Personal Expense Tracker

Abstract

This paper represents a Personal Expense Tracker is a tool that resides on a remote server and is accessible via browsers. As the name suggest Personal Expense Tracker is a web application that allows you to track the personal expense of the user and help them to better manage their resources. It creates a digital record of the income and expense of the user. It input from the user a income, source of this income and the date of earning that income and creates a transaction entry under income category sums to the total amount of income and making real time changes. The various sources of income can be added and thus the distribution of your income is also illustrated by real time functioning charts that will keep updating as per your transactions. Similarly, it will also have an expense category where you can make similar transaction about the source of your expense, amount and date. On creating such transaction a different chart for distribution of expense will also be made in real time. The web application will also be voice powered and all the functionalities can be used with voice commands. The application will be accessible and compatible to all the devices.

Introduction

The personal 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 personal 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.

We have also considered disinterest or the lack of time of users to maintain such records and thus made the web application voice powered as well making sure that there is something for each and every type of users. The application doesn't need any extended hardware or software support to run and thus a user with minimal resources can also make use of the application to make a difference into their life.

The application will prove to be a crucial utility among the families removing the fear of losing the physical records, here data is stored in the IBM cloud database and thus is never lost and stay as it is even if you open the application after a long period of time.

Problem Statement

- At the end of the month, we start to have money crisis
- Lack of proper planning of out income
- Person has to keep a log in a diary or in a computer
- All the calculations need to be done by the user
- Overload to rely on the daily entry of the expenditure

Objectives

➢ To know where the money is going.
➢ To spend only on priorities.
➢ To save money for pre-defined expenses.
➢ To plan on your future investments.

Literature Survey

Personal Expense Tracker can be accessed from a web browser, such as Google Chrome or Mozilla Firefox, allowing for a portable work environment. The application contains all the features of digitally maintaining the records with some eye-catching visual representation and graphics of your spending and even elimination the need of physical entries by provide voice instructions. This web application usually is developed using ReactJS as the framework and also uses its libraries like MUI, chart.js to add and create the functionalities.

ReactJS is a declarative, efficient and flexible JavaScript frontend library for building reusable UI components. It is a component-based front-end library and is available freely to everyone which is responsible only for how the application looks or the view layer of the application. The aim of ReactJS is to make it feasible for developers to develop User Interfaces (UI) easily by dividing it into various components and also to develop fast systems. It uses virtual DOM (JavaScript object), which enhances efficiency and the performance of the app. The JavaScript virtual DOM is faster than the conventional DOM. We can use ReactJS on both client and server-side as well as with other available frameworks. It uses component and data patterns that improve readability and helps to maintain and regulate larger apps.

Component based development allows to break the system into various components and develop them separately, test them separately and then integration them to make up the system. Also, the concept of virtual DOM improves the performance of system as the component, on which the change is make is re-rendered and the whole application is not re-rendered again.

Our application is divided into three major components that is income, expense and create transaction section. Create transaction component controls the rest of the system. It allows user to choose from two categories whether it is an Income or a Expense and also choose from list of types of income or expense and the enter the amount and date and create entry. After the creation of transaction donut, polar area, pie, radar and line charts are created in the income or expense section based on type of transaction in real time showing the distribution of your income and expense respectively.

All these features of creating and deleting transactions are also implemented by voice commanded using Speechly voice engine which is an AI powered engine providing voice recognition to implement in our system.

The application make use of advanced React concepts of context APIs and hooks. With Hooks, you can extract stateful logic from a component so it can be tested independently and reused. Hooks ensures and allow you to reuse stateful logic without changing your component

