

Original Article

Personal Finance Desk: A Desktop-Based Personal Finance Management System Using Python

Mukunda Sanjay Patil¹, Dipali Milan Mahajan²

^{1,2}DNCVPS Shirish Madhukarrao Chudhari College, Jalgaon

Manuscript ID:
IJERSD-2026-020306

ISSN: 3067-2325

Volume 2

Issue 3

Pp. 25-31

June 2026

Submitted: 12 May 2026

Revised: 19 May 2026

Accepted: 12 June 2026

Published: 30 June 2026

Correspondence Address:

Mukunda Sanjay Patil
DNCVPS Shirish Madhukarrao
Chudhari College, Jalgaon
Email: pmukunda72@gmail.com

Quick Response Code:



Web: <https://rlgjaar.com>

DOI: 10.5281/zenodo.23057598

DOI Link:
<https://doi.org/10.5281/zenodo.23057598>



Abstract

The human life, is more becoming more digitized day by day. Because of this proper personal financial management plays a very important role in human life. It ensures the financial security and long-term development. In recent article, makes focus on making of desktop based Personal Finance Application based on Python, Custom Tkinter, and SQLite. The various GUIs are developed for the application to enables users to track efficiently their financial transactions like: income, expenses and various financial activities. The application also includes features like: secure login, bank wise transaction management, category-based expense tracking, data visualization, attachment support and so on. The system also supports UI elements such as animations and responsive layouts to enhance user experience. The aim behind this project is to provide a simple, secure and efficient solution for personal financial management.

Keywords: Personal Finance, Python, CustomTkinter, SQLite.

Introduction

The managing the personal financial resources are an important aspect of an individual's day-to-day life. Individuals require efficient tools to manage their finances affairs with increasing expenses and multiple sources of income. Before the digitisation, financial records were maintained manually using notebooks or spreadsheets. But these traditional methods are often time-consuming having disadvantages of inaccuracies and fail to offer structured management and real-time evaluation. On the other hand, many users face unreliable and unsecure transactions in some financial applications. Many of existing financial management applications, especially mobile and web-based platforms having complex user interfaces, dependency on internet connectivity, data privacy concerns, and limited customization for individual user needs.

To overcome these drawbacks, a simple, efficient and user-friendly solution is required which can provide simple and secure transaction. In recent article, "Personal Finance Desk" application is developed to simplify financial tracking by providing an intuitive interface and powerful functionalities [1, 2]. The system is designed by using Python [3, 4], SQLite [5] and CustomTkinter ensuring secure data storage, offline accessibility and improved user experience. The application provides essential features such as user registration, authentication with login and, bank account management, income and expense tracking, category-based expense recording, payment mode selection, and attachment support for storing transaction-related documents. It also includes modules for managing records with update and delete operations, searching and filtering transactions, and generating monthly and date-wise reports. Additionally, the system offers data visualization through charts, CSV export functionality, and a modern user interface with splash screens and loading animations to enhance usability and user experience.

Working Methodology / System Implementation

In current model "Personal Finance Desk" personal financial activities are efficiently managed. The working of the

system is divided into multiple stages, each representing a specific functionality of the application. The total system is developed in several stages:

1. System Architecture
2. System Modules
3. System Pipeline

Creative Commons

This is an open access journal, and articles are distributed under the terms of the [Creative Commons Attribution NonCommercial-ShareAlike 4.0 International](https://creativecommons.org/licenses/by-nc-sa/4.0/), The Creative Commons Attribution license allows re-distribution and re-use of a licensed work on the condition that the creator is appropriately credited

How to cite this article:

Patil, M. S., & Mahajan, D. M. (2026). Personal Finance Desk: A Desktop-Based Personal Finance Management System Using Python. International Journal of Engineering Research for Sustainable Development, 2(3), 25–31. <https://doi.org/10.5281/zenodo.23057598>

System Architecture:

The system architecture of the “Personal Finance Desk” application is divided into frontend and backend components. The frontend is developed using CustomTkinter and Tkinter widgets to create a modern desktop graphical user interface. It includes modules such as login, registration, dashboard, bank management, income and expense forms, reports, and charts. The backend is implemented using Python [4], which handles authentication, validation, transaction processing, report generation, attachment management, and business logic. SQLite is used as the database for storing various records like: user, bank, income, and expense records. Additional facilities like image handling, export functionality and data visualization are also provided by adding special libraries functions such as Pillow, CSV and Matplotlib.

