



Dhirubhai Ambani University Technology

Formerly DA-IICT

Groups - 28

SYSTEM TESTING – GROUPS SECTION

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1. Introduction

This document presents the **system testing** of the **Groups module**, which includes the Groups listing page and the Group Details page.

2. BlackBox Testing — Groups

2.1 Groups Test

UI Constraints

Create Group – Group Name

- Group Name cannot be empty.
- Must contain at least one non-space character.

Search Groups

- Any text input is valid
- If search box is empty , all groups are shown.

Delete Group

- Clicking the delete (trash) icon opens a confirmation dialog.
- “Cancel” → closes dialog and does not remove the group.
- “Delete” → removes that group from the list.

Navigation Buttons

- “View Details” → opens Group Detail page for that group.
- “Add Expense” → opens Add Expense page for that specific group.

2.2 Equivalence Class Partitioning (ECP) – Create Group

Equivalence Class Group Name Input Result

E1	Valid text (e.g. "Trip")	success
E2	Empty string	error
E3	Only spaces (" ")	error

2.3 Boundary Value Analysis (BVA) – Groups Page

Group Name	Search Term	Delete Choice	Output	Reason
""	<i>none</i>	—	Group not created, error shown	Name cannot be empty
""	<i>none</i>	—	Group not created, error shown	Only spaces not allowed
"A"	<i>none</i>	—	Group created and listed	Minimum valid name
"Weekend Trip"	""	—	New group listed, all groups visible	Empty search → no filter
"Trip"	"tri"	—	Only groups containing "tri" are shown	Case-insensitive search
any existing name	<i>any</i>	Cancel	Group remains visible in list	Delete cancelled
any existing name	<i>any</i>	Delete	Group removed from list after confirmation	Successful delete

3. BlackBox Testing — Group Details

3.1 Group Detail Test

Field & UI Constraints

General

- Page shows summary cards: Total Expenses, Members, Expenses count, Last Activity.
- Tabs: **Expenses, Balances, Members**.

- “Add Expense” button opens Add Expense page for that group.

Expenses Tab

- If no expenses → shows “No expenses yet” message and button “Add First Expense”.
- Each expense card shows: title, description, category, date, paid by, total amount, and per-person share (if split among members).

Balances Tab

- **Settlements** section:
 - Shows lines like “X owes Y amount”.
 - “Settle Up” button is shown only for the user who owes in that line.
 - If there are no settlements → shows “All balances are settled!”.
- **Individual Balances** section:
 - Shows each member with name, email and balance.
 - Positive balance → user is owed money.
 - Negative balance → user owes money.
 - Zero balance → “settled”.

Members Tab

- Shows list of group members: avatar, name, email, and current balance text.
- “Add Member” button opens the Add Member dialog.

Add Member Dialog

- Full Name: cannot be empty.
- Email Address: cannot be empty.
- Email must look like a valid email (example: test@example.com).
- On valid input → A Group Invitation Notification is sent to the invited user.

3.2 Equivalence Class Partitioning (ECP) – Add Member

Equivalence Class	Full Name	Email	Result
M1		valid	valid format success
M2		empty	valid format error
M3		valid	empty error
M4		valid	invalid format error

3.3 Boundary Value Analysis (BVA) – Group Detail (Including add expense , add member)

Full Name	Email	Tab	Output	Reason
""	friend@example.com	Members	Member not added, error shown	Name required
"J"	friend@example.com	Members	Invitation is sent successfully. Notification appears for invited user.	Minimum non-empty name
"John Doe"	""	Members	Member not added, error shown	Email required
"John Doe"	"friend@"	Members	Member not added, error shown	Invalid email format
-	-	Balances	No settlements → "All balances are settled!"	Empty settlements list
-	-	Balances	Member with positive balance shown as +\$X.XX	Positive means "is owed"
-	-	Balances	Member with negative balance shown as -\$X.XX	Negative means "owes"

4. Acceptance Testing — Groups

Test 1 – Create Group Successfully

Input:

- Click **Create Group**.
- Enter Group Name: 1.
- Click **Create Group**.

Result:

- A new group card with name 1 appears in the groups list.