hierarchy. This makes it easy to share and use Hooks among many components or with the community.
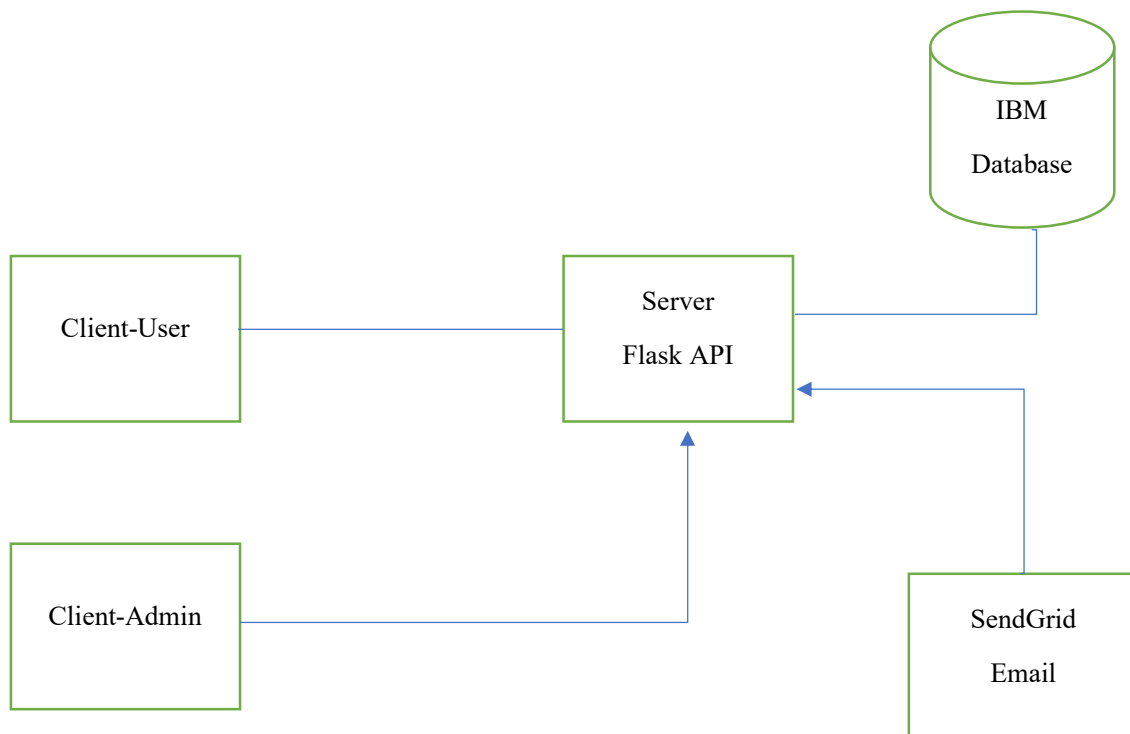
Styled components are used to style the web application and make it responsive for all the devices. Ultimately the best possible use of stack of technology is done to make sure that the user experience is unmatched and inimitable.
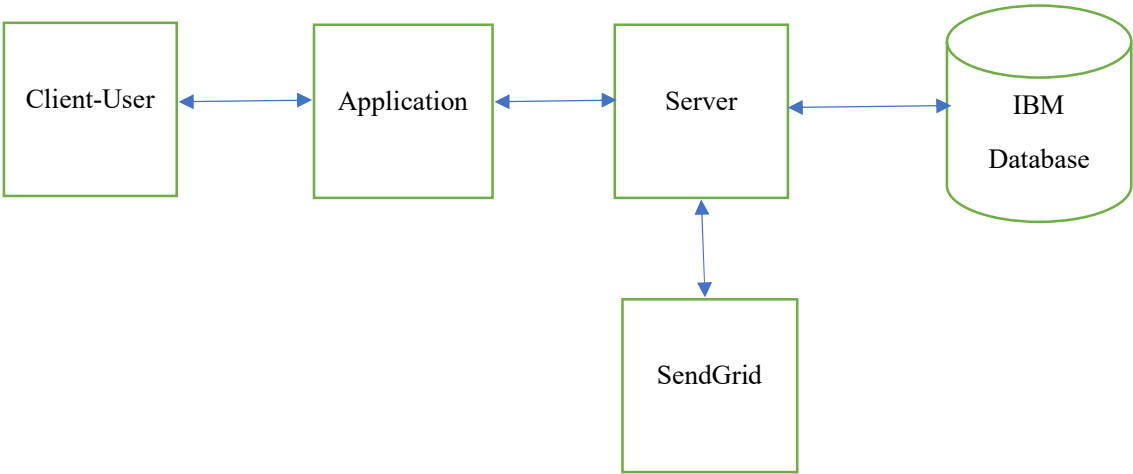
Purpose

