

Finsave: Expense Administrator AI Based Expense Management System

Smita S. Wagh

Department of computer Engineering
JSPM's Jayawantrao Sawant College of
Engineering, Pune, India

Sakshi Namdev Kore

Department of computer Engineering
JSPM's Jayawantrao Sawant College of
Engineering, Pune, India

Yogeshwari Pralhad Shahir

Department of computer Engineering,
JSPM's Jayawantrao Sawant College of
Engineering, Pune, India

Onkar Karbhari Tayde

Department of computer Engineering
JSPM's Jayawantrao Sawant College of
Engineering, Pune, India

Karan Sanjay Chaughule

Department of computer Engineering
JSPM's Jayawantrao Sawant College of
Engineering, Pune, India

Abstract:- Expense management software simplifies and automates the process of tracking and reconciling expenses, reducing paperwork, and minimizing errors. Many people today, particularly millennials, tend to prioritize spending over saving. However, when it comes to making important investments, such as buying a house or a car, the importance of saving money becomes clear. Effective management of expenses is crucial for both individuals and organizations to achieve their financial goals. Unfortunately, a lack of expense management software can make this process difficult and frustrating.

Keywords:- Expenses, segregation, graphs, analytics, open authorisation, Cloud services, web application, open authorization, Clustering, report etc.

INTRODUCTION

An AI-based expense tracker assists users in creating budgets, tracking expenses, and saving money automatically. It provides intelligent advice and recommendations on how to save money. The application includes features such as salary advances, savings accounts, cash back rewards, and expense management tips. The user interface and user experience are easy to understand and navigate. To provide smart suggestions and recommendations as an AI financial assistant, this application "synchronizes" with the user's accounts and analyses their spending patterns. Once enough information and details about accounts and expenditures have been collected, it will automatically recommend the most suitable methods for decreasing expenses and efficiently saving money.

In this architecture, data input is received from various sources, and then it is stored in a secure location such as a database or cloud storage. The data is then processed using machine learning algorithms to extract relevant information, such as identifying patterns, detecting fraud, and categorizing expenses. The processed data is then presented to the users through a user interface, where they can view reports, visualizations, and receive alerts. The system also includes business logic, which handles all the business rules,

validations, and calculations, as well as security measures to protect the data from unauthorized access.

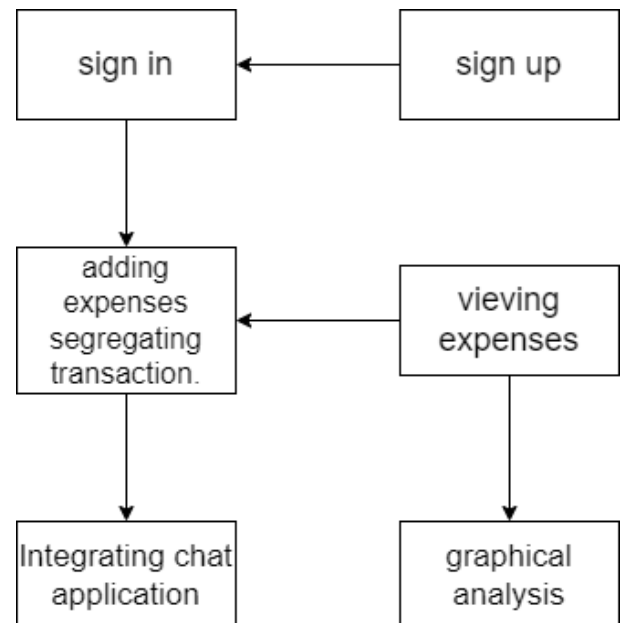


Fig. Basic model of application

Data Input:

This component is responsible for capturing and inputting expense data into the system. This can be done through various methods such as manual entry, integration with existing systems (e.g., accounting software), or through the use of optical character recognition (OCR) to scan receipts.

Data Storage:

Once the data has been inputted, it needs to be stored in a secure and accessible location. This can be done through the use of databases or cloud storage solutions.

Data Processing:

The system uses machine learning algorithms to analyse the expense data and extract relevant information. This can include identifying patterns, detecting fraud, and categorizing expenses.