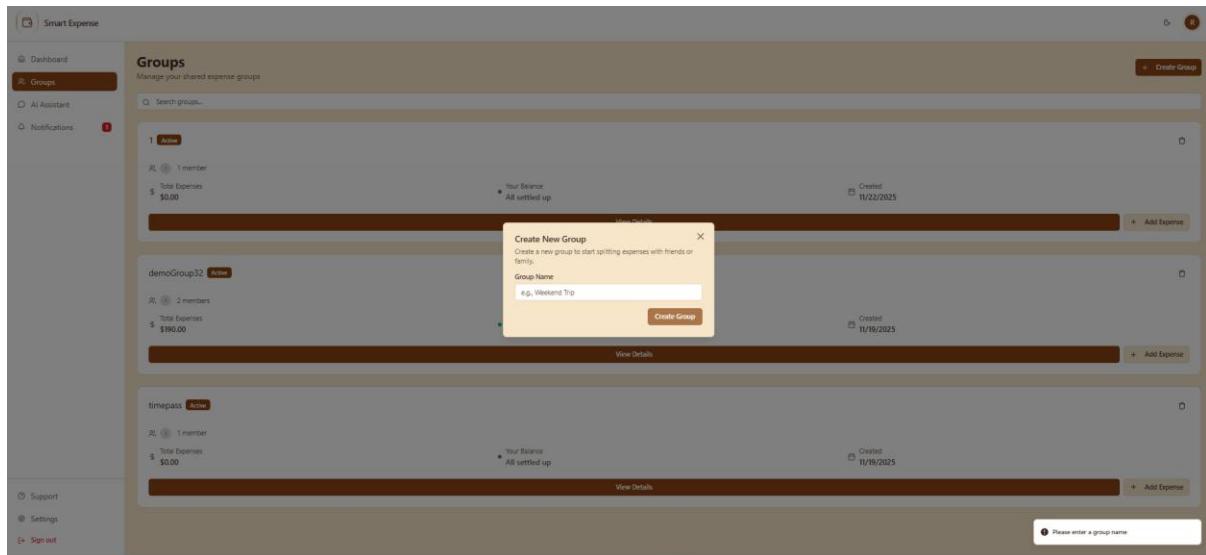
Test 2 – Create Group With Empty Name

Steps / Input:

- Click **Create Group**.
- Leave Group Name empty.
- Click **Create Group**.

Result:

- Group is not created.
- An error message is shown asking to enter a group name.



Test 3 – Search Groups

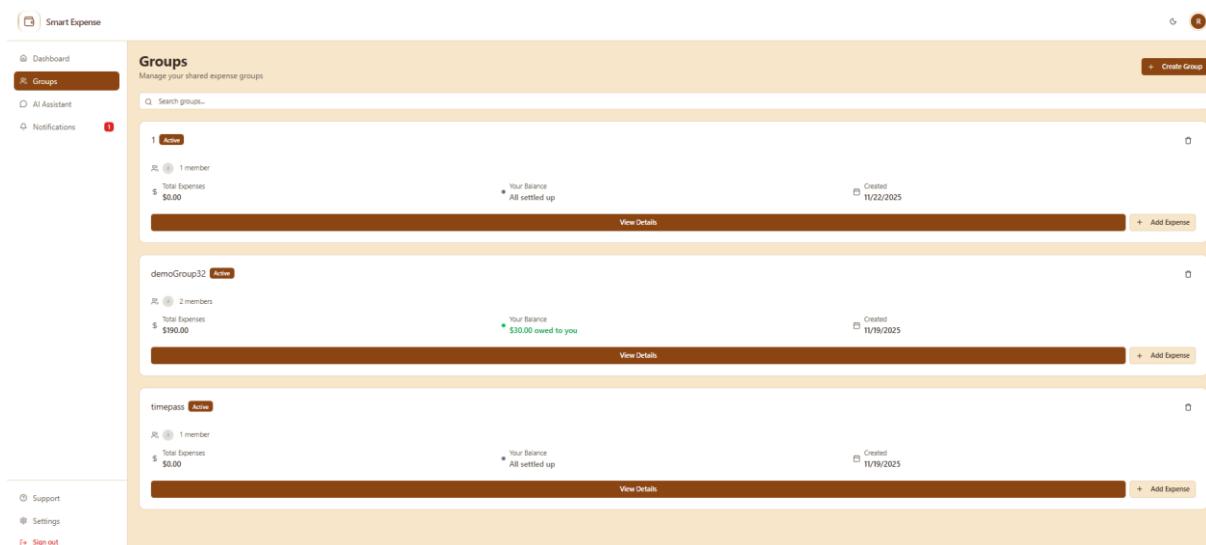
Precondition: Multiple groups exist, e.g. demoGroup32 and timepass.