System Modules

The overall system is divided in various module as bellow [6]:

- **User Authentication:** The system starts with a secure login and registration module. New users can sign up by entering required information such as username, email, and password, while existing users can access the system by logging in with their credentials.
- **Splash Screen and User Interface:** Upon launching the application, a 'splash screen' featuring an animation is displayed to provide a professional user experience. Once loading is complete, a login interface appears, featuring a modern and responsive design created using 'CustomTkinter'.
- **Bank Selection and Management:** After successfully logging in, the user selects a bank account or adds a new one. The system enables users to manage multiple bank accounts, with transactions for each bank maintained separately. This facilitates the categorization and management of financial information on a bank-by-bank basis.
- **Income Management:** Users can add income records by providing details such as date, source, amount, and optional notes. To facilitate better record-keeping, the system also allows users to attach files (e.g., bills or screenshots). All income records are stored in an SQLite database.
- **Expense Management:** This system allows users to record expenses across various categories such as food, travel, shopping, and others. Users can also select payment options like UPI, cash, or cards. Categorizing expenses in this manner enables better financial analysis.
- **Record Management:** Users can view all transactions in a structured format. The system provides options to update, delete and manage records. It also offers features to search and filter by date, category, and bank.
- **Reports and Analysis:** This application generates reports such as monthly reports, bank-wise reports, and date-wise summaries. These reports help users analyze their spending patterns and financial behaviour.
- **Data Visualization:** Tables and graphs are used to display income and expense trends. This helps users understand their financial information in a visual format.
- **Export Functionality:** The system allows users to export financial data into CSV files for external use and record keeping.
- **Loading and Transition Mechanism:** After logging in, a 'loading screen' featuring an animation and a progress bar appears for a few seconds before the dashboard opens. This enhances the user experience and ensures the process runs smoothly.

The figure 1 shows the system's Data Flow Diagram, while figure 2 shows the ER Diagram of the developed application.

