

A Mobile Application for Expenditure Tracker

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ABSTRACT

A mobile application called Expenditure Tracker is designed for all individuals concerned and attentive to their daily spending. Despite income levels, tracking expenditures is essential because it allows individuals to reduce expenses and control their spending. Users will be able to be more cautious with their spending and can save more with the help of this application. Additionally, using this application rather than the more traditional techniques of recording users' expenditures in their diaries makes it simpler to keep records of how their spending is used. Various online platforms offer similar applications focusing on expenses and income (budgets). However, this expenditure tracker stands out by primarily focusing on users' expenses, simplifying the process of inputting expenditures. The application's expense feature enables users to enter each expense's category, amount, and additional notes. By streamlining the tracking process to just expenses, users can easily record their spending without the added complexity of managing income. This targeted approach ensures that users can efficiently monitor their expenses, gain insights into their spending habits, and make informed decisions. This will improve their financial stability. This application uses agile development, contributing to a customer-centred strategy considering user stories. Users will find expenditure trackers more user-friendly and suitable for their needs while using the application. The application will be able to adjust to the continuously changing environment due to continual technical adjustments and improvements. This application also includes a feature that displays a pie chart to generate a daily expenditure.

Introduction

The first step towards organizing expenses is to keep track of spending. Frequently running out of money at the end of every month highlights the need to assess how expenses are managed. Money advice is often easy to say but challenging to implement. Paying attention to expenditures can benefit individuals by helping them understand and control their spending habits. By tracking expenses, people can identify areas of overspending and make necessary adjustments to reduce overall expenditure. This, in turn, can increase savings, eliminate debt, and achieve financial goals. The use of expenditure tracker apps can make it easier to track monthly expenses, and offline mode ensures access to information anytime, anywhere.

An expenditure tracker is a software or application that allows users to record their transactions. The app automatically categorizes expenses, but users can modify rules and create custom categories to organize incoming transactions better and gain insights into their purchasing behaviour. This application helps individuals, regardless of their income level, keep track of daily expenses, calculate total expenditures across categories, and clearly understand their spending habits. Many individuals have insufficient funds, regardless of their income level, by the end of each month. Focusing on expenditures is not dependent on income, as even wealthy individuals can fall into the trap of overspending and accumulating debt without effective expense control. Conversely, those with lower salaries can effectively manage their spending and maintain financial stability.

Related Works

Numerous research has been done to determine how well expense trackers work for managing personal expenses. However, the best types of applications and ways to track expenditures are still up for discussion. This section examines the present research on expenditure trackers, including their efficiency, characteristics, and advantages. The reviews of the four most popular expenditure-tracking apps for controlling spending are discussed in the subsequent sections, including their advantages and disadvantages.

Mint

It provides personalized notifications and reminders to help you stay on top of bill payments and other obligations. For time-saving purposes, it provides direct import and automatic categorization. It synchronizes with credit cards and bank accounts. Users can set financial objectives and monitor their investments (Software Testing Help, 2022). However, Ads, app bugs, and expenses categorized incorrectly are some of the complaints made in user evaluations (Software Testing Help, 2022).

Expensify

It is designed to make it easy to complete the costs quickly while travelling and in real-time ("Expensify," n.d.). It offers an unlimited SmartScan free trial that lasts for six weeks. However, individual monthly fees start at \$4.99, while group monthly fees begin at \$5 per person. According to several user reviews, the interface isn't intuitive ("Expensify," n.d.).

QuickBooks Online

For a one-time fee of \$50, all QuickBooks users can have a trained bookkeeper quickly and precisely set up their accounting software. It provides real-time dashboards to keep track of any financial activities ("Intuit launches the completely new QuickBooks online," 2013). It offers a free trial of 30 days (about four and a half weeks). However, depending on the plan, prices range from \$12.50 to \$75 per month. Some user reviews criticize the program for having bugs and an unfriendly interface (Businesswire, 2013).

