

Project Report - Intelligent Financial Planning Hub (Finance Tracker)

Tech. Domain – Data Visualization.

BATCH: Team – 4

Team Members:

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Overview of the Project

The **Finance Tracker** is a web-based application designed to help users manage their personal finances by tracking expenses, setting budgets, and generating financial reports. It includes features like user registration and login, expense management (add, update, delete, view), and financial reporting with visualizations. Users can set budget limits for various categories, receive alerts when approaching or exceeding their budgets, and track their financial goals. The application provides a user-friendly dashboard with key financial metrics and real-time updates. The project is divided into modules, with milestones focusing on authentication, expense management, reporting, dashboard visualization, and budget planning.

Technologies used

Frontend :

HTML/CSS: For structuring and styling the user interface.

JavaScript: For interactive features and dynamic updates.

Backend – Django (Python)

Database – MySQL

Milestone – 1

User Authentication & Expense Management (Weeks 1-3)

Module 1: User Authentication

Module 1: User Authentication focuses on implementing secure user registration, login, and logout functionalities. After successful login, users are directed to a personalized dashboard. The module includes form validations, test cases for authentication views, and ensures robust error handling for user authentication services.

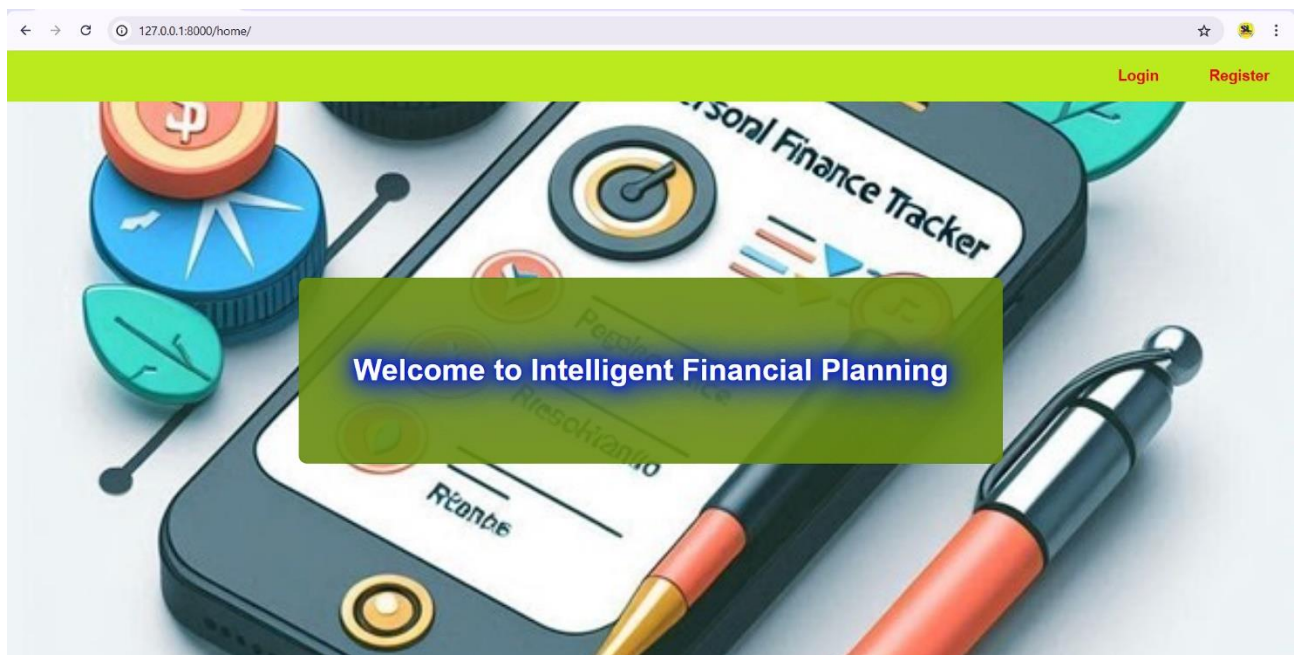
Key Features implemented in this milestone

1. **User Registration:** This feature allows new users to create an account by providing their details, such as username and password. The system ensures form validation to prevent invalid or duplicate entries.
2. **User Login:** Registered users can securely log in by entering their credentials. Proper error handling ensures users receive feedback for incorrect details or account-related issues.
3. **Dashboard Redirection:** After a successful login, users are taken to their personalized dashboard.

Screenshots

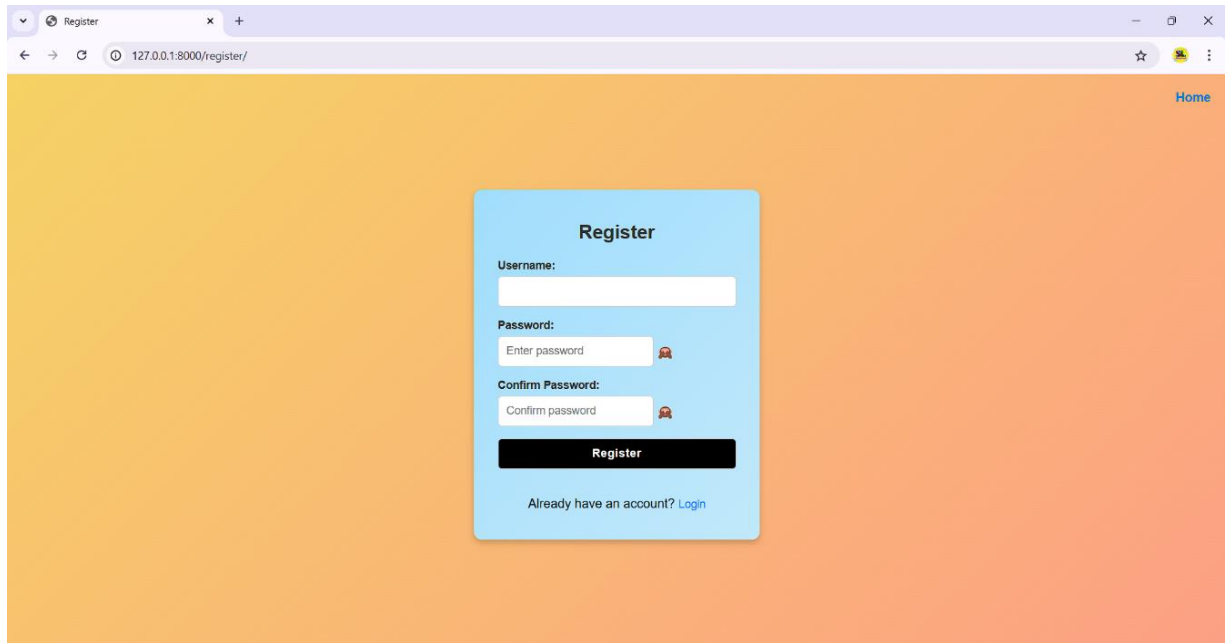
- **Home Page:** Welcomes users with a friendly message and provides easy access to login and registration options.

