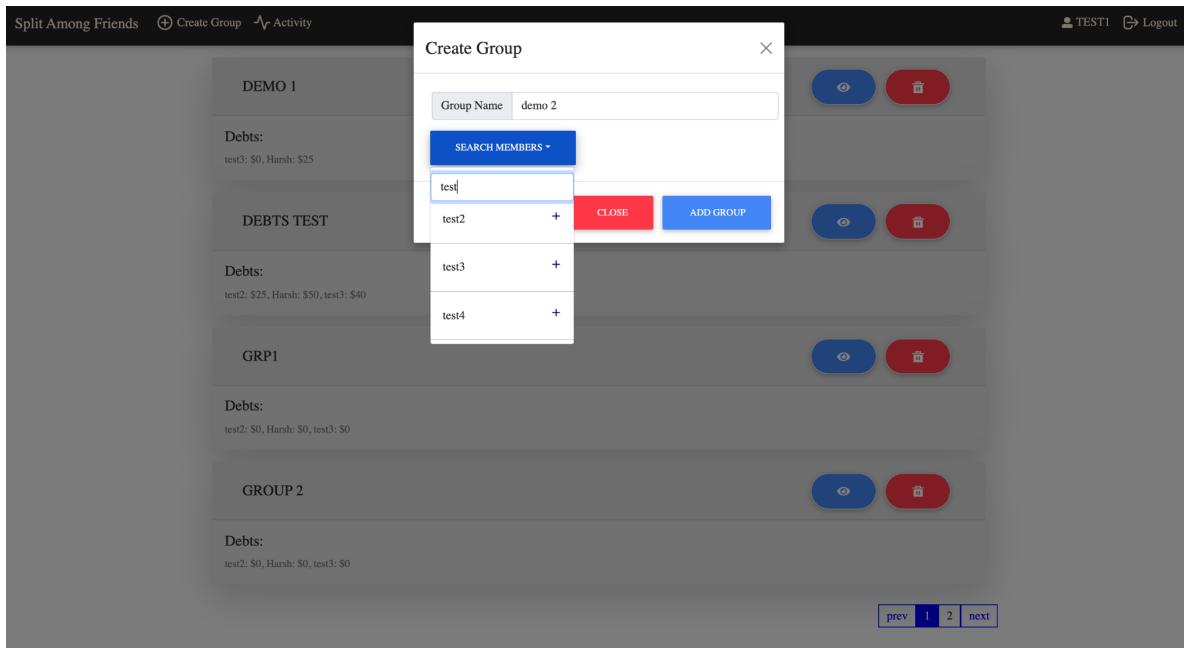
The screenshot displays the Home Page interface. At the top, there are navigation links: 'Split Among Friends', 'Create Group', 'Activity', 'TEST1', and 'Logout'. Below this, there are four distinct sections, each representing a group:

- DEBTS TEST**: Shows debts for test2: \$10, Harsh: \$50, test3: \$20.
- GRP1**: Shows debts for test2: \$0, Harsh: \$0, test3: \$0.
- GROUP 2**: Shows debts for test2: \$0, Harsh: \$0, test3: \$0.
- GROUP1**: Shows debts for test2: \$0, Harsh: \$16, test4: \$5, test3: \$0.

Each group section includes a blue circular 'Edit' button and a red circular 'Delete' button. At the bottom of the page, there are navigation buttons labeled 'prev' and 'next'.

