

# **EXPENSE TRACKER**

**A PROJECT REPORT  
for  
Mini Project-I (K24MCA18P)  
Session (2024-25)**

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**Submitted in partial fulfilment of the  
Requirements for the Degree of**

## **MASTER OF COMPUTER APPLICATION**

**Under the Supervision of  
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**Submitted to**

**DEPARTMENT OF COMPUTER APPLICATIONS  
KIET Group of Institutions, Ghaziabad  
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(DECEMBER- 2024)**

# **CERTIFICATE**

Certified that **Ansh Mishra (202410116100029)**, **Abhishek Sharma (202410116100009)**, **Ankit Sisodia (202410116100029)** has carried out the project work having “**Expense Tracker**” (**Mini Project-I, K24MCA18P**) for **Master of Computer Application** from Dr. A.P.J. Abdul Kalam Technical University (AKTU) (formerly UPTU), Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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# ABSTRACT

The Expense Tracker project is a web-based application designed to empower individuals in managing their finances effectively. This intuitive tool allows users to record their daily expenses, categorize them, and track their remaining balance in real time. By inputting their monthly salary as the starting balance, users can monitor their spending patterns and gain valuable insights into their financial habits. The application prioritizes simplicity, ensuring accessibility for users of all financial literacy levels.

The motivation for this project stems from the growing need for user-friendly tools that simplify financial management. Existing solutions are often overly complex, inaccessible, or lack real-time tracking capabilities, leaving users unaware of their spending habits. The Expense Tracker addresses these gaps by providing real-time updates, expense categorization, and a comprehensive transaction history, all through an intuitive interface.

The system is built using HTML, CSS, and JavaScript, ensuring cross-platform compatibility and responsiveness across devices. Key features include budget alerts, expense categorization, and visual representations of spending through charts and graphs. Additionally, the platform ensures data security and scalability, with the potential for future enhancements like cloud storage and advanced analytics.

This project contributes to improving financial awareness and discipline among users, helping them avoid overspending and achieve their savings goals. By offering a seamless and practical solution, the Expense Tracker fosters financial independence and promotes responsible money management.

**Keywords:** Expense Tracker, Financial Management, Real-Time Updates, Budgeting Tool, Personal Finance

## ACKNOWLEDGEMENTS

Success in life is never attained single-handedly. My deepest gratitude goes to my project supervisor, **Ms. Divya Singhal** for her guidance, help, and encouragement throughout my project work. Their enlightening ideas, comments, and suggestions.

Words are not enough to express my gratitude to Dr. Arun Kumar Tripathi, Professor and Dean, Department of Computer Applications, for his insightful comments and administrative help on various occasions.

Fortunately, I have many understanding friends, who have helped me a lot on many critical conditions.

Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me with moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

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# CHAPTER 1

## INTRODUCTION

### 1.1 OVERVIEW

The **Expense Tracker** is a user-friendly web application developed to assist individuals in effectively managing their finances by keeping track of their daily expenses and monitoring their monthly budget. Designed with simplicity and ease of use in mind, the tool allows users to input their monthly salary at the beginning of each month, which serves as their starting balance. As users log their expenses throughout the month, the application automatically deducts the amounts from their initial balance, providing real-time updates of the remaining wallet balance.

The primary purpose of the **Expense Tracker** is to help users stay on top of their spending, offering them a clear understanding of where their money is going. Users can categorize each expense into various types (such as food, entertainment, transportation, and utilities), allowing them to better visualize and analyze their financial habits. By tracking every expenditure, the app encourages users to be more mindful of their financial decisions, potentially helping them identify areas for saving.

With its intuitive and easy-to-navigate interface, the **Expense Tracker** is accessible to users of all levels of financial literacy. It provides a simple way for anyone to gain greater financial awareness without the complexity of more advanced budgeting tools. The application helps individuals understand their spending patterns, avoid overspending, and build better financial habits. By offering an uncomplicated and streamlined way of managing expenses, the **Expense Tracker** empowers users to take control of their financial health with minimal effort.

### 1.2 BACKGROUND AND MOTIVATION

The **Expense Tracker** was developed in response to the growing need for accessible and efficient personal finance management tools. Many individuals struggle to track their daily expenses and maintain financial control, often leading to overspending and poor budgeting. The motivation behind this project is to provide a simple, real-time solution that helps users monitor their spending, stay within their budget, and achieve better financial awareness and independence.

#### 1.2.1 Existing Challenges



### **1. Lack of Technological Tools for Expense Management:**

One of the major challenges individuals face in managing personal finances is the lack of accessible and user-friendly technological tools. While various budgeting and expense-tracking tools exist, many are either too complex or fail to offer a simple, intuitive way of tracking daily expenses and monitoring overall financial health. Many existing tools require users to manually input complex data or focus heavily on large financial overviews, ignoring the importance of real-time expense tracking. The absence of a seamless, automated, and interactive tool that can help individuals track their daily expenses against their monthly income is a significant issue.

### **2. Difficulty in Budgeting and Financial Awareness:**

Many individuals struggle with managing their finances due to a lack of awareness about where their money is going. Without a clear, simple system to track expenses, it can be challenging to stay within a budget, and people may not be aware when they are overspending. This often leads to financial stress, debt, and missed savings opportunities. Traditional methods like pen-and-paper budgeting or using spreadsheets require consistent effort and are not always effective for tracking daily, small expenses, which can accumulate over time. People may lose track of small transactions that add up, further hindering their ability to manage their money effectively.

### **3. Limited Financial Control and Planning:**

Without effective tools to visualize and manage their expenses, individuals often lack the necessary insights to control their finances and plan for the future. Monitoring daily spending, especially for those who have irregular incomes or fluctuating expenses, can be overwhelming. Without the ability to see real-time updates of remaining funds or to categorize expenses, individuals are left making guesses about their financial health, which could lead to poor decision-making, overspending, or not being able to save adequately. This limits financial planning, making it harder for users to set and achieve long-term financial goals such as saving for a large purchase or building an emergency fund.

#### **1.2.2 Motivation for the Project**

The motivation behind the **Expense Tracker** project stems from the need to address the challenges individuals face in managing their daily expenses and maintaining control over their finances. With a growing need for more accessible and user-friendly financial management tools, this project aims to simplify the process of tracking expenses, ensuring that individuals are empowered to make informed financial decisions.

### 1. **Real-Time Expense Tracking and Balance Updates:**

The core motivation for this project is to provide individuals with a tool that allows them to track their expenses in real time. By inputting each daily expenditure, users can see an immediate deduction from their monthly salary or budget, helping them stay aware of their remaining balance. This will prevent overspending, as individuals will always have up-to-date information on their financial status, allowing them to make better financial decisions throughout the month.

This project is also driven by the desire to raise financial awareness among users and promote better budgeting habits. By offering a clear and easy-to-understand view of their spending patterns, the **Expense Tracker** helps users understand where their money is going. Categorizing expenses into various types (such as food, entertainment, and transportation) allows users to identify areas where they may be overspending and adjust their habits accordingly. The project aims to make budgeting more accessible and less intimidating for individuals, helping them gain control over their financial situation.