Home Page



- **Registration Page:** The Registration Page allows new users to create an account by entering details like username and password, with form validations ensuring accurate and secure data entry.
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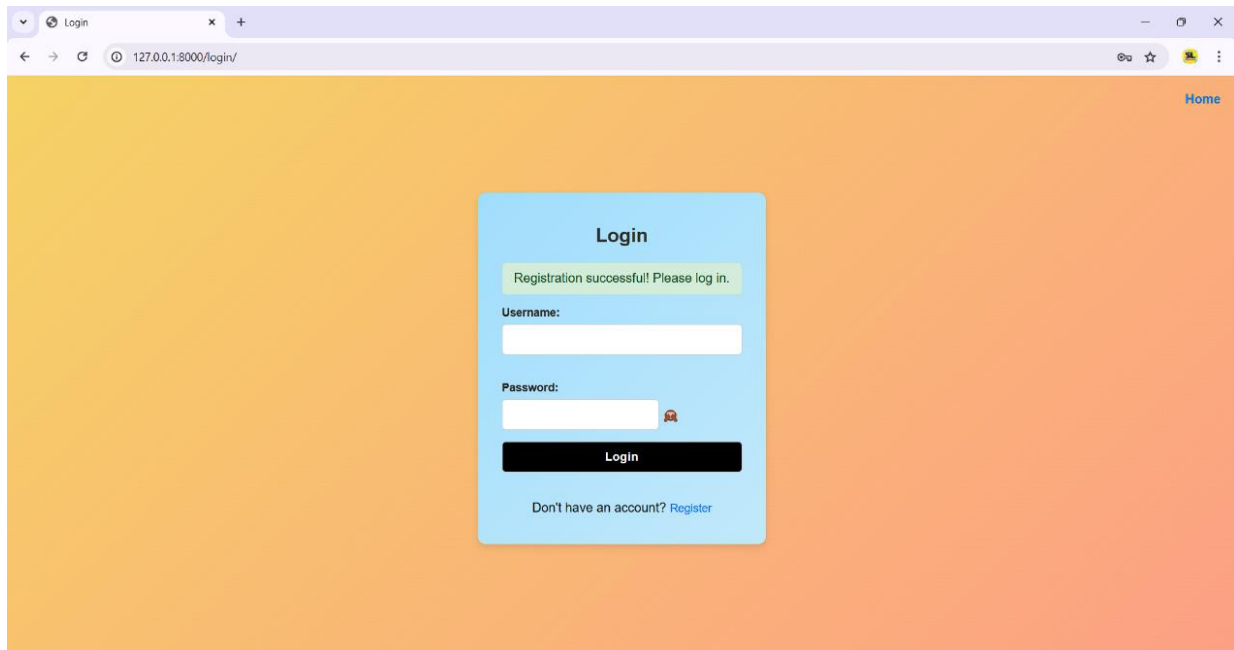
Registration Page



A screenshot of a web browser displaying the registration page. The browser's address bar shows the URL "127.0.0.1:8000/register/". The page has a light orange background with a blue "Home" link in the top right corner. In the center, there is a light blue rectangular form titled "Register". The form contains three input fields: "Username:" with a white text box, "Password:" with a white text box and a red eye icon, and "Confirm Password:" with a white text box and a red eye icon. Below these fields is a black button with the text "Register" in white. At the bottom of the form, there is a link that says "Already have an account? [Login](#)".

- **Login Page** : The Login Page enables registered users to access their accounts by entering valid credentials, with error handling for incorrect inputs and redirection to the profile upon successful login.