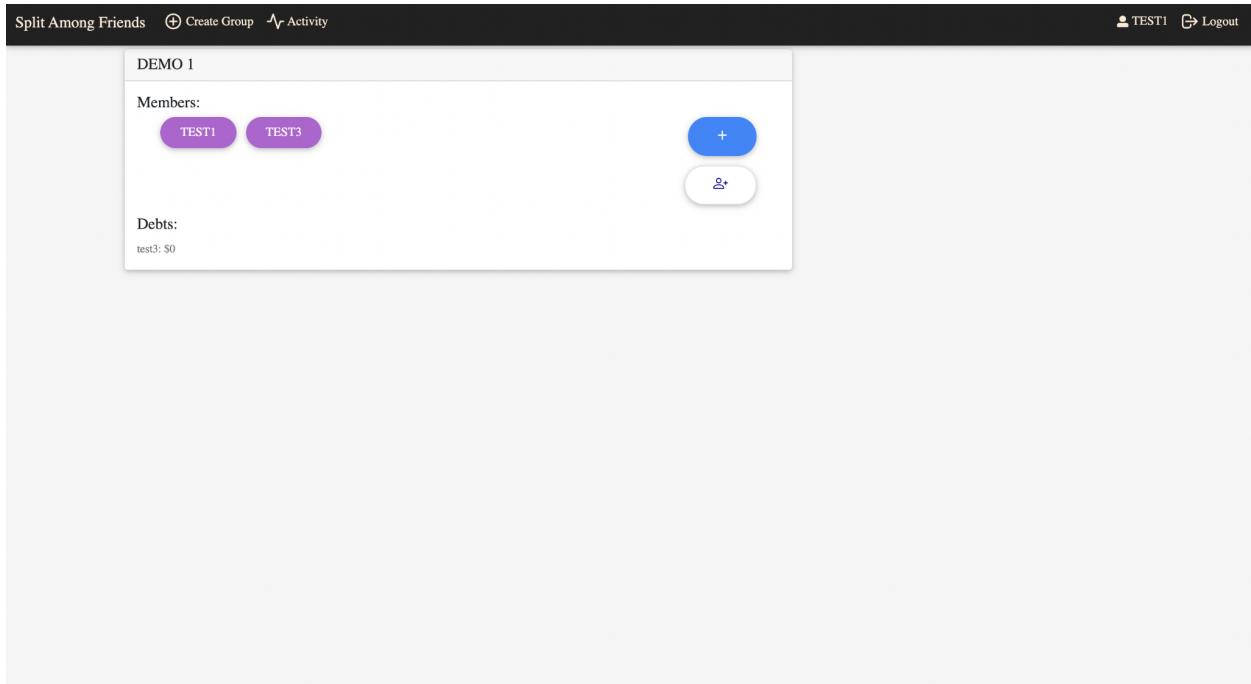
After logging in, the user will be able to see all the groups that he is part of.

## 2. Create Group



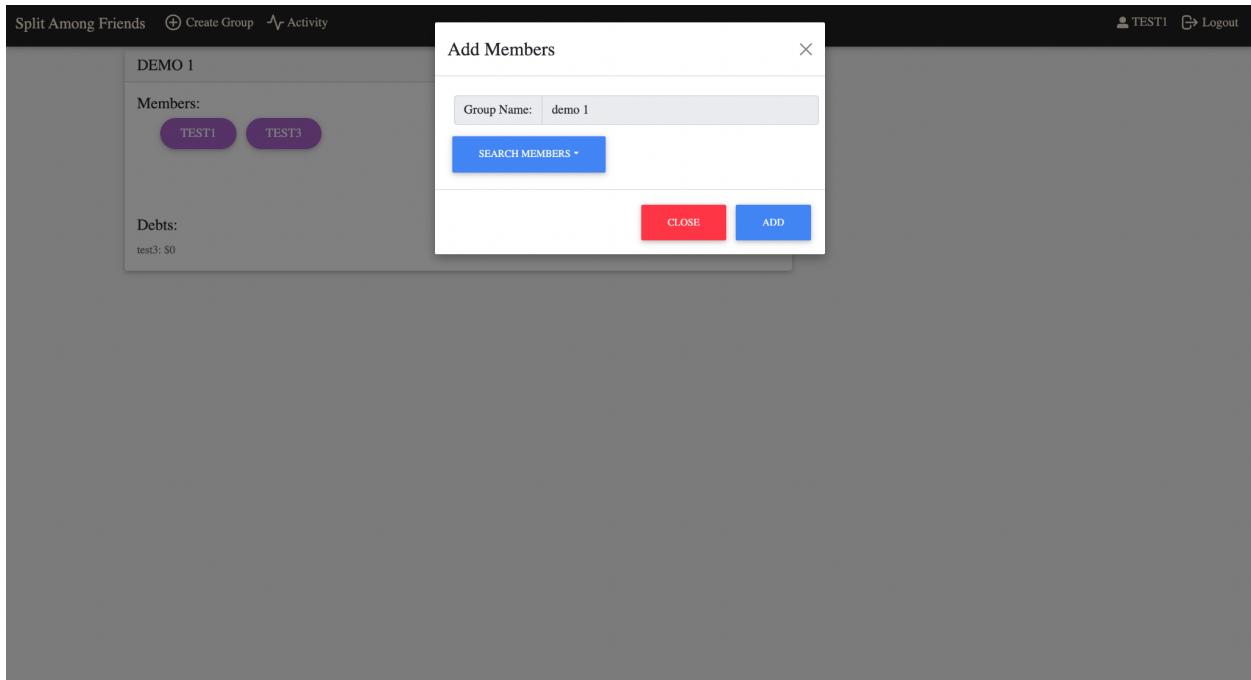
The user can create a group, by providing the group name and adding group members by using the search functionality and selecting the people that he wants in the group.