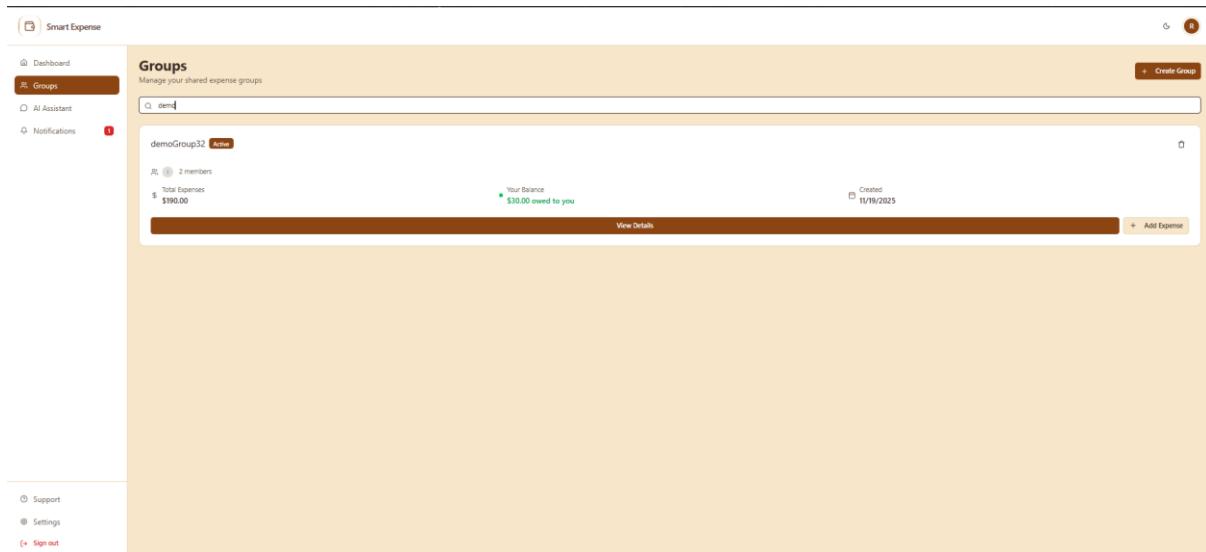
Steps / Input:

- Type demo in the **Search group** box.

Expected Result:

- Only groups whose names contain “demo” (like demoGroup32) are shown.
- Other groups (e.g. timepass) are hidden





