



# Dhirubhai Ambani University

**GROUP - 28**

**System Testing – Addexpense (Personal + Group)**

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## 1. Add Expense (Personal) – Field Constraints

Title (Required)

- Cannot be empty
- Must have at least 1 character which is not a space.

Amount (Required)

- Cannot be empty
- Must be a valid number
- Must be greater than 0
- Will allow decimals values

Date (Required)

- Cannot be empty
- Data format must be valid.
- Invalid date strings are not allowed.
- Future dates are not allowed.

Category (Required)

- Cannot be empty

- Must be selected from the dropdown options or auto categorize with AI

Description (Optional)

- Can be empty
- Can contain any characters

Receipt Upload (Optional)

- Can be left empty
- If uploaded, must be JPG, PNG, or PDF

## 2. Equivalence Class Partitioning (ECP)

EC Class	Title	Amount	Date	Category	Receipt	Expected Result
E1	valid	valid (>0)	valid	valid	optional	success
E2	invalid (empty)	valid	valid	valid	optional	error
E3	valid	invalid (empty)	Valid	valid	optional	error
E4	valid	valid	invalid ( wrong format)	valid	optional	error
E5	valid	valid	valid	invalid (not selected)	optional	error
E6	valid	valid	valid	valid	invalid file type	error
E7	invalid	invalid	valid	valid	optional	error
E8	valid	invalid	invalid	valid	optional	error
E9	valid	valid	invalid	invalid	optional	error
E10	invalid	invalid	invalid	invalid	invalid	error

### 3. Boundary Value Analysis (BVA)

Covers limits of numeric, date, and input formats.

Title	Amount	Date	Category	Receipt	Expected Output	Actual Output	Reason
""	100	20/11/2025	Food	none	fail	fail	Title must be non-empty
"Lunch"	0	20/11/2025	Travel	none	fail	fail	Amount must be > 0
"Lunch"	-10	20/11/2025	Health	none	fail	fail	Negative amount invalid
"Lunch"	abc	20/11/2025	Food	none	fail	fail	Amount must be numeric
"Lunch"	100	""	Food	none	fail	fail	Date cannot be empty
"Lunch"	100	20/11/2025	(not selected)	none	fail	fail	Category required
"Lunch"	100	20/11/2025	Food	file.exe	fail	fail	Invalid file type
"Lunch"	100	20/11/2025	Travel	receipt.png	success	success	Valid input with receipt

### Acceptance Testing — Add Expense (Personal)

#### Test 1 — Missing Required Field (Empty Title)

Title: (empty)

Amount: 150

Date: 20/11/2025

Category: Food

Receipt: None

Expected Output: Invalid , popup indicating to fill the title field

 Expense Details

**Quick Select (Recurring Expenses)**

Select a frequently used expense ▼

Select a recurring expense to auto-fill the details.

**Title \***

e.g., Dinner at Italian Restaurant

**Amount \*** ! Please fill in this field.

\$ 120

**Date \***

29/11/2025 CALENDAR

**Category \***

Entertainment ▼

⚡ Auto-Categorize with AI

**Description (Optional)**

Add any additional details...

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### Test 2 — Invalid Amount (Zero or Negative)

Title: Grocery Shoppings

Amount: 0

Date: 20/11/2025

Category: Grocerie

Receipt: None

Expected Output: Invalid (Amount must be greater than 0)

**Add Expense**

Track your personal expense

[Personal](#) [Group](#)

**Expense Details**

**Quick Select (Recurring Expenses)**

Select a frequently used expense

Select a recurring expense to auto-fill the details.

**Title \***

Grocery

**Amount \***

\$ 0

**Date \***

20/11/2025

**Category \***

Other

Auto-Categorize with AI

**Description (Optional)**

Add any additional details...

**Receipt (Optional)**

Drag and drop your receipt here, or click to browse

Choose File

Supported formats: JPG, PNG, PDF

[Cancel](#) [Add Expense](#)

Please enter a valid amount

This screenshot shows the 'Add Expense' form on a dark-themed interface. The 'Personal' tab is selected. The 'Expense Details' section contains fields for Title ('Grocery'), Amount ('\$ 0'), Date ('20/11/2025'), Category ('Other'), and Description ('Add any additional details...'). Below this is a 'Receipt (Optional)' section with a file upload area. At the bottom are 'Cancel' and 'Add Expense' buttons. A validation message 'Please enter a valid amount' is displayed in a box next to the amount field.

