# Part3: Reflection on the Experience:

## Personal Finance Tracker

This assignment allowed me to build a **Personal Finance Tracker**, a project that required not only Python programming skills but also an understanding of data management and visualization. The goal of the project was to create a tool for users to track, visualize, and manage their personal expenses. It involved multiple aspects, such as input validation, file handling (CSV), and data visualization, which made it an engaging challenge.

I believe I chose a **suitably challenging problem** because it required implementing various functionalities, including reading and writing data to files, handling user input, and generating visual outputs (graphs). Each of these features tested my problem-solving abilities in different ways, helping me grow as a developer. The project was neither too easy nor overwhelming, and it provided a well-balanced opportunity to apply theoretical knowledge in a practical way.

The **most challenging aspect** was implementing the plotting functionality. I had to ensure that the data was correctly parsed, sorted, and visualized. Specifically, handling different date formats and ensuring they were correctly parsed into a uniform format before plotting was tricky. Additionally, visualizing the data with matplotlib required me to ensure the graph was clear, aesthetically pleasing, and informative. Sorting the data by date before plotting also required attention to detail. Despite these challenges, I found it rewarding to see the graph come together and display the expense trends effectively.

I relied on **multiple resources** to learn about the libraries and techniques used in the project. For reading and writing CSV files, I referred to the Python documentation for the csv module. For data visualization, I consulted the official matplotlib documentation, as well as various tutorials and examples available online. These resources helped me understand how to structure my data, handle edge cases, and visualize the data clearly.

The **most valuable thing I learned** was how to work with external data sources, such as CSV files, and how to visualize data using Python. Before this assignment, I had limited experience working with CSV files and creating graphs. This project enhanced my ability to manipulate data, validate inputs, and present information in a visual format, which is a valuable skill in many areas of cloud computing and data science. It also taught me how to structure a program that involves both data storage and user interaction.

I tested my program extensively to ensure it was working as expected. I added several expenses with different categories and amounts, deleted some, and checked that the file was updated correctly. I also tested the plotting feature with a range of data to ensure that it displayed the information accurately. Based on these tests, I am confident that the program works reliably and meets the requirements.

While I’m proud of the current implementation, I would still like to **add more features** in the future. For instance, I could implement a budgeting feature that allows users to set limits for different categories and track their spending against those limits. I could also add a filtering system to view expenses by category or time period, making the tool more flexible and powerful. These features would enhance the program’s usefulness and provide more value to the user.

Working on this assignment was a very **enjoyable experience** because it combined practical problem-solving with learning new concepts. It was satisfying to see the program evolve from a simple expense tracker into a fully functional tool with visual capabilities. I feel that this project not only improved my Python skills but also deepened my understanding of how to build applications that interact with external data sources and present information in an intuitive way. The project helped me see the direct application of Python in real-world scenarios, which has motivated me to explore more complex projects in the future.