|  |  |
| --- | --- |
| A logo of a piggy bank  AI-generated content may be incorrect.  OPSC6311POE | Members  Meekaa-eel Abrahams – ST10328453  Liam Petersen – ST10266342  Keanu Adams – ST10273358  Ameer Miller – ST10067171 |

Contents

[Report: 2](#_Toc201869714)

[GitHub Link: 4](#_Toc201869715)

[YouTube link : 4](#_Toc201869716)

[Part 1 Document: 4](#_Toc201869717)

[Images of the App: 10](#_Toc201869718)

[APK File: 13](#_Toc201869719)

# Report:

1. Introduction

PennyWise is a mobile budgeting application designed to allow users to manage their finances efficiently. It allows users to record their income and spending, analyse expenditure trends, and enjoy better financial discipline. It is designed with usability and everyday real-world use in mind.  
  
2. Purpose of the App  
The primary purpose of PennyWise is to assist users in making sense of, and gaining control over, their financial behaviour by:  
  
- Monitoring monthly income and expenditure.  
  
- Preventing impulsive or undesired expenditures.  
  
- Helping to establish achievable saving goals.  
  
Offering visual displays of expenditure categories.  
3. Key Functionalities  
From the demo in the video, the application currently includes the following functionalities:  
  
Dashboard Overview: A homepage showing income, expenditure, and remaining balance.  
  
Add Transactions: Users can input income or expenditure records with amount, date, and remarks.  
  
Category-Based Spending: Expenditures can be tagged (e.g., food, transport, rent) for analysis.  
  
Expense Visualization: Patterns of expenditure are represented graphically in the form of charts and graphs, promoting financial awareness.  
  
Monthly Tracking: Enables users to view and interact with their finances on a monthly basis.  
  
4. UI/UX Design  
The user interface is intuitive, clean, and user-friendly:  
  
Modern minimalistic design with minimal navigation.  
  
Buttons and forms are easy to use.  
  
Color-coded graphs make it easier for the user to understand.  
  
Responsive animations give a sophisticated experience.  
  
5. Technologies Used

- Platform: Android (API 21+)  
- Programming Language: Kotlin  
- Libraries/Tools: Jetpack Compose for UI, Android Studio for development environment.  
  
6. Security & Privacy  
Even though the video didn't provide detailed security features, it's assumed the app uses common data protection mechanisms:  
  
Local data storage.  
  
User authentication may be added in future versions.  
  
No sensitive data shared externally.

7. Features Still to Be Added

1. UserProfileManager

This function handles saving and retrieving the user's profile info, such as their name and bio.

What It Does:

saveProfile(name, bio): Saves the user's name and bio to local storage (SharedPreferences).

getName() / getBio(): Fetches the saved name and bio so it can be displayed or reused later.

Use Case:

Imagine a user logs in or updates their profile — you can store that info with this function and access it anywhere in the app.

2. ActivityLogger

This function logs what the user is doing in the app, like visiting a screen.

What It Does:

logActivity(message): Saves a timestamped message (e.g., "Visited MainActivity") to a local activity log.

getLog(): Returns the entire log so it can be displayed or analyzed.

Use Case:

Useful for showing a history of user actions, helpful for user engagement tracking, debugging, or simply giving feedback.

In our App:

When MainActivity runs:

"Liam" and "App Developer" are saved as the user's name and bio.

"Visited MainActivity" is logged as an activity.

Both the profile and activity log are then displayed on screen.  
  
  
8. Conclusion  
PennyWise is a great foundation for a personal finance app in the basic budgeting functionality. Its focus on simplicity, visual feedback, and category-based tracking makes it a useful day-to-day tool for anyone wanting to be more financially aware and responsible.

# GitHub Link:

* <https://github.com/MrPREDDY18/PennyWise.git>

# YouTube link :

* <https://youtube.com/shorts/neDR3Sexx0Q?feature=share>

# Part 1 Document:

1. Introduction

PennyWise is a comprehensive personal finance management mobile application designed to help users take control of their spending habits, set achievable savings goals, and build healthier financial behaviors. With an intuitive interface and smart features, the app simplifies budgeting while offering real-time insights and guidance.

2. Purpose of the App

PennyWise empowers users to:

* Track income and expenses efficiently.
* Set and manage personalized budgets.
* Receive AI-generated financial insights and tips.
* Collaborate with others on shared financial goals.