### Test 3 — Invalid Amount (Non-numeric)

Title: Grocery

Amount: 0

Date: 20/11/2025

Category: Travel

Receipt: None

Expected Output: Invalid (Amount must be numeric)

**Add Expense**  
Track your personal expense

Personal Group

**Expense Details**

**Quick Select (Recurring Expenses)**  
Select a frequently used expense

Select a recurring expense to auto-fill the details.

**Title \***  
Grocery

**Amount \***  
\$ 0

**Date \***  
20/11/2025

**Category \***  
Other

Auto-Categorize with AI

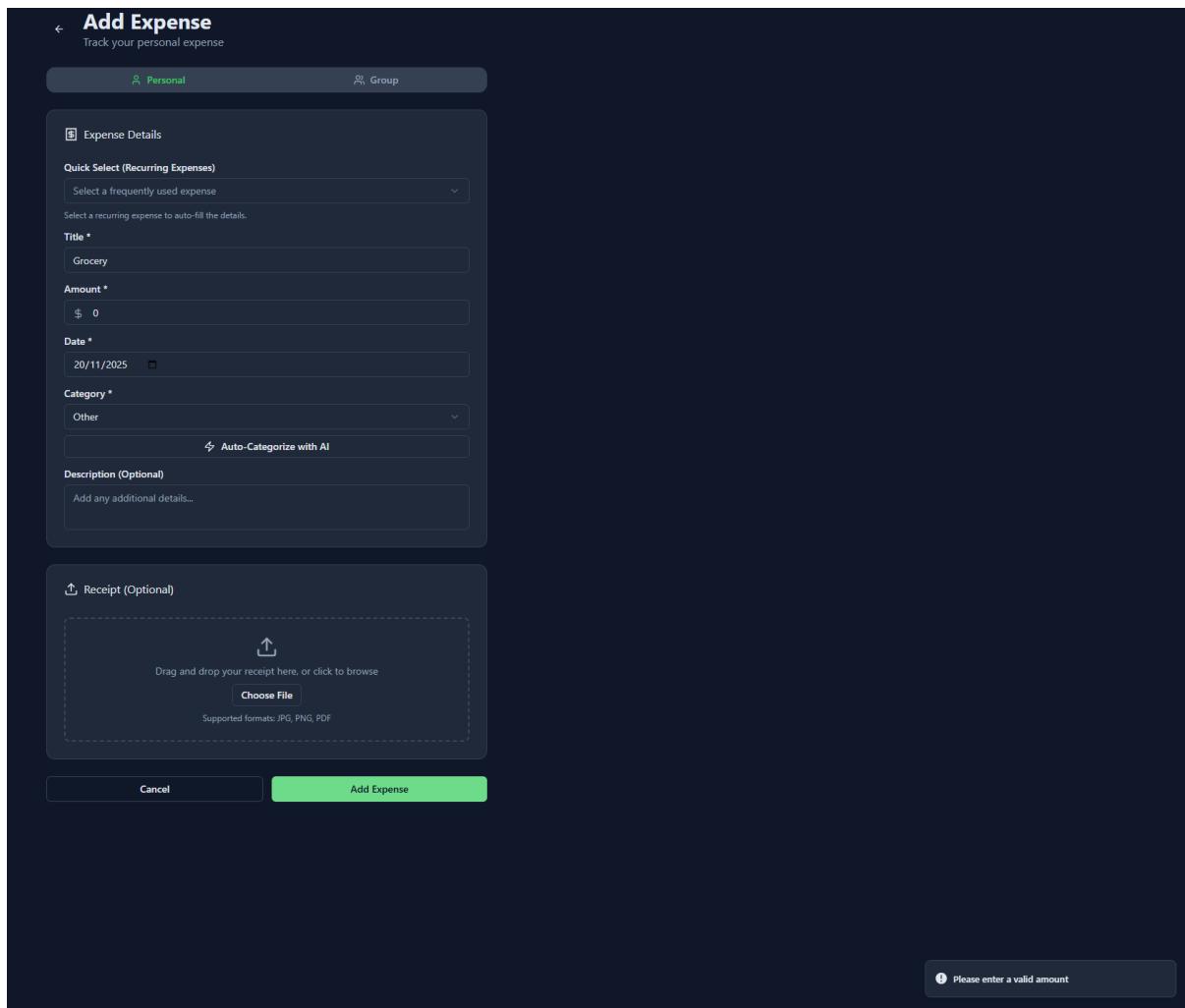
**Description (Optional)**  
Add any additional details...

