Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Project Kit

Title of the Project

Expense Tracker and Budgeting System

Abstract of the Project

The Expense Tracker and Budgeting System is a web-based application designed to help users manage their personal finances efficiently by tracking expenses, setting budgets, and analyzing spending habits. This system enables users to record daily, weekly, and monthly expenses, categorize them for better organization, and receive insights through data analysis tools. Users can set budgets for different categories and receive notifications when they approach their spending limits. Administrators have access to a dashboard for managing user accounts and generating reports on user spending trends. The goal of this project is to simplify personal financial management and improve financial planning for users through a user-friendly interface and insightful analytics.

Generic keyword:

Expense Management, Online Expense Tracking, Personal Finance, Budgeting, Spending Categories, Data Visualization, Payment History, Notifications, User Authentication, Reporting.

Specific Technology keywords:

HTML, CSS, Angular, MySQL (or H2database), Spring Boot, Web Application, Database Management.

Functional Components of the Project:

User Registration and Authentication:
- Allows users to securely create accounts and log in to manage their expenses.

User Profile Management:
- Users can update personal information and financial preferences.

Expense Tracking:
- Enables users to record and categorize expenses such as groceries, entertainment, and transportation.

Budgeting and Limit Setting:
- Users can set weekly or monthly budgets for each expense category and receive alerts when nearing their limit.

Expense History and Reporting:
- Provides a history of past expenses, allowing users to review spending habits and generate reports.

Data Analysis and Visualization:
- Offers graphical representation of spending patterns through charts and graphs, enabling users to make informed financial decisions.

Notifications and Alerts:
- Sends notifications for budget limit warnings and reminders for approaching deadlines.

Admin Dashboard:
- Allows administrators to manage user accounts, monitor system performance, and generate financial reports.

Payment Gateway Integration (optional for future development):
- For future development, this feature could allow users to link bank accounts for payment processing and automate bill payments based on their tracked expenses.

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Functionality

Users of the system:

Customers:

Role: Access their accounts, manage expenses, set budgets, and view financial reports.

Administrators:

Role: Manage user accounts, monitor expense activities, generate reports, and ensure system security.

Core Functionalities:

- User registration and authentication for customers and administrators.
- Management of user profiles, including personal details and financial preferences.
- Expense tracking with categorized inputs for easier organization and analysis.
- Budgeting features that allow users to set and monitor spending limits.
- Generation of financial reports and graphs for data analysis.
- Notifications for overspending, approaching deadlines, and other relevant activities.
- Administrative tools for managing users and monitoring system performance.
- Secure integration with payment gateways (optional for future enhancements).
- Robust security measures to ensure the protection of user data and compliance with privacy regulations.

Steps to start-off the project:

The following steps will be helpful to start off the project –

1. Gain a solid understanding of the necessary technologies.
2. Research personal finance management and user behaviour.
3. Define the different types of users (customers and administrators) and their roles.
4. Ensure the interface is user-friendly and intuitive.
5. Maintain a consistent UI/UX design with professional visuals and coherent navigation.

Requirements

Hardware Requirements:

Number	Description	Alternative (if Available)
1.	Minimum requirements- Processor, x86-64 bit CPU	
2.	Ram - 4Gb, Disk Space - 5Gb.	

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Software Requirements:

Numbers	Descriptions	Alternatives (if Available)
1.	Client on Intranet - User Interface, Windows OS	
2.	Development Environment - IntelliJ/VS Code, Spring Boot, Angular, MySQL, Windows OS	

Manpower requirements:

2 to 3 students can complete this in 4 – 6 months if they work fulltime on it.

Milestones and Timelines

Number	Milestone name	Milestone Description	Timeline Week no. From the start of the project	Remarks
1.	Requirements Specification	Complete specification of the system with assumptions. Write a document and present it.	2-3	Attempt to add more relevant functionalities beyond the basic requirements.
2.	Technology familiarization	Understand the technologies needed to implement the project.	4	Present the understanding with a focus on practical application rather than theory.
3.	Database creation	Create a database with users and categories for expenses.	5-6	Finalize the database to ensure smooth development and testing.

4.	High-Level and Detailed Design	Map each requirement to a scenario and create flowcharts or pseudocode to handle them.	7-8	Design should be comprehensive and cover all specified requirements.
5.	Front-End Implementation	Implement the login system and initial expense tracker interface.	9-10	Begin working on a test plan for the system during this milestone.
6.	Front-End and Database Integration	Connect the front-end with the database and ensure expense data is stored correctly.	11-12	Ensure the system is ready for integration testing at this point.
7.	Integration Testing	Thoroughly test the system using the test plan created earlier.	13-14	Another 2 weeks should be there to handle any issues found during testing of the system. After that, the final demo can be arranged.
8.	Final Review	Ensure all requirements are met and prepare for the final demo	15-16	Confirm that all system requirements have been fulfilled or document reasons for any gaps.

Guidelines and Reference:

Object Oriented Modelling and Design with UML- Michael Blaha, Jams Rumbaugh.

Software Engineering, Seventh edition Ian Sommerville.

Spring Boot Reference Document docs.spring.io.

Java - www.oracle.com/java/

Wikipedia - www.wikipedia.com

Database Management Systems - Navathe.

Complete Reference - J2EE - Keogh.