Personal Expense Tracker – Documentation

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Overview

A lightweight, single-page web application to record, filter, and analyze personal expenses. The app runs entirely in the browser and persists data via `localStorage`. It includes a responsive UI, dark mode, CSV export, and statistics.

Key Features

- **Add expenses:** amount, category, date, optional description with validation
- **List & delete:** view all expenses; delete entries
- **Filtering:** by category and date range
- **Statistics:** total, category breakdown, monthly summary
- **Dark mode:** toggle with persisted preference
- **Export CSV:** client-side download of stored expenses
- **Responsive:** mobile-friendly layout

Architecture

- `index.html` : semantic layout – header, add-form, filters, statistics, expense list
- `styles.css` : light/dark CSS variables, component styling, responsive grid
- `app.js` : state management, storage, validation, rendering, CSV export

Data Model

Field	Type	Description
id	string	Client-generated unique identifier
amount	number	Positive currency amount
category	string	One of: Food, Transport, Entertainment, Bills, Shopping, Other
date	YYYY-MM-DD	Transaction date (not in the future)
description	string	Optional short text

Storage

- `localStorage["expenses_v1"]` : JSON array of expense objects
- `localStorage["theme_preference_v1"]` : `"light"` or `"dark"`

Validation Rules

- Amount must be a positive number
- Date is required and cannot be in the future
- Category selection is required

Filtering Logic

- Category filter: exact match (or ALL)
- Date from/to: inclusive comparison on ISO date strings
- Results sorted by date desc, then id desc

Statistics

- **Total:** sum of amounts of filtered expenses
- **Category breakdown:** grouped totals with proportional bars
- **Monthly summary:** totals grouped by `YYYY-MM` with bars

Dark Mode

- Applied via `[data-theme]` attribute on `<html>`
- Preference stored in `theme_preference_v1`; falls back to system preference
- Secondary button contrast adjusted for dark theme

CSV Export

- Filename pattern: `expenses_YYYYMMDD.csv`
- Columns: `id,date,category,amount,description`
- CSV escaping: quotes doubled; fields with special characters quoted

Setup & Usage

1. Open `index.html` in a modern browser, or serve locally: `python3 -m http.server 5173`
2. Add expenses using the form; use filters to narrow results
3. Toggle dark/light via the header button (persists across reloads)
4. Export data with the *Export CSV* button

Accessibility

- Theme toggle uses `aria-pressed` for state indication
- Focus outlines retained; keyboard navigation supported by native controls

Limitations

- Data is device-local only (no sync)
- No edit/update UI (delete and re-add)
- Currency formatter is INR; adjust in `app.js` if needed

Test Plan (Quick)

- Add: valid, invalid (negative amount, future date)
- Filter: category, date range, and clear filters
- Delete: remove item and verify stats update
- Dark mode: toggle and refresh (preference persists)
- Export CSV: open file and verify headers/values

Change Log

- v1.0: Initial release with add/list/delete, filters, stats, dark mode, CSV export
- v1.0.1: Improve dark mode contrast for secondary buttons
- v1.0.2: Add documentation (this file)

This document is generated and maintained alongside the codebase.