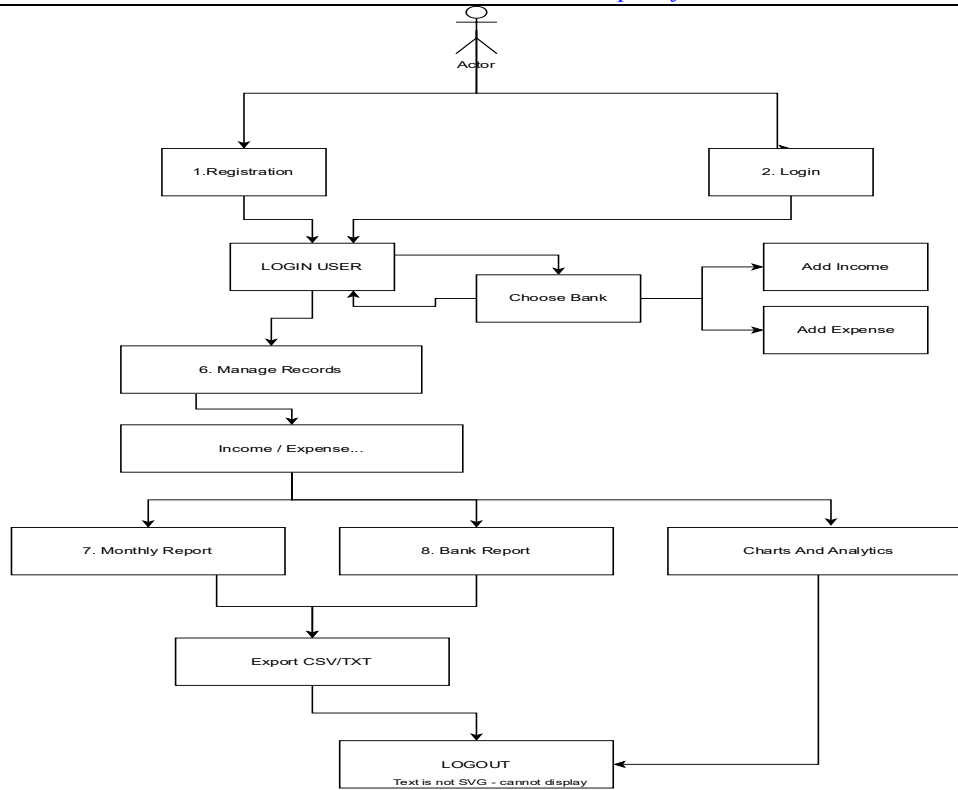


Figure 1: Flow Diagram

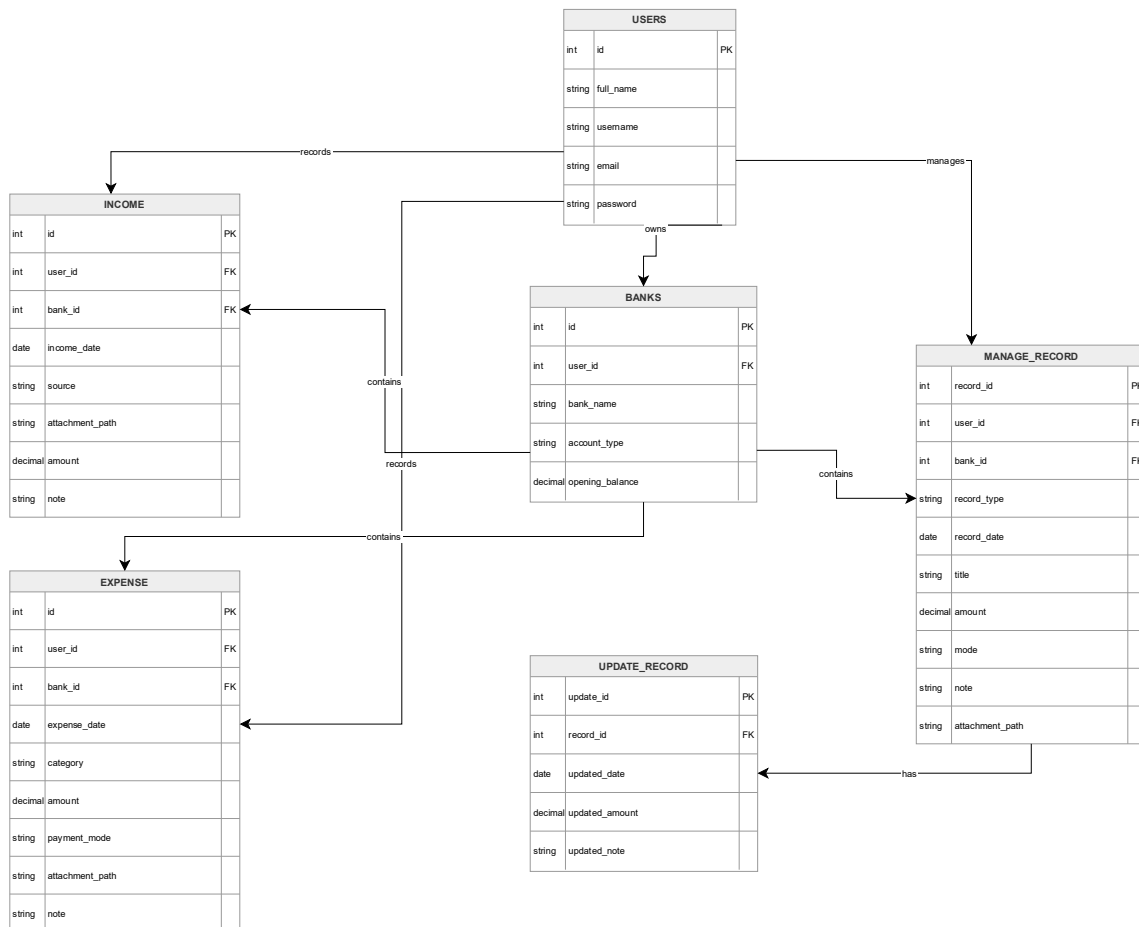


Figure 2: ER-Diagram

3. System Pipeline

The "Personal Finance Desk" system is implemented as a desktop-based application, utilizing Python for backend logic, a custom Tkinter interface for the Graphical User Interface (GUI), and SQLite for database management. The system includes a secure user authentication module that handles registration and login by storing and verifying user credentials. After a successful login, users can manage multiple bank accounts, with each bank maintaining a record of its respective financial transactions. The application features dedicated modules for managing income and expenses, allowing users to log transactions with details such as date, category or source, amount, payment method, and notes. It also features an 'attachment' facility for storing transaction-related bills and documents. An integrated 'Records Management' module enables users to efficiently view, search, filter, update, and delete income and expense records. Using the stored data, the system calculates total income, total expenses, and the remaining balance, while also generating monthly and bank-wise reports. Additionally, data