### 2. **Empowering Financial Independence and Better Planning:**

The ultimate goal of this project is to empower individuals to achieve financial independence by providing them with the tools necessary to manage their money effectively. By keeping track of expenses and ensuring that users have a clear view of their wallet balance, the **Expense Tracker** encourages responsible spending and savings. This tool enables users to set financial goals, stay on track with their budget, and plan for the future, thus fostering better financial planning and long-term financial stability. Through its simplicity and functionality, this project aims to reduce financial stress and improve overall financial literacy, ensuring that individuals feel more confident and secure in their financial decision-making.

## 1.3 Objectives

The main objectives of this Project are:

1. **Real-Time Expense Tracking:** To allow users to input and track their daily expenses in real-time, providing immediate updates on their remaining balance.
2. **Budget Management:** To help users set and manage their monthly budget by automatically deducting expenses from the initial salary, ensuring they stay within their financial limits.
3. **Expense Categorization:** To enable users to categorize their expenses (e.g., food, entertainment, utilities), giving them insights into where their money is being spent.
4. **Financial Awareness:** To increase financial awareness by providing users with a clear, organized view of their spending patterns and helping them identify areas for potential savings.
5. **User-Friendly Interface:** To design a simple, intuitive interface that makes it easy for users of all financial backgrounds to track and manage their expenses without confusion.
6. **Visual Reports:** To generate visual summaries of spending, such as graphs or charts, allowing users to easily analyze their financial habits and make informed decisions.

7. **Promote Financial Discipline:** To encourage better budgeting habits and financial discipline, helping users avoid overspending and achieve their savings goals.

## 1.4 Scope of the Project

The **Expense Tracker** project aims to provide an efficient and user-friendly solution for individuals to manage and monitor their daily expenses. The scope of the project includes:

1. **Expense Management:** Users can record and track all types of expenses, categorizing them based on predefined categories like food, transportation, entertainment, and utilities. This feature allows for comprehensive tracking of where money is being spent.
2. **Budgeting and Balance Calculation:** The application allows users to input their monthly salary at the beginning of the month, which serves as the starting balance. As users log their daily expenses, the system automatically deducts the amounts from the total balance, providing real-time updates on the remaining funds.
3. **Visual Representation of Expenses:** The tool will generate visual reports, such as charts and graphs, that provide insights into spending patterns and help users understand their financial habits more clearly.
4. **Categorization and Filtering:** Users can filter their expenses by category, date, or amount, allowing for more detailed analysis and the identification of areas where spending can be reduced.
5. **Real-Time Updates:** The tracker ensures that the wallet balance is updated instantly after each expense is entered, giving users a real-time view of their financial situation.
6. **Target Audience:** The tool is primarily aimed at individuals who need help managing their personal finances, especially those who find it challenging to track daily expenses and stick to a budget.
7. **Technology Stack:** The project will be developed using web technologies such as HTML, CSS, and JavaScript, ensuring that it is easily accessible on various devices with an internet connection, providing flexibility for users.
8. **Limitations:** The project focuses primarily on managing monthly expenses and does not include advanced financial planning features such as tax calculations, investment tracking, or detailed financial forecasting.
9. **Future Enhancements:** Potential future updates could include integration with bank accounts for automatic expense tracking, recurring expense management, and advanced financial insights.

# CHAPTER 2

## FEASIBILITY STUDY

### 2.1 Technical Feasibility

The **Expense Tracker** project is technically feasible due to the following reasons:

1. **Web-Based Application:** The project is designed as a web application, making it accessible from any device with an internet connection. By using basic web technologies such as HTML, CSS, and JavaScript, the project ensures that it can be easily deployed across different platforms (desktop, tablet, and mobile devices).
2. **Simple and Lightweight Design:** The Expense Tracker does not require complex algorithms or heavy processing, making it suitable for a simple and lightweight design. This enables easy development, testing, and maintenance while ensuring fast performance and a smooth user experience.
3. **Real-Time Updates:** The application will use JavaScript and DOM manipulation to update the wallet balance and expenses in real-time. With client-side scripting, users will be able to see their balance change instantly after entering new expenses, ensuring the application remains responsive and interactive.
4. **User Interface (UI) and Experience (UX):** The UI/UX design is relatively simple, relying on basic HTML for structure, CSS for styling, and JavaScript for interactivity. The simplicity of the design makes it easy to develop and ensures that the application remains user-friendly, even for those with minimal technical knowledge.
5. **Cross-Platform Compatibility:** By using web technologies, the application is platform-independent, meaning it can be accessed on various operating systems (Windows, macOS, Linux) and mobile devices (iOS, Android). This ensures broad usability without the need for specific software installations.

### 2.2 Economic Feasibility

The **Expense Tracker** project is economically feasible for the following reasons:

1. **Low Development Cost:** The project leverages widely available and open-source technologies such as HTML, CSS, and JavaScript, which significantly reduces development and licensing costs. There is no need for expensive software or hardware resources, and the project can be developed with minimal budget.
2. **Minimal Maintenance Costs:** As a web-based application, the **Expense Tracker** does not require ongoing software updates or maintenance beyond basic troubleshooting and improvements. With limited technical infrastructure, the app is cost-effective to maintain.
3. **Scalability:** While the initial development may be focused on basic features, the project is easily scalable. As the app gains users, additional features (like cloud storage, advanced analytics, or bank account integration) can be incorporated incrementally, without significant overhauls to the system.
4. **Target Market:** The target market for the **Expense Tracker** is a wide range of individuals, from students to professionals. Most of the target audience uses

smartphones or computers and is actively seeking solutions to manage personal finances. The economic feasibility is strengthened by the large, growing demand for personal finance tools, with minimal competition in the targeted user-friendly, real-time expense tracking category.

5. **Potential for Monetization:** The application could be monetized in the future by offering premium features (such as advanced reports or integrations with bank accounts) or by using an advertisement-based revenue model. This would make the project economically viable in the long term.

## 2.3 Existing Solutions and Literature

Several existing solutions address personal finance management, but many have limitations in user-friendliness, real-time updates, and comprehensive expense tracking. Some of the notable existing solutions are:

1. **Mint:** Mint is a popular finance management tool that automatically tracks income and expenses, but its complexity and cluttered interface can be intimidating for new users, especially those unfamiliar with financial software. It also relies on bank integrations, which may not appeal to users who prefer manual tracking.
2. **YNAB (You Need A Budget):** YNAB offers excellent features for budgeting but has a steeper learning curve and is often more suitable for users with in-depth financial knowledge. Its subscription-based pricing can be a barrier for many potential users.
3. **PocketGuard:** This tool provides users with insights into their finances, but it is also more complex and focused on larger financial management needs, lacking the simple real-time tracking that a broader audience might prefer.
4. **Spendee:** Spendee allows users to track expenses and set budgets, but its user interface is still more advanced than what many casual users may require. It also offers only limited free features, limiting its appeal to those who want a simple, cost-effective tool.

These existing solutions are often geared toward users with more complex financial needs and may not be ideal for those who require a basic, easy-to-use expense tracker. The **Expense Tracker** aims to fill this gap by offering a simple, intuitive, and real-time solution focused on personal expense management for everyday users.

## 2.4 Gaps in Existing Systems

Although many existing finance management tools are available, there are several gaps that the **Expense Tracker** project seeks to address:

1. **Simplicity and Ease of Use:** Many existing tools are overly complex, with features designed for users with advanced financial knowledge. The **Expense Tracker** focuses on simplicity, making it suitable for anyone who wants to track their daily expenses without the complexity of advanced budgeting tools.
2. **Real-Time Expense Tracking:** While many apps allow users to enter expenses, real-time balance updates are not always a feature, or they are not automatically calculated. **Expense Tracker** provides instant updates to the remaining balance after each expense is logged, ensuring users have up-to-date information at all times.