I. No Need to Install web application: - the problem of installing web application avoided on any device. So, reducing space and time related problems.
II. Remotely Accessible: - a web-based application can be used remotely via a network connection that is platform independent.
III. Movability and Repository: - to reduce the problem of movability and repository field by using to make the concept of web-based application.
IV. Cloud Storage: - Cloud Storage allows developers to store and retrieve data from the cloud database. The data stored in cloud will not expire. This means that data will persist even if the tab or the browser window is closed.
V. 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.
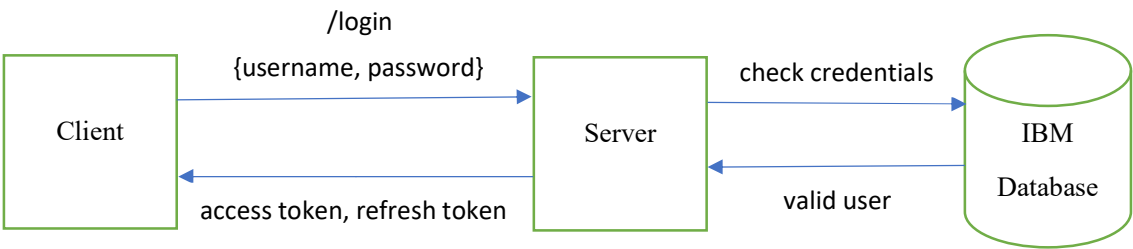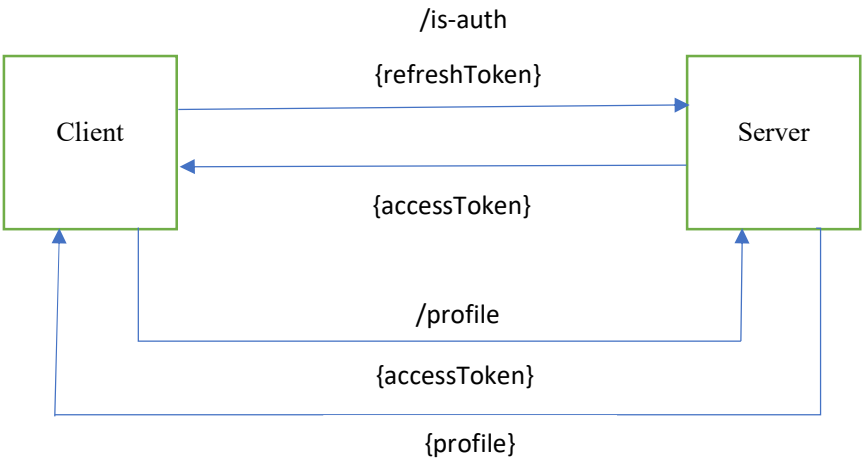
System Architecture

Overall Architecture

Client

Authentication

On New Session

Methodology Proposed

➢ 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 Expense to make an entry.
➢ The user can select any entry according to his/her choice. There are different in both Income and Expense 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 donut, polar area, pie, radar and line charts will be created when we add any item and distributed according to the user need.
➢ The main feature is that we have speech recognition technique in this Personal Expense Tracker.
➢ If any user doesn't know how to add or delete he/she simply can give commands. For example, Add rupees 10,000 in income as salary.

Functional Requirements

➢ Dashboard panel
➢ Add Bill
➢ Expense tracker
➢ Expense planner

Non-functional Requirements

➢ Usability
➢ Reliability
➢ Supportability
➢ Performance
➢ Availability

Hardware Requirements

➢ 8GB RAM
➢ Intel Core i3
➢ Laptop/Desktop/Mobile
➢ Windows/Mack/Linux OS

Software Requirements

➢ Python
➢ Flask
➢ Docker
➢ Kubernetes
➢ IBM DB2

Conclusion

Tracking your expenses 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 words more efficient than the other available income and expense tracker. The project successfully avoids the manual calculation for avoiding calculation the income and expense per month and save time of user. The modules are developed with efficient, reliable and also in an attractive manner.

References

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