Daily Expense Tracker

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Abstract — The Daily Expense Tracker is a web-based application designed to help users monitor and manage their daily expenses. Hosted on a remote server and accessible via web browsers, the application enables users to record and categorize income and expenditures efficiently. It incorporates features such as real-time transaction updates, categorization of financial data, and graphical summaries for better analysis. Additionally, the application includes voice-controlled functionality to enhance accessibility. This paper outlines the conceptualization, design, and implementation of the Daily Expense Tracker, focusing on its practical usability and role in supporting effective financial management.

Keywords: Daily Expense Tracker, Web-Based Financial Management, Real-Time Expense Monitoring, Voice-Controlled Application, Income and Expenditure Categorization, Graphical Financial Summaries, Personal Budgeting Tool, Remote Access Application, User-Centric Design, Digital Expense Tracking System

I. Introduction

The daily expense tracker is a web application which is used to maintain data of daily, weekly, monthly and yearly expenses in an eye-catching way. This project is aimed at developing a web application which will be helpful to users who run out of resources due to mismanagement and also find it difficult to maintain records of their expenses. So daily expense tracker will help them manage their needs and spending in a better way by accessing the web application directly from web browsers. It is designed and developed in a way that it is compatible with each and every device.

Managing personal finances is a vital yet often neglected aspect of daily life, leading many individuals to encounter unforeseen financial difficulties. Traditional methods of tracking expenses, such as manual bookkeeping or spreadsheet entry, are time-consuming and prone to human error. To address these challenges, the Daily Expense Tracker is developed as a responsive, browser-based application that enables users to seamlessly monitor and manage their financial transactions.

II. Literature Review

Expense tracking applications have evolved significantly in recent years, leveraging advancements in web development, cloud computing, artificial intelligence, and user interface design. These applications aim to provide users with intuitive and efficient methods of managing financial records without the need for manual bookkeeping. As personal finance becomes increasingly digital, the role of intelligent, responsive, and portable systems becomes paramount.

Modern expense tracking systems are generally web-based, enabling cross-platform accessibility through standard browsers such as Google Chrome and Mozilla Firefox. These systems often adopt component-based development frameworks such as ReactJS, which facilitates modularity, maintainability, and responsiveness. React's virtual DOM enhances performance by updating only the necessary components instead of re-rendering the entire interface. Moreover, Context APIs and React Hooks are utilized to manage state efficiently across different components, promoting reusability and testability.

To provide an engaging user experience, these systems employ libraries like Chart.js for data visualization, which dynamically represents income and expense data in pie charts, bar graphs, and line charts. The graphical representation of financial transactions allows users to gain insights into their spending habits and budgeting patterns in real time.

An important innovation in user interaction is the incorporation of voice-enabled interfaces, such as those powered by Speechly or Web Speech API. These technologies allow users to create, update, or delete transactions using natural language commands, enhancing accessibility, particularly for users who may find traditional input methods inconvenient or inaccessible.

Expense tracking systems also rely on browser-based local storage to retain data persistently. Local storage ensures that user data remains available across sessions without the need for server-side databases, reducing infrastructure complexity while maintaining privacy and performance.

From a software engineering perspective, expense trackers emphasize usability, portability, and minimal resource consumption. The use of cloud deployment platforms like Netlify ensures scalability, HTTPS encryption, and protection against common security threats such as Distributed Denial of Service (DDoS) attacks.

Overall, expense tracking systems represent a confluence of financial literacy tools and modern web technologies. They serve as both personal finance assistants and educational tools, guiding users towards more mindful financial decision-making. The integration of voice support, dynamic visualizations, and responsive design sets a new standard for personal finance applications, making them more user-centric and adaptable to diverse user needs.

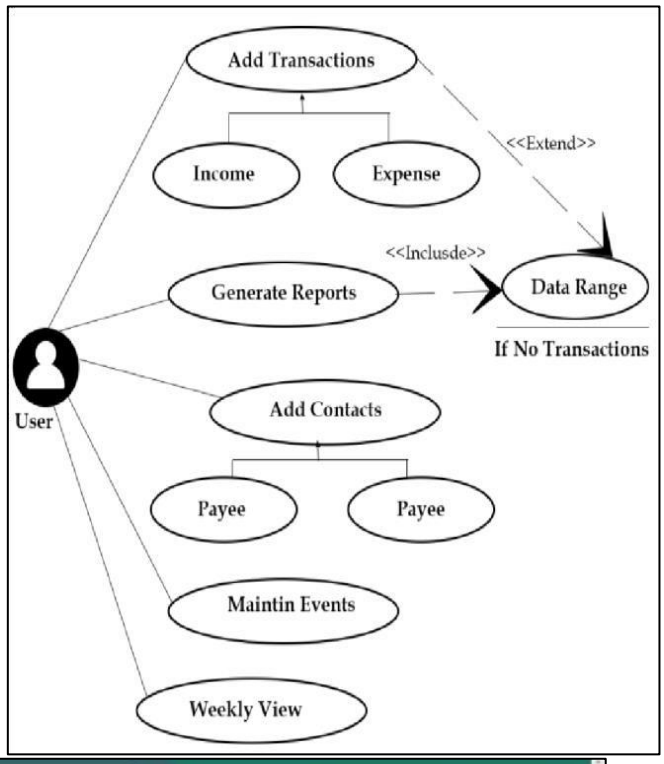
III. Purpose

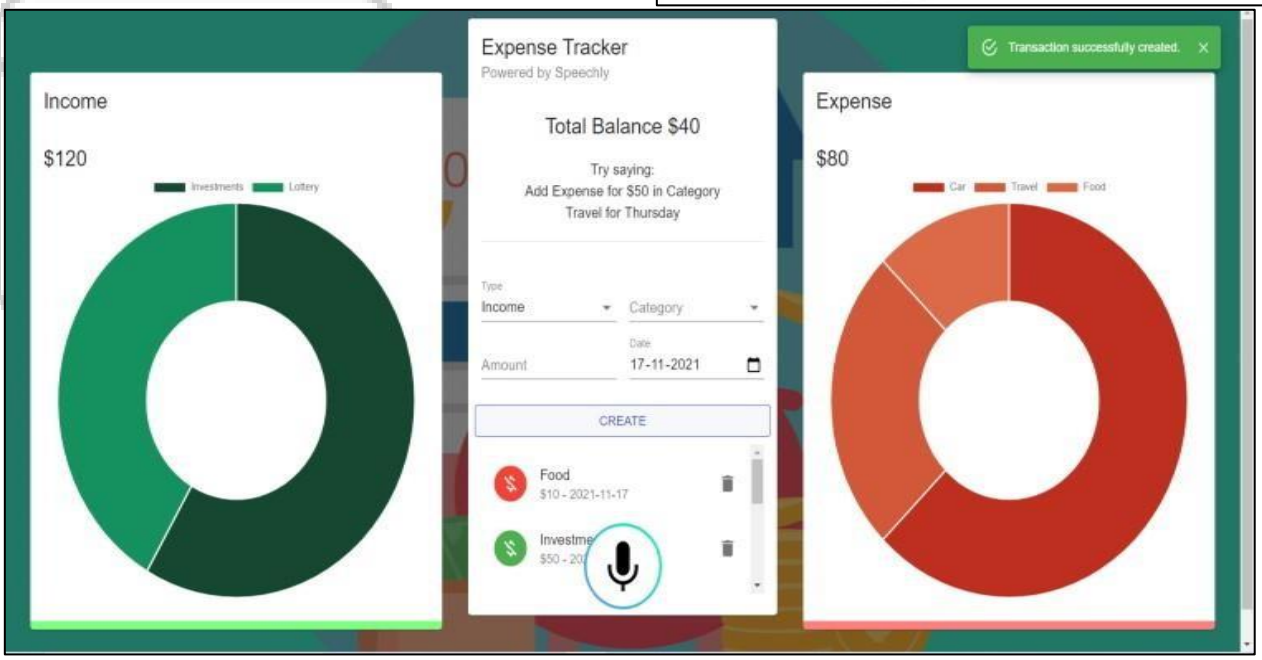
1) No Need to install web application: the problem of installing web application avoided on any device. So, reducing space and time related problems.
2) Remotely Accessible: a web -based application can be used remotely via a network connection that is platform independent
3) Movability and Repository: to reduce the problem of movability and repository field by using to make the concept of web-based application.
4) Local Storage: Local storage allows developers to store and retrieve data in the browser. The data stored in local

storage will not expire. This means the data will persist even if the tab or the browser window is closed.

