

Final Project Proposal for Mobile App Development

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For our final project, we propose creating an innovative expense-tracking application that helps users manage their finances while adding a rewarding, gamified experience. This app allows users to set a personalized monthly budget based on their financial preferences and, upon reaching their monthly savings goals, rewards them with points that elevate their ranking in a fun, points-based game. Users will begin with a secure login page, authenticated via Google Sign-In. Once signed in, they'll complete a brief questionnaire specifying their monthly income and desired savings and investment percentages. After processing this information, the app prompts users to link bank accounts or payment cards (credit or debit) to enable precise tracking of spending habits. Following the account-linking process, users are directed to a dedicated page displaying an interactive, customizable pie chart. Here, they can create categories for their expenses, visually represented in the chart. In addition, a dedicated button on this page allows users to snap pictures of receipts; the app then leverages the Google Cloud Vision API to analyze these images and add manual entries to their monthly expenses.

This page also showcases the user's accumulated points, awarded each month they meet or stay within their budget. Each monthly achievement grants the user 10 points, while failing to meet the budget deducts 10 points. Additionally, daily push notifications keep users informed about their progress toward their budget goals, alerting them to the number of days remaining to achieve their target. The app's settings will offer a variety of customization options, including light and dark themes, search functionality for specific expenses, access to a community leaderboard displaying all users' point rankings, notification frequency adjustments, and options to update monthly income or modify savings and investment percentages for the following month.

While we haven't yet finalized the technical implementation details, we are considering integrating the Plaid API into our application to enable automatic tracking of the user's spending. Additionally, the Google Cloud Vision API will support the receipt photo feature, while Firebase Cloud Messaging will facilitate timely push notifications. This feature would allow us to send timely alerts, updating users on their progress toward monthly budget goals and enhancing engagement with personalized reminders.