System Vision Document for Personal Finance Tracker

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# Problem Description

Our Personal Finance Tracker is a financial app that simplifies personal financial management. It allows users to securely create accounts, log daily expenses and income, automatically categorize transactions, and visualize their financial data through interactive charts and graphs. Users can set and monitor budgets for various expense categories with ease. In addition to these core functions, we're considering advanced features such as personalized financial insights, notifications, and robust data security measures to provide a simple to use yet comprehensive solution for managing and understanding personal finances.

# System Capabilities

## User Authentication and Profile Management

Description: Allow users to create accounts, log in securely, and manage their profiles.

Possible Technologies: To achieve this, we plan to implement an authentication framework. Given our familiarity with Java, we may opt for Java Spring Security. Other potential options include OAuth and Firebase Authentication.

## Expense and Income Tracking

Description: Enable users to input their daily expenses and income within a well-designed and user-friendly front-end application.

Possible Technologies: Depending on resource availability, we may pursue a native approach, developing for both Android and iOS. Alternatively, if needed, we'll utilize web application UI development using technologies such as React.

## Categorization of Transactions

Description: Automatically categorize transactions into predefined categories (e.g., groceries, rent, entertainment).

Possible Technologies: We can implement a tagging system or, for a more advanced approach, explore the use of machine learning and data classification algorithms.

## Data Visualization

Description: Generate charts and graphs to represent financial data, including spending patterns, income trends, and budget allocation.

Possible Technologies: For interactive data visualization, we'll consider technologies like D3.js and Chart.js as they are popular choices.

## Budget Management

Description: Allow users to set and monitor budgets for various expense categories.

Possible Technologies: We will utilize MySQL and PHP for storing budget data within the application's database.

**The next three functions, while more complex, will be implemented if time allows:**

## Financial Insights

Description: Provide users with personalized financial insights and recommendations based on their spending history. Additionally, enable the prediction of future expenditures.

Possible Technologies: We'll explore data analytics and machine learning for in-depth trend analysis.

## Notification and Alerts

Description: Send notifications and alerts to users for important events, such as reaching budget limits or upcoming bills.

Possible Technologies: We'll employ a mix of machine learning, as mentioned earlier, and utilize push notifications via Firebase Cloud Messaging or Apple Push Notification Service.

## Data Security and Privacy

Description: Ensure the security and privacy of user data through encryption and secure storage practices.

Possible Technologies: We'll implement SSL/TLS for data transmission, use robust encryption algorithms, and consider secure cloud storage solutions.

# Business Benefits

Our goal with this app is to streamline your finances. it will help you track your expenses and income, manage your budget, and visualize your spending data. It makes financial planning easier by automatically categorizing your transactions, so you can quickly see where your money is going. You'll also get personalized financial insights and timely notifications to help you stay on track and reach your financial goals. Plus, Personal Finance Tracker is secure, so you can be confident that your financial data is protected.(again this is assuming we have optimal time management to implement as many features as possible).