INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY RESEARCH
IN SCIENCE, ENGINEERING AND TECHNOLOGY

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

Impact Factor: 7.521

Expense Tracker: A Web App to Keep Track of our Expenses

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ABSTRACT: Expense- Tracker is a web app. It helps people handle money we-ll. In today's world, money matters are complicated. This app makes it easy to monitor how much money you have and where you're spending it. It gives you the information you need to be smart with your money. This project addresses the problems of handwritten financial tracking and separate apps. It has feature-s like user sign up, safe sign in, organizing data, good data pull and interactive bar charts for data. This app is good for handling personal money, small businesses, tracking joint expenses, and learning about finances. By making it accessible, safe, and visually appealing, the Expense Tracker Web app intends to improve how well you handle your money and helps you to take charge of your financial destiny.

KEYWORDS: finance, expense, income, management

I. INTRODUCTION

The objective of this project is to develop an Expense Tracker Web Application to assist users in managing their finances by tracking income and expenses. The application aims to provide a user-friendly platform for users to record, categorize, and visualize their financial data effectively. The Expense Tracker Web Application is designed to address the challenges individuals face in managing their personal finances. It offers a digital solution to help users keep track of their income and expenses, make informed financial decisions, and improve their financial well-being. The project's scope encompasses the development of a web-based application with the following key components: User registration and authentication for secure access. Adding income and expense entries with categories, amounts, and dates. Viewing and managing recorded income and expense data. Generating bar charts to visualize financial trends over specified date ranges

II. APPLICATIONS

The Expense Tracker Web Application finds its application in various scenarios, including: Personal Finance Management: Individuals can use the application to maintain a clear record of their financial transactions, helping them budget effectively and save money. Small Business Finance: Small businesses can utilize the application to track income and expenses, aiding in financial planning and tax reporting.

Shared Expense Tracking: Roommates, family members, or group members can manage shared expenses, ensuring equitable distribution of financial responsibilities.

Educational Purposes: Educational institutions can use the project to teach financial management and budgeting.

III. RELATED WORKS

Sumit Yadav et al. [1] Connected mobile apps enable transactions in today's tech-savvy banking environment, capturing information through synchronized SMS. App Crawler technologies make it easier to extract and analyze financial data. In response to this development, our article suggests a novel tool for managing expenses. By comparing
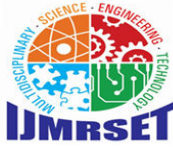
earnings and expenses to predetermined boundaries, it methodically keeps an eye on users' finances and uses AI to provide tailored recommendations. Through visuals and layouts, the user-friendly interface improves financial comprehension. Our AI-powered automated process offers adaptable recommendation modifications according to customer preferences and past spending patterns.

Era Johri et al [2] In the current technological era, while conducting any type of financial transaction, numerous mobile applications connect with one another. The users' mobile devices, which are synchronized with these applications, receive an SMS informing them of these transactions, which is documented. It is now simpler to extract and manipulate financial transaction data for analysis purposes using the App Crawler tools. The need for skilled programs that can handle these contemporary financial dynamics has been highlighted by this change. The focus has shifted to creative expense tracking solutions that make use of technology in response to this shifting environment. In this research, we present an app for a cost management system that allows users to systematically track their financial

Shahed Anzarus Sabab et al. [3] eExpense, an Android app streamlining expense tracking. Users scan bills using the app, which extracts and stores relevant information for processing. The eExpense app also monitors income from SMS notifications, providing monthly and yearly balance calculations. A smart and efficient solution for effortless expense management.

Xin-Tong Koo et al. [4] This study uses Tesseract OCR (version 5) with LSTM to create an easy-to-use mobile app for tracking spending. It does this by extracting expenses from receipts seamlessly. The app's average Character Error Rate (CER) and Word Error Rate (WER) for products and unit prices, respectively, were found to be 9.36% and 19.39% and 2.26% and 4.33%, respectively, after evaluation using 20 supermarket receipts. With its overall good System Usability Scale (SUS) score of 71.5%, the program provides easy-to-use spending monitoring and visualization via graphs and statistics.

A.Tamizhselvi et al. [5] Presenting Penny is a feature-rich smartphone application for recording expenses that aims to assist users in properly managing their finances. Bar graphs, pie charts, and summaries allow users to keep an eye on their spending on a daily, weekly, monthly, or annual basis. Users can enter details about their expenses in Penny, including the amount, service provider, category, date, and optional areas for extra notes and subcategories. This online and mobile application seeks to encourage a responsible lifestyle by tracking spending and cutting down on wasteful spending. With its powerful features and easy-to-use design, Penny provides a productive way to manage your money.

