**Project Title: Personal Budget Tracker**

**Project Number: 11**

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**Introduction:-**

The **Personal Budget Tracker** is a user-friendly system that **helps individuals** monitor and **manage** their monthly finances. It **allows users to record** **income and expenses**, **categorize** their spending, and **visualize** their **financial activity** using charts. The purpose of this project is to **support better financial decisions** and personal budgeting habits. This system is designed **(targeted)** specifically for individual users looking to gain control over their personal spending.

**System overview:-**

The system is made up of several key modules. The Income/Expense Module allows users to **add** and **manage** their financial **transactions**. The Category Module helps users **organize** their spending into **types** like food or transport. The Summary Module **calculates** the monthly totals and current balance. The Visualization Module **displays** **charts** to show **spending patterns**. All modules work together to provide a complete picture of the user’s financial status.

* **income/Expense Module**: Manages all financial entries.
* **Category Module**: Organizes transactions by type (e.g., food, transport).
* **Summary Module**: Calculates monthly totals and balance.
* **Visualization Module**: Displays spending patterns through charts.
* **User Module**: Manages user sessions and access.

# **Module descriptions:-**

## **Income/expense module:**

This module allows users to **add, edit, and delete** transactions. It stores information such as the **amount**, date, description, **category**, and type **(income or expense)**. It connects with the Summary and Visualization modules to update the financial dashboard.

## **Category module:**

The Category Module helps users **classify each** income or expense entry into predefined or custom categories, **such as** Food, Transport, Utilities, or Salary. This classification enables **better organization** of data and allows users to track where their money is going. The module ensures that every transaction is assigned a valid category, and it supplies category-specific data to the **Visualization Module** for generating charts.

## **Summary module:**

The Summary Module **calculates and displays** the total income, total expenses, and remaining balance for a selected period, typically on a monthly basis. It **retrieves all financial transactions** entered by the user and performs calculations based on their type and amount. This module is essential for giving users a **quick overview** of their financial status, helping them determine if they are overspending or saving money during the month.

## **Visualization module:**

This module is responsible for **visually representing** the user's financial data. It takes **categorized data** from the Category and Summary modules and generates clear, interactive **pie charts**. These visual aids help users quickly understand their **spending distribution** and identify which categories consume the most of their budget. The charts update dynamically as new entries are added, edited, or deleted.

## **User module:**

The User Module **manages** **personal user data** and sessions. It ensures that each user has access only to their **own financial records**. This module handles **basic user operations** like **account creation**, **login**, and **logout**. It also supports data privacy by separating each user’s financial entries and providing a **secure session** for tracking and managing their budgets.

# **Component Interaction:-**

The **Income/Expense** Module collects **transaction data** from the user. This data is passed to the **Category** Module to **label** each entry correctly. The **Summary** Module then uses the **categorized entries** to **calculate** monthly totals and balances. The **Visualization** Module gets data from the Summary and Category modules to **generate** **charts**. All modules communicate through **shared data storage**, and **updates** in one module are **reflected** in the others **automatically**.

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# **UI (User Interface) descriptions:-**

## **Login/register:**

The Login page allows existing users to sign into the application. It includes fields for email and password, a “Login” button, and a link to navigate to the Register page. Basic validation messages are shown for empty or incorrect input. The layout is clean and focused on quick access  
 The Register page is for new users to create an account. It features input fields for name, email, password, and confirm password, followed by a “Register” button. Below the form, there is a link to switch to the Login page. Error messages appear for invalid or mismatched input.

## **Dashboard:**

The Dashboard is the **landing page** and gives a high-level **overview** of the user’s finances. It includes a **balance card** showing leftover funds, **categorized expense** summaries, and a list of recent transactions. A circular **chart displays** income categories, providing a **quick visual breakdown** of where money is coming from.

## **My Budget:**

This section lets users **manage income** and **expenses**. It includes two panels: “**My Income**” and “**My Expenses**,” each showing lists with details like name, amount, date, and category. Each entry has **Edit and Remove** buttons. A toggle switch and form below allow users to **add new income** or **expense** entries with fields for name, amount, date if repeated and category.

## **Analytics:**

The Analytics page **summarizes income and spending** trends over time. Two main cards show total **income** and **expenses** for the week, month, and year. **Pie chart** provide breakdowns of income and expenses **by category**, helping users see where their money goes.

# **Special Requirements:-**

## **First Requirement:**

The UI must be **fully responsive** and work on mobile, tablet, and desktop screen sizes.

## **Second Requirement:**

The app should be **fast and updated** **instantly** whenever the user adds, edits, or deletes an income or expense also for the **pie chart** and **total calculations** must update automatically and immediately to show the most accurate information at all times.