### 3. Empty group detail screen

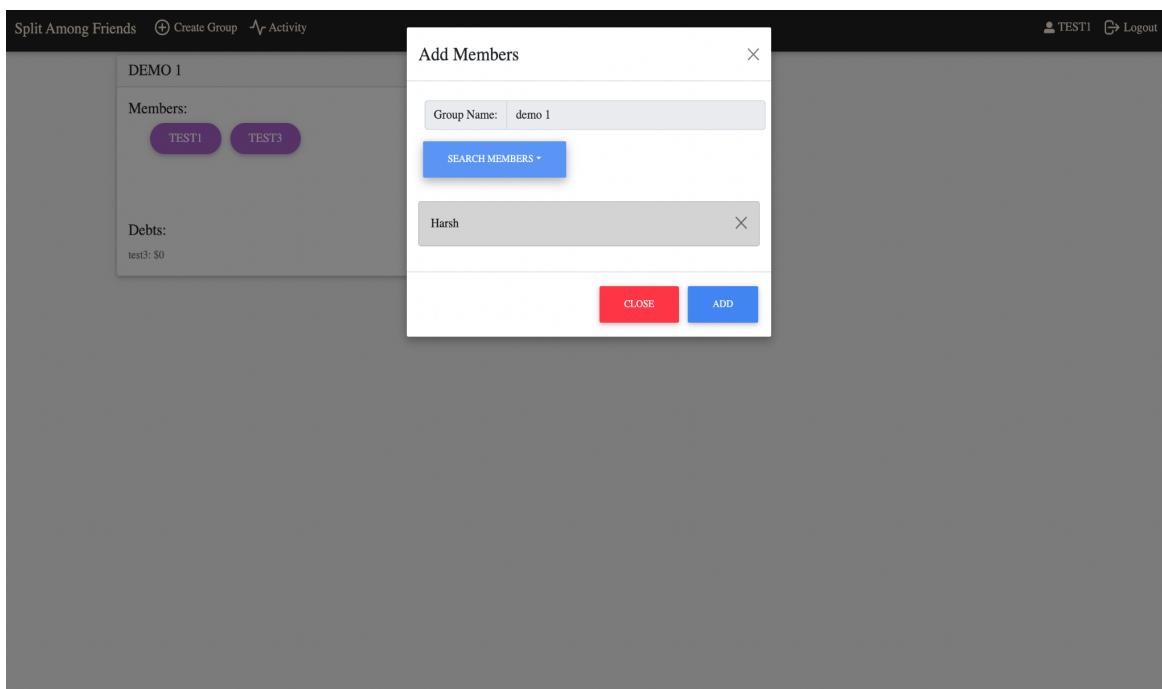
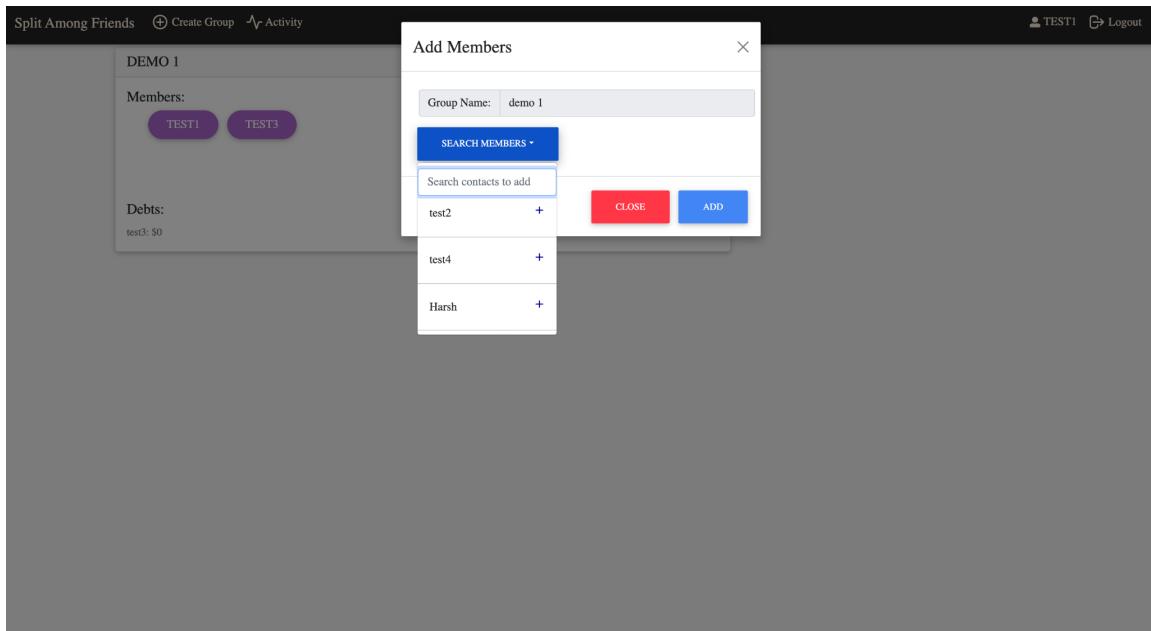