Manuel B. Garcia et al. [6] Introducing "Mobile Bookkeeper," a cutting-edge app that simplifies handling personal finances. Optical Character Recognition (OCR) technology makes it simple for consumers to record, track, and monitor receipts by scanning them with the camera on their smartphone. Testing was carried out using the QUIS 7.0 questionnaire and ISO standards to evaluate user satisfaction and usability. The results indicated the importance of the app's receipt scanner capability for managing mobile finances, but they also pointed out issues with OCR integration and text recognition precision
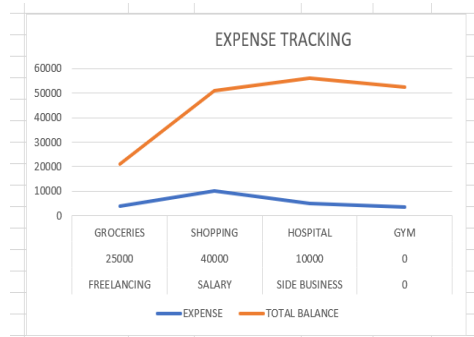
IV. EXISTING SYSTEM

As of now, there may be manual methods, spreadsheets, or standalone applications used by individuals to manage their finances. These existing systems often lack the user-friendliness and visual data representation offered by the proposed web application.

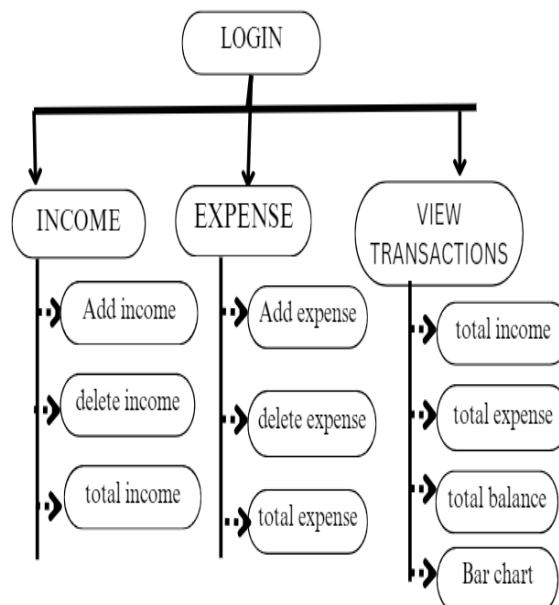| MONTH-1				
INCOME NAME	INCOME	EXPENSE NAME	EXPENSE	TOTAL
FREELANCING	25000	GROCERIES	4000	21000
SALARY	40000	SHOPPING	10000	51000
SIDE BUSINESS	10000	HOSPITAL	5000	56000
	0	GYM	3500	52500
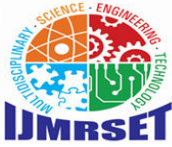
V. DRAWBACKS OF EXISTING SYSTEM.

- Lack of Accessibility:Manual methods and standalone applications may not be easily accessible from anywhere, limiting flexibility.
- Limited Data Visualization: Existing systems may not offer visual representations of financial data, making it challenging to identify trends.
- DataSecurity:Standalone applications may lack adequate security measures, exposing sensitive financial data to potential risks

VI. PROPOSED SYSTEM

The proposed Expense Tracker Web Application will address the limitations of existing systems by providing the following features:
*User registration and secure authentication
*User-friendly data entry forms for adding income and expenses.
*Categorization of transactions for better organization.
*Efficient data retrieval and filtering options.
*Interactive bar chart visualization of financial data for trend analysis.
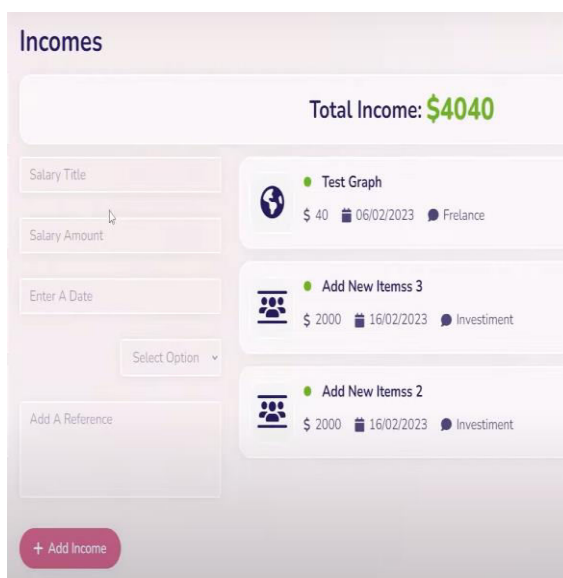
VII. BLOCK DIAGRAM

VIII. METHODOLOGY

The Expense Tracker Web Application will include the following key features:

1) User Registration and Authentication**:** Users can create accounts and log in securely.

2) Adding Income**:** Users can input income details, including source, amount, and date.