GoodBudget

The envelope feature lets users prioritize achieving various goals and see their spending in real time. Users can alter the envelope categories to suit their needs, such as saving for a vacation or an emergency fund. However, using the envelope approach' requires users to keep track of their spending. Users can obtain their recent activity from their bank's website and integrate that into Good Budget. However, manual data entry helps users fully understand their spending habits. According to specific user evaluations, the app has technical problems. It costs \$7 monthly or \$60 annually for Good Budget Plus, which includes unlimited users on up to five devices, seven years' worth of transaction history, debt tracking, and email assistance (GoodBudget, n.d.).

Design

Methodology

The SDLC (systems development life cycle) explains the steps needed in developing an information system, from the feasibility study to the ongoing maintenance of the implemented application. SDLC can be used for both technical and non-technical systems. Software developers, system engineers, end users, and program and project managers are often involved during SDLC. Hardware and software are included in a plan for IT technology.

SDLC stands for Software Development Life Cycle and Synchronous Data Link Control. It closely resembles the system development life cycle despite focusing only on software development. A system development lifecycle provides a strict framework and structure to specify the stages and procedures necessary for the system's development. A sequence of iterations occurs in the hardware and software development process.

Agile Development Model

Agile development is a customer-centred approach considering customer stories when creating a system. Rather than using the system, we will use the application for our project. Using the application, users will find expenditure trackers more user-friendly and meet their needs. Due to ongoing technological modifications and upgrades, the application will have a chance to adapt to the constantly changing environment. Additionally, it can continuously develop, which is a significant advantage.

Agile Methodology Model Process

Requirements Gathering - It is necessary to gather specifications for creating an expenditure tracker. This study aims to understand and compile the requirements based on the reports and articles of previous spending trackers. Older systems' technical capabilities and usability are assessed to gather the required information.

Designing Requirements - Based on the requirements gathered during the requirements collecting phase, we determine and proceed to the requirements designing phase. Diagrams like the activity diagram, data flow diagram, and context diagram are created to bring this phase to a close. The purpose of the diagrams is to clarify the entire system's process.

Development - At this point, the system begins to be developed. Several adjustments will continue to be made to the system because it is still in its early stages of development.

Testing - It is now time for the final stages of system development to be completed after a quality assurance test of the system's final product.

Deployment - Last but not least, the system should remain in working condition during the deployment phase. By the end of the previous presentation, the system should be ready because it has been tested.

Implementation

A block diagram showing the main categories and functionalities of the expenditure tracker can be found in Figure 1. Manual input is allowed in the data input section, which allows users to enter expense details directly into the tracker.