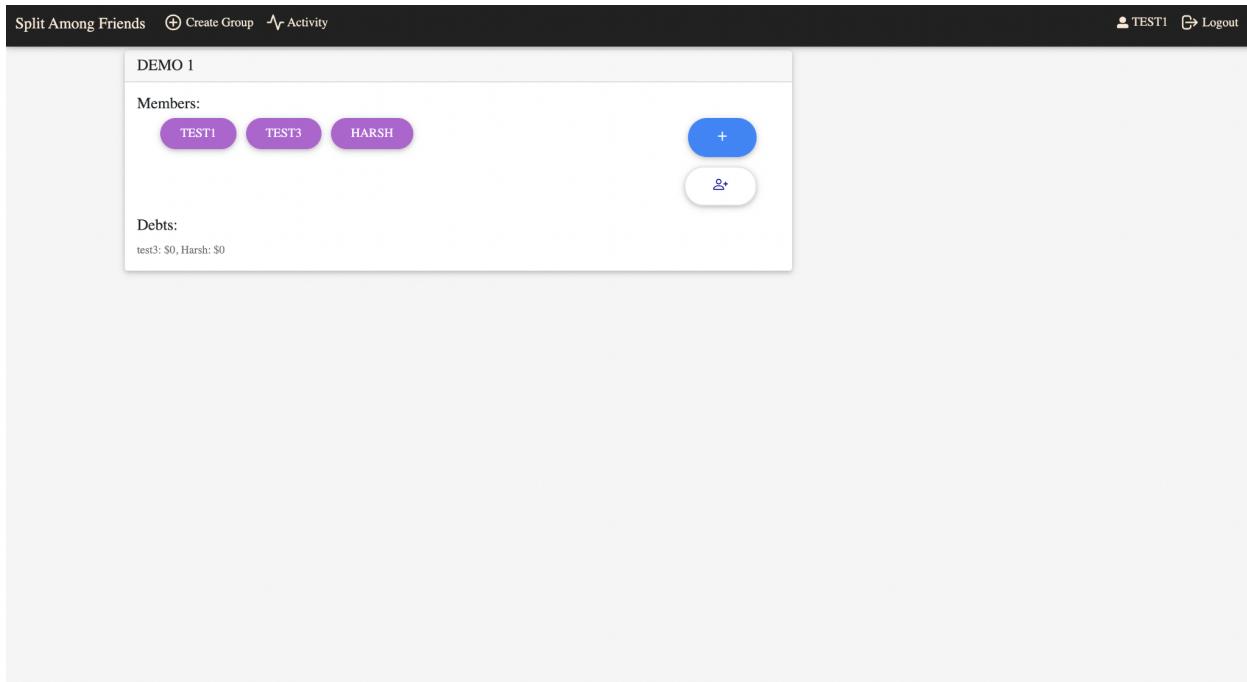
Once the user clicks on the view button, he is redirected to the group detail screen.