visualization via charts helps users analyze financial patterns. The application also includes an export feature to generate CSV and text reports for external use. A modern user interface featuring a splash screen, loading animations and responsive layouts enhances the overall user experience. The modular design and integration of frontend, backend, and database components ensure efficient performance, data security, and ease of use.

Result and Discussion

1. Registration page and Login Page

The registration page allows new users to create an account by storing their details in the database, while the login page verifies user credentials for secure access. Input validation and password visibility features improve usability, and a loading animation enhances user experience

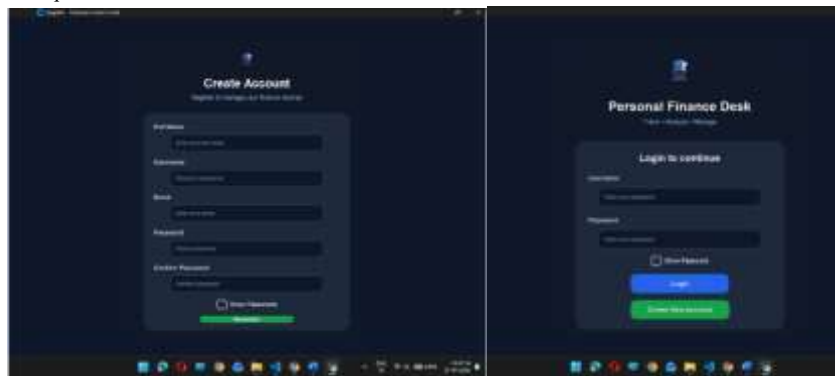


Figure3.1: Registration page and Login Page:

2. Dashboard page

As shown in the figure 3, the dashboard serves as the system's main control panel. It displays total income, expenses, and the remaining balance, while also providing access to all modules such as income, expenses, bank management, reports, and graphs. Additionally, the dashboard updates dynamically to reflect changes in financial data in real-time.

