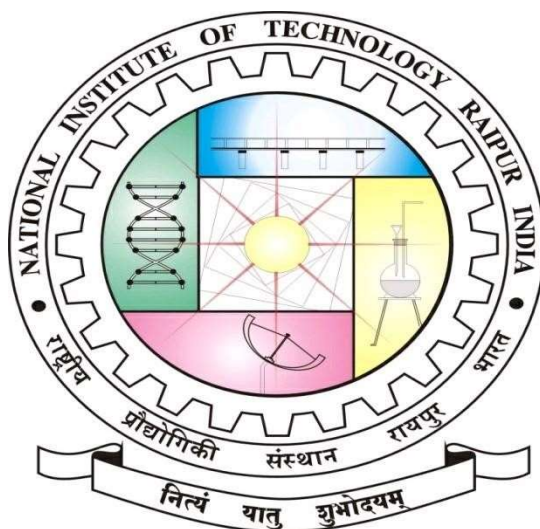


NATIONAL INSTITUTE OF TECHNOLOGY

RAIPUR

DEPARTMENT INFORMATION TECHNOLOGY



PROJECT REPORT
WEB TECHNOLOGY LAB

Submitted by	ABHAY SEN
Branch & Sem	IT 4 TH SEMESTER
Roll No	22118003

INDEX

Sr no.	Page	Page no.	Remarks
1.	Introduction	1	
2.	Description	2-5	
3.	Tech Stack	5-6	
4.	Future Scope	6-7	
5.	Conclusion	7	

Introduction

In today's fast-paced world, managing personal finances efficiently is essential for financial well-being. The ability to track expenses accurately plays a crucial role in maintaining a healthy financial lifestyle. To address this need, we have developed an innovative Expense Tracker application.

The Expense Tracker application is designed to provide users with a simple yet powerful tool to monitor and manage their expenses effectively. Leveraging the modern web technologies, our application utilizes React for the front end and Supabase for the back end, ensuring a seamless and responsive user experience.

With the Expense Tracker, users can easily log their expenses, including details such as the date of the expense, the amount spent, and the method of payment. The application then organizes this data to provide users with a comprehensive overview of their spending habits, including total expenses over a specified period.

This project aims to empower users by offering them insights into their spending patterns, helping them make informed financial decisions. Whether it's tracking daily expenses, monitoring monthly budgets, or analysing spending trends over time, our Expense Tracker provides users with the tools they need to stay financially organized.

In this project report, we will delve into the details of the Expense Tracker application, including its features, technologies used, future scope, and the overall impact on personal finance management. Join us on this journey as we explore how technology can revolutionize the way we manage our expenses.