### 4. Adding a new member to the group



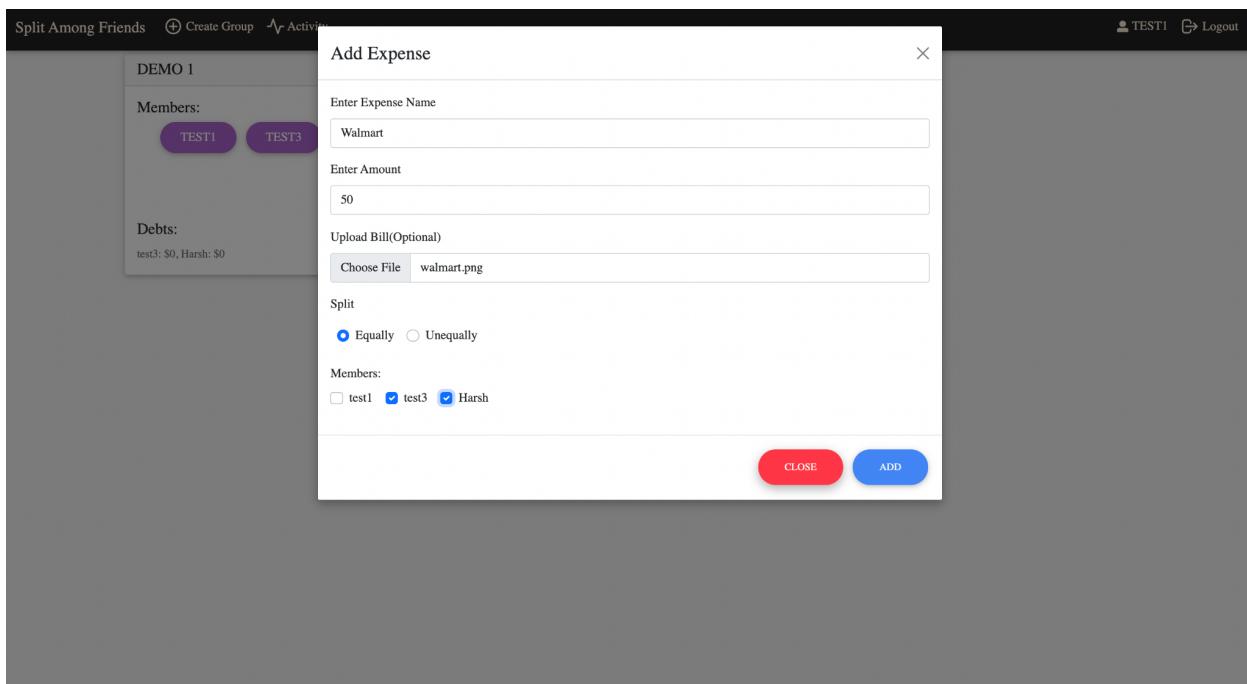
On clicking the add person icon, a modal is shown to add a new member to the current group. And new members to the group are added by the admin of the group only.