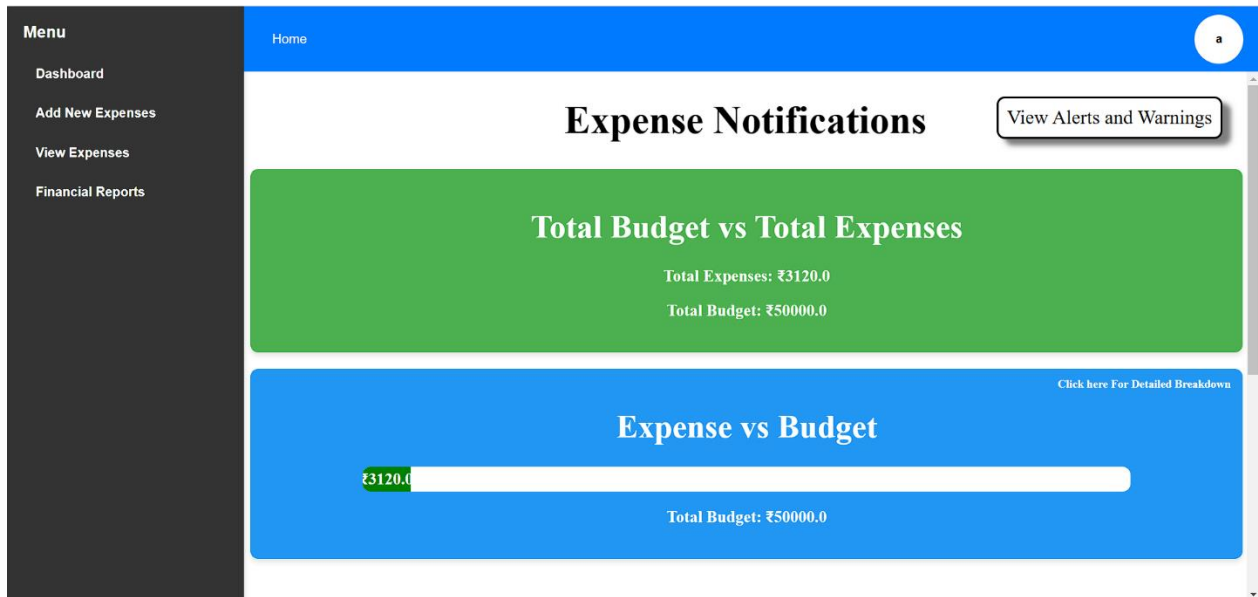
Login Page



A screenshot of a web browser displaying the login page. The browser's address bar shows the URL "127.0.0.1:8000/login/". The page has a light orange background with a blue "Home" link in the top right corner. In the center, there is a light blue rectangular form titled "Login". At the top of the form, there is a green message box that says "Registration successful! Please log in.". Below this, there are two input fields: "Username:" with a white text box and "Password:" with a white text box and a red eye icon. Below these fields is a black button with the text "Login" in white. At the bottom of the form, there is a link that says "Don't have an account? [Register](#)".

- **User Profile**: The Profile Page serves as the user's central hub, featuring a menu with options to navigate to the dashboard, add or view expenses, and access detailed financial reports, ensuring seamless functionality and user convenience.

User Profile Form



Module 2: Expense Management

Module 2: Expense Management involves designing a database to store expense data, providing an interface for users to add, update, view, and delete expenses. It includes backend functionality for managing expense operations, form validations, and comprehensive test cases to ensure the reliability of expense-related services.

Key Features implemented in this module

1. **Add Expenses:** Users can record their expenses by entering details such as amount, category, date, and description.
2. **View Expenses:** A comprehensive list of all recorded expenses is displayed, allowing users to track their spending history easily.
3. **Edit or Delete Expenses:** Users can update existing expense details or remove them entirely, offering flexibility and control over their financial data.

Screenshots

- **Add Expenses :** Users can enter their expenses with details like amount, category, date and description.

Add Expenses Form

Add Expenses

Date

dd-mm-yyyy

Category

Select a category

Description

Amount (INR)

Submit

View Expenses

Add Expenses Page

User Profile

127.0.0.1:8000/profile/?first_login=true

Home

Menu

Add New Expenses

View Expenses

Financial Reports

Expense added successfully!

Date

dd-mm-yyyy

Category

Select a category

Description

Amount (INR)

Submit

View Expenses

- **View Expenses** : allows users to see a list of all their recorded expenses, displaying key details like amount, category, and date. This feature helps users track their spending patterns and manage their finances effectively.

View Expenses Form

Menu

Add New Expenses

View Expenses

Financial Reports

Home

Your Expenses

Date	Description	Amount (INR)	Actions
Nov. 28, 2024	idly	2000.00	<div>Edit</div> <div>Delete</div>
Nov. 19, 2024	deterfd	1200.00	<div>Edit</div> <div>Delete</div>
Nov. 11, 2024	retrer	1233.00	<div>Edit</div> <div>Delete</div>
Nov. 27, 2024	xfgfhjh	2000.00	<div>Edit</div> <div>Delete</div>
Nov. 27, 2024	idly	2500.00	<div>Edit</div> <div>Delete</div>
Nov. 22, 2024	sasaa	123.00	<div>Edit</div> <div>Delete</div>
Dec. 11, 2024	doadada	200.00	<div>Edit</div> <div>Delete</div>
Dec. 20, 2024	sncks	2000.00	<div>Edit</div> <div>Delete</div>

Download PDF

- Update Expenses :** This enables users to edit existing expense entries by modifying details like amount, category, or description, or to delete any expense they no longer wish to track, providing flexibility in managing their financial records.

Update Expenses Form

Edit Expense

Date

dd-mm-yyyy

Category

Food

Description

idly

Amount (INR)

20100.00

Update Expense

Cancel

Milestone – 2

Financial Reporting (Weeks 4-5)

Module 3: Financial Reporting

Module 3 focuses on creating an interface for users to generate detailed financial reports, allowing them to select custom date ranges. It includes backend logic for calculating expense totals and averages, along with visualizations like charts and graphs to represent spending patterns. The module also supports exporting reports as PDFs and ensures accurate functionality with test cases and form validations.

Key Features implemented in this module

1. **Report Generation:** Users have the ability to generate reports.
2. **Expense Calculation:** The system computes the total and average expenses for the expenses.
3. **Visualizations:** Spending patterns are displayed through charts and graphs, such as pie charts for categories and line charts for monthly expenses.
4. **PDF Export:** Users can download their financial reports in PDF format for offline access.

Screenshots

- **Financial Reports :** Reports in the system provide users with detailed insights into their spending patterns.