Data Output:

The final component is responsible for presenting the processed data in a meaningful and actionable way. This can be done through reports, visualizations, and alerts.

User Interface:

A user interface is provided to interact with the system. User can input their expense data and also can see their expense report and notifications.

Database:

This component stores the data in a structured format for easy retrieval and analysis.

Cloud Services:

This component allows the system to be accessed and used from anywhere with an internet connection, and provides scalability and reliability.

Security:

This component ensures that the system is secure and that data is protected from unauthorized access.

LITERATURE SURVEY

There have been various methods for tracking expenses over time, both traditional and technological. In the past, people would write down their expenses in a register to calculate their profits or savings. Today, there are many different software options available, both on desktop and mobile devices. Some early examples include Quicken and Microsoft Money. More recent options include apps like Personal Capital and Dollar Bird, which allow users to visualize their spending through graphs and calendar systems

[Expense Tracker -A Smart Approach to Track Everyday Expense, 4809] by "Hrithik Gupta and team," they created a daily expense management system intended to keep track of the daily expenses of employees effortlessly and efficiently through a computerized system that eliminates paperwork and maintains records in an organized manner. [Analytical expense management system,] by "Zeki Bozkus and team," they collect information related to the expenses and may propose aggregation of figures. Result is close to what excel sheet provides.

[system ,1934-7197] by "Dr. Geetha and team". this application also eliminates the paper work and systematically maintains information. They had categories in expense tracker such as add expenses, monthly expenses, add new expenses. It also has daily reminder about savings

For small business owners, there are also specialized options like "QuickBooks". Among the newer apps in this category, You Need a Budget that stands out for its ability to automatically track expenses through bank accounts and credit cards, and its ability to help users plan for future costs. Additionally, this app is mobile-friendly, and it has been

around since 2013. it also has embedded AI technology to help manage and define daily expenses.

However, this app does not provide detailed information about external costs, but it receives that information through a window application via text.

The goal of this project is to create a web application for tracking expenses, with the aim of making it as convenient as possible for users. Many people struggle to keep track of their personal expenses, often not knowing where their money is going. In the past, people have used various methods to track their expenses, such as sticky notes or spreadsheets. However, these methods can be inconsistent and prone to errors.

The goal of this mobile application is to provide a more efficient and user-friendly solution for tracking expenses. The app will be designed to be easy to use, capable of recording expenses and providing a clear overview of spending. Additionally, the app will have an intelligent feature that can show the history of expenses recorded in the app.

PROPOSED SYSTEM

The proposed system we are going to add additional features such as integrating image attachment from the gallery and a chatting feature. "Users will also be able to login easily using social login options like OAuth." The system will have an image view feature to view expenses and receivables, making it easy for users to track their expenses. A budget calculation feature is also included, which will send notifications to the users if they exceed their expenditure for the month or day. Users will also be able to enter their receivables in the system. The system will have a feature to view the expenses list which the user has entered earlier. If the user spends too much on a particular item, the system will send a notification with recommendations on how to reduce expenditure on that item. We have successfully developed a system that allows expense management functionality. The system comprises of several key components including a robust database, a user- friendly desktop web application, and an intuitive user interface.

This Expense Tracker is a web-based application that can be accessed at any time, it has a two-tier architecture.

The database tier will store all financial data and the user interface will enable user to interact with the system and store information in the database. The system will identify the transactions made through messaging apps, and it will provide various categories for the user to select from including transaction type and mode of payment. The system will also analyse the data, giving insights on where the user spent most of their money. Additionally, the user interface will allow the user to store and view past expenses in various categories.

A. Database

When the data has been inputted, it needs to be stored in a secure and accessible location. This can be done with databases or cloud storage solutions. This component stores the data in a structured format for easy retrieval and analysis.

B. Applications

The application is designed to be intuitive and user-friendly, providing a seamless experience for users. This allows for quick and easy access to all the necessary information and functions, saving time and reducing the learning curve for new users.