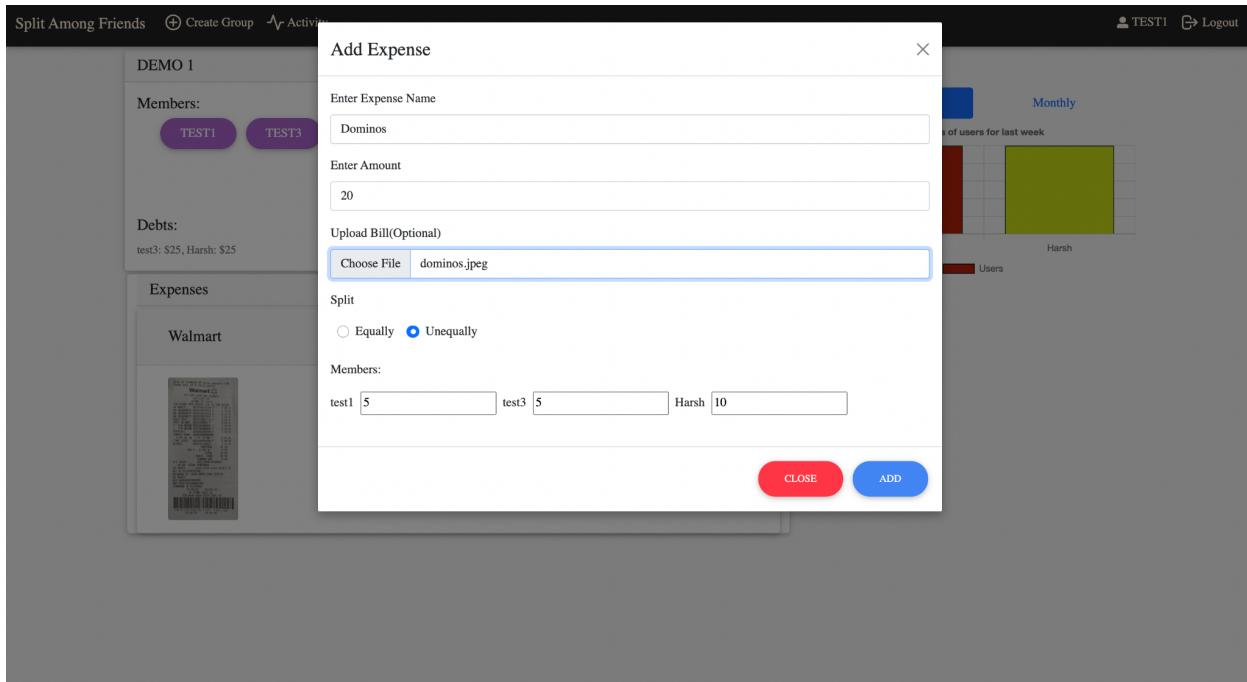




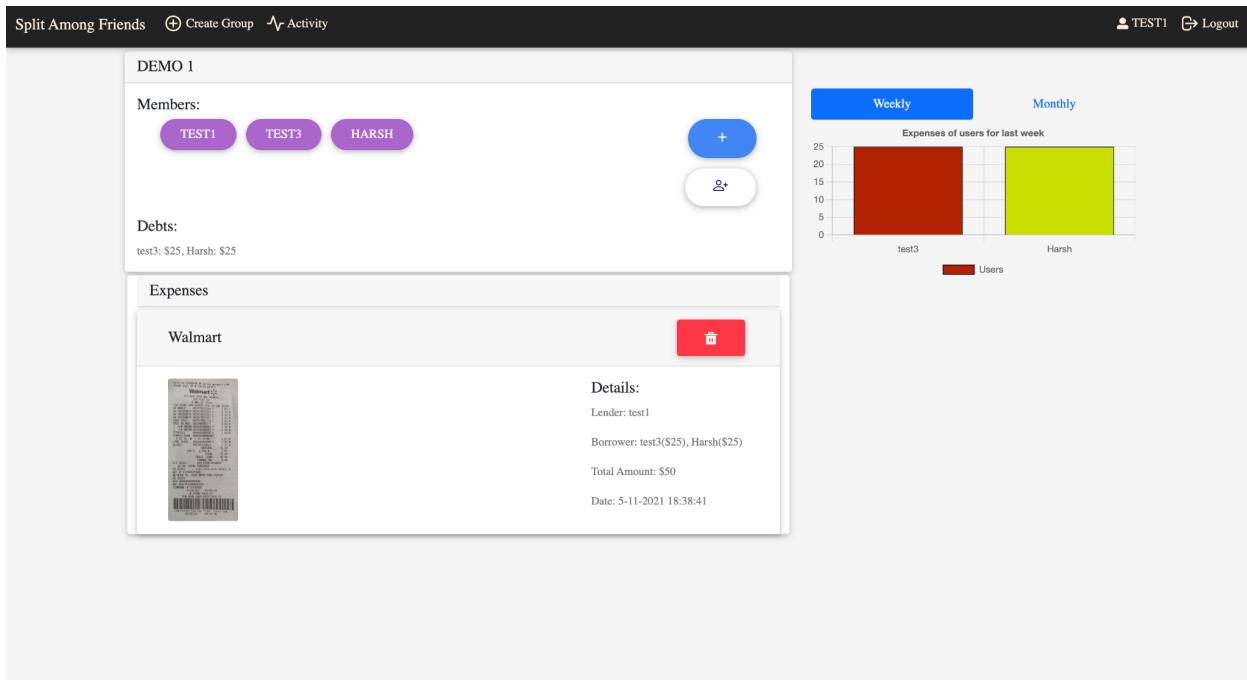
After selecting the member to add to the current group, we can see the newly added member in the group detail screen.

## 5. Add expense





On clicking the add icon, a modal is shown to add the expense where the current user can enter various details related to expense such as name, image, amount, and the splitting criteria (Equally and UnEqually).



Once the user clicks on add button, the expense is added and respective details of that expense are shown with having a button for archiving the expense.

In the group detail screen, the user can also check the stats of weekly and monthly expenses.

