Expense Tracker

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Domain: Full Stack Web Development

Type: Basic Project

Introduction:

The Expense Tracker is a full-stack web application built using the MERN (MongoDB, Express.js, React, Node.js) stack that allows users to manage their financial data efficiently. The application provides a platform to track various types of financial transactions, including expenses, savings, and investments.

Users can easily input their spending details, categorize them, and monitor their savings and investments. To help visualize their financial health, the app generates a pie chart that displays a breakdown of these categories, offering users an intuitive way to assess and manage their finances.

Objective:

- Allow users to store and categorize various types of financial data, such as expenses, savings, and investments, to keep track of their financial activities in an organized manner.
- Provide a seamless interface for users to input their financial transactions and instantly reflect changes in the database, ensuring real-time tracking of their financial status.
- Implement a dynamic pie chart that visualizes the breakdown of expenses, savings, and investments, allowing users to easily analyze and understand their financial distribution at a glance.
- Create an intuitive and responsive UI using React, ensuring that users of all experience levels can navigate the application effortlessly on both desktop and mobile devices.

Technologies Used:

- **JavaScript:** JavaScript is a high-level, versatile, and interpreted programming language primarily used to create interactive and dynamic content on websites. It is a core technology of the web, alongside HTML and CSS, enabling developers to build responsive and feature-rich user interfaces.

- **HTML:** HTML (HyperText Markup Language) is the standard language used to create and structure content on the web. It uses a system of tags to define elements such as headings, paragraphs, links, images, and more.

- **CSS:** CSS (Cascading Style Sheets) is a language used to style and layout HTML content on web pages. It controls the appearance of elements, such as colors, fonts, spacing, and overall design.

- **Vite:** Vite is a modern front-end build tool and development server designed for fast and efficient development. It is particularly popular for projects using frameworks like React, Vue, and Svelte.

- **ReactJS:** ReactJS is a popular JavaScript library for building dynamic, interactive, and reusable user interfaces, especially for single-page applications (SPAs). It was developed by Facebook and is maintained by Meta and an open-source community.

- **Boxicons:** Boxicons is a simple and easy-to-use icon library that provides a collection of high-quality, customizable icons. It is designed to be used in web and mobile applications for enhancing the user interface with visually appealing and scalable vector icons.

- **Chart.js:** Chart.js is a popular open-source JavaScript library used to create interactive and responsive charts and graphs. It is widely used in web applications to visualize data through different chart types, such as bar charts, line charts, pie charts, and more. Chart.js is built on top of the HTML5 <canvas> element, making it lightweight and performant for rendering complex visualizations.

- **Lodash:** Lodash is a widely used JavaScript utility library that provides a set of helpful functions for working with arrays, objects, strings, numbers, and other data types. It simplifies common tasks like data manipulation, iteration, and deep cloning, and helps make code more readable and maintainable. Lodash is often used to optimize performance and avoid writing repetitive code.

- **React-hook-form:** React Hook Form is a popular library for handling form validation and data management in React applications. It allows developers to build forms efficiently with minimal re-rendering, reducing the complexity of form handling while providing robust features for validation, error handling, and form state management.

- **React-redux:** React-Redux is a popular library used to manage the state of a React application in a predictable way. It is a binding library for React that allows React components to interact with a Redux store efficiently. Redux itself is a state management library, and React-Redux helps integrate Redux into React applications by providing a set of tools to connect components with the Redux store.

- **Cors:** CORS (Cross-Origin Resource Sharing) is a security feature implemented by web browsers that allows or restricts web applications running at one origin (domain) to make requests for resources from a different origin. It is designed to prevent malicious websites from accessing resources and data from other domains without permission.

- **Dotenv:** Dotenv is a zero-dependency module for managing environment variables in Node.js applications. It loads environment variables from a .env file into process.env, which is the global object in Node.js that stores environment variables. By using dotenv, you can keep sensitive information like API keys, database credentials, or configuration settings out of your codebase, improving security and flexibility.

- **Express:** Express is a minimal and flexible web application framework for Node.js, designed to simplify the process of building web applications and APIs. It provides a robust set of features that make it easy to handle routing, middleware, and HTTP requests and responses, allowing developers to focus on building their application logic rather than managing low-level details.

- **Mongoose:** Mongoose is an Object Data Modeling (ODM) library for MongoDB and Node.js. It provides a straightforward way to interact with MongoDB from a Node.js application by mapping MongoDB documents to JavaScript objects. Mongoose helps to manage the relationship between data, provides schema validation, and simplifies CRUD operations.

- **MongoDB:** MongoDB is a popular NoSQL database that stores data in a flexible, document-oriented format using collections and documents instead of traditional tables and rows, as in relational databases. MongoDB is designed to handle large volumes of data with high scalability and flexibility, making it suitable for modern web applications, real-time analytics, and big data projects.