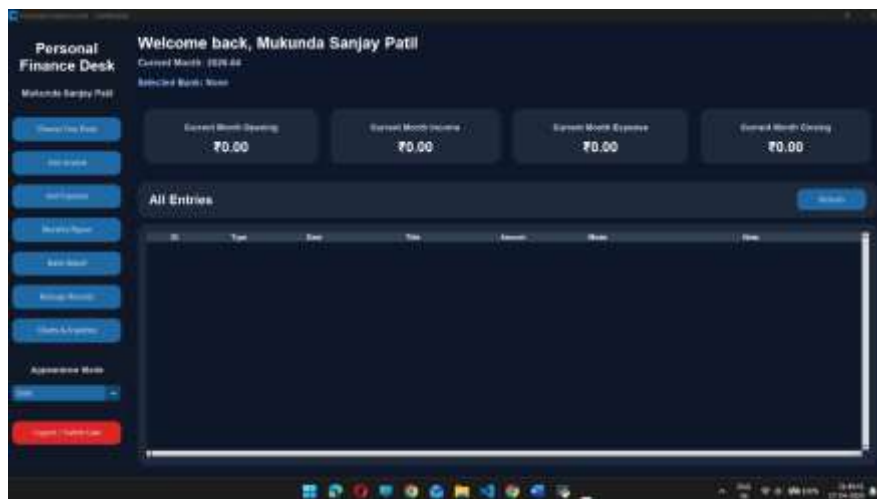


Figure 3: Dashboard page

3. Choose your bank and add new bank

As shown in the figure 4, the "Choose Your Bank" page allows users to select, add, edit, and remove bank accounts. Users can add a new bank by entering details such as the bank name, account type, and opening balance; these details are stored in the database. All income and expense transactions are processed based on the selected bank, ensuring the proper organization and categorization of financial information.



Figure 4: Choose Your Bank Page

5. Add Income

As shown in the figure 5, the Income Page allows users to add income details such as date, source, amount, and notes. It also includes an Attachment section, where users can upload supporting files such as payment receipts, screenshots, or related documents. The attachment file path is stored in the database along with the income record based on the selected bank.

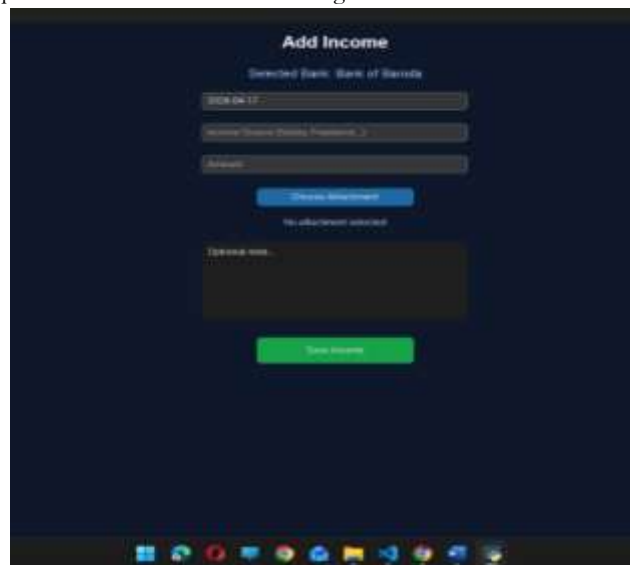


Figure 5: Add Income Page

6. Expense Page:

As shown in below figure 6, the Expense Page allows users to record expenses by entering details such as date, category, amount, payment mode, and notes. It also supports file attachments and stores data bank-wise for better financial tracking.

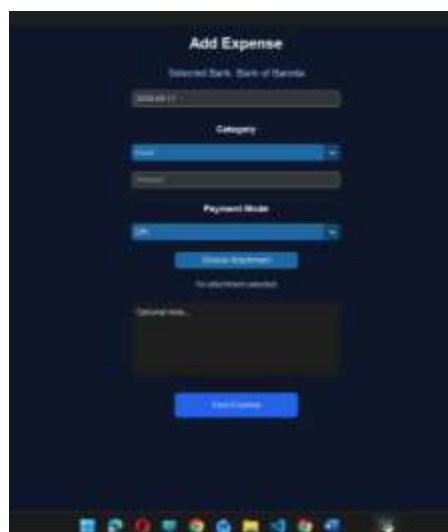


Figure 6: Expense Page View

7. Monthly report:

The figure 7 shows the Monthly Report module generates a summary of income and expenses for a selected month, including opening balance, total income, total expense, and closing balance.