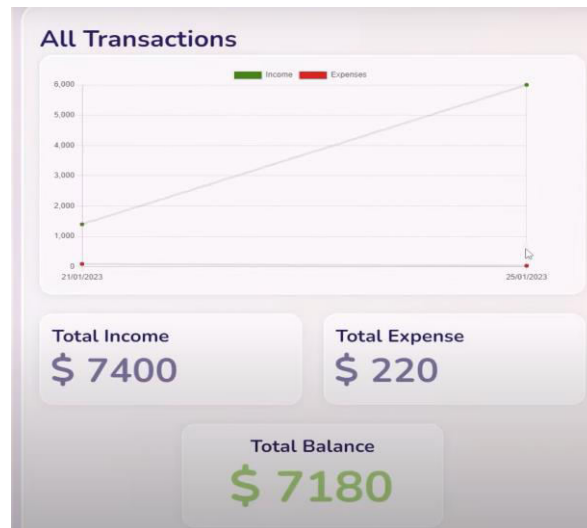3) Adding Expenses: Users can record expenses, including name, amount, date, and category.
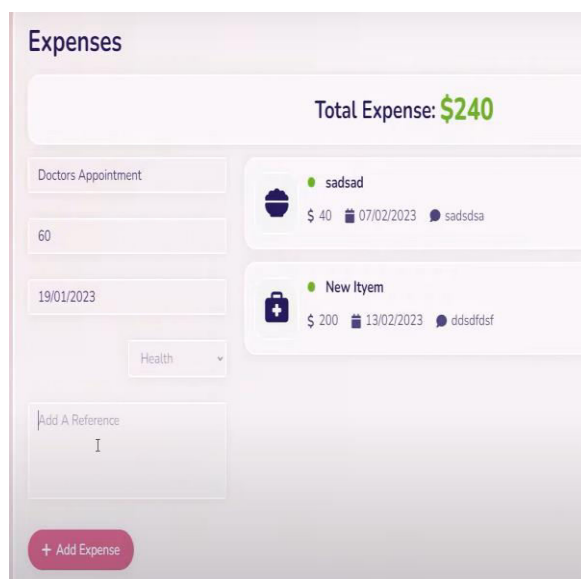
4) Data Management: Users can view, sort, and filter their income and expense entries.

5) Bar Chart Visualization: Users can generate bar charts to visually analyze their financial data
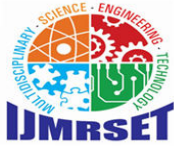
IX. PROJECT DESCRIPTION

1) PROJECT STRUCTURE
Adding Expenses: Users can record expenses, including name, amount, date, and category. Data Management: Users can view, sort, and filter their income and expense entries. Bar Chart Visualization: Users can generate bar charts to visually analyze their financial data.

2) FRONT END DEVELOPMENT:
In the frontend, several features have been implemented to make financial tracking user-friendly. Users can seamlessly add their income and expenses by providing details such as description, amount, and category. They can also review their financial history, compute total expenses, and visualize data using a bar graph. The frontend leverages React for UI development, Axios for backend communication, and Chart.js for data visualization

3) BACKEND DEVELOPMENT:
The backend component is responsible for ensuring the functionality of the API endpoints and the data management process. The API allows users to add income, add expenses, fetch income and expense records, and calculate the total expenses incurred. To store and retrieve this data securely, MongoDB is used, and Mongoose facilitates interaction with the database. Additionally, CORS is implemented to manage cross-origin requests and enhance security in communication between the frontend and backend.

4) DATA FLOW:
The data flow within the Expense Tracker Web App is well-structured. The frontend initiates HTTP requests to the backend's API endpoints when users perform actions like adding income or expenses and retrieving financial data. The backend processes these requests, validates incoming data, and interacts with the MongoDB database. Once the backend operations are completed, it sends HTTP responses back to the frontend, which then updates the user interface to reflect the real-time changes.

5) USAGE
The Expense Tracker Web Application has a wide range of applications and can be utilized in various scenarios to enhance financial management and decision making. Here are some of the key usages of the project:

6) PERSONAL FINANACE MANAGEMENT:
Individuals can use the Expense Tracker to maintain a comprehensive record of their income and expenses. This helps in creating and sticking to a budget, tracking savings and expenditures, and making informed financial decisions..
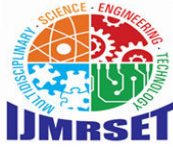
X. RESULT

The development and implementation of the Expense Tracker Web Application have yielded a comprehensive and user-friendly financial management tool. The application successfully fulfills its core objectives, which include user registration, secure authentication, income and expense tracking, data categorization, data retrieval, and data visualization through bar charts. Users can easily access, record, and analyse their financial data through this platform.

Key results of the project include:
1) User-Friendly Interface: The application features an intuitive and user-friendly interface, ensuring that users can quickly understand and utilize its capabilities.
2) Secure Authentication: User registration and secure authentication mechanisms are in place, protecting users' financial data from unauthorized access.
3) Data Recording: Users can effectively add and categorize their income and expense entries, providing a clear record of their financial transactions.
4) Data Management: The application offers efficient data retrieval and filtering options, enabling users to access specific financial data with ease.
5) Data Visualization: The bar chart visualization feature enables users to analyze their financial trends and identify patterns over specified date ranges.

XI. CONCLUSION

The Expense Tracker Web App presents a fully functional solution for users to track their income and expenses efficiently. This mini-project leverages the power of modern web development technologies to create a practical and user friendly application. While the project's core features have been implemented successfully, there is room for further development and enhancements. Future iterations of the app could include user authentication, advanced data filtering, and additional data visualization options. In conclusion, this mini-project stands as a testament to the capabilities of modern web development, offering users a valuable tool for managing their finances and gaining insights into their spending habits. Its adaptable structure allows for continued growth and improvement in the future

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