Overall, this system is designed to be highly efficient, secure, and user-friendly, making it the perfect solution for any organization or individual that needs to work with expense system. We look forward to providing you with the necessary tools to take your productivity and efficiency to the next level.

C. System Design

System design is the process of defining architecture, modules, interfaces, and data for a system to meet specific needs. The design of a system can be perceived as the use of systems theory in the creation of a product.

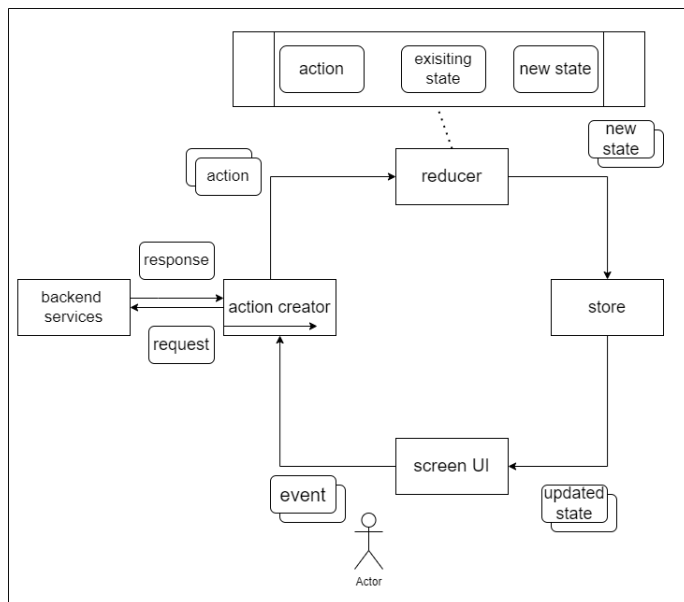


Fig: - Architecture Diagram

MODULES

1. User Registration/Creation:

The user registration/creation feature of this application is similar to most other applications. The user will be presented with a login screen and an option to register. First-time users are required to register before they can access the application. However, users who have already registered can log in using their previously created login credentials. The application utilizes Firebase for authentication purposes.

2. OAUTH (Open Authorization) Social Login:

This module allows for social login functionality, where users can log in to their accounts using various social media platforms. Specifically, the application has been integrated with Google, Facebook, and Twitter logins, allowing users to easily access the mobile application through their existing social media accounts.

3. All Expenses Details:

This feature of the application allows users to view all their expense and income records by selecting a date range. Users can choose a from-date and to-date, giving them a comprehensive overview of their expenses and income for a specified period.

4. Reports and insights:

The AI-based expense monitoring software will categorize all financial outflows and transactions, and generate detailed reports. With this application, users will have access to intelligent insights and can take appropriate actions based on that information.

5. Admin dashboard:

The system provides teams and administrators with the capability to oversee users, review transactions, track revenue and conduct all necessary tasks through a centralized dashboard.

6. Financial knowledge:

Added feature that shows some articles, news, videos, statistics, etc about financial management and controlling expenses. This will not only improve engagement on the application, and also help users significantly.

ANALYSIS

RESULT

This tool will help organizations track and record financial expenses. It provides insight into spending patterns and helps identify areas of unnecessary expenditure. This can aid in budget planning and management, ensuring compliance with financial regulations and company policies. Additionally, it streamlines the reimbursement process for employees, improving the efficiency and accuracy of financial reporting. With a centralized platform for managing and approving expense claims, it supports the decision-making process through real-time data and analytics. This improves the transparency and accountability of financial operations, enhancing the overall financial management and control of the organization.

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CONCLUSION AND FUTURE WORK

Tracking your expenses on a daily basis can not only help you save money, but also assist you in setting and achieving financial goals for the future. By knowing exactly where your money is going each month, you can identify areas where cutbacks can be made. The project that we have developed is more efficient than other existing income and expense tracking tools. It eliminates the need for manual calculations, saving users time. The modules are designed to be efficient, reliable, and user-friendly. The application will be free, open-source software that can be used for managing personal or organizational finances. With the help of artificial intelligence, it can streamline the process of submitting, processing, auditing, and reimbursing expenses. It also generates insights and provides advice on savings.

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