3. **Lack of Personalization:** Existing tools may not allow users to easily categorize and filter their expenses in a personalized manner. The **Expense Tracker** allows users to define their own expense categories, helping them better understand where their money is going.
4. **Cost and Accessibility:** Many tools, especially more advanced ones, require paid subscriptions or integration with financial institutions. **Expense Tracker** is free and accessible, making it available to a larger audience without any hidden fees or complicated integrations.
5. **Mobile-Friendly:** Although many finance apps are available on mobile platforms, some still have limitations in terms of mobile responsiveness or ease of use. The **Expense Tracker** will be fully mobile-friendly, offering users a seamless experience across devices.

## 2.5 Social and Practical Feasibility

The **Expense Tracker** is socially and practically feasible due to the following reasons:

1. **Widespread Need for Financial Management:** Personal finance management is a universal need, cutting across age, income levels, and professions. With increasing financial pressures and the growing awareness of the importance of budgeting, many individuals are seeking practical tools to help them manage their expenses. This provides a large and diverse user base for the **Expense Tracker**.
2. **Accessibility and Inclusivity:** The app's simplicity ensures that it is accessible to people with limited financial literacy. It can be used by students, young professionals, and even individuals who have little experience with managing finances. Its mobile accessibility also makes it available to a broad demographic.
3. **Cultural Relevance:** With the increasing use of smartphones and internet access globally, especially in emerging markets, the **Expense Tracker** can cater to users from different socio-economic backgrounds. The simplicity of the app ensures that it can be used in a variety of contexts, from individuals managing small personal budgets to those with more complex financial goals.
4. **Practicality:** The tool's focus on daily expense tracking and real-time updates makes it highly practical for users who want immediate insights into their finances. The ability to input and categorize expenses quickly makes it a practical solution for users who want to stay within their budget without requiring extensive time investment.
5. **Social Impact:** By helping individuals better manage their finances, the **Expense Tracker** could reduce financial stress and promote better financial planning, potentially helping users save more money, avoid debt, and work toward long-term financial goals. This can lead to improved overall well-being and financial independence for users.
6. **Ease of Adoption:** The user-friendly nature of the **Expense Tracker**, along with its minimal learning curve, makes it easy to adopt for a wide range of individuals. Unlike more complicated financial software, this tool can be implemented and used without the need for specialized knowledge or training.

## **CHAPTER 3**

### **PROJECT OBJECTIVE**

The primary objective of the **Expense Tracker** project is to develop an efficient, easy-to-use platform that helps users effectively manage and monitor their daily expenses. This project focuses on allowing users to record their expenses and manage their finances by tracking how much they spend daily, and automatically deducting those expenses from their pre-set monthly income. The goal is to empower users to maintain financial discipline, avoid overspending, and ensure that their expenses remain within their income limits.

#### **3.1 Key Objectives**

##### **1. Accurate Expense Tracking**

- Implement a seamless and reliable system for users to input and track daily expenses manually.
- Ensure the accuracy of expense entries by allowing users to add expenses with specific details, such as the amount spent and the time of expenditure.
- Provide easy options for users to edit, update, or delete expenses, ensuring data accuracy and flexibility in tracking ongoing spending patterns.
- Support multiple types of expenses, with the system designed to handle different formats (e.g., decimal values for expenses) for more precise tracking.

##### **2. Monthly Income Management**

- Allow users to input and update their monthly income, ensuring that the application adjusts the remaining balance after each expense entry.
- Automatically deduct the recorded daily expenses from the user's monthly income, updating the remaining balance in real time.
- Provide a clear view of how much money is left from the initial monthly income after each expense deduction. This will help users understand their spending limits and financial status at any point during the month.

##### **3. User-Friendly Interface**

- Design a clean, intuitive, and responsive user interface that is simple to navigate for all users, regardless of their technological proficiency.
- Ensure the platform is accessible, with clear input fields for daily expense recording and income management.
- Offer a smooth and consistent experience across devices, such as desktops, tablets, and smartphones, making it convenient for users to track their expenses on the go.
- Focus on ease of navigation, providing simple access to key functions like expense tracking, income management, and remaining balance calculations.

##### **4. Budget Monitoring and Alerts**

- Enable users to set a predefined monthly budget to help them track their expenses relative to their income.
- Provide alerts or notifications to users when their expenses approach or exceed their set budget, encouraging better spending behaviour.
- Offer features like setting limits on how much can be spent daily or weekly, helping users stay within their financial limits.
- Allow users to modify their budget or income limits at any time to adapt to changes in their financial situation.

##### **5. Expense History and Record Keeping**

- Maintain a detailed history of all user entries, including each recorded expense and the date it was added, so users can review their spending at any time.
  - Offer search and filtering options to allow users to easily find specific expenses or review spending over a particular time period.
  - Ensure that all historical data is securely stored and can be accessed for future reference without compromising user privacy or security.
- 6. Accessibility and Inclusivity**
- Ensure the platform is designed to be fully responsive, allowing users to access the Expense Tracker from various devices, including smartphones, tablets, and computers.
  - Implement a web-based solution that eliminates the need for users to install any software, providing universal access without technical hurdles.
  - Consider multi-language support in the future to cater to diverse populations, ensuring that language barriers do not prevent users from utilizing the tool effectively.
- 7. Cost-Effective and Scalable Solution**
- Develop the platform using open-source libraries and tools, ensuring that development and operational costs remain manageable.
  - Build the platform with scalability in mind, allowing the integration of additional features in the future, such as recurring expenses tracking, advanced reporting, or integration with banking systems.
  - Focus on creating a solution that remains low-maintenance while being robust enough to accommodate increased user demand or additional functionalities as the project grows.

## 3.2 Broader Objectives

- 1. Financial Awareness and Empowerment**
- Help users become more aware of their financial situation by providing them with tools to monitor their expenses against their income.
  - Empower individuals to take control of their finances, avoid overspending, and make more informed financial decisions.
  - Provide users with a sense of financial security and confidence by giving them the tools to stay on top of their spending.
- 2. Reduction in Financial Stress**
- Enable users to better manage their money by offering a simple way to track daily expenses and adjust spending habits.
  - Provide a sense of control over financial outcomes by allowing users to see their spending against their income and adjust as necessary.
- 3. Scalable and Flexible Solution**
- Ensure that the Expense Tracker can be expanded to incorporate additional features like detailed expense reports, integration with banking systems for automatic expense logging, or the ability to manage multiple income streams.
  - Allow users to adapt the system to their evolving needs, such as changing income levels or adjusting monthly budgets, ensuring that the platform remains valuable over time.
- 4. Accessibility for a Wide User Base**
- Create a solution that is easy to use for individuals across different demographics, regardless of age or financial literacy.



- Ensure that the platform caters to various devices and operating systems, making it accessible to a broader audience.

#### **5. Real-World Impact**

- Provide a practical tool that allows users to make daily financial decisions with confidence, improving their overall financial health.
- Create an impact by helping individuals live within their means, reduce financial stress, and save more effectively.