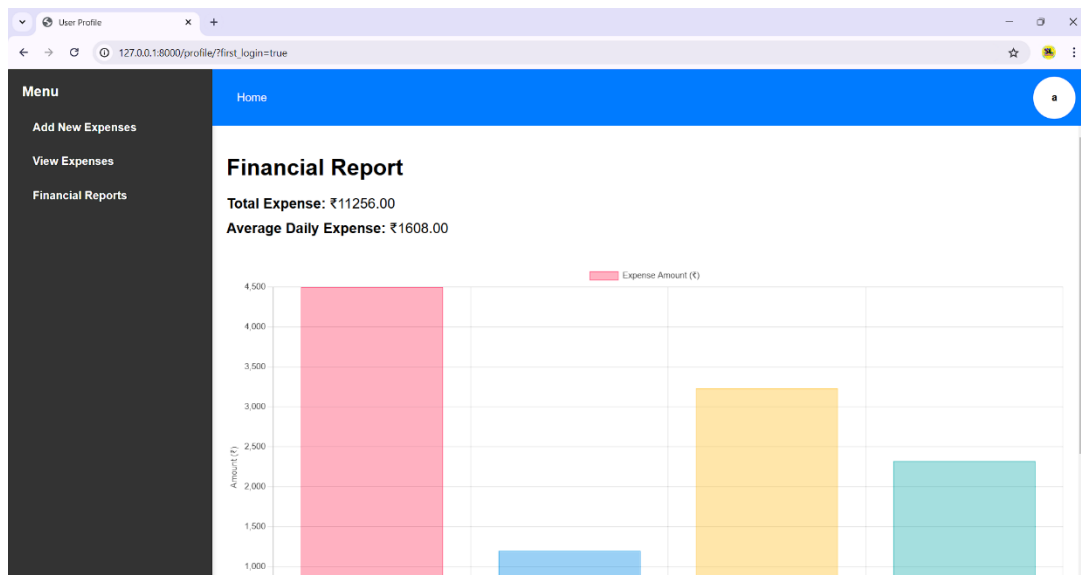
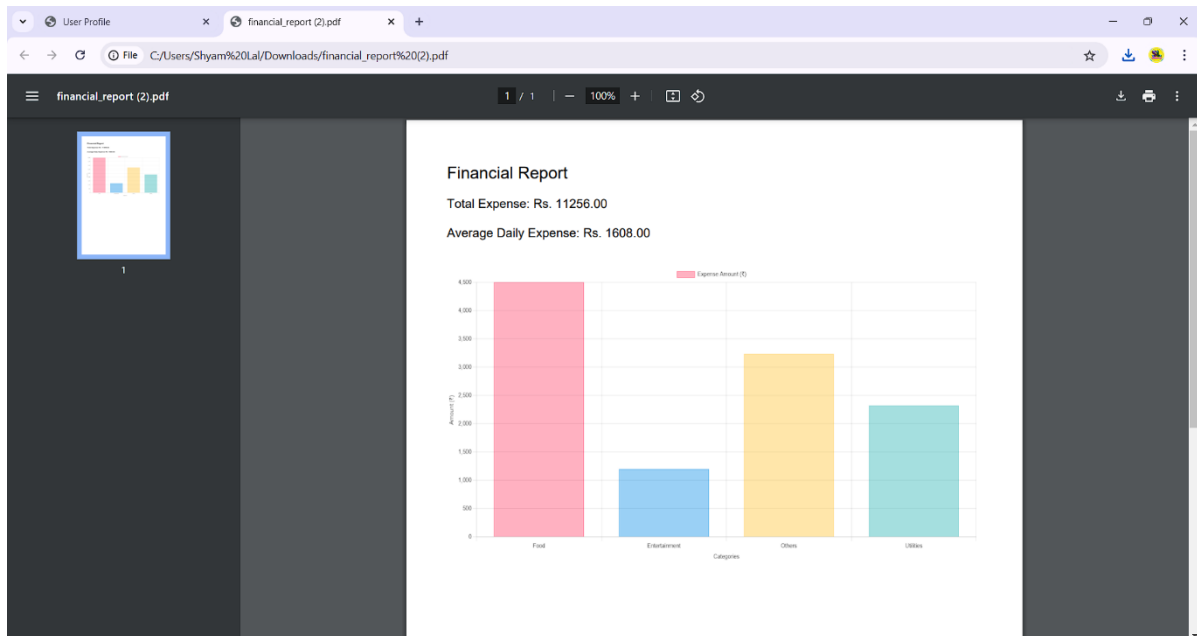


Fig – 9: Reports

- **PDF Export :** For PDF export, JavaScript, along with the **jsPDF** library, is used to generate PDF files directly in the browser. It fetches the user's expense data and visualizations, then compiles them into a downloadable PDF report, which is saved under the name "financial_expenses.pdf" for easy access and sharing.



- For **PDF export** of the **View Expenses** section, JavaScript with the **jsPDF** library is used to generate the PDF file. The report, containing the user's expense details, is saved with the filename formatted as **"_expenses_list.pdf"**, making it personalized and easy to identify.

akshupappu_expenses_list.pdf

1 / 1 | 100%

akshupappu's Expenses List

Date	Description	Amount (INR)
Nov. 28, 2024	idly	2000.00
Nov. 19, 2024	denerfd	1200.00
Nov. 11, 2024	retrtr	1233.00
Nov. 27, 2024	xfgthj	2000.00
Nov. 27, 2024	idly	2500.00
Nov. 22, 2024	sasaa	123.00
Dec. 11, 2024	doadaada	200.00
Dec. 20, 2024	snacks	2000.00

Milestone – 3

Dashboard and Data Visualization (Weeks 6-7)

