**Final Report**

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**1. INTRODUCTION**

**1.1 Project Overview** The Expense Tracker is a personal finance management web application designed to help users monitor, categorize, and analyze their daily expenditures. It allows users to set financial goals, view monthly reports, and receive alerts when nearing their budget limits.

**1.2 Purpose** The purpose of the Expense Tracker is to provide a simple and effective tool for individuals to manage their finances, understand their spending patterns, and encourage saving habits. It aims to replace traditional manual tracking with a digital solution.

**2. IDEATION PHASE**

**2.1 Problem Statement** Many individuals struggle with managing their finances effectively due to a lack of organized tracking tools. Paper-based or spreadsheet tracking methods are often inefficient and error-prone.

**2.2 Empathy Map Canvas**

* **Says:** "I don't know where my money is going."
* **Thinks:** "I should start saving more."
* **Does:** Keeps receipts or manually updates spreadsheets.
* **Feels:** Anxious when expenses exceed the budget.

**2.3 Brainstorming**

* Mobile-friendly web interface
* Expense categorization
* Visual analytics (charts, graphs)
* Monthly budgeting
* Real-time notifications
* Secure authentication and user data protection

**3. REQUIREMENT ANALYSIS**

**3.1 Customer Journey Map**

1. User visits the platform.
2. Registers or logs in using Clerk authentication.
3. Adds expenses with category and amount.
4. Views categorized reports and analytics.
5. Sets monthly budget goals.
6. Receives notifications when limits are exceeded.

**3.2 Solution Requirements**

* Functional: User login, Add/Edit/Delete expenses, View reports, Budget alerts.
* Non-functional: Responsive UI, Secure authentication, Real-time performance, Scalable architecture.

**3.3 Data Flow Diagram** (Include diagram visual)

1. User interacts with frontend
2. Frontend calls backend APIs
3. Backend interacts with MongoDB to fetch/store data
4. Clerk handles user auth
5. Data is returned to frontend for display

**3.4 Technology Stack**

* Frontend: React, TailwindCSS, Vite
* Backend: Node.js, Express.js
* Database: MongoDB
* Authentication: Clerk

**4. PROJECT DESIGN**

**4.1 Problem-Solution Fit** The app bridges the gap between complex financial tools and manual tracking methods, offering a simple yet powerful platform.

**4.2 Proposed Solution** A web-based expense tracking application with categorized expense management, goal-setting, budget alerts, and detailed visual reports.

**4.3 Solution Architecture** (Include diagram visual)

* Frontend connects to backend via REST APIs
* Backend processes logic and queries MongoDB
* Clerk handles authentication and authorization

**5. PROJECT PLANNING & SCHEDULING**

**5.1 Project Planning**

* Week 1: Requirements gathering & wireframing
* Week 2-3: Frontend and backend development
* Week 4: Integration, testing, and bug fixing
* Week 5: Final polish, deployment, and documentation

**6. FUNCTIONAL AND PERFORMANCE TESTING**

**6.1 Performance Testing**

* API load tested using Postman/Apache JMeter
* App tested on multiple browsers for responsiveness
* MongoDB tested for large datasets

**7. RESULTS**

**7.1 Output Screenshots** (Insert screenshots of: login screen, add expense page, report dashboard, budget alert popup)

**8. ADVANTAGES & DISADVANTAGES**

**Advantages:**

* User-friendly interface
* Fast and responsive
* Real-time notifications
* Secure data handling

**Disadvantages:**

* Requires internet connection
* Currently supports only one currency

**9. CONCLUSION** The Expense Tracker project successfully delivers a comprehensive tool for personal finance management. It simplifies financial planning and provides actionable insights into spending habits.

**10. FUTURE SCOPE**

* Mobile app version
* Multi-currency support
* AI-based savings suggestions
* Integration with bank accounts

**11. APPENDIX**

**Source Code:** (https://github.com/HarshDhumal/Expense-Tracker-FullStack)

**Dataset Link:** N/A

**GitHub & Project Demo Link:** ([https://www.youtube.com/watch?v=RCZkITc9gkY)](https://www.youtube.com/watch?v=RCZkITc9gkY)%20%20-%20-----------%7bwith)