### **3.3 Measurable Outcomes**

#### **1. Expense Tracking Efficiency**

- Achieve accuracy in tracking and recording daily expenses, ensuring that all user data is correctly captured and updated.
- Minimize user input errors and ensure that the system is intuitive for users to update and manage their expenses.

#### **2. User Adoption**

- Measure how often users engage with the platform, looking at daily or weekly usage rates to determine its effectiveness.
- Collect user feedback to assess the ease of use, satisfaction levels, and areas for improvement.

#### **3. Budgeting Effectiveness**

- Evaluate how effectively users are able to manage their budgets, measuring the percentage of users who stay within their monthly income limits.
- Track the success of alerts or notifications in helping users avoid overspending.

#### **4. Platform Accessibility**

- Ensure that the platform is accessible on a variety of devices and performs well under different conditions, with minimal technical issues.
- Collect data on the user experience across various devices and platforms, ensuring a consistent and seamless experience.

#### **5. Financial Impact**

- Measure how the Expense Tracker has helped users improve their financial habits, including saving more, reducing unnecessary spending, or sticking to their monthly budgets.

## CHAPTER 4

# HARDWARE AND SOFTWARE REQUIREMENTS

### 4.1 Hardware Requirements

The **Expense Tracker** is a web-based application, so its hardware requirements are minimal. The application can run efficiently on most modern computing devices. The basic hardware requirements are as follows:

1. **Computer/Device:**
  - Desktop, Laptop, or Mobile Device (Smartphone or Tablet)
  - Screen Resolution: A minimum resolution of 1024x768 pixels (higher resolutions are recommended for better user experience)
2. **Processor:**
  - A minimum of 1 GHz processor (Intel Core i3 or equivalent for desktop/laptop)
  - For mobile devices, any modern smartphone or tablet will suffice.
3. **RAM:**
  - Minimum 2 GB RAM (Recommended 4 GB or higher for smoother operation, especially for mobile devices or multitasking).
4. **Storage:**
  - Minimal storage is required as the app is lightweight.
  - At least 100 MB of free storage for cache and local data storage (this depends on the amount of data stored by the user).
5. **Internet Connection:**
  - A stable internet connection (broadband or mobile data) to access the application and synchronize data when necessary (if integrated with cloud services in future versions).

### 4.2 Software Requirements

The **Expense Tracker** is developed using basic web technologies, so the software requirements are minimal. Here are the primary software requirements:

1. **Operating System:**
  - The application is platform-independent, so it can run on any operating system, including:
    - Windows 10/11 (for desktops)
    - macOS (for desktops and laptops)
    - Linux (for desktops)
    - iOS (for mobile devices)
    - Android (for mobile devices)
2. **Web Technologies:**
  - **HTML (HyperText Markup Language):** Used for structuring the content and layout of the application.

- **CSS (Cascading Style Sheets):** Used for styling the interface and ensuring the app is visually appealing and responsive across different devices.
  - **JavaScript:** Used for client-side scripting to enable dynamic features such as real-time updates, user input validation, expense categorization, and wallet balance calculation.
- 3. Web Browser:**
- As the application is web-based, users will need a compatible web browser to access it. The supported browsers include:
    - Google Chrome
    - Mozilla Firefox
    - Microsoft Edge
    - Safari
- 4. Text Editor/IDE (for Development):**
- **Visual Studio Code** (Recommended): A popular code editor for JavaScript, HTML, and CSS development.
  - **Sublime Text** or **Atom:** Alternatives for code development.
- 5. Version Control** (Optional, for development teams):
- **Git:** A version control system to track code changes and collaborate effectively.
  - **GitHub** or **GitLab:** Platforms for hosting the project and collaborating with others (if working in a team).
- 6. Local Storage or Database:**
- For storing data locally on the user's device (e.g., expenses and balance), technologies like:
    - **LocalStorage** or **SessionStorage** (for client-side storage).
    - **JSON:** For storing and retrieving data in a lightweight, human-readable format.
- 7. Optional Future Software (for Advanced Features):**
- If the app is expanded to include cloud storage or database systems, software like:
    - **Firebase** (for cloud storage and real-time database).
    - **MySQL** or **MongoDB** (for server-side database solutions, if needed in future versions).

# CHAPTER 5

## PROJECT OVERFLOW

The project flow of the **Expense Tracker** is designed to be simple and user-friendly, focusing on tracking expenses and updating the wallet balance in real time. Below is the detailed breakdown of the project flow:

### 5.1 User Authentication Stage

#### 1. Login/Sign Up:

- At the start, users are prompted to either sign up for a new account or log in if they already have an existing account.
- Users can sign up by providing their email, username, and password.
- Login requires users to enter their credentials, and the system authenticates them against the stored data.

#### 2. Authentication Process:

- The system checks the entered credentials against stored data to authenticate the user. If successful, the user is granted access to their account.
- If unsuccessful, the user is informed about the incorrect details and is prompted to try again or reset their password.

#### 3. Security:

- The password entered by the user is hashed and stored securely, ensuring user data privacy.

### 5.2 User Input Stage

#### 1. Input Monthly Salary:

- Once the user has logged in, they are prompted to input their monthly salary, which serves as the starting balance for the month.
- The salary input is stored in the user's account profile.

#### 2. Input Expenses:

- The user can enter daily expenses using a simple form.
- For each expense, the user is asked to provide:
  - **Amount**
  - **Description** (optional)
  - **Date of Expense**
- This ensures that users can track their daily expenditures efficiently.

### 5.3 Input Parser Stage

#### 1. Expense Parsing:

- After the user submits the expense, the application validates the input to ensure the data is correct (e.g., non-negative numeric values for expenses).
- If there are any issues with the input (e.g., invalid or empty fields), the user is notified and prompted to correct the information.

## **2. Data Storage:**

- Once the expense input is validated, the expense data (amount, description, date) is stored in the local storage or database.
- The remaining balance is updated by deducting the expense amount from the user's salary.

## **5.4 Expense Deduction and Balance Update Stage**

### **1. Balance Update:**

- The system automatically updates the wallet balance by subtracting the entered expense from the current balance.
- The updated balance is displayed in real-time on the user interface, providing immediate feedback to the user about their current financial situation.

### **2. Transaction Record:**

- Each expense is added to a transaction history, which the user can view at any time to track their spending.
- This transaction history includes the amount, date, and description of each expense.

## **5.5 Output Stage**

### **1. View Balance:**

- Users can access a simple view of their balance, showing their starting salary, total expenses, and remaining balance.
- This view is updated automatically each time a new expense is added.

### **2. Transaction History:**

- Users can view the complete list of their expenses in a chronological order, with details like amount and date for each transaction.
- The transaction history helps users keep track of their spending.

## **5.6 Data Flow Diagram (DFD)**

### **• Level 0 (Context Diagram):**

- The system interacts with the user who inputs the monthly salary and daily expenses. The system outputs the updated balance and transaction history.
- Data is stored in local storage or database, ensuring that the user's data is persistent across sessions.