## 6. Clear Debts (settle up)

The screenshot shows the group detail screen for 'DEMO 1'. At the top, there are buttons for 'Create Group' and 'Activity'. On the right, there are user profiles for 'TEST3' and 'Logout'. The main area displays group members: TEST3, TEST1, and HARSH. Below them is a 'Debts' section showing 'test1: \$-25, Harsh: \$0'. To the right is a 'SettleUp' button. The 'Expenses' section shows a transaction for 'Walmart' with details: Lender: test1, Borrower: test3 (\$25), Harsh (\$25), Total Amount: \$50, Date: 5-11-2021 18:38:41. To the right are two charts: a 'Weekly' chart titled 'Expenses of users for last week' showing red bars for 'test3' and 'Harsh', and a 'Monthly' chart showing green bars for the same users.

Once the user clicks on the settle-up icon, a modal will be displayed with the group name and members to clear debts with.

The screenshot shows the group detail screen for 'DEMO 1'. A modal window titled 'Clear Debts' is overlaid. It contains fields for 'Group Name' (set to 'DEMO 1') and 'MEMBERS' (with a dropdown menu showing 'test1 (25\$)'). There is also a text input field with '\$0.00'. At the bottom of the modal are 'CLOSE' and 'SUBMIT' buttons. The background of the page shows the same group members, debts, and expense details as the previous screenshot.

Split Among Friends [Create Group](#) [Activity](#)

TEST3 [Logout](#)

**DEMO 1**

**Members:** TEST3, TEST1, HARSH

**Debts:** test1: \$-25, Harsh: \$0

**Expenses**

**Walmart**

**Details:**  
Lender: test1  
Borrower: test3(\$25), Harsh(\$25)  
Total Amount: \$50  
Date: 5-11-2021 18:38:41

**Clear Debts**

Group Name: DEMO 1  
Members: 25

CLOSE SUBMIT

**Weekly** **Monthly**

Expenses of users for last week

User	Weekly	Monthly
test3	Red Bar	Red Bar
Harsh	Green Bar	Green Bar

Users

Split Among Friends [Create Group](#) [Activity](#)

TEST3 [Logout](#)

**DEMO 1**

**Members:** TEST3, TEST1, HARSH

**+ Add Member**

**Debts:** test1: \$0, Harsh: \$0

**Expenses**

**Walmart**

**Details:**  
Lender: test1  
Borrower: test3(\$25), Harsh(\$25)  
Total Amount: \$50  
Date: 5-11-2021 18:38:41

**Payment**

**Details:**  
Lender: test3  
Borrower: test1(\$25)  
Total Amount: \$25  
Date: 5-11-2021 18:54:45

**Weekly** **Monthly**

Expenses of users for last week

User	Weekly	Monthly
test3	Red Bar	Red Bar
Harsh	Green Bar	Green Bar

Users

Once the user submits the form of the clear debt, a new payment will be recorded and it is displayed with the green color having payment as a name.

## 7. Activity screen

The screenshot shows a web application interface titled "Activity". At the top, there are navigation links: "Split Among Friends", "+ Create Group", and "Activity". On the right side, there is a user profile icon labeled "TEST1" and a "Logout" link. The main content area is titled "Activities" and displays a list of user actions in a card-based format:

- You added an expense of \$20  
11-5-2021
- You created the demo 2 group  
11-5-2021
- You archived fdfsfd group  
11-5-2021
- You created the fdfsfd group  
11-5-2021
- You added an expense of \$20  
11-5-2021
- You added an expense of \$20  
11-5-2021
- You added an expense of \$50  
11-5-2021
- You created the demo 1 group  
11-5-2021

All the actions performed by the user are recorded and viewed in the activity screen of the application. The activity that is tracked is creating/archiving a group, adding/archiving an expense, adding a new member to the group, and clearing debts.

### Work Division:

Feature	Member
Signup/Login(JWT, Authentication and Authorization)	Siddhi Manoj Varma Rudraraju
Creating different groups with different members. An admin for each group will have permission to add new group members with the existing members.	Abijith Velaga
Adding an Expense then selecting the people who are involved in the expense to split and add the debt for those people.	Harsh Uday Rajgor

Archive an expense.	
Settle up for the group, Archiving a Group	Siddhi Manoj Varma Rudraraju
Weekly and daily stats in the form of charts in each group	Abijith Velaga
User-specific activity tab	Harsh Uday Rajgor

**Project demo Video Recording URL:**

<https://utdallas.app.box.com/s/bmu2b7t6mgs5jx67g2pfjp4tzftefwgx>