**Receipt (Optional)**

Drag and drop your receipt here, or click to browse  
**Choose File**  
Supported formats: JPG, PNG, PDF

**Cancel** **Add Expense**

Please enter a valid amount



#### Test 4 — Category Not Selected

Title: poker

Amount: 120

Date: 20/11/2025

Category: (not selected)

Receipt: None

Expected Output: Invalid (Category required)

**Add Expense**

← Track your personal expense

[Personal](#) [Group](#)

**Expense Details**

**Quick Select (Recurring Expenses)**

Select a frequently used expense

**Title \***

poker

**Amount \***

\$ 120

**Date \***

20/11/2025

**Category \***

Select a category

Auto-Categorize with AI

**Description (Optional)**

Add any additional details...

**Receipt (Optional)**

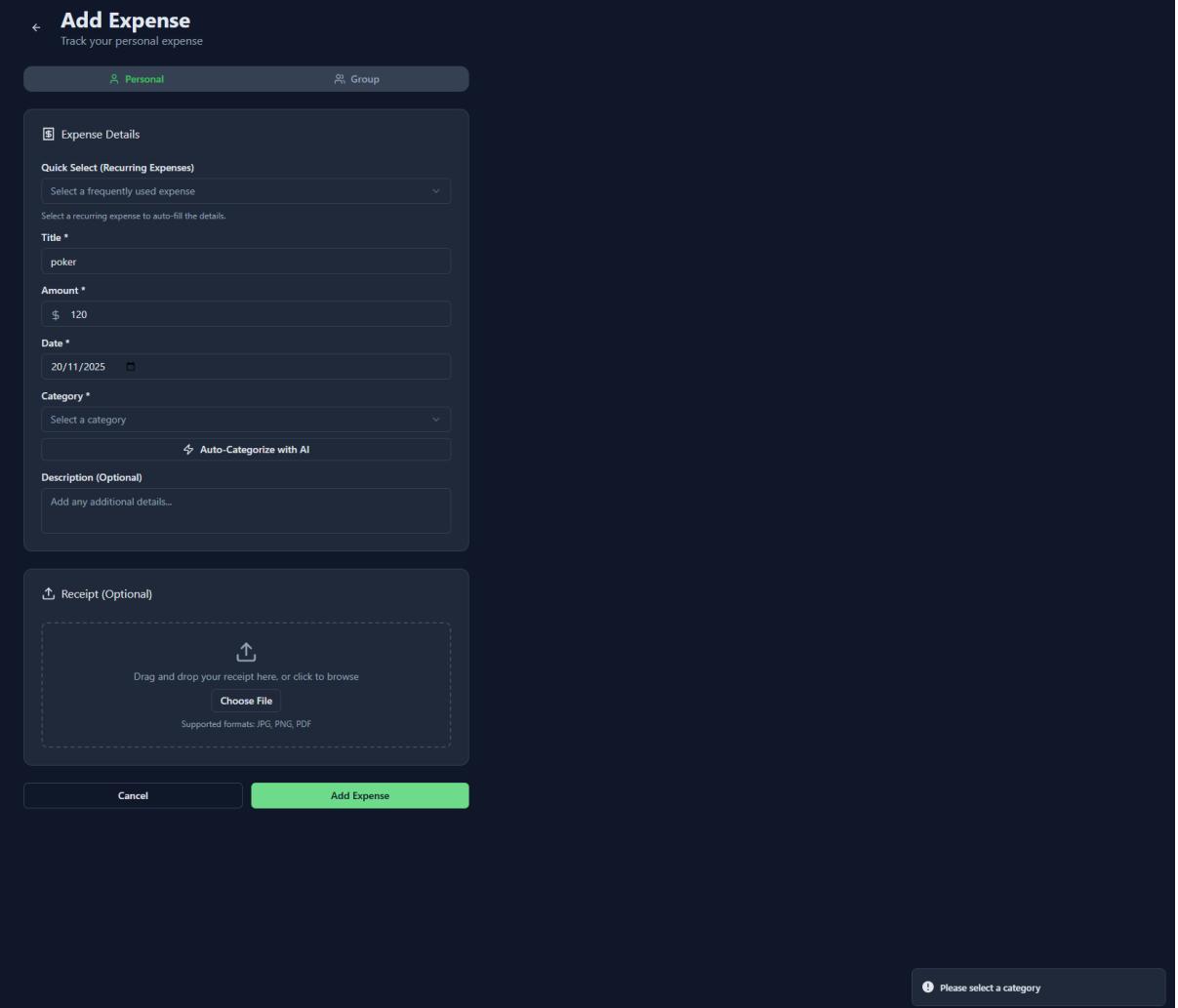
Drag and drop your receipt here, or click to browse