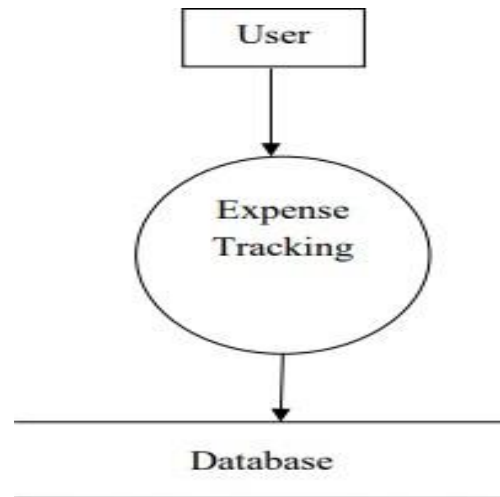


Fig.1 Level 0 Data Flow Diagram

- **Level 1 (DFD):**

- User inputs data, which is processed by the system's input validation module.
- The data is then parsed and stored in the system's backend (local storage or database).
- The wallet balance is updated, and the system keeps a record of transactions.

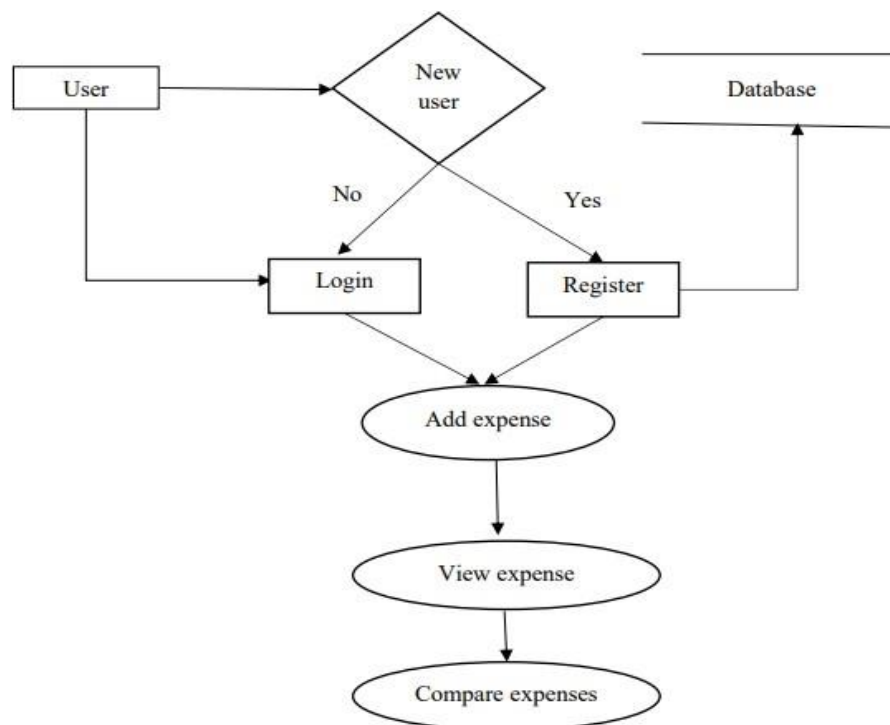


Fig.2 Level 1 Data Flow Diagram

## 5.7 Use Case Diagram

The use case diagram for the **Expense Tracker** application shows the various user interactions with the system:

- **User:** Logs in, enters salary, adds expenses, views balance, and views transaction history.
- **Expense Tracker System:** Authenticates the user, processes inputs, updates balance, stores data, and maintains the transaction history.