3. Core Functionalities

Based on the video demo and proposed feature set, PennyWise currently includes:

* Dashboard Overview: A real-time summary of income, expenses, and balance.
* Manual Expense Entry: Add expenses and categorize them with ease.
* Spending Categories: Organize expenses under custom or predefined categories.
* Visual Graphs: View pie charts and bar graphs for monthly spending.
* Budget Management: Allocate specific amounts to each category and track usage.
* Savings Tracker: Define savings goals and monitor progress.

4. Innovative Features

AI-Powered Insights

Spending Analysis: Break down spending by category with visual graphs and identify overspending trends.

Spending Optimization: Get AI recommendations to reduce costs and increase savings.

Personalized Financial Tips: Receive advice based on behavior, like suggesting automated savings or budget adjustments.

Automated Budget Adjustments

* Dynamic Budgeting: Budgets adapt based on past trends and projected spending.
* Real-Time Suggestions: As users enter expenses, the app suggests shifting funds from other categories if needed.

Collaborative Budgeting

* Group Budgeting: Invite others to co-manage household or group budgets.
* Expense Splitting: Track who paid for what and split expenses fairly.
* Shared Goals: Set and monitor collective savings goals (e.g., for trips, bills).

Customizable Alerts

* Spending Limit Alerts: Notify users before they exceed category budgets.
* Bill Reminders: Timely notifications for upcoming payments.
* Savings Milestones: Celebrate when users hit goals to motivate continued progress.

5. Core Technical Requirements

User Registration & Authentication:

* Email, Google, Apple, and social login options.
* MFA, fingerprint/Face ID support.
* Profile customization with currency settings.

Expense Tracking:

* Manual entry and bank synchronization.
* Automatic and custom categorization.

Budget Management:

* Custom budget creation and allocation.
* Monthly and category-level overviews.

Savings Goals:

* Create goal with target amount and deadline.
* Real-time progress feedback.

Reports & Insights:

* Financial summaries and spending trends.
* Budget vs. actual comparisons.

Notifications & Alerts:

* Smart reminders for bills, overspending, and goals.

6. Gamification Features

Points System:

* Earn points for actions like logging expenses and hitting goals.
* Redeem for perks or donate.

Badges & Achievements:

* Unlock badges for consistency and milestones.
* Personalized achievements based on spending improvements.

Leaderboards:

* Compete in saving challenges with friends or globally.

7. Usability & Design Requirements

UI/UX:

* Minimal, clean layout.
* Easy navigation, touch-friendly components.
* Green and blue color scheme for trust and clarity.

Accessibility:

* Text-to-speech, high-contrast mode, and voice commands.

Dark Mode:

* Reduces eye strain and enhances usability at night.

Multi-Currency Support:

* International usability with real-time currency conversion.

8. Key Screens

Login Page

* Simple username/password entry with optional profile photo display.

Sign-Up Page

* Clear input validation and easy registration steps.

Category Management

* Add/update custom categories with a visible list.

Expenses Page

* Table view of all expenses with fields like date, category, time, and description.

9. Testing Strategies

Unit Testing: Ensures individual features work properly.

Integration Testing: Confirms that components function together.

Usability Testing: Refines interface based on user feedback.

Security Testing: Validates data protection and privacy protocols.

10. Future Enhancements

- AI Chatbot for financial guidance

* Investment & stock tracking tools
* Scheduled automatic bill payments
* Smart savings recommendations based on patterns

11. Conclusion

PennyWise combines cutting-edge technology, gamification, and user-centric design to make personal finance fun, insightful, and effective. It stands out as a future-ready financial companion for individuals and families aiming to take control of their money and build lasting financial habits.

# Images of the App:

Home page:

A screenshot of a cell phone

AI-generated content may be incorrect.

Figure 1 Home Page

Login Page:

A screenshot of a login screen

AI-generated content may be incorrect.

Figure 2 Login Page

Sign up page:

A screenshot of a login screen

AI-generated content may be incorrect.

Figure 3 Sign up Page

Item Purchased:

A screenshot of a black screen

AI-generated content may be incorrect.

Figure 4 Item purchases and added to budget

Other options:

A screenshot of a phone

AI-generated content may be incorrect.

Figure 5 Other options in the app

# APK File:

