



INFORMATICS  
INSTITUTE OF  
TECHNOLOGY

UNIVERSITY OF  
WESTMINSTER 

## Software development I (IIT Sri Lanka)

**Module:** (2023) 4COSC006C.2 Software Development I (IIT Sri Lanka)

**Assignment type:** Coursework03 (Individual)

**Assignment Specification:** Personal Finance Tracker (Dictionary-Based with JSON Serialization, modified to provide a GUI using **Tkinter** python module)

### Student details:

**Student Name :** Heshan Kaushith Ratnaweera

**IIT Student ID:** 20222094

**UOW Student ID:** 20822895/1 (W2082289)

### Content in this document:

**This document includes details such as setup instructions and feature descriptions of the Personal finance tracker program.**

# Personal Finance Tracker

## Overview

The **personal finance tracker** is a software application developed using python programming language and JSON (JavaScript Object Notation) for data storage and manipulation. The application is designed to assist users track their daily income and expenses, manage their budget, and analyze their spending patterns. Its key features include:

- Recording transactions.
- Updating transactions.
- deleting transactions.
- viewing transactions .
- Sort transactions in ascending and descending orders.
- Search for a specific transaction out of a pool of stored transactions.
- Generating summaries of transactions.
- Recording transactions in bulks from a text file.
- Saving transactions to a file for convenience.

## Setup Instructions

### Prerequisites

- ❖ **Python 3.x** install on your computer:

**Personal finance tracker** application highly depends on python libraries such as “**random**”, “**datetime**”, “**os**”, “**tkinter**” and “**json**” for its function.

## Installation:

- ❖ Download or copy the entire **Python\_and\_JSON** folder onto your local machine.
- ❖ Make sure the files are in the correct directory / folders, it is crucial for the files to be in the right folder locations. Therefore, it is strongly recommended that users directly copy or download the entire folder containing both the main program file and the subfolder containing the features program files.

## Usage:

- ❖ To run the application, follow the steps below:
  1. Navigate to/ go to the locations in your computer where you stored the **Python\_and\_JSON** folder.
  2. Inspect the **Python\_and\_JSON** folder to see the contents of the folder.
  3. Inside the **Python\_and\_JSON** folder you could see a python file named **main\_prog.py**, double click on the file, then the **Personal finance Tracker** will start running and the user interface of the app will be visible.

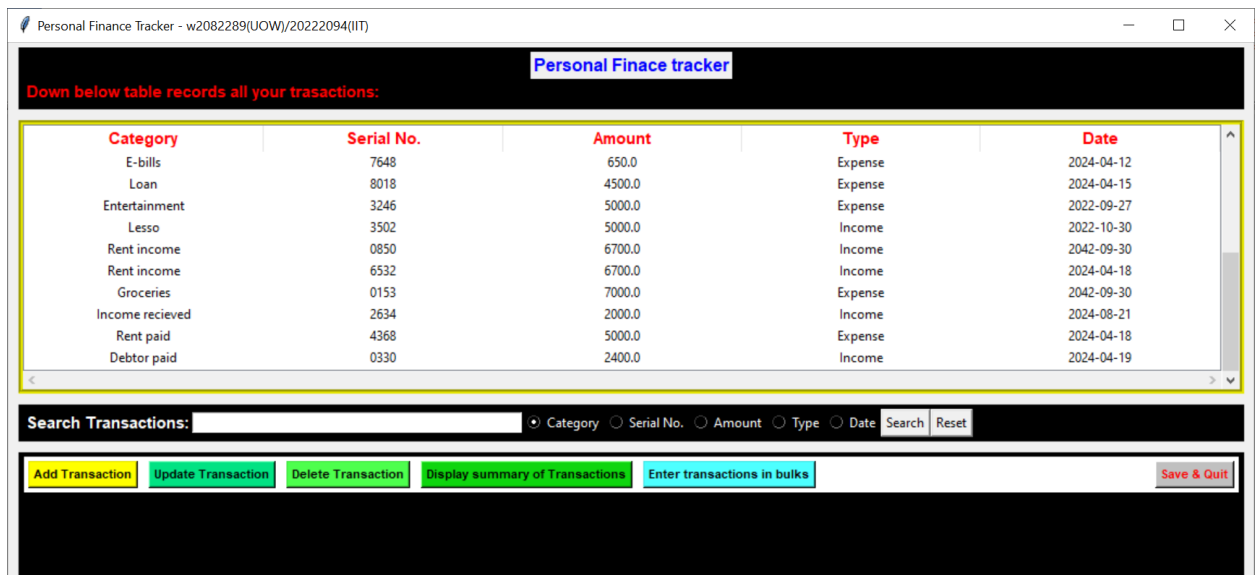


Figure 1: The user-interface of the app Personal Finance Tracker

4. Now you are all set, now you can start managing your daily transactions using the **Personal finance tracker application**.
5. If need be, you can also right click on the **main\_prog.py** file and create a desktop Short-cut for easy access to the application.

## Features

- ❖ The **Personal Finance Tracker** provides a **GUI** as the interface of the application for enhance user experience.

### 1. Add transactions feature:

- Allows the user to add transactions to the financial records of the application.
- Users can specify the amount, category, transaction type (income or expense), and date of a transaction entered.
- Transactions are validated before updating to maintain data accuracy.

### 2. View transactions feature:

- Allows the user to view his/her transactions.
- Displays all recorded transactions in a table.
- Provides insights into each transaction details such as serial no. , amount. category, transaction type, and date.

### 3. Sort transactions feature:

- Allows the user to sort transactions in either ascending or descending orders.
- Users can sort transactions by clicking either of headers(column names) of the table that displays the transactions.
- To sort in ascending order, click the desired column header once.
- To sort in descending order, click the desired column header twice.

### 4. Search for specific transaction/s feature:

- Allows the user to search for a specific transaction/s using a value.
- The user can select which column to search for the specific value/data.
- Matching transactions gets highlighted in the table.

### 5. Update transaction feature:

- Allows the user to update existing transactions.
- The user can modify data such as amount, category, transaction type, and date of transaction.
- Transactions are validated before updating to maintain data accuracy.

### 6. Delete transaction feature:

- Allows the user to delete specific transactions from their records
- The user is prompted to enter the serial number of the transaction to be deleted or delete a group of transactions at once by deleting using the category name.

#### 7. Display summary feature:

- Present a summary of all recorded transactions.
- Provide the total number transactions, total number of transactions for an individual category , total income, total expenses, and overall balance (income – expenses).
- Offers valuable insights into the user's financial status briefly.

#### 8. Record transactions in bulks from a text file:

- Allows the user to read a text file containing transactions and record/extract all the transactions in it to the main program.
- After extraction of the transactions to the main program, the user can update, view, obtain summaries, delete, and save the transactions to the JSON file used to save transactions.

#### 9. Save transactions feature:

- Preserves the recorded transactions by storing them to a JSON file.
- Ensures that users can access their financial records at any time.
- Simplifies data management and retrieval for future reference.

## Conclusion

The **Personal finance Tracker** offers a user-friendly and efficient solution for managing personal finances. With unique interface and robust features, users can easily track their income, expenses, and overall financial status. Whether you are budgeting, analyzing spending patterns, or planning for the future, the Personal Finance Tracker is ready to assist your need to stay organized and in control of your finances.