

Splitwise Application Documentation

1. Introduction

This document provides a comprehensive overview of the web application, including its features, architecture, database schema, and user interactions. The application is designed to manage group expenses, track debts among friends, and display user activities.

2. Features Overview

2.1 Groups Page

Groups Section

- Group List: Displays all groups the user is part of, including those created or joined.
- Group Details: Shows detailed information about the selected group, including members and expenses.
- Simplify Button: Simplifies all expenses in the group to determine net balances.
- Expense List: Shows all expenses incurred in the group.
 - Expense Info: Details of each expense, including:
 - Added By: Person who added the expense.
 - Time: When the expense was added.
 - Split Members: Members involved in the expense.
 - Split Amounts: Amount each member owes or is owed.
 - User's Involvement: Indicates if the user is involved in the expense.
 - Auto-Detect Expense Logo: Automatically detected logo for the expense.
 - Delete Expense Button: Allows removal of an expense.
- Add Member Button: Adds a new member to the group.
 - Friend List: Displays friends to add to the group.
 - Already Added: Indicates if a friend is already part of the group.
- Add Expense Button: Opens a form to add a new expense.
 - Expense Form: Includes fields for description, amount, paid by, and members to split the expense.

2.2 Friends Page

Friends Section

- Friends List: Displays all friends added by the user.

- Owe You / You Owe: Shows amounts owed to and by the user, calculated from group expenses.

- Settle Button: Options for settling debts:

- Record by Cash: Log cash transactions.

- Pay with UPI/Other Methods: Options to pay via UPI or other methods.

- Simplify Debts: Simplifies interlinked debts between friends.

- Search Friends: Allows searching for friends by username.

- Friend Suggestions: Displays suggested friends based on search.

2.3 Activity Page

Activity Section

- Total User Balance: Shows overall balance of the user.

- Owe/Receiving Summary: Displays a summary of amounts owed and received.

- Activity List: Lists all activities and transactions across groups the user is a member of.

2.4 Profile Page

Profile Section

- User Info: Displays the user's profile information.

- Logout Button: Allows the user to log out of the application.

3. Architecture

3.1 Flowcharts

- Groups Page Flowchart: Represents the interactions and flow of the Groups Page.

- Friends Page Flowchart: Represents the interactions and flow of the Friends Page.

- Activity Page Flowchart: Represents the interactions and flow of the Activity Page.

- Profile Page Flowchart: Represents the interactions and flow of the Profile Page.

3.2 Sequence Diagrams

- Simplify Debt Process: Sequence diagram showing the process of simplifying debts among group members.

4. Database Schema

4.1 Tables

- Users

- id : string (Primary Key)
- username : string
- email : string
- phone : string
- name : string
- password : string
- created_at : timestamp
- updated_at : timestamp

- Friend Collections

- id : string (Primary Key)
- userId : string (Foreign Key)
- friendId : string (Foreign Key)
- status : string (pending, accepted, rejected)
- created_at : timestamp
- updated_at : timestamp

- Groups

- id : string (Primary Key)
- creatorId : string (Foreign Key)
- groupName : string
- created_at : timestamp
- updated_at : timestamp

- Group Members

- id : string (Primary Key)
- groupId : string (Foreign Key)
- memberId : string (Foreign Key)
- joined_at : timestamp

- Activities

- id : string (Primary Key)
- description : string
- paidById : string (Foreign Key)
- groupId : string (Foreign Key)
- time : timestamp
- amount : decimal

- splitMembers : array
- splitAmounts : array
- created_at : timestamp
- updated_at : timestamp

- Transactions

- id : string (Primary Key)
- payerId : string (Foreign Key)
- receiverId : string (Foreign Key)
- amount : decimal
- method : string (cash, UPI, card, etc.)
- time : timestamp
- status : string (pending, completed, failed)
- created_at : timestamp
- updated_at : timestamp

- UPI Payments

- id : string (Primary Key)
- transactionId : string (Foreign Key)
- upiId : string
- status : string (pending, completed, failed)
- created_at : timestamp
- updated_at : timestamp

- Notifications

- id : string (Primary Key)
- userId : string (Foreign Key)
- type : string (friend request, group invite, payment reminder, etc.)
- message : string
- read : boolean
- created_at : timestamp
- updated_at : timestamp

4.2 Relationships

- Users to Friend Collections: One-to-Many
- Users to Groups: One-to-Many (creatorId)
- Groups to Group Members: One-to-Many
- Groups to Activities: One-to-Many
- Users to Activities: One-to-Many (paidById)

-Users to Transactions: One-to-Many (payerId, receiverId)

-Transactions to UPI Payments: One-to-One

-Users to Notifications: One-to-Many

5. User Interface

5.1 Groups Page

-Overview of UI components and their functionality.

5.2 Friends Page

-Overview of UI components and their functionality.

5.3 Activity Page

-Overview of UI components and their functionality.

5.4 Profile Page

-Overview of UI components and their functionality.

6. Conclusion This documentation provides a complete guide to understanding the web application's structure, features, and flow. It aims to assist developers and users in navigating and utilizing the application effectively.