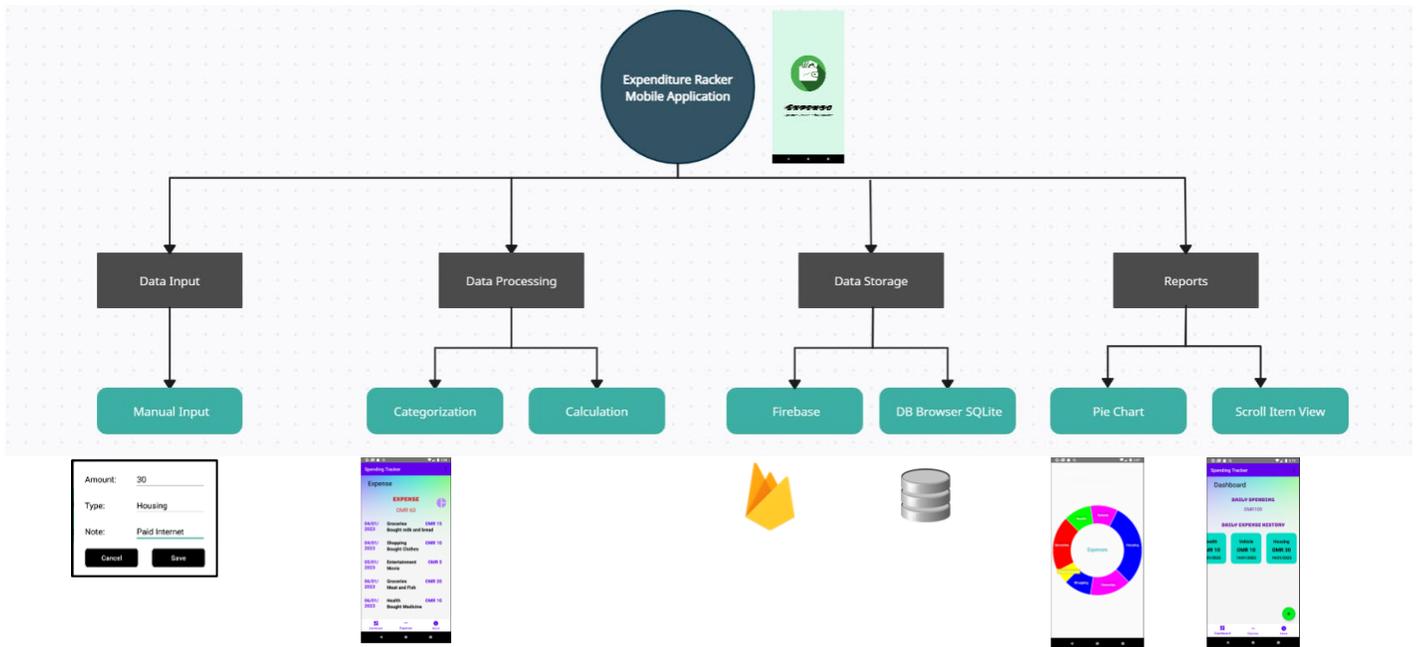


Figure 1. Block Diagram

In the data processing process, categorization and calculation play key roles. The categorization process involves organizing expenses into different categories, while the calculation process involves calculating and analyzing data.

Firebase and SQLite databases are used for data storage in the expenditure tracker. Cloud-based Firebase provides real-time data synchronization, allowing seamless access across multiple devices to expenditure information. Meanwhile, SQLite offers a local database that enables users to access and retrieve data offline.

This expenditure tracker application is developed using Android Studio, the development environment for creating, testing, and debugging Android applications. Developers can build user-friendly and robust applications using its comprehensive resources and tools.

Additionally, the expenditure tracker includes reporting features, such as pie charts, that show how expenses are distributed visually. Users can quickly determine the most significant expenditure categories contributing to their overall spending using these charts. Additionally, users can easily navigate their transactions with the scrolling item view, providing a convenient means of reviewing and analyzing their previous transactions.

Results

The expenditure tracker displays the total amount spent and the history of daily expenses on a comprehensive dashboard page. Users can scroll through their transactions from right to left on the dashboard for a convenient overview of their spending habits. The expense page displays the date, type, note, and amount associated with each entry, allowing users to understand each transaction more deeply. A pie chart page visually represents the distribution of expenses, with different colours indicating transactions involving higher amounts. This feature lets users easily identify the categories that contribute most to their overall spending.

