

Expense Tracker

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Abstract

Expense Tracker is a web application through which users can maintain their expenses on the machine efficiently instead of making a paper diary. It is an efficient way of managing one's expenses without the need of manual calculations. It provides various categories for income and expenses like clothes, food, movies, investment, rent, salary, business and many more. There is a reminder feature which will give an alerting notification if the user has exceeded the limit set for maximum expense. It will also provide a monthly report to the individuals that will help to keep the record. This report will be calculated based on the user's daily input about their expenses and income. So, by using this web application one will get a clear idea about his expenditure and can think about savings that will be helpful in an emergency situation.

Key Words: Expense Tracker, Income, MERN stack, Expense

1. INTRODUCTION

In the world of innovative technologies almost all are attracted towards automation and application development. Most of the people are earning more but on the other hand they are spending it in a similar way. Sometimes it happens that they forget about how much spending they have done on that particular day may be due to some workload etc. To avoid and tackle such a hectic and boring task which is very time consuming, people started maintaining manual diaries, notes, sheets on computers in which they make entry of expenses they spend on each day for calculating overall expense and savings they are left with at the end of month.

To ease this process, the user can make use of such expense trackers that are developed specially to maintain such expenses.

Our web application named 'Expense tracker' is based on MERN (MongoDb, Express, React and Node) technology that is one of the most emerging technologies today, which will track the user's expenses and income in no time. It also has a reminder feature which will give alerting notification if the user has exceeded the limit set for maximum expense. Lastly, based on data entered by the user our web application will automatically generate a monthly report in the form of graphical representation.

1.1 EXISTING SYSTEM

Traditional system was based on maintaining log diaries and required the effort of manual calculations leading to a hectic task. This would result in inaccurate data, manual errors and wastage of time.

The existing system stores the data in excel sheets or csv files instead of paper logs in which the user has to eventually add the data and do the manual calculations to keep the track of records.

1.2 AIM AND OBJECTIVES

The principle objective for developing our web based Expense Tracker are given as follows:

- ❖ Keep track of the user's daily expenses.
- ❖ Decreases manual calculations of users.
- ❖ Prevent wastage of money.
- ❖ Creates awareness on spending for required things.
- ❖ User friendly and efficient to use

1.3 LITERATURE REVIEW

We have analysed many research papers related to expense tracker application in the view to fulfil new requirements necessary for developing our project.

S. Chandini, T.Poojitha, D.Ranjith, V.J. Mohammed Akram, M.S. Vani, V. Rajyalakshmi [1] In this paper the authors have developed an expense tracker using PHP technology where the users are allowed to add bills for calculating expenses based on the report that gets generated and sends reminders via email. Weekly or monthly History of expenses can be provided.

Atiya Kazi, Praphulla S. Kherade, Raj S. Vilankar, Parag M. Sawant [2] In this paper the authors have stated that they have used Android studio, SQLite, Angular 8 to build their android application; they have provided types and subtypes for income and expense which can be selected manually. This system cannot send reminders automatically also various category options needed to add which have been implemented by our project.

Velmurugan.R, Mrs.P.Usha [3] In this paper the authors proposed an expense tracker using Android studio, Java, XML, MySQL for developing their application and provided many different categories for expense and generated reports . Also they have provided expense history as a new feature. This system cannot set reminders if expenses cross the limit. So here a reminder feature can be added.

Prof Miriam Thomas, Lekshmi P, and Dr. Mahalekshmi T [4] In this paper the authors have stated in their article that they have used NetBeans, Dreamweaver, MySQL for building their web application. In this there are three logins- Admin, Manager, staff and made use of data mining and least square algorithm. For data mining and prediction, the system takes more time. This system is not time efficient.

Muskaan Sharma , Ayush Bansal , Dr. Raju Ranjan, Shivam Sethi [5] In this paper the authors have given in their article that for developing their application they have used Python, MySQL. These databases are stored in .config files and also feature the expense of the previous month in the form of graphical representation. This system is for a limited expense group. Scope will be providing shared expenses.

Gupta, Hrithik, Anant Prakash Singh, Navneet Kumar, and J. Angelin Blessy.[6] In this paper the authors have given in their article that they have developed a GUI based windows application using Java ,MYSQL.In future scope record of backup details can be maintained.

Manchanda, Angad.[7] In this paper the authors have given in their article that they have designed their interface using custom art elements. Implementation is under IOS SDK functionality.It is an android based application with operating systems such as symbian ,IOS,RIM. Also web applications developed using HTML,CSS for windows ,linux.

Thanapal, P., Mohammed Yaseen Patel, TP Lokesh Raj, and J. Satheesh Kumar.[8] In this paper the authors have developed an application with some features like ADD income, ADD categories, Export income(date reminder) , remove export files(removes remainder).

Jadhav, Nidhi Jitendra, Rutuja Vijay Chakor, Trupti Mahesh Gunjal, and Damayanti D. Pawar.[9] In this paper the authors

have developed a mobile application. They have included a database layer(holds data and financial information,programme.Users are provided with various categories and modes for payment.

Singh, Uday Pratap[10] In this author have given in their article that they have developed a GUI based windows application but is supported by android too.They have used Java, MYSQL workbench as methodology.In further work they can add mails and pay mode.They have feature of calender which will help to track date month year of input for expenses.

Sharma, Shobhit, and Parth Verma[11]. In this paper the authors have developed Voice Based User Expense Tracker by using JavaScript, ReactJs and JSX. By using Voice controlling features one can add or delete records. Voice activation features make it easy to handicap people.

Velmurugan, A., J. Albert Mayan, P. Niranjana, and Richard Francis[12] In this paper the author has created an expense manager that keeps track of all daily transactions, suggests the best investments option and keeps track of your money lent or borrowed. Technology used java, kotlin, Sqlite and figma designing tools.

2. PROPOSED SYSTEM

The proposed system is developed in such a way that users must gain compatibility while using. It helps users by providing a digital automated diary.

Our system helps users to calculate their balance by simply knowing their income and expenditure.

As the individual opens the web application 'Expense Tracker', each user needs to register themselves on the system by giving some personal inputs like name, mail id at the time of registration.

- The user can access the expense tracker with ease, wherein the add categories option will be displayed for user convenience.
- Our web application Expense Tracker provides a variety of options for the user thus enabling an user friendly UI.
- The options for expenses include - travel, food, education, clothes, rent, grocery, maintenance bills, consulting fees, medicines, miscellaneous.
- Income options consist of - salary, investment, rent received, business incomes, interests received, miscellaneous.
- Next the user has to choose as to Add Income and Add Expense, using which the balance gets generated.
- If balance exceeds the target limit, it will send a reminder to that particular user to curb his/her expenses.

Also a monthly report will be generated that would help the user to keep a record for future use. The monthly report generated will also be provided in graphical representation.

2.1 MODULES

- **Add Category:** In this module users can add the categories. Every expense and income is stored under the categories.
- **Add Expenses & Income:** This module helps the user to add the daily expenses and incomes as per his convenience by providing a variety of option categories.
- **Transaction:** This module helps in generating the balance once expense and income has been added.
- **Set Reminder:** It helps the user by sending a reminder if the target expense limit is exceeded.
- **Report:** At the end of the month users can download a report of expense details that would help them to keep track of record.

2.2 UML DIAGRAMS

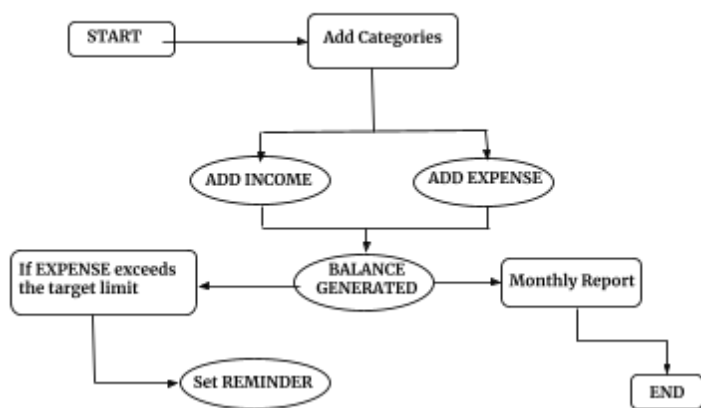


Fig 1 : Flowchart of the web application

3. METHODOLOGY USED

Our web application 'Expense Tracker' project is developed by using MERN stack technology.

- **MongoDb:** It is a NoSQL Database program. It also makes use of JSON documents. It is used to manage databases.
- **Express.js:** It builds single page, multi page web applications and is used for backend frameworks.
- **React.js:** It is open source javascript library used prominently for frontend to build user interfaces. In this, less code is required to build web application.
- **Node.js:** It is an open source runtime environment for developing server side application. It is also a JavaScript web server. It is efficient for real time applications.
- **RTK query:** It is a data fetching and client-side caching tool; designed for loading data in web applications.

- **Tailwind Css:** It provides the ability to customise design for frontend which also includes spacing size, styling, colour, and it also provides small sized files.
- **Redux toolkit:** Redux is a javascript library used for managing application state.
- **usestyles:** It is a library in react for solving recurring problems. By using different styles it gives a clean interface.

4. CONCLUSION

Expense Tracker is developed to ease the process of manual calculations with the help of new technology that is MERN stack. By using such web applications one can try to overcome their financial crisis which arises due to many reasons. One of them can be unnecessary spendings. The salary amount leftover throughout those spending can work as a savings which will be helpful in any emergency situation or for an auspicious occasion. Basically, we can say that manual calculation can be avoided and for that matter usage of paper can be reduced which will result as a small contribution towards saving trees.

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