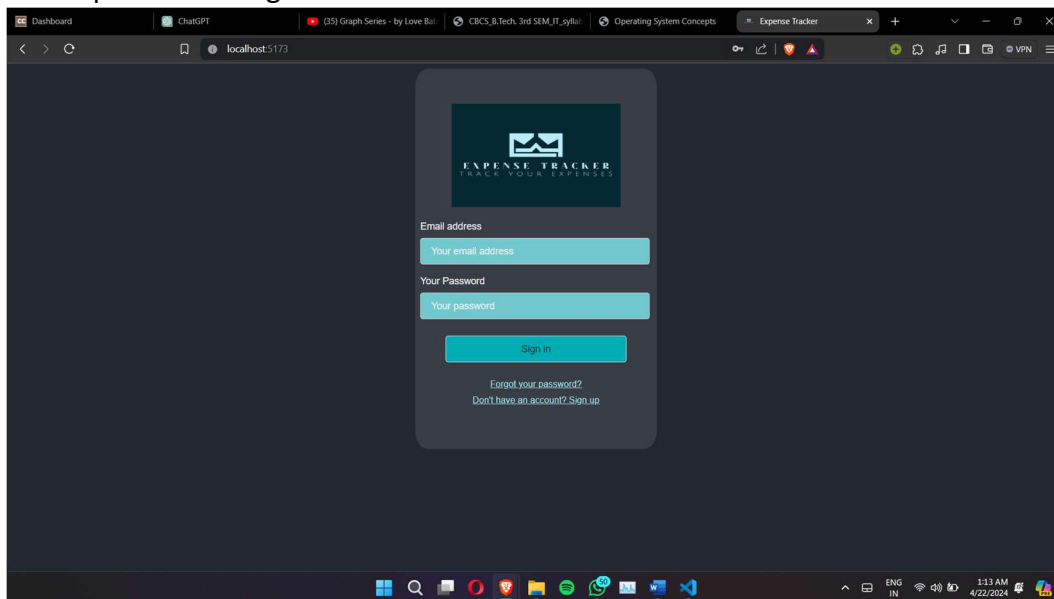
Description

User Authentication: Sign In and Sign Up

The initial launch of our Expense Tracker application directs users to the 'Sign In/Sign Out' page, providing a seamless entry point to the system. Users with existing accounts can sign in using their registered email ID and password. For new users, the option to create an account is available through a 'Do Not Have an Account' link, which redirects them to the Sign Up page.

Sign In Page:

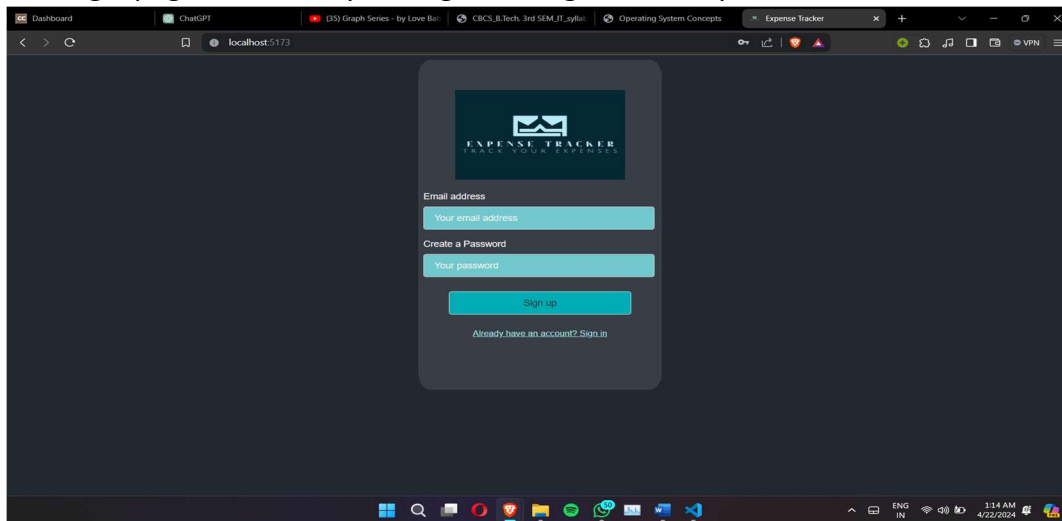
The Sign In page prompts users to enter their registered email ID and password for authentication. Upon successful validation, users gain access to their personalized dashboard and expense tracking features.



Sign Up Page:

The Sign Up page allows new users to create an account by providing their email ID and choosing a secure password. After submitting the registration details, an email verification link is sent to the provided email address. Upon clicking the verification link, users are redirected to

the Login page, where they can sign in using their newly created credentials.



This user authentication process ensures a secure and user-friendly experience, enabling both new and existing users to access the full functionality of the Expense Tracker application effortlessly

Dashboard and User Profile:

Upon successful authentication, registered users are directed to the dashboard, designed for seamless navigation and efficient expense management. The dashboard features a navigation bar with three primary options: Profile, Dashboard, and Logout. This structured menu empowers users to access essential functionalities effortlessly.

Navigation Bar:

- Profile: Allows users to view and manage their personal information, including age, name, and other details.
- Dashboard: Provides a comprehensive overview of expenses, categorized and displayed in a table format for easy reference.
- Logout: Enables users to securely log out of their accounts, ensuring privacy and data security.



Expense Table:

The dashboard prominently displays a table containing detailed information about expenses,

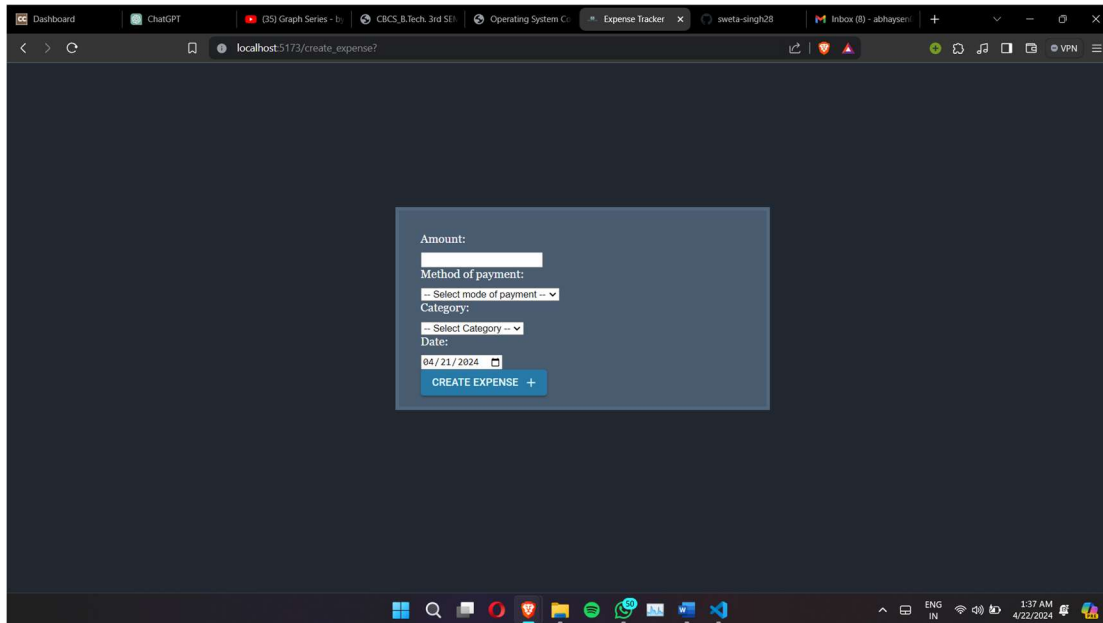
Adjacent to the expense table, a personalized message greets users by name and provides a real-time summary of their total expenses. This feature enhances user engagement and fosters a personalized experience within the application.

New User Registration:

Age Group	Percentage
18-24	100%
25-34	90%
35-44	80%
45-54	70%
55-64	60%
65-74	50%
75-84	40%
85+	30%

Expense Adding Page:

A prominent "Add New Expense" button, strategically placed at the bottom of the dashboard, facilitates quick entry of new expenses. This user-friendly interface streamlines the process of recording expenditures, ensuring accuracy and convenience.

The screenshot shows a web browser window with the URL 'localhost:5173/create_expense?'. The browser's tab bar includes 'Dashboard', 'ChatGPT', 'DSJ Graph Series - b...', 'CBCS_B.Tech. 3rd S...', 'Operating System C...', 'Expense Tracker', 'aweta-singh28', and 'Inbox (0) - alhaysen...'. The main content area is a dark blue-grey rectangle containing a light blue-grey form. The form has the following fields: 'Amount:' with a text input; 'Method of payment:' with a dropdown menu showing 'Select mode of payment'; 'Category:' with a dropdown menu showing 'Select Category'; 'Date:' with a date picker showing '04/21/2024'; and a blue button with the text 'CREATE EXPENSE +'. The Windows taskbar at the bottom shows the Start button, search icon, and several application icons. The system tray on the right shows the language 'ENG IN', network, volume, and a clock displaying '1:37 AM 4/22/2024'.

Expense Form:

- Amount Field: Users input the amount of the expense.
- Payment Method Dropdown Menu: Offers options for selecting the payment method, ensuring accurate record-keeping.
- Payment Category Dropdown Menu: Allows users to categorize expenses for better organization and analysis.
- Date Picker: Enables selection of the expense date, ensuring chronological tracking.

The integration of these features in the dashboard and user profile management ensures a user-centric approach, empowering individuals to track expenses effectively, manage personal information securely, and enjoy a seamless navigation experience within the Expense Tracker application.

Tech Stack:

Our Expense Tracker application leverages a robust and modern tech stack, carefully chosen to ensure reliability, scalability, and an exceptional user experience. Below are the key components of our tech stack:

1. Front End - React:

- Why React? React's component-based architecture simplifies UI development, enhances code reusability, and ensures a responsive and interactive user interface.
- Libraries and Tools: We utilize React Router for efficient navigation within the application, Axios for handling API requests, and Material-UI for designing consistent and visually appealing UI components.

2. Back End - Supabase:

- Why Supabase? Supabase provides a powerful combination of PostgreSQL database functionalities and authentication services, offering real-time data synchronization, secure data storage, and user management capabilities.
- Features: Our backend implementation includes Supabase's database for storing expense data, authentication services for user registration and login, and API integration for seamless communication between the front end and back end.

3. Database - PostgreSQL:

- Why PostgreSQL? PostgreSQL is a robust and reliable open-source relational database management system known for its performance, scalability, and advanced features such as ACID compliance, JSONB data type support, and extensive indexing options.
- Data Management: We utilize PostgreSQL through Supabase for efficient data storage, retrieval, and management, ensuring data integrity and optimal performance for our Expense Tracker application.

4. Authentication and Security:

- JSON Web Tokens (JWT): We implement JWT-based authentication for secure user authentication and authorization, ensuring that only authenticated users can access sensitive functionalities such as adding expenses and managing user profiles.
- Encryption: All sensitive data, including user passwords and authentication tokens, are encrypted using industry-standard encryption algorithms to protect user privacy and data security.

5. Deployment and Hosting:

- Platform: Our application is deployed and hosted on cloud platforms such as Vercel or Netlify for seamless deployment, scalability, and reliability.
- Continuous Integration/Continuous Deployment (CI/CD): We implement CI/CD pipelines to automate the deployment process, ensuring smooth updates and releases without downtime.

By leveraging this advanced tech stack, our Expense Tracker application delivers a robust, secure, and user-friendly solution for effective expense management and financial tracking.

Future Scope:

As our Expense Tracker application continues to evolve, we envision several exciting enhancements and features to further empower users in managing their finances effectively. The future scope of our project includes:

1. Income Tracking:

- Integrate an income tracking feature to monitor total income sources.
- Implement functionality to deduct expenses from total income, providing users with a comprehensive view of their financial health.

2. Visual Data Representation:

- Incorporate dynamic pie charts and data visualization tools to depict spending patterns and expenditure categories graphically.
- Provide interactive charts that allow users to explore and analyze their spending habits, enabling informed financial decision-making.

3. Budgeting and Forecasting:

- Develop budgeting tools to help users set financial goals, allocate budgets for different expense categories, and track budget adherence.
- Implement forecasting algorithms to predict future expenses based on historical data and spending trends, assisting users in proactive financial planning.

4. Mobile Application Integration:

- Create a mobile application version of the Expense Tracker for seamless access and usability on smartphones and tablets.
- Utilize mobile platform-specific features such as push notifications, camera integration for receipt scanning, and location-based expense tracking for enhanced user experience.

5. Enhanced User Profiles:

- Expand user profile capabilities to include additional personal finance metrics such as savings goals, investment portfolios, and debt management.
- Provide personalized financial insights and recommendations based on user behavior and financial data analysis.

6. Collaborative Features:

- Introduce collaborative features such as shared expense tracking for households, families, or teams, enabling collective budget management and expense sharing.
- Implement user permissions and access controls to ensure data privacy and security in collaborative environments.

7. Integration with Financial Services:

- Explore partnerships and integrations with financial institutions, payment gateways, and third-party services to streamline expense tracking, bill payments, and financial transactions.
- Offer value-added services such as credit score monitoring, investment tracking, and tax planning tools within the Expense Tracker platform.

By implementing these future enhancements, our goal is to transform the Expense Tracker application into a comprehensive financial management solution, empowering users to achieve financial stability, make informed financial decisions, and achieve their financial goals with confidence.

Conclusion:

In conclusion, our Expense Tracker application represents a significant step forward in empowering individuals to manage their finances efficiently and effectively. Through the integration of modern technologies such as React for the front end, Supabase for the back end, and PostgreSQL for database management, we have created a robust platform that simplifies expense tracking, enhances financial visibility, and promotes responsible financial management practices.

The user-centric design of our application, featuring intuitive navigation, personalized user profiles, and visual data representation through charts and graphs, ensures a seamless and engaging user experience. The inclusion of future enhancements such as income tracking, budgeting tools, mobile application integration, and collaborative features further expands the capabilities of our Expense Tracker, catering to diverse user needs and preferences.

As we continue to iterate and improve upon our application, we remain committed to providing a secure, reliable, and feature-rich solution for individuals and households seeking to take control of their finances. We believe that through continuous innovation and user feedback, our Expense Tracker will continue to evolve as a valuable resource for financial management, enabling users to achieve their financial goals and build a more secure financial future.

We extend our gratitude to all stakeholders, contributors, and users who have supported and contributed to the success of our Expense Tracker project. Together, we look forward to shaping a brighter and more financially empowered future for all.