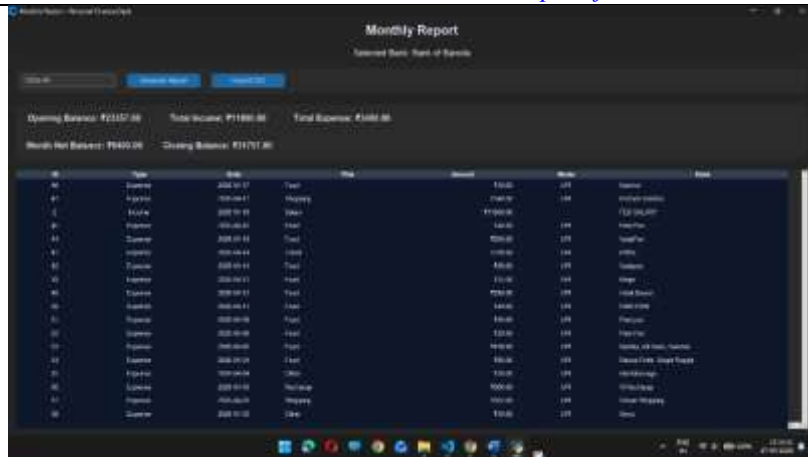


Figure 7: Monthly report

8. Bank Report:

The below Figure 8 shows the Bank Report module provides a bank-wise summary of income and expenses and calculates the current balance for the selected bank account. It presents key financial information, including opening balance, total income, total expenses, and current balance

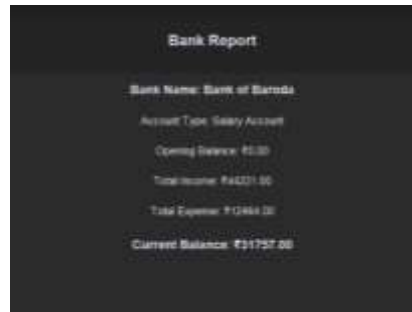


Figure 8: Bank Report

9. Manage Records

The below figure 9 shows, Manage Records module displays all income and expense data in a single structured table, providing a unified view of financial transactions. It enables users to search for and filter records based on criteria such as date range, month, category, bank, and transaction type. This module also includes functionality to update and delete records, allowing users to modify or remove them as needed. Furthermore, the system automatically refreshes the data after any changes are made, ensuring it remains accurate and up-to-date at all times. This module improves data availability, accuracy, and control, ensuring the efficient and streamlined management of financial records.

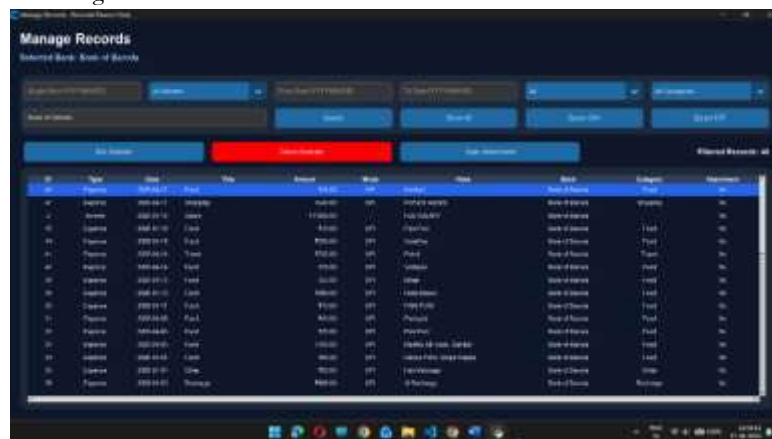


Figure 9: Manage Records

10. Chart Page

As shown in figure 10, the 'Charts and Analytics' presents financial information through graphs such as bar charts and pie charts, making it easier to visualize and analyze the data. This page enables users to analyze income and expenses based on selected criteria (filters) such as month, time period, or bank. By processing data from the database, the system displays category-wise expenses, monthly income trends, and a comparison between income and expenses. Interactive options allow users to customize the visual view according to their needs for better analysis. This section enhances decision-making capabilities by providing clear information on spending patterns and overall financial performance.

