Python Development Internship @ Coding Samurai

Final Internship Project Report

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GitHub Repository: https://github.com/m-zohaib-shahid/CODING-SAMURAI-INTERNSHIP-TASK

1. Introduction

This report presents the work completed as part of my Python Development Internship with Coding Samurai (Batch A-55). The internship was a one-month program (from 5th September 2025 to 5th October 2025) designed to help students gain real-world experience by building hands-on projects and improving their practical programming skills.

During this internship, I worked on two main Python projects:

1. **Calculator Application** – A feature-rich console-based calculator with memory and history functionality.
2. **To-Do List Application** – A simple and efficient task management system with persistent storage and an optional GUI interface.

This report describes the objectives, design, implementation, and outcomes of these projects, along with the skills and knowledge I gained throughout the internship.

2. Internship Objectives

The main objectives of the internship were:

- To apply Python programming concepts in real-world applications.
- To strengthen problem-solving and logical thinking skills.
- To learn how to design and structure a complete software project.
- To gain experience working with GitHub for version control and project hosting.
- To prepare for professional software development workflows.

3. