# Personal Expense Tracker Application

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# Literature Survey

## Introduction:

In this Web application all the financial decisions and activities that a Finance app makes your life easier by helping you to manage your finances efficiently. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

Expense tracker is a refined system which allows user to efficiently manage his/her expenses with ease. Tracking expenses daily can really help to us save lot of money. Once we start off by tracking our expenses each day, we will be able to get a better idea where you are spending your money, so you stay in control and achieve your goal. It will be able to generate your expense and saving report as time duration you selected. There will be a reminder that will help to save money for your pre-defined expenses.

The quality of this app is that it is depicted in a way to help the students for better finance management planning so that they can manage and keep track of, analyze and optimize their budget or spendings. In this application, we are also going to collect student's data with authenticated permissions, here we will analyze and monitor their different expenses in particular category or by distinct kinds of spending that will help us to see according to market trends. The conclusion can be derived using some basic techniques such as clustering, classification and association. In this world of growing technologies everything is digitalized. With large number of money transaction and many more things done by the students related to money, it becomes difficult for the student to keep track of all the transaction and spendings. The main aim of this paper is to manage personal and group expenses of a student. Not many applications provide a variety of features within a single application. We develop an android application that keeps record of student personal expenses such as tuition, travel, hostel fee and food, etc

## Problem Statement:

A Personal Expense Tracker is a kind of digital diary that helps keep an eye on our money-related transitions. It provides all financial activities report daily, weekly, monthly and yearly. Users get notifications to record expenses and incomes that are helpful to the tracking system of the application. The user interface of the Personal Expense Tracker is straightforward and attractive, so it is easy to understand and the best way to record our financial data. All the financial decisions and activities you make cannot keep track of. This app makes your life easier by helping you to manage your finances efficiently. A personal finance app will help you with budgeting and accounting and give you helpful insights about financial management.

## Existing System:

In simple words, personal finance entails all the financial decisions and activities that a Finance app makes your life easier by helping you to manage your finances efficiently. A personal finance app will not only help you with budgeting and accounting but also give you helpful insights about money management.

This application will ask users to add their expenses and based on their expense's wallet balance will be updated which will be visible to the user.  Also, users can get an analysis of their expenditure in graphical forms. This web application has the following:

An exhaustive literature survey on related topics suggests that earlier tracking was performed manually. These things were done in an old school way you can say more likely in a notebook or copybook these things were written as per the willingness of a person in simple words you can call it as "The quiet manually stuff". Then after that they have calculated the entire expenditure at the end of the month or week and a report is generated against the expenditure in comparison to the previous month or information related to that.

So, they face a certain problem that time:
- Data is not accurate
- Reports in not up to the mark
- A single mistake in a manual calculation and actually cost you much
- It's time consuming boring and most of the time insufficient

- Going through all the data back then rewriting them off actually makes way fussier

**User Registration and Creation:**

This application like the vast majority of the applications will have user login screen and alternatives for enlistment. The user should enlist in this application when the person in question is utilizing for first time. Nonetheless, the client who is now enlisted can login to the application utilizing their login accreditations that are made by the user at the hour of enrolment.

**Adding Income and Expenses:**

This application will provide to choose the categories or type of income or expenses. Every user of the application has to the options to add incomes and expenses
accordingly. Each record should have details date of occurrence of item, details of items
etc.

**Category Master:**

This module fundamentally relies upon the SQL Lite for putting away classification details and expense subtleties and income.

**Remainder:**

The Rest of is a caution generator module, for user recognition the alert/ready will review the user to add the Income or Expenses at day by day or Certain Period bases on user need.

This web application has an option to set a limit for the amount to be used for that particular month if the limit is exceeded the user will be notified with an email alert. If you exceed daily expense allowed amount it will give you a warning, so that you don't spend much and that specific day. If you spend less money than the daily expense allowed amount, the money left after spending is added into user's savings. The application generates report of the expenses of each end of the month. The amount saved can be used for celebrating festivals, Birthdays or Anniversary.

In this Existing System, when the user get his/her salary he/she can add that into daily expense manager. Then after adding his/her salary details user can expense manager stores all the details. If the user want's all the detail of credit and debit he/she

can get it through the Expense Tracker. Notification Manager also reminds about credit and debit details after the salary is updated.

Daily 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 eliminating the need of physical entries by providing voice instructions.

This web application usually is developed using React Js as the framework and also uses its libraries like material Ui, 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 components and data patterns that improve readability and helps to maintain and regulate larger apps. Component based development allows us to break the system into various components and develop them separately, test them separately and then integrate them to make up the system. Also, the concept of virtual DOM improves the performance of the system as the component on which the change is made is re rendered and the whole application is not re rendered again. Our application is divided into three major components that are income, expense and create transaction section.

The transaction component controls the rest of the system. It allows users to choose from two categories whether it is an Expense or an Income and also choose from a list of types of income or expense, enter the amount and date and create an entry. After the creation of a transaction pie charts are created in the income or expense section based on the type of transaction in real time showing the distribution of your income and expense respectively.

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 a stack of technology is done to make sure that the user experience is unmatched and inimitable.

## Proposed System:

Users are provided with three data entry options: Income, expenses and Wish List. If you select income or payment, you will be supplied with its types and subtypes. For the wish list, only items can be inserted. This information would be saved into the database by their particular classification. The saved data can later be changed if the user needs to do as such. Altering here means adding descriptions, changing wish lists, updating data etc. Users can also view the result. They can also filter to see the required content only.

The User have to provide the input manually or with the help of your speech. The moment you fill in the input manually and click the "CREATE" button or the moment you provide your voice command, the app stores the data with the help of context that makes your app faster and the information is easily flowed between the various components of the app. Then the information is populated in a list which if displayed just below the input form. The list holds all the transaction be it any expenditure or income for your reference so that any time you want to have a look at your previous activities you could easily have it.

As soon as the user logs in with their credentials they can add there income and expenses either manually are using the voice command which will be implemented in our web application.

All these features of creating and deleting transactions are also implemented by voice commands using Speechly voice engine which is an AI powered engine providing voice recognition to implement in our system. The application makes 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 ensure and allow you to reuse stateful logic without changing your component hierarchy.

**Module Description:**

Modularization consists of well-defined manageable units with well-defined interfaces among the teams.

A desirable property of modular systems includes the following:
- Each module is a well-defined sub-system.
- Single, well–defined purpose of each module.
- Modules can be separately compiled and stored in a library.
- Modules can use another module.
- Modules should be easier to use than to build.
- Modules should be more straightforward from the outside than from the inside.

The project can be decomposed into the following modules:
- **Welcome module:**
    This module is the starting page of this application.
- **Main window module:**
    This module is responsible for inputting and storing the data in the database.
- **Add amount:**
    This module enables users to add the amount to the database.
- **Delete expense:**
    This module is responsible for deleting the previous 20 days' costs.
- **View Expense:**
    This module is responsible for viewing all the expenses in detail added to the log by the user earlier.
- **Add Module:**
    This module is responsible for editing the pre-defined category.
- **Categories module:**
    This module is responsible for various options. This app allows users to select multiple basic expense categories according to their choice.
- **Search module:**

This module is responsible for adding notes and dates to the user's expenditure.

## Future Enhancement:

In the future, we have planned to add some more additional features which are listed below:

- Multiple account support.
- Include currency converter.
- Bill split.
- Generation of the report in category-wise format.

Hence, this application can be treated as version-1 and later we will update and add new feature to it accordingly. Once the user gets familiar with the settings of the application, then we can update it to version-2. Our future work will be to merge this application with credit/debit or any of the smart card and will keep the record of each and every credit and debit. It will update the details automatically and we will be able to monitor our spending easily.

## Problem Formulation:

The problem of current generation population is that they can't remember where all of the money they earned have gone and ultimately have to live while sustaining the little money
they have left for their essential needs. In this time there is no such perfect solution which helps a person to track their daily expenditure easily and efficiently and notify them about the money shortage they have. For doing so they have to maintain long ledger's or computer logs to maintain such data and the calculation is done manually by the user, which may generate error leading to losses. Not having a complete tracking system, generates a regular need of entering daily data of the expenditure and total estimation till the end of month.

The purpose of this tool is to:
- Keep tracking daily expenses and Budgeting.
- Save money for necessary expenses which in return will help to plan the future investments.

**Feasibility Analysis:**

**Technical Feasibility**:

This analysis focuses on the technical resources which available to use. It helps in determining whether the technical team is capable of converting the ideas into working models. It also evaluates the hardware, software and other technological requirements of the designed system.

**Operational Feasibility:**

This analysis has a simple User-Interface. Anyone with basic knowledge of Android device can use Expense Tracker. It takes few seconds (approx. 2 sec) to take you from home screen to front page. With a click data can be entered.

**Economic Feasibility:**

The only cost for building this is for printing and binding report files and system uses cost. In Addition to this, effort and time by every team member is also involved for this project. Also, the user doesn't need to pay any amount to use this app. Just install and use the application. And hence, it is economically feasible for anyone with the application.

**Conclusion:**

After making this application we assure that this application will help its users to manage the cost of their daily expenditure. It will guide them and aware them about their daily expenses. It will prove to be helpful for the people who are frustrated with their daily budget management, irritated because of amount of expenses and wishes to manage money and to preserve the record of their daily cost which may be useful to change their way of spending money. In short, this application will help its users to overcome the wastage of money.

So basically, the student can include this application in his/her daily routine by this he can be disciplined about his expenses and get better and better at saving, and utilise the money on learning new skills or buying presents for parents etc. They will also focus

on earning money and making new sources of money in turn getting better future ahead. This application will also help in analyzing the monthly expenditure.

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