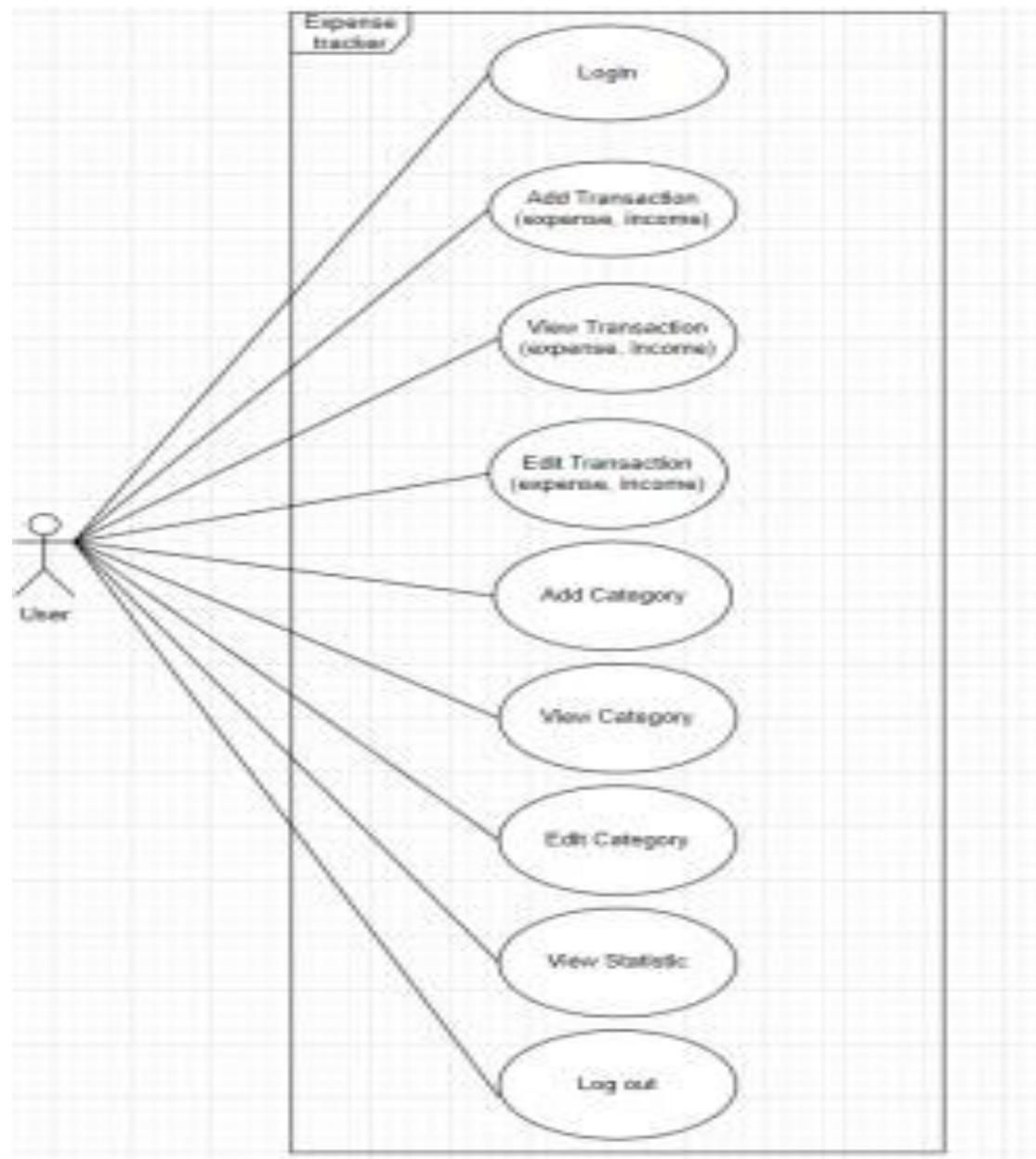


Fig.3 Use Case Diagram of Expense Tracker

## 5.8 Flowchart & Algorithm

### 1. Flowchart:

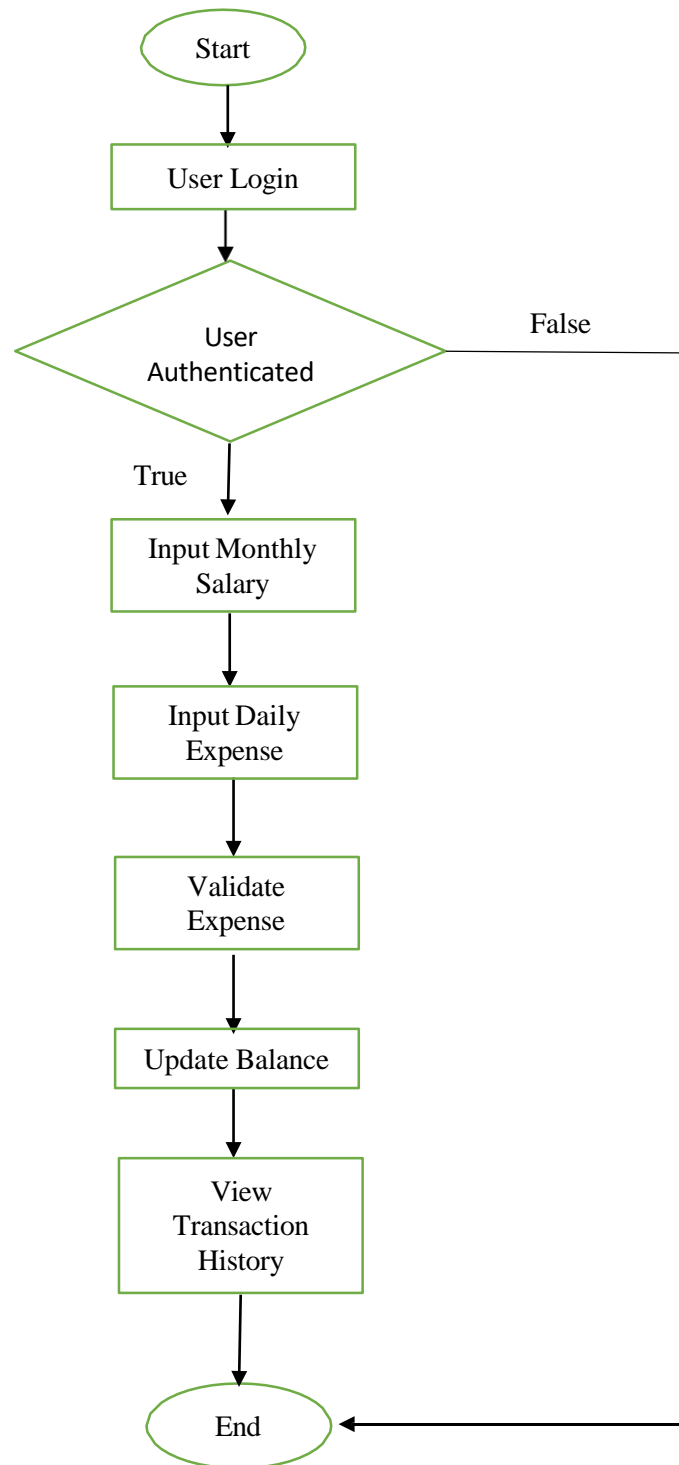


Fig.4 Flowchart of Expense Tracker



## 2. Algorithm:

- **Step 1:** User logs in using credentials.
- **Step 2:** User enters their monthly salary.
- **Step 3:** User enters daily expenses with necessary details (amount, description, date).
- **Step 4:** The system validates the input data for correctness.
- **Step 5:** The expense amount is subtracted from the balance, and the new balance is displayed.
- **Step 6:** The expense data is stored, and the transaction history is updated.
- **Step 7:** The user can view their balance and transaction history.
- **Step 8:** Repeat for each new expense entry.
- **Step 9:** End.

## CHAPTER 6

# PROJECT OUTCOME

The **Expense Tracker** project aims to help users efficiently manage their personal finances by tracking daily expenses and providing a clear view of their remaining balance. Below are the key outcomes of the project:

### 6.1 Key Outcomes

#### 1. User-Friendly Financial Management:

- The primary outcome of the Expense Tracker is the provision of a simple and intuitive tool for managing personal expenses.
- Users are able to enter their expenses and view their balance in real-time, making it easier to track daily spending and ensure they stay within their budget.

#### 2. Real-Time Balance Updates:

- The system provides automatic updates to the wallet balance after each expense entry, helping users stay aware of their remaining funds and avoid overspending.

#### 3. Transaction History:

- The application stores and presents a complete transaction history, giving users the ability to review their expenses over time.
- This outcome allows users to track how much they have spent and monitor any trends in their spending behaviour.

#### 4. Improved Financial Awareness:

- By providing users with a detailed record of their expenses, the Expense Tracker helps users develop a better understanding of where their money is going.
- This leads to more informed decisions about budgeting and saving money.

#### 5. Easy Accessibility:

- The application ensures that users can easily access their financial data at any time, making it a convenient tool for individuals looking to track their monthly expenses.

### 6.2 Social Impact

#### 1. Increased Financial Literacy:

- The project encourages users to become more aware of their financial habits. As users track their daily expenses and monitor their remaining balance, they gain insights into their spending patterns.
- This helps in promoting financial literacy and encourages responsible money management.

#### 2. Empowerment and Independence:

- The Expense Tracker gives users the power to independently manage their finances without needing complex financial tools or advice.

- It empowers individuals, especially those new to budgeting, by providing them with a simple yet effective way to control their finances.
- 3. Promotion of Savings Culture:**
- With better awareness of their financial status, users are more likely to adopt a savings-focused mind set, adjusting their spending habits to save more money each month.

## 6.3 Technological Advancement

- 1. Web-Based Application:**
  - The project demonstrates the use of web technologies like HTML, CSS, and JavaScript to build a functional and responsive web application.
  - This showcases how lightweight and efficient web applications can be developed for personal use without the need for complex setups or installations.
- 2. Integration of Real-Time Data:**
  - The application's ability to update balances in real-time after each expense entry reflects the system's efficiency and smooth user experience, ensuring users can track their finances instantly.
- 3. Security Implementation:**
  - The project also emphasizes the importance of secure data handling, as user credentials and expense data are securely processed and stored, ensuring user privacy and data protection.
- 4. Scalability:**
  - The project is scalable, meaning new features such as expense categorization, reporting, or even mobile integration can be added in the future without major changes to the underlying system.

## 6.4 User Interface

### 1. Home Page

The home page is the starting point and serves as the user's first interaction with the application. Its primary role is to provide an overview of the application and guide users to the next step. Key features include:

- **Introduction to the Application:**  
The home page provides a brief introduction to the Expense Tracker, emphasizing its purpose—helping users track and manage their finances by monitoring income, tracking expenses, and viewing transaction histories.
- **Key Features and Benefits:**  
The page highlights the main functionalities of the application, such as:
  - Adding and managing monthly income.
  - Recording expenses with descriptions and categories.
  - Viewing a detailed transaction history to track spending patterns.
- **Call-to-Action (CTA):**  
Prominent navigation buttons for “Login” and “Sign Up” are displayed,

encouraging users to proceed. These buttons are visually distinct and strategically placed for ease of access.

- **Visual Appeal:**

The home page uses clean design principles, including a minimalistic layout, bold headings, and an engaging color scheme, to make it user-friendly and visually attractive.