5) Voice Features: We have used Speechly for building real-time multimodal voice user interfaces. It enables developers and designers to enhance their current touch user interface with voice functionalities for better user experience.

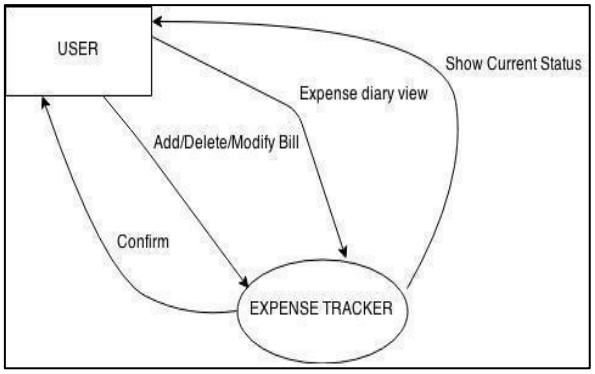
IV. IMPLEMENTATION





The methodology of daily expense tracker are as follows:

- This system will include a website application that will allow users to maintain a digital automated diary
- There will be two options for the user that are income and expenses to make an entry.
- The user can select any entry according to his/her choice. There are different options in both expense and income category.
- For instance, we have sub categories in income that are lottery, deposits, travel, bills, salary, savings, rental income etc.
- The important point here is that user can create his /her category according to need.
- This is a platform independent web application. User can use this application either in their mobile phones or desktops.
- Both Income and Expenses pie chart will be created when we add any item and distributed according to the user need.
- The main feature is that we have used speech recognition technique in this daily expense tracker. If any user doesn't know how to add or delete, he/she simply can give commands. For e.g.: Add rupees 10,000 in income as salary.



- The above-mentioned figure shows that user can simply add, modify and delete income and expenses according to his/her choices.
- The final result is shown in the pie chart. There will be two separate pie charts for income and expense with different colours showing the distribution of amount the user has added in the web application.

V. SECURITY

- The application is deployed on Netlify which provides it the cloud infrastructure required to process and function.
- Netlify has tie up with the most in demand cloud frameworks which are regularly audited and improvements are made on security.
- Moreover, Netlify itself provides a prerendered and static environment which leaves no possible area to attack on .
- The application once hosted or deployed is encrypted with HTTPS certificates.
- Netlify provides protection from Distributed Denial of Service attacks by using constant monitoring strategies.
- Data centres of Netlify are maintained as per the security policies.
- The traffic regulated over all the Netlify networks are TLS encrypted.
- Thus, all these abilities or security aspects of Netlify reflects on our project or the application and makes it secure and fit for its purpose without involving any risk of confidentiality for the users.

VI. CONCLUSION

Tracking your expenses daily can save your amount, but it can also help you set and work for financial goals for the future. If you know exactly where your amount is going every month, you can easily see where some cutbacks and compromises can be made and are possible. The project what we have developed works more efficient than the other available income and expense tracker. The project successfully avoids the manual calculation for avoiding calculating the income and expense per month and save time of user. The modules are developed with efficient, reliable and also in an attractive manner.

VII. FUTURE SCOPE

In the future, The Online Income and Expense Tracker application can be further enhanced to include following features:

- The application can be extended to include scanning of barcode on the price tag which decreases the effort of entering the data in the input fields.
- Group: Apart from keeping a personal log, we are planning to extend this system to incorporate a shared expense group.
- The application can be designed in a way as to create a monthly analysis and report of the user's income and expenses to provide better understanding to the user and gain control of his or her expenditure.
- A notification system can be enabled in case when the expenses cross over the income generated by the user to warn him or her about the situation.

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