Choose File

Supported formats: JPG, PNG, PDF

[Cancel](#) [Add Expense](#)

Please select a category



## Test 5 — Invalid Receipt File Type

Title: Bill

Amount: 50

Date: 20/11/2025

Category: Utilities

Receipt: file.exe

Expected Output: Invalid (Only JPG, PNG, PDF allowed)

**Add Expense**

Track your personal expense

[Personal](#) [Group](#)

**Expense Details**

**Quick Select (Recurring Expenses)**

Select a frequently used expense

Select a recurring expense to auto-fill the details.

**Title \***

bill

**Amount \***

\$ 120

**Date \***

20/11/2025

**Category \***

Bills & Utilities

Auto-Categorize with AI

**Description (Optional)**

Add any additional details...

**Receipt (Optional)**

Drag and drop your receipt here, or click to browse

Choose File

Supported formats: JPG, PNG, PDF

[Cancel](#) [Add Expense](#)

! Unsupported file type. Use JPG/PNG/PDF.

### Test 6 — Invalid Date Format

Title: Parking

Amount: 10

Date: 20-02-3000

Category: Transport

Receipt: None

Expected Output: valid must be less than {current date}.



### Test 7 — Successful Expense Creation

Title: Dinner at Italian Restaurant

Amount: 75.50

Date: 20/11/2025

Category: Food

Receipt: receipt.png

Expected Output: Success (Expense added successfully)

 Personal expense added!

#### Test 8 – Future Dates Not Allowed

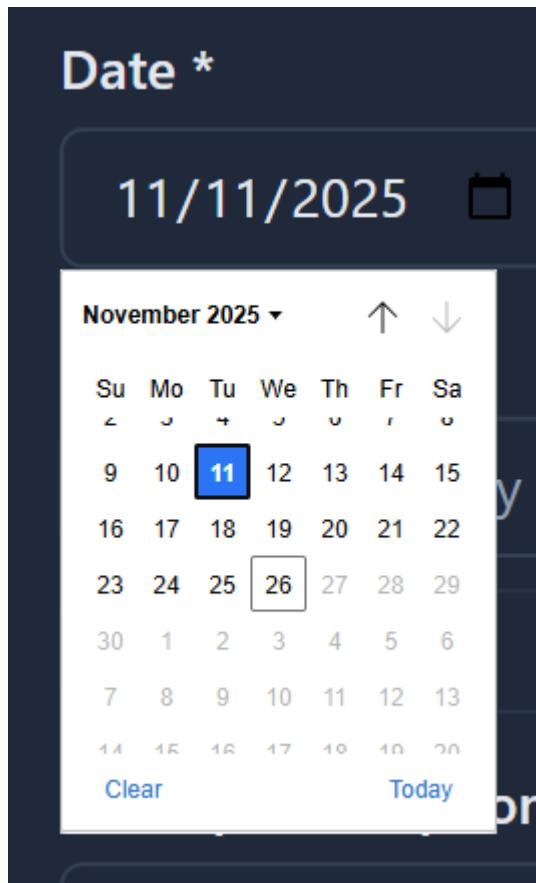
Date Selected: 01/01/2030

Expected Output:

User should not be able to select a future date from the calendar.

Disable future dates (click option will be disabled).

Screenshot:



## BlackBox Testing — Add Expense (Group Section)

\*Note = Since the initial part of the group section is completely same to the personal expense section , hence we are not reaping the testing required for those particular fields (expemse detail)

## 1. Group & Payment – Field Constraints

Select Group (Required)

- Cannot be empty
- Only options in dropdown allowed

Paid By (Required)

- At least one member should be selected.
- Submit disabled without selecting payer

Split Method

Two modes:

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A. Equal Division Mode

- Must select at least one member to split with
  - All selected members will be included in equal calculation
  - System automatically divides total amount by the number of members.
  - If no members are selected, then it is invalid
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B. Unequal Division Mode