Module 4: Dashboard and Data Visualization

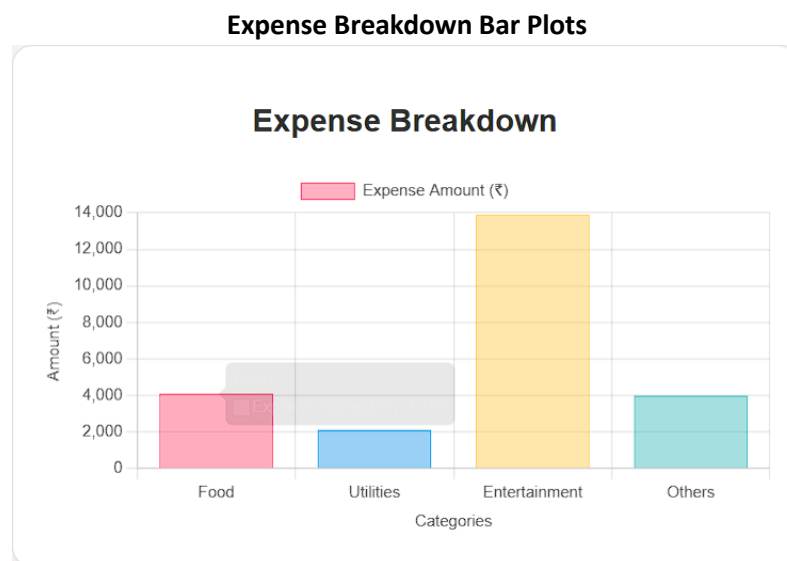
This focuses on providing users with a centralized view of their financial metrics. It includes interactive charts and graphs to visualize spending trends and filters for viewing expenses based on categories or date ranges. A budget tracking feature with visual alerts helps users monitor overspending. The dashboard dynamically updates in real-time as new expenses are added, ensuring up-to-date financial insights. Additionally, the design is responsive, making it accessible across various devices.

Key Features implemented in this module

1. **Expense Breakdown Bar Plots:** Visualize category-wise expenses using bar charts for better understanding of spending patterns.
2. **Expense Speedometer:** A visual gauge that tracks spending against budget limits, helping users identify overspending.
3. **Latest Expenses:** Displays a list of the most recent expenses, providing quick insights into recent financial activities.
4. **Budget Tracking:** Visual indicators highlight overspending when users exceed their set budget limits.

Screenshots

- The **Expense Breakdown Bar Plots** feature enables users to visualize their spending patterns by categorizing expenses and presenting them as intuitive bar charts. This helps users gain a clear understanding of how their finances are allocated across different categories.



- The **Latest Expenses** feature offers users a quick snapshot of their recent financial activities by displaying the five most recent expenses. This ensures users stay updated with their spending patterns and can easily review their latest transactions at a glance.

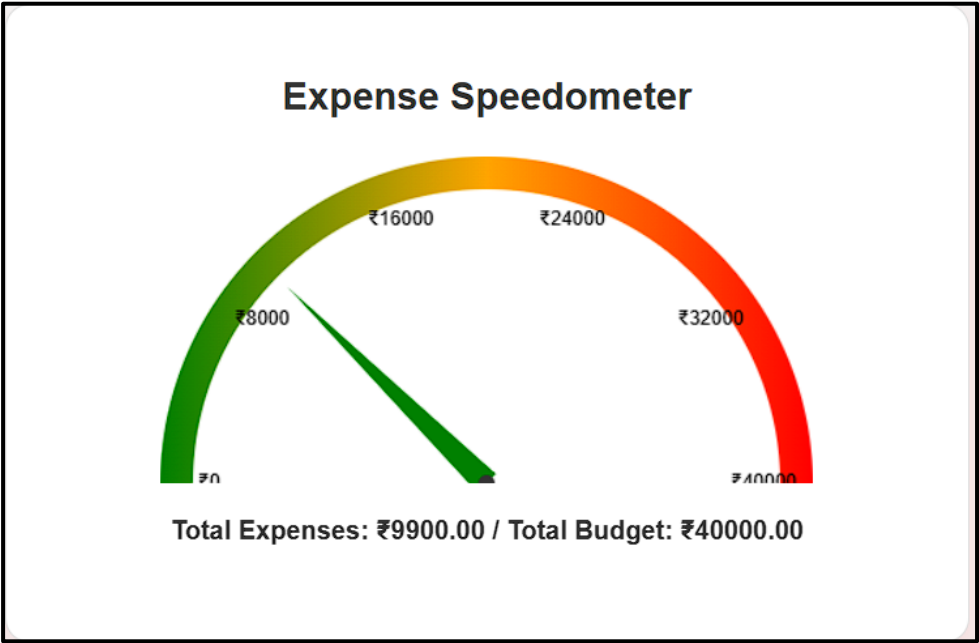
Latest Expenses

Latest Expenses

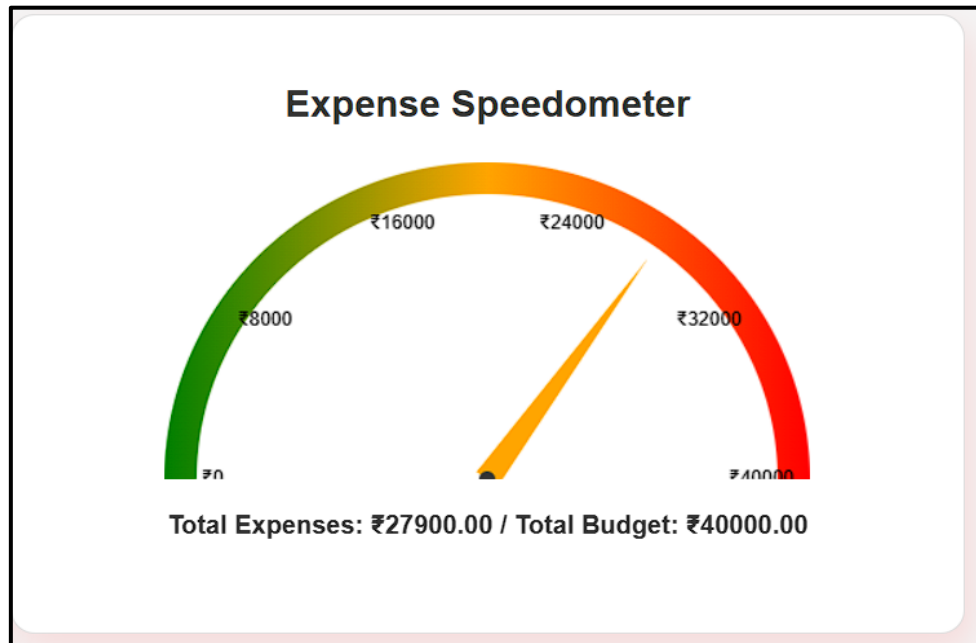
Date	Category	Amount
Dec. 18, 2024	Entertainment	₹13000.00
Dec. 13, 2024	Entertainment	₹300.00
Dec. 11, 2024	Utilities	₹2000.00
Dec. 10, 2024	Utilities	₹120.00
Dec. 10, 2024	Food	₹100.00