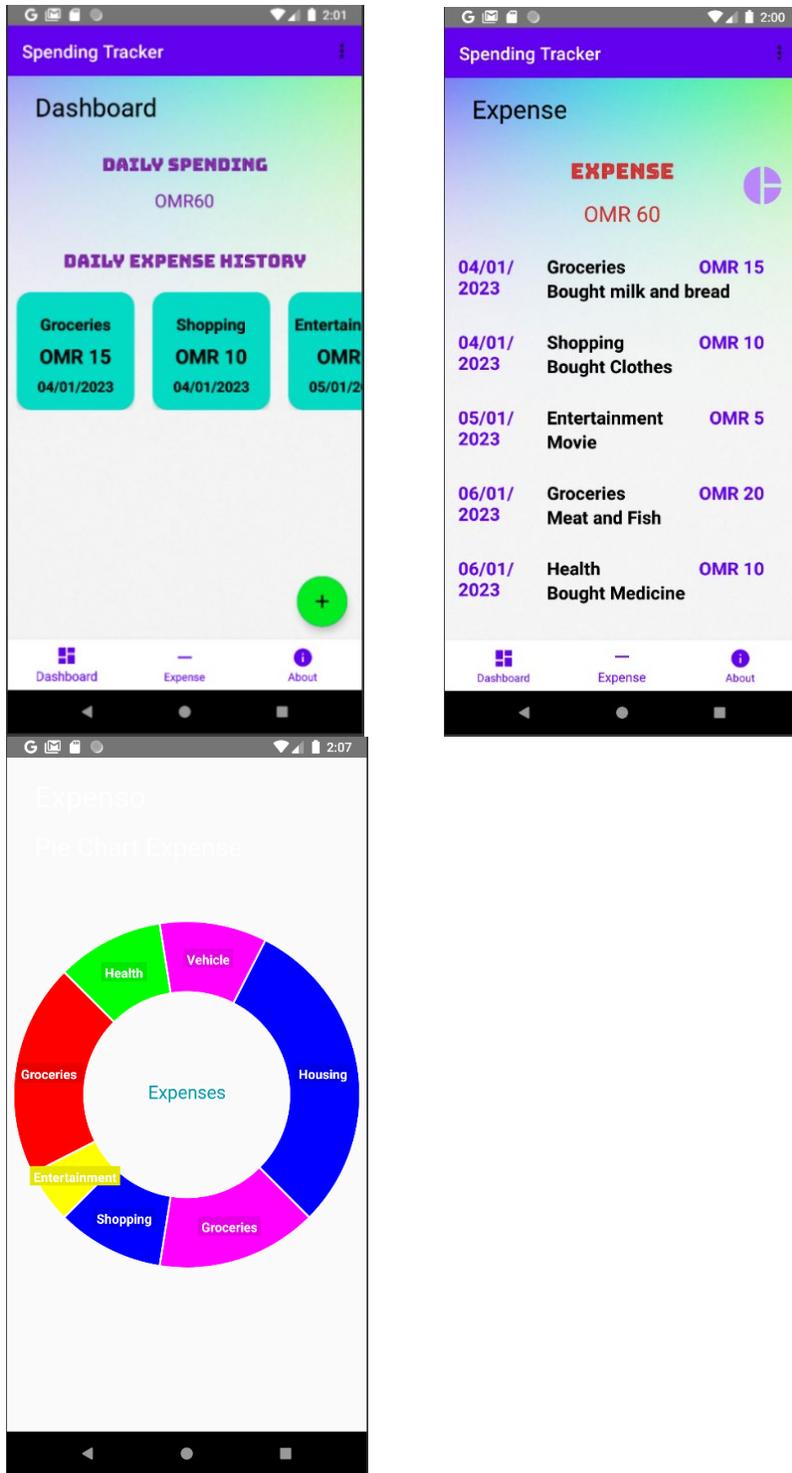


Figure 2. Dashboard Page, Expense Page, Pie Chart Page

Conclusion

Keeping track of spending is crucial for anybody trying to manage their money. People can spot areas where they could be overspending and change their behaviour by closely observing their spending habits. People may better understand their financial condition and control their spending by using various tools and techniques, such as manually recording expenses or using cost-tracking applications, which as the Expenditure Tracker. In addition, tracking spending may assist people in creating an expenditure plan that aligns with their financial objectives and sets realistic financial goals.

People may remain on track and prevent overspending by routinely keeping track of their costs and periodically evaluating their spending habits. Overall, keeping track of spending may give people a sense of control over their expenditures and help them reach their financial objectives, even though it could take some early discipline and effort. It is a useful tool that may enable individuals to take control of their financial future by allowing them to make well-informed financial decisions.

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