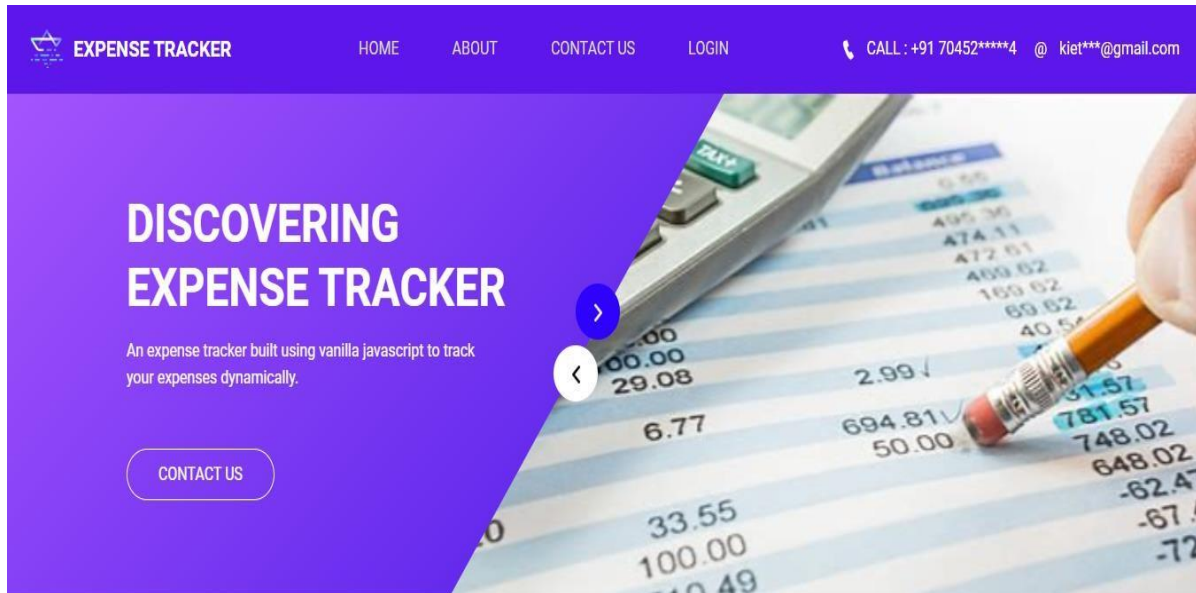


Fig.5 Home Page of Expense Tracker

## 2. Login Page

The login page provides existing users with secure access to their accounts. Its design ensures simplicity and ease of use. Key components include:

- **Input Fields for Credentials:**

The login page includes fields for entering the user's **email/username** and **password**, with clear labels to guide input.

- **Login Button:**

A prominently displayed **“Login”** button allows users to submit their credentials. Upon submission, the system verifies the credentials before granting access to the main application.

- **Navigation to Signup Page:**

A link such as **“Don’t have an account? Sign Up here”** is included for new users who wish to create an account.

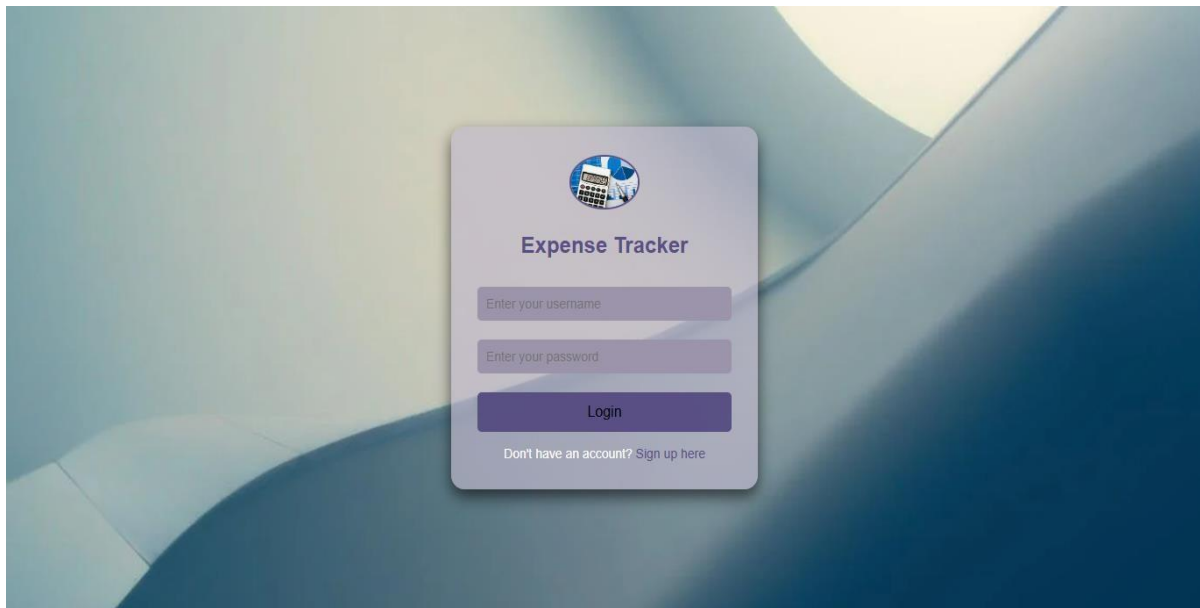


Fig.6 Login Page of Expense Tracker

### 3. Signup Page

The signup page is where new users can create accounts. It is designed to make the registration process smooth and user-friendly. Key features include:

- **Input Fields for User Details:**  
Users are prompted to input essential details, such as:
  - **Full Name:** Used for personalizing the experience.
  - **Email Address:** Required for account identification.
  - **Password and Confirm Password:** Users create and confirm their passwords for security purposes.
- **Password Validation:**  
Basic validation is included to ensure the password meets minimum criteria (e.g., minimum length). Users are guided through this process with clear error messages if necessary.
- **Signup Button:**  
A “**Sign Up**” button allows users to submit their details, after which their account is successfully created.
- **Navigation to Login Page:**  
A link such as “**Already have an account? Login here**” redirects existing users to the login page.

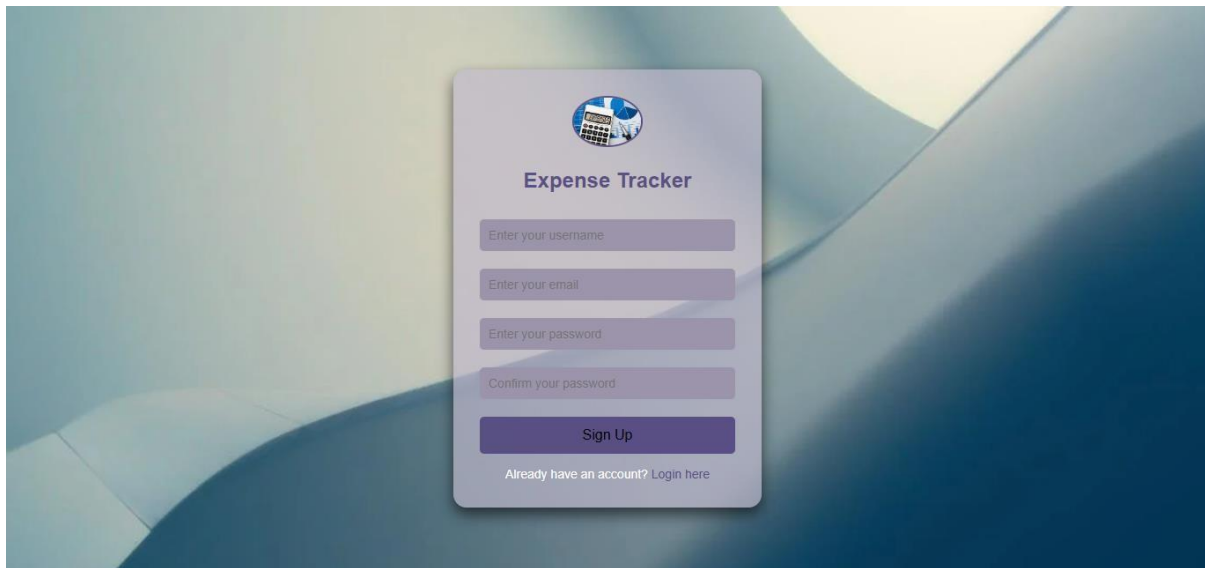


Fig.7 Signup Page of Expense Tracker

#### 4. Main Dashboard (Post Login)

Once logged in, users are directed to the main dashboard, which serves as the hub for all core functionalities. The dashboard is designed to provide users with a comprehensive view of their financial data and quick access to key features. It consists of the following sections:

##### a. Add Monthly Salary

- A section where users can input their monthly income. This acts as the starting point for tracking their finances.
- Users can modify the salary value as needed, reflecting changes in their financial situation.
- The total salary is displayed prominently on the dashboard as the **“Total Available Balance.”**

##### b. Add Expense

- Users can record new expenses by filling out the required details, such as:
  - **Expense Amount:** The monetary value of the expense.
  - **Expense Category:** A dropdown menu or list to categorize the expense (e.g., food, rent, entertainment).
  - **Description:** An optional field for additional notes about the expense.
- Once submitted, the expense is deducted from the available balance, and the updated balance is displayed immediately.

##### c. View Transactions

- This section lists all past transactions made by the user, including:
  - Date of the transaction.
  - Category of the expense.
  - Expense amount.
  - Description (if provided).
- Users can scroll through their transaction history to monitor their spending habits and ensure they stay within budget.

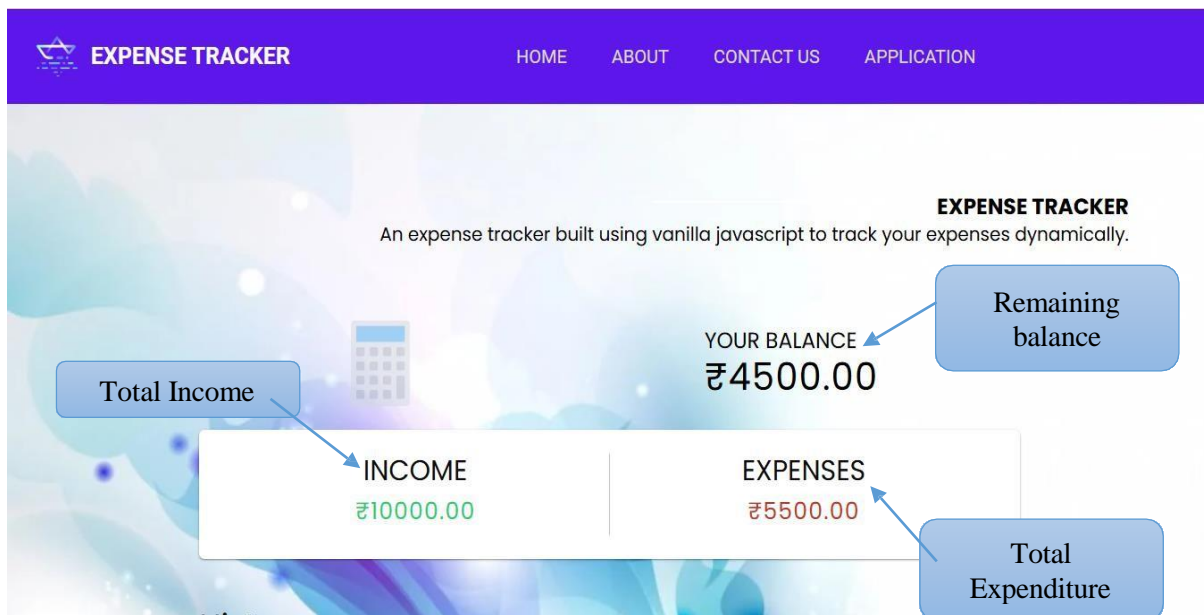
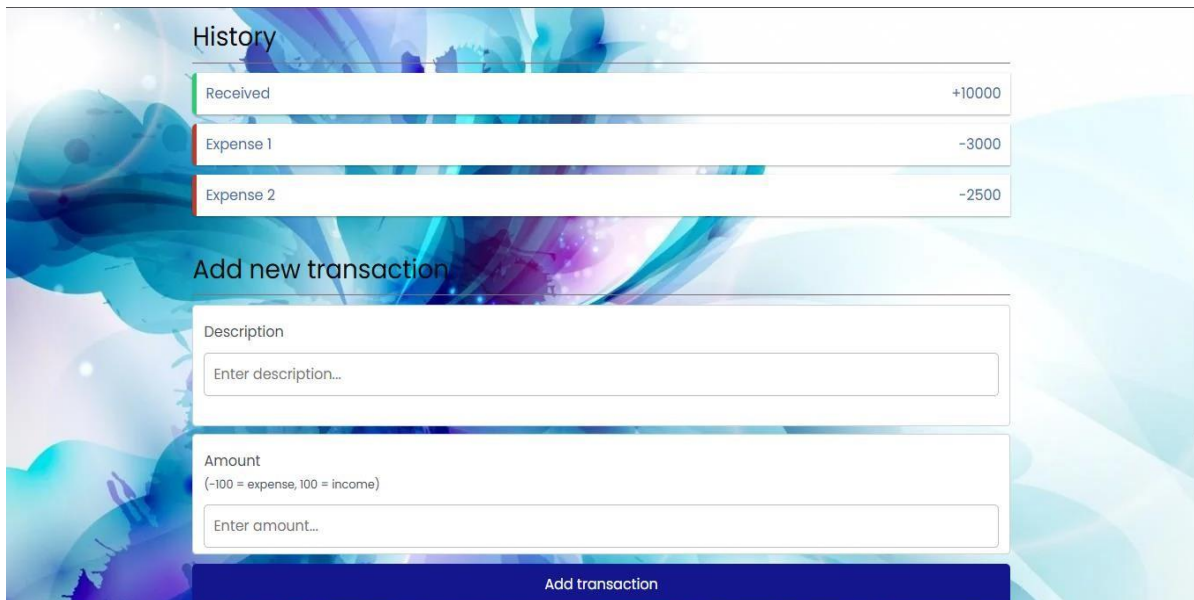


Fig.8 Application Preview



The image shows the "History" and "Add new transaction" sections of the application. The "History" section lists three transactions:

History	
Received	+10000
Expense 1	-3000
Expense 2	-2500

The "Add new transaction" section contains two input fields:

- Description**: Enter description...
- Amount**: (-100 = expense, 100 = income) Enter amount...

At the bottom, there is a blue button labeled "Add transaction".

Fig.9 Application Preview (Contd.)

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