- User will input the amount split between every member.
  - All member fields must be filled
  - Each amount must be  $\geq 0$
  - Sum of all split amounts MUST equal to the Total Expense Amount
  - Otherwise, it will show error
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General Split Constraints

- If split validation fails than the expense cannot be added
- No negative values
- No empty fields (for Unequal division)
- This unequal splitting total should be equal to the total amount

## 2. Equivalence Class Partitioning (ECP)

EC Class	Group Selected	Paid By	Split Method	Split Values	Expected Result
E1	valid	valid	Equal	valid members selected	success
E2	valid	valid	Unequal	values sum = total	success
E3	invalid (none)	-	-	-	error
E4	valid	invalid (none)	-	any	error
E5	valid	valid	Equal	no members selected	error
E6	valid	valid	Unequal	missing values	error
E7	valid	valid	Unequal	non-numeric value	error
E8	valid	valid	Unequal	negative value	error
E9	valid	valid	Unequal	sum ≠ total amount	error
E10	valid	valid	Equal	selecting members not allowed (UI blocked)	error / invalid state
E11	valid	valid	Unequal	extra members beyond group	error (not possible in UI)

## 3. Boundary Value Analysis (BVA)

Group	Paid By	Split Method	Split Inputs	Total Amount	Expected Output	Reason
none	—	Equal	—	100	fail	Group must be selected

Group	Paid By	Split Method	Split Inputs	Total Amount	Expected Output	Reason
demoGroup32	ruchir	Equal	none selected	100	fail	Must choose members
demoGroup32	ruchir	Unequal	50, ""	100	fail	Missing input field
demoGroup32	ruchir	Unequal	50, abc	100	fail	Non-numeric
demoGroup32	ruchir	Unequal	50, -10	100	fail	Negative value
demoGroup32	ruchir	Unequal	40, 40	100	fail	$40+40 \neq 100$
demoGroup32	ruchir	Unequal	50, 50	100	success	Valid split
demoGroup32	ruchir	Equal	dame3e, ruchir	100	success	Valid: 100/2 split

## Acceptance Testing : ADD EXPENSE(Groups)

### Test 1 — No Group Selected (Required field)

Action / Inputs

- Group: (*none selected*)
- Paid By: —
- Total Amount: 100

**Expected Output:** Invalid — popup indicating to select a group

The screenshot shows the 'Add Expense' form on a dark-themed application. The form is structured into three main sections:

- Expense Details:** Contains fields for Title (filled with "blah"), Amount (\$ 100), Date (20-11-2025), Category (Transportation), and Description (Optional).
- Group & Payment:** Contains a 'Select Group' dropdown which is currently empty and has an error message: "Please select a group".
- Receipt (Optional):** Contains a file input field with placeholder text: "Drag and drop your receipt here, or click to browse" and a "Choose File" button. It also specifies supported formats: "Supported formats: JPG, PNG, PDF".

At the bottom of the form, there are three buttons: "Cancel", "Add Expense" (highlighted in green), and a status message: "Please select a group".

## Test Case 2 — Valid Equal Split

**Precondition:** A group with at least 2 members exists.

**Steps:**

1. Open Add Expense → Group Expense.
2. Enter a valid amount (e.g., ₹100).
3. Select a valid group.
4. Select a valid payer.
5. Choose Equal Split.
6. Select at least two members for splitting.
7. Click Add Expense.

**Expected Output:**

- Expense is successfully added.
- Confirmation message will be shown.
- Expense will be appeared in Group Expense list.

The screenshot shows the 'Add Expense' interface. In the 'Expense Details' section, a title 'timespass', amount '\$ 100', and date '28-11-2025' are entered. The category is set to 'Food & Dining'. In the 'Group & Payment' section, the group is 'nachirjoshi party' and the payer is 'daneesh'. Under 'Split Details', the 'Unequal Division' method is selected. Two members are chosen for splitting: 'daneesh' and 'nachir'. The total expense amount is '\$100.00' and the amount per member is '\$50.00'. In the 'Receipt (Optional)' section, there is a placeholder for a file upload. At the bottom, there are 'Cancel' and 'Add Expense' buttons.

### Test Case 3 — Valid Unequal Split

**Precondition:** Same as above.

**Steps:**

1. Enter amount ₹100.
2. Select group and payer.
3. Select Unequal Split method.
4. Enter valid values for each member, e.g., 60 & 40.
5. Click Add Expense.

**Expected Result:**

- Expense added successfully.

- Confirmation message visible.