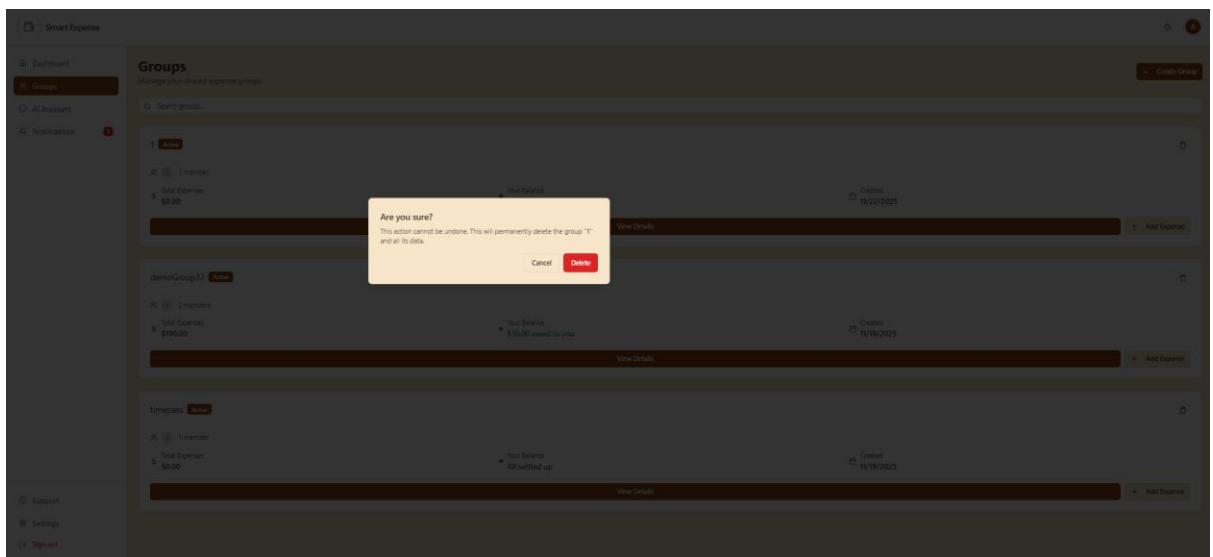
Test 4 – Delete Group

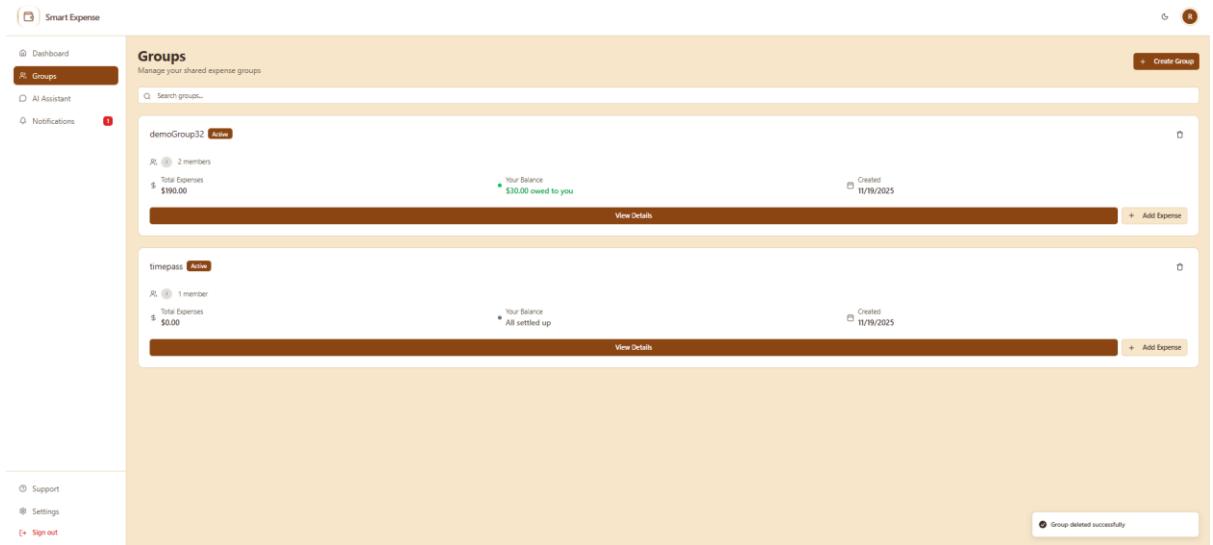
Steps / Input:

- Choose a test group (e.g. 1).
- Click the **trash** icon on that group.
- In confirmation dialog, click **Delete**.

Result:

- The selected group card is removed from the groups list.





