# International Journal of Research Publication and Reviews

# Expense Tracking System with Data Visualization

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**ABSTRACT—**

The purpose of the online application "Expense Tracker" is to make managing everyday spending easier, more organized, and efficient. By eliminating the need for tedious manual computations while recording daily expenses, this program gives users a useful tool for efficiently managing and keeping an eye on their money. By entering their revenue, users can enable the application to compute their daily spending total, with the results being saved for each unique user. This application's capacity to estimate managers' income and expenses using data mining is one of its standout features. The Least Square Algorithm is used by the system to analyse past data and produce projections, providing insightful information for financial planning.

Three separate roles—administrator, manager, and staff—are integrated into the application's secure login system. Admin powers provide you access to extensive custom reports and the power to create, amend, and remove managers and employees. Conversely, managers have the ability to create reports, add and validate spending kinds, and add and validate income types. Employees are able to add to, change, and submit computations, income, and costs for validation.

**Keywords:** Least Square Algorithm, Prediction, Daily Expense and Income

Keywords— *EXPENSE TRACKING WITH DATA VISUALIZE WEBSITE (FIREFOX, HTML, CSS, DATA VISUALIZE FORMAT)*

## Introduction

The Daily Expense Tracker System is designed to keep tabs on the day-to-day financial operations of a business while differentiating between income and expenses. It distributes money according to daily spending and, should the day's expenses surpass the predetermined threshold, recalculates the daily permissible expense amount. Every month, the system produces reports that show the income-expenditure graph. Managers receive reports from employees for validation, and managers then send the completed reports to administrators. The system forecasts future month's spending using this data, helping with total revenue and expense control.

To expedite the processing, payment, and auditing of employee- initiated charges, businesses use expense management software. By facilitating expense input and approval using forms, this program reduces administrative responsibilities and does away with paper trails. Administrators are able to monitor and manage spending as they have complete insight into how staff members utilize financial resources. The program analyses total expenses, finds areas for cost reduction, and assists in reining in excessive spending.

"Expense Tracker" is designed to improve day-to-day expense management by eliminating manual computations and provide an organized method of monitoring expenses. The application calculates daily expenses based on the information users enter about their income and stores the results for each user. The program has data mining features that allow managers to forecast their earnings and outlays.

Budgeting and expense tracking play pivotal roles in efficiently managing business expenses. The expense tracking feature brings several advantages to organizations, particularly in managing employee-initiated expenses.

## Literature Survey

Expense Tracker Application -A robust and user-friendly Android software called Expense Tracker enables users to keep a digital journal of their daily expenditures. Users may better comprehend their spending because to the feature's category-wise distribution, which makes it simpler for them to stick to their budget. For a more thorough investigation of spending patterns, the application provides monthly reports with a graphical representation of expenses and categorises them. Moreover, Expense Tracker offers an expense history so customers may analyse previous expenses at any time. Overall, using this simple application will help you keep track of your spending, manage your money effectively, and make wise financial decisions.[1]

Expense: A smart Approach to Track Everyday Expense – An innovative Android app called Expense simplifies the process of keeping track of spending. Users can scan their bills or receipts instead of utilising traditional methods like pen and paper, and the application will automatically extract

the data needed for processing. By recording SMS messages from the user's savings accounts, Expense also keeps tabs on their income. The tool gives customers a detailed picture of their financial situation on a monthly and annual basis by accounting for both income and expenses. Overall, Expense is an intelligent and automated cost monitoring tool that makes the process simple and empowers users to make wise financial

## System Design

*A.User Interface (UI):*

LOGIN WITH DETAILS:

User

 System to accurately interpret these commands of user

Visual Feedback:

Provide visual cues on the website interface to confirm user commands. This can include highlighting selected items, displaying expense summaries, and using animations to signify actions.

*B. Dashboard:*

Categorization:

Group menu items logically into categories (weekly, monthly, yearly).

Allow users to navigate through categories using expense outcome

*C.Expense Set Management:*

Daily Interaction:

Allow users to add, remove, and review items in their cart using voice commands like "Add Budget".

Provide confirmation of each action.

Order Confirmation:

Confirm the order with a prompt before finalizing the purchase.

*D.Data visualize of every step of data*

Integration:

Integrate a reliable voice recognition API (such as Google Cloud Speech-to-Text, Microsoft Azure Speech, or other similar services).

Implement error handling for misinterpretations and ambiguous commands.

*E.Error Handling:*

Clearly communicate errors or uncertainties in voice commands.

Provide suggestions or alternatives when the system encounters a potential misinterpretation.

F. *User Authentication:*

Account Creation/Login:

Allow users to create accounts or log in using voice commands or a combination of voice and traditional methods.

Ensure secure authentication and data handling.

*G.Notification System:*

Order Status Updates:

Implement a notification system to update users on the status of their orders.

Use both visual indicators on the website and voice prompts to notify users of order confirmations, delays, or completions.

*H.Accessibility:*

Compatibility:

Ensure the website is accessible to users with disabilities by incorporating voice commands and alternative navigation options.

Follow accessibility standards (WCAG) to make the website inclusive.

*J.Testing:*

User Testing:

Conduct extensive testing with real users to identify usability issues.

Test the voice recognition system with users from different demographics to ensure inclusivity.

*K.Scalability and Performance:*

Backend Infrastructure:

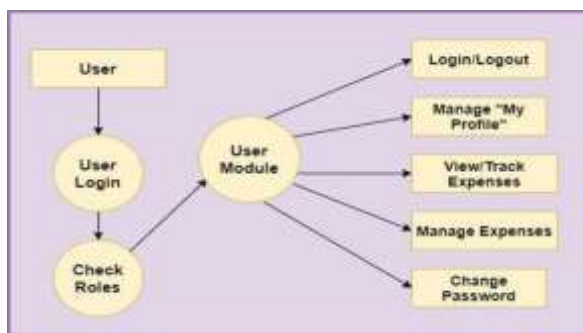Design a scalable backend infrastructure that can handle varying levels of user activity, especially during peak times.

Optimize database queries and server responses to ensure quick and efficient processing
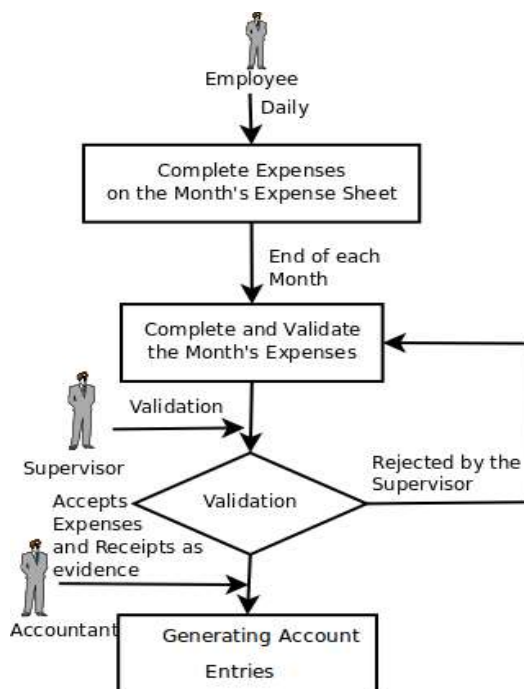
Performance Optimization:

Optimize the website's performance for fast response times.

Regularly monitor and optimize both front-end and back-end components to provide a seamless user experience.

WORKING



USER WORKFLOW



## RESULTS OF DATA FEED

The majority of the shortcomings of the previous system have been addressed by the new one, which operates in accordance with the provided design specification. Our designed project operates at a higher efficiency than conventional income and expense trackers. The project successfully eschews

performing the monthly income and spending calculations by hand. The modules are designed in a way that is both appealing and efficient. The created systems solve the issue and satisfy the requirements by offering accurate and thorough information. The system has satisfied every need that the user expressed. The recently created system updates and processes all the details instantly and requires minimal processing time. Any user will become accustomed to using the screen because it is very user-friendly and offers online help massages. Because of their extreme flexibility, modules may readily accommodate any failure need without causing significant issues. The top companies have a system in place for tracking and making these reimbursements. This best practise ensures that the costs are tracked promptly, correctly, and in compliance with copyright. From a business standpoint, prompt payment of these costs when properly tracked will undoubtedly raise employee morale. 1) Determine the Profitability of the Business Quickly 2) Effective reporting and tracking of expenses with data visualize.
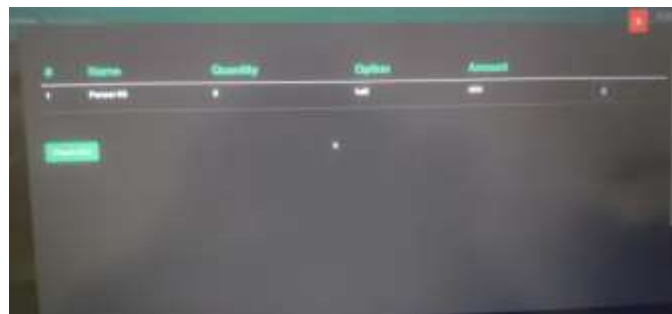
DASHBOARD



Dashboard component



Feed of data 1



Individual details



Login page

Sign-Up page

## VI. CONCLUSION

Useful for those who want to manage their money but unhappy with the everyday budgeting process.

Maintain the daily expense log to prevent financial waste.

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