# PennyWise

## Introduction

A Simple Expense Tracker app helps users manage their personal finances by tracking their daily expenses. This app is particularly useful for users who want to monitor their spending habits, set budgets, and get insights into their financial health.

## Scope

The Simple Expense Tracker app offers a comprehensive solution for managing personal finances, including features for logging daily expenses, generating detailed reports, setting and monitoring budgets, and exporting data. This app is designed to provide users with valuable insights into their spending habits and help them maintain financial discipline through a user-friendly interface and robust backend support.

## Users and their role

**Regular Users:**

- Log daily expenses
- View expense reports
- Set and manage budgets
- Export data for analysis

**Authenticated Users:**

- Create accounts and log in
- Synchronize data across multiple devices
- Manage user profiles and account settings

## Use cases of the system

- **Daily Logging:** The app allows users to log their daily expenses, categorizing each entry by type, such as food, transport, or entertainment, and including details such as the amount spent and the date. Users can add optional notes to provide additional context for each expense.

- **Monthly Review:** At the end of each month, users can review their spending through detailed reports that summarize their expenses. These reports provide a breakdown of spending by category

and visualize spending patterns through pie charts and bar graphs, helping users to understand where their money is going.

- **Recurring Expenses:** The app implements functionality to define recurring expenses (e.g., monthly rent) with automatic reminders and budget allocation.

- **Budget Monitoring and Forecasting:** Users can also set monthly budgets for different expense categories and receive notifications when their spending approaches or exceeds these budgets. This feature helps users to monitor their spending and maintain control over their finances. It can even explore forecasting based on spending trends.

- **Expense History Search:** The app provides a searchable and filterable history of all logged expenses, allowing users to look up past entries by date, category, or amount. This functionality enables users to easily review their financial history and make informed decisions based on past spending.

- **Synchronization with Cloud Storage:** The app allows users to connect their expense data with cloud storage services like Google Drive or Dropbox for backup and accessibility across devices.

- **Data Export and Import:** Additionally, users have the option to export their expense data to a CSV file for external analysis or backup, and potentially import data from other sources. This feature ensures that users can maintain their financial records and perform detailed analyses using external tools if needed.

# Technologies

**Backend:**

- Java Spring Boot
- JPA/Hibernate
- RESTful Web Services
- H2/MySQL

**Frontend:**

- Java Server Faces (JSF)/Thymeleaf
- PrimeFaces

**AI Integration:**

- Python Flask
- TensorFlow/Keras

**Other Tools:**

- Maven/Gradle
- Git

- Docker