- The **Expense Speedometer** is a visual gauge that tracks a user's spending against their set budget limit. It dynamically displays the current expense status, with clear indicators (e.g., green, yellow, and red zones) to show if the user is within budget, approaching the limit, or has overspent. This helps users quickly assess their financial health at a glance.

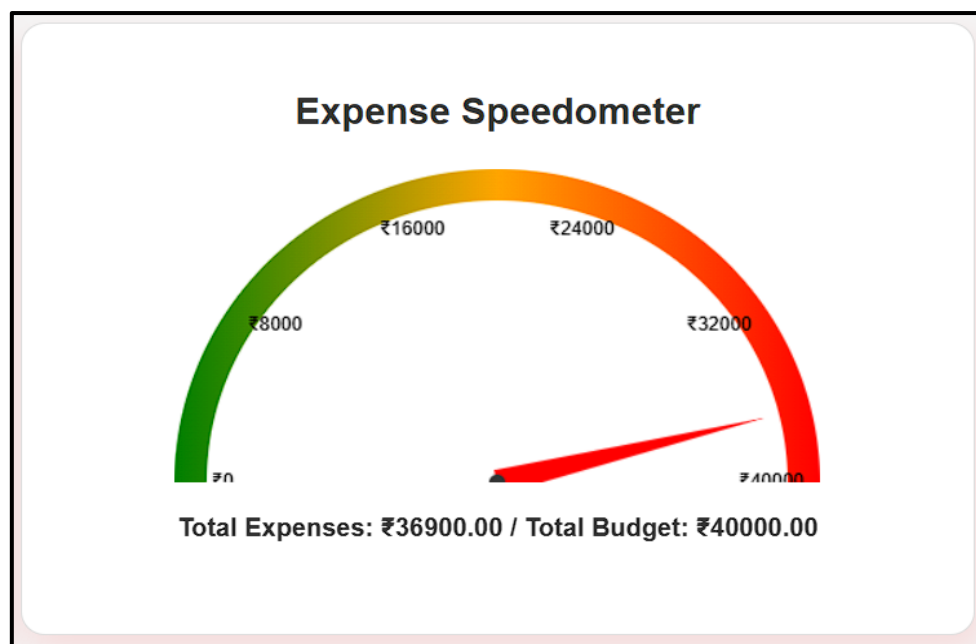
Expense under the Budget



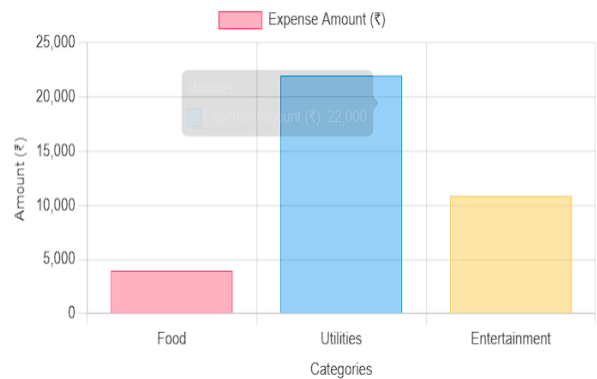
Expense under Warning limit of the Budget



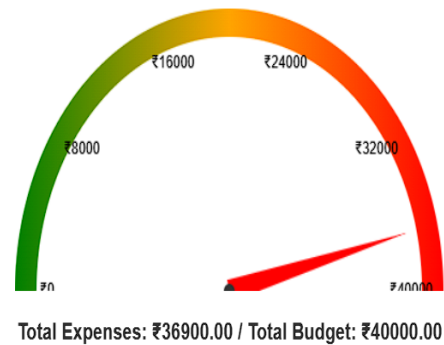
Expense under Alert limit of the Budget



Expense Breakdown



Expense Speedometer



Latest Expenses

Date	Category	Amount
Dec. 13, 2024	Entertainment	₹300.00
Dec. 12, 2024	Utilities	₹10000.00
Dec. 11, 2024	Utilities	₹2000.00
Dec. 10, 2024	Food	₹100.00
Dec. 9, 2024	Entertainment	₹600.00

Milestone – 4

Budget Planning and Management Features (Weeks 8-10)

Module 5: Dashboard and Data Visualization Budget Planning and Alerts

The **Budget Planning and Management Module** empowers users to take control of their finances by providing tools to set, monitor, and achieve financial goals. Users can define specific budget limits for various expense categories, promoting disciplined spending and better financial awareness. The module features real-time alerts to notify users when they approach or exceed their limits, ensuring they stay on track. A visual **Budget vs. Actual Spending** comparison highlights areas of overspending and savings opportunities, offering actionable insights. Additionally, users can set financial goals, such as saving for a specific purpose, and track their progress toward achieving them. With robust error handling, user-friendly feedback, and comprehensive test cases to ensure accuracy, the module simplifies budget management, fosters smart spending habits, and supports users in building a secure financial future.

Key Features implemented in this module

1. **Budget Limit Setting:** Allows users to define spending limits for each expense category individually (e.g., Food, Utilities, Entertainment and Others).
2. **Alert System:** Notifies users when they approach or exceed their budget limits.
3. **Budget vs. Actual Spending Comparison:** Offers visual comparisons of planned budgets against actual expenditures.

Screenshots:

- The **Budget Limit Setting** feature gives users the ability to define specific spending limits for each expense category individually, such as **Food, Utilities, Entertainment, and Others**. This personalized approach allows users to allocate their finances according to their unique needs and priorities, ensuring that they do not overspend in any particular category.

Expense Breakdown Bar Plots

Home

Edit Username Set Budget Change Password Add Profile Picture Additional Information

Set Budgets

Food Budget
16000.00

Entertainment Budget
12000.00

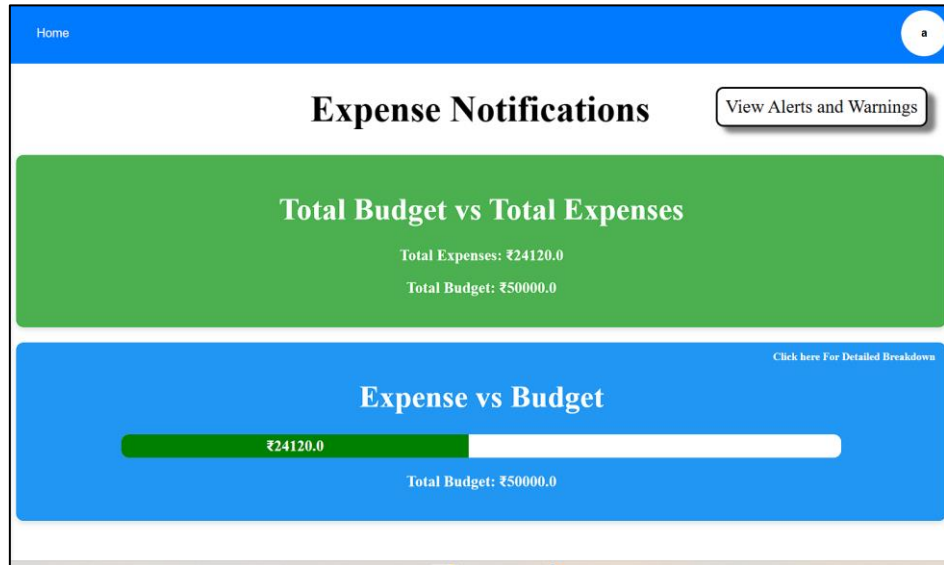
Utilities Budget
12000.00

Others Budget
10000.00

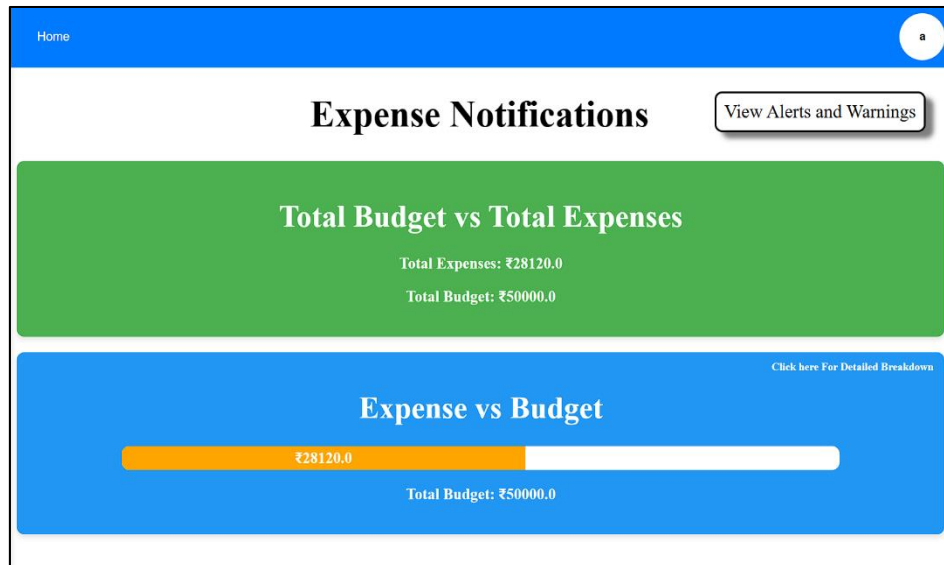
Save Budgets

- The **Budget vs. Actual Spending Comparison** feature provides users with a visual representation of their planned budgets versus their actual expenditures. Using intuitive bar graphs, this feature highlights any discrepancies between budgeted amounts and actual spending. The colour of the bars changes dynamically based on the budget-to-expense ratio:

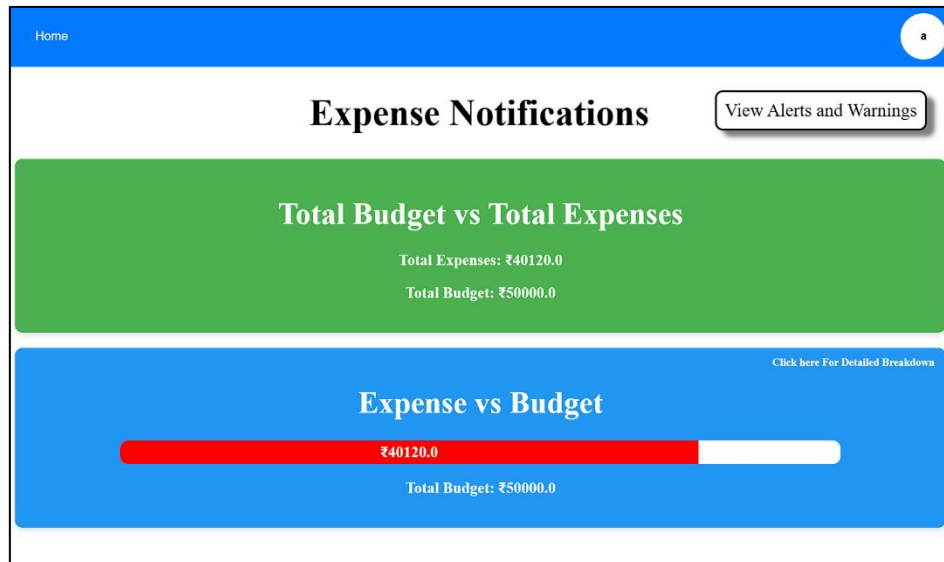
- **Green** bars indicate that spending is within the budget or under the allocated limit.



- **Orange** bars show that the user is nearing the budget limit, suggesting caution.

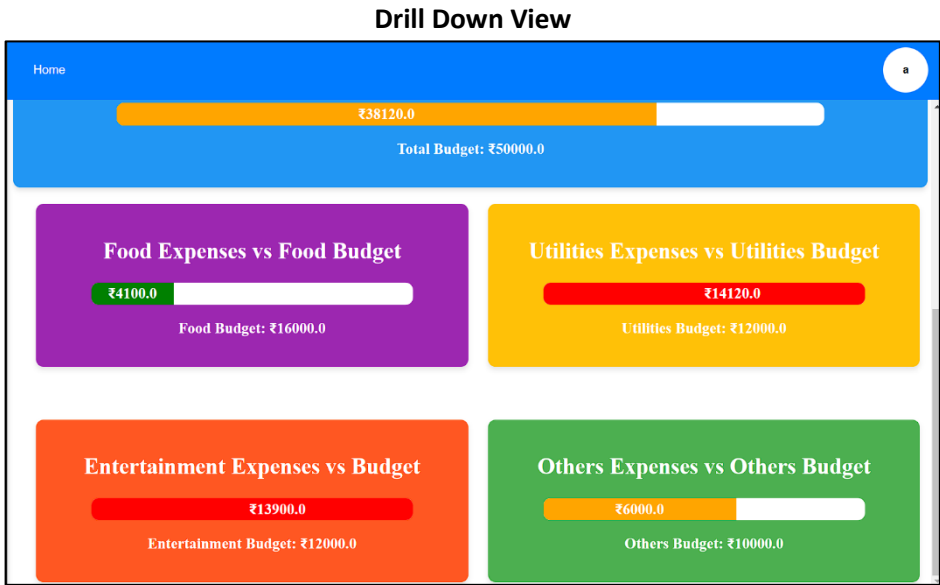


- **Red** bars signal that the user has exceeded their budget, indicating overspending.

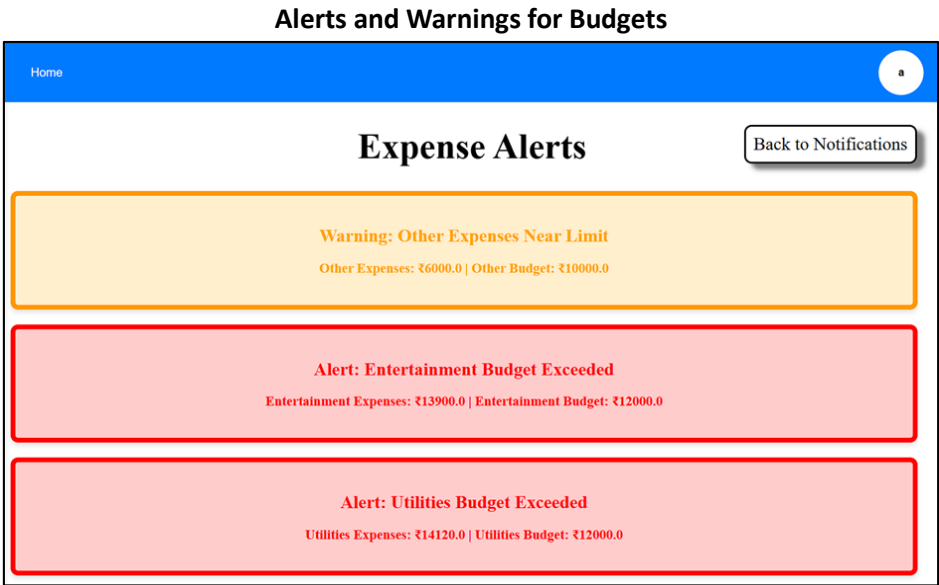


This color-coded approach makes it easy for users to quickly assess their financial situation at a glance and take necessary actions to stay within their financial goals. The visual comparison helps users identify spending trends, areas of overspending, and potential savings opportunities, offering valuable insights for better financial decision-making.

- The **Budget vs. Actual Spending Comparison** feature includes an interactive option that, when clicked, reveals a detailed bar graph view for each expense category. This allows users to drill down into specific categories to gain a deeper understanding of where their funds are being allocated.



- The **Alert System** feature is designed to keep users informed about their spending by notifying them when they are approaching or exceeding their budget limits. As users track their expenses across different categories, the system triggers automatic alerts when their spending reaches a predefined threshold, whether it's nearing the set budget limit or has already surpassed it. These timely notifications help users stay aware of their financial situation, enabling them to take proactive measures to curb excessive spending.



Home

a

Expense Alerts

Back to Notifications

All Budgets Within Limits

All your expenses are within the allocated budgets. Keep up the good work!