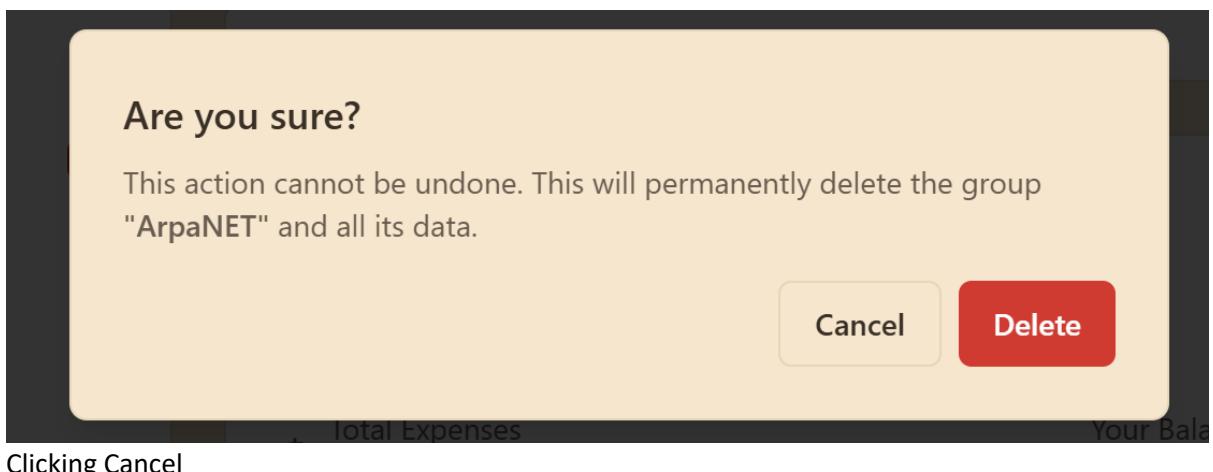
Test 4.1 – Delete Group Abort (cancel action)

Steps / Input:

- Choose a test group (e.g. 1).
- Click the **trash** icon on that group.
- In confirmation dialog, click Cancel.

Result:

Display Group page



The screenshot shows the 'Groups' page with a single group listed. The group is named 'ArpaNET' and is marked as 'Active'. It has 1 member. The total expenses are \$0.00, and the balance is also \$0.00, indicating 'All settled up'. The group was created on 29/11/2025. There are buttons for 'View Details' and '+ Add Expense'.

Test 5 – View Group Details and Expenses Tab

Steps / Input:

- On Groups page, click **View Details** for a group
- On the Group Detail page, stay on the **Expenses** tab.

Expected Result:

- Summary cards are visible (Total Expenses, Members, Expenses, Last Activity).
- If there are no expenses → “No expenses yet” message and “Add First Expense” button.
- If there are expenses → list of expense cards with title, category, date, paid by and amount.

The screenshot shows the 'demoGroup32' detail page on the 'Expenses' tab. Summary cards show Total Expenses (\$200.00), Members (2), Expenses (4), and Last Activity (Just now). Below, a table lists four expenses:

Expense	Balances	Members
lunch Food & Dining • 11/22/2025 • Paid by ruchiR	\$10.00 \$5.00 per person	
concert Entertainment • 11/22/2025 • Paid by ruchiR	\$100.00 \$50.00 per person	
sutta Food & Dining • 11/19/2025 • Paid by ruchiR	\$40.00 \$20.00 per person	
dinner Food & Dining • 11/19/2025 • Paid by dame3e	\$50.00 \$25.00 per person	

Test 6 – Add Member

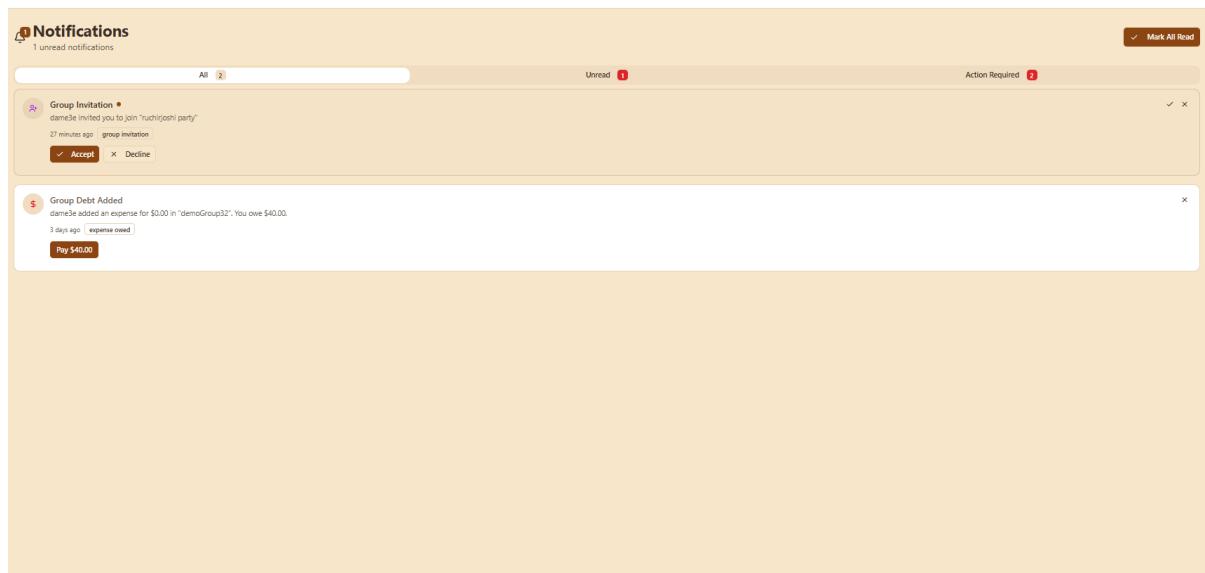
Page: Group Detail → Members tab

Steps / Input:

- Click **Members** tab.
- Click **Add Member**.
- Full Name: ruchir.
- Email Address: joshiruchir35@gmail.com.
- Confirm/Add.

Expected Result:

- A **group invitation** is created.
- The invited user sees a **notification** under their Notifications page.
- **Member does NOT appear** in the group until the invitation is accepted.



Group Members
People in this expense group

Member	Email	Balance
Kirtan Chauhan	202301409@dau.ac.in	+\$110.00 is owed
ruchir	joshiruchir35@gmail.com	-\$110.00 owes

Test 7: Add Member with Invalid Email Format

Steps / Input:

1. Open the **Group Details** page.
2. Go to **Members** tab.
3. Click **Add Member**.
4. Enter:
 - o **Full Name:** raj
 - o **Email:** invalidgmail.com (no "@")
5. Click **Add / Send Invitation**.

Expected Result:

- Member invitation is **NOT** sent.
- An error message appears:
"Invalid email format"

demoGroup32

Total Expenses	\$200.00
Members	2
Expenses	4
Last Activity	Just now

Add Member
Invite someone to join this group by entering their email address.

Full Name: raj
Email Address: invalidgmail.com

Please enter a valid email address

Cancel

Test 8: Add Member who is not registered within the App (no account)

Steps / Input:

6. Open the **Group Details** page.
7. Go to **Members** tab.
8. Click **Add Member**.
9. Enter:
 - **Full Name:** raj
 - **Email:** notregistered123@gmail.com
10. Click **Add / Send Invitation**.

Expected Result:

-

Test Case Name: View Balances When Group Has Unsettled Amounts

Steps / Input:

1. Open the **Group Details** page for a group that has unsettled expenses.
2. Click on the **Balances** tab.

Expected Result:

- Under **Settlements**, at least one row appears showing:
“X owes Y \$Amount”
- Each settlement row shows two users and the amount owed.
- The “**Settle Up**” button should appear **only** for the logged-in user *if they are the one who owes (X)*.
- If the logged-in user is **not the debtor**, the “Settle Up” button should **not** appear.
- The **Individual Balances** section should show:
 - Positive amounts → labeled as “is owed”
 - Negative amounts → labeled as “owes”
 - Zero amounts → “settled”

Smart Expense

Dashboard Groups AI Assistant Notifications 1

demoGroup32

Total Expenses \$ 200.00	Members 2	Expenses 4	Last Activity Just now
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+ Add Expense

Expenses Balances Members

Settlements
The simplest way to settle all debts

d dame3e owes ruchir	\$25.00
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Individual Balances
Each member's net balance in this group

d dame3e -\$35.00	ruchir +\$35.00
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Support Settings [Sign out](#)

This screenshot shows the Smart Expense application interface for a group named 'demoGroup32'. The top navigation bar includes links for Dashboard, Groups, AI Assistant, and Notifications (with 1 unread notification). The main header displays the group name 'demoGroup32' and key statistics: Total Expenses (\$200.00), Members (2), Expenses (4), and Last Activity (Just now). A prominent 'Add Expense' button is located below the header. Below this, there are three main sections: 'Settlements' (a debt tracking feature showing 'd dame3e owes ruchir \$25.00'), 'Individual Balances' (showing each member's net balance: 'dame3e' has a balance of -\$35.00 and 'ruchir' has a balance of +\$35.00), and a general summary section with tabs for Expenses, Balances, and Members.