The screenshot shows the 'Add Expense' interface. The 'Expense Details' section includes fields for Title ('timestamp'), Amount ('\$ 100'), Date ('28-11-2025'), Category ('Food & Dining'), and Description ('Optional'). The 'Group & Payment' section shows a group named 'nachiket party' and a payer named 'danielle'. The 'Split Details' section shows an unequal division where 'danielle' gets \$40 and 'nachiket' gets \$60. The total expense amount is \$100.00, and the amount split is also \$100.00. The 'Receipt (Optional)' section has a placeholder for a file upload. At the bottom, there are 'Cancel' and 'Add Expense' buttons, with the latter being green.

#### **Test Case 4 — Invalid Unequal Split (Sum mismatch)**

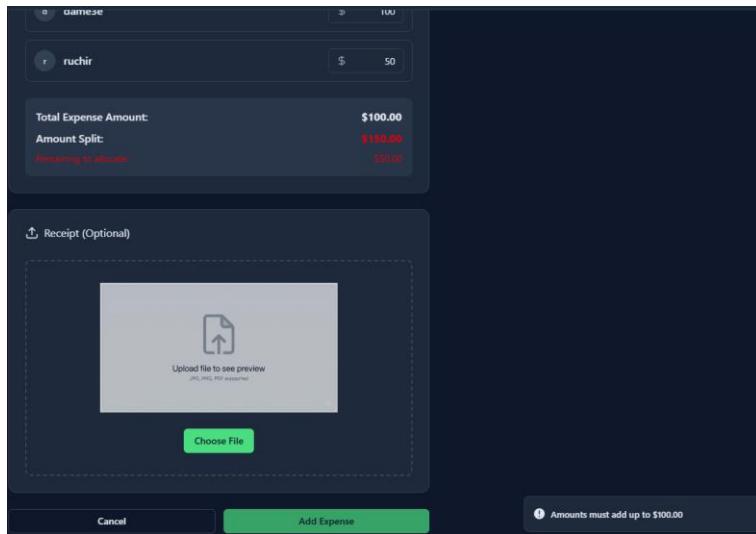
##### **Steps:**

1. Enter amount ₹100.
2. Select group and payer.
3. Choose Unequal Split.
4. Enter 50 & 20 (does not total 100).
5. Click Add Expense.

##### **Expected Result:**

Expense is not saved.

- Error message / validation occurs: “*Remaining to allocate.*”



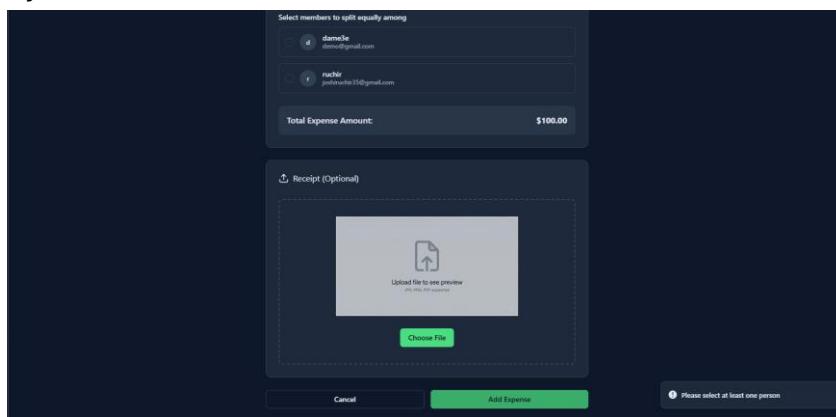
### Test Case 5 — No Members Selected in Equal Split

#### Steps:

1. Enter valid amount.
2. Select valid group + payer.
3. Choose Equal Split.
4. Do not select any members.
5. Click Add Expense.

#### Expected Result:

- Expense is not added.
- System asks to select members.



### Test Case 6 — Negative or Non-numeric Values of amount in unequal split.

#### Steps:

1. Enter amount ₹100.

2. Select group & payer.
3. Choose Unequal Split.
4. Enter -20 or abc as one member's amount.
5. Click Add Expense.

### Expected Result:

- Invalid Number.

Split Details

Split Method

Equal Division

Unequal Division

Enter amount for each member  
Amounts must add up to the total expense.

dame3e	\$ 0.00
ruchir	\$ 0.00

Total Expense Amount: \$100.00

Amount Split: \$0.00

Remaining to allocate: \$100.00