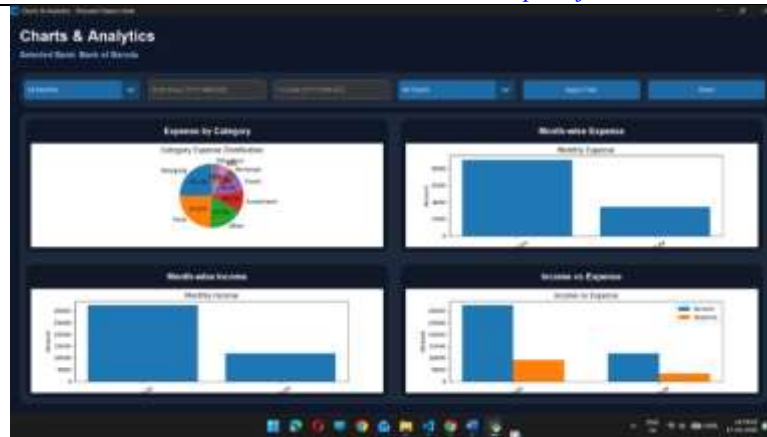


Figure 10: Charts and Analytics

Conclusion

The "Personal Finance Desk" system successfully provides a simple, secure, and efficient solution for managing personal financial activities. The application is developed as a desktop-based system using Python, CustomTkinter, and SQLite, ensuring offline accessibility, data security, and ease of use. The system allows users to manage multiple bank accounts, record income and expenses, attach supporting documents, and maintain financial records in an organized manner. Features such as manage records, search and filter options, and real-time data updates improve the accuracy and accessibility of financial data. The inclusion of monthly and bank-wise reports helps users analyze their financial performance effectively, while graphical visualization through charts enhances understanding of spending patterns. The user-friendly interface, combined with modern UI elements such as splash screens and loading animations, provides an improved user experience. Additionally, export functionality allows users to maintain external records for further use. Overall, the system meets its objectives by providing a reliable and efficient financial management tool that helps users track, analyze, and manage their financial activities with ease. It can be further enhanced with advanced features such as cloud integration, mobile support, and intelligent financial analysis in the future.

Acknowledgement

The authors express their sincere gratitude to the management and the Principal of DNCVPS Shirish Madhukarrao Chudhari College, Jalgaon, for providing the facilities, guidance, and academic environment necessary to carry out this work. The authors are also thankful to the Department for its continuous encouragement and technical support throughout the development of the "Personal Finance Desk: A Desktop-Based Personal Finance Management System Using Python".

Financial support and sponsorship

Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. Rahul Huchgond, Aditya Jadhav, Shreyash Nale, Akshata Bhosale, Dipali Jadhav AI-Driven Personal Finance Management System Using Machine Learning and Flask International Journal of Scientific Research in Engineering and Management (IJSREM) Volume: 09 Issue: 11 | Nov – 2025
2. Gupta, S., & Verma, T., AI-Based Personal Finance Management System. International Journal of Engineering Research & Technology (IJERT), 2023.
3. Savit Singh, Dr. Madhuri Gedam, Personal Finance Management System, Int. Jr. of Contemp. Res. in Multi. Volume 4 Issue 4 [Jul- Aug] Year 2025
4. Venkata Reddy Mulam, Python in Finance: Revolutionizing Financial Services, International Journal of Research In Computer Applications and Information Technology (IJCAIT), Volume 7, Issue 2, July-December 2024, pp. 973-981
5. Raj Kumar, Manvi Talwar, Chhavi, Misbah Rani, Aastha Kashyap5 Student Budget Planner: A Web-Based Financial Management System Using Machine Learning, International Journal of Science, Engineering and Technology, 2026
6. LakshmiKishore.M, Mrs.Bhuvaneswari. B, Ai-Powered Personal Finance Tracker Using Behavioral Pattern Analysis, International Research Journal of Engineering and Technology (IRJET) Volume: 12 Issue: 12 | Dec 2025.