Features:

- **Expense Tracking :** Users can log and categorize their daily expenses, such as groceries, transportation, and entertainment.

- **Savings And Investments:** Track the progress of savings goals and investments to monitor financial growth.

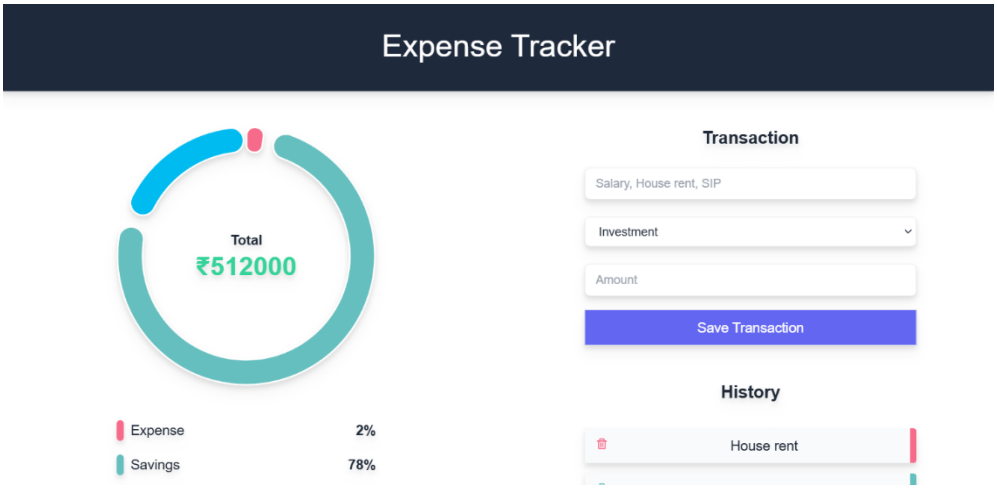
- **Data Visualization:** A pie chart representation of the user's financial data, giving a clear visual overview of how money is allocated across expenses, savings, and investments.

- **Responsive UI:** Responsiveness in websites refers to the design and development approach that ensures a website looks and functions well on a wide variety of devices and screen sizes, including desktops, tablets, and mobile phones.

- **Data Storage:** All the transactions will be saved on database to have all the history of transactions.

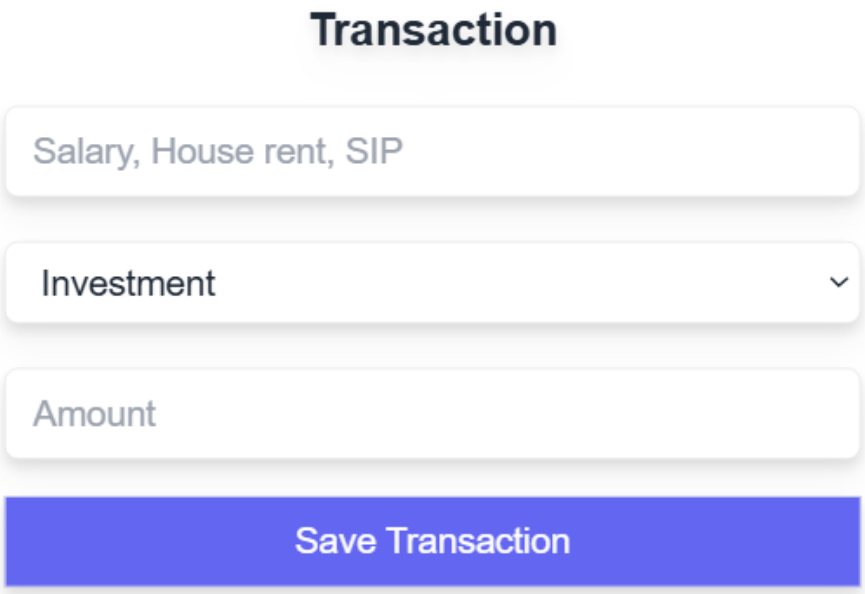
Working:

a) Base Design



b) Data Visualization

c) Transaction Form (To add new transaction)



d) Transaction History

History

House rent

salary

Buy stocks

Electricity Bill

Summary:

The Expense Tracker is a full-stack web application developed using the MERN stack (MongoDB, Express.js, React, Node.js) that allows users to efficiently manage their financial data. The platform enables users to log and categorize various financial transactions, such as expenses, savings, and investments, while providing real-time updates. A dynamic pie chart visualizes the breakdown of these financial categories, offering users an intuitive overview of their financial distribution. The app is designed with a responsive user interface, ensuring a seamless experience across devices, and all data is securely stored in a MongoDB database for easy tracking of financial history.

Source code: https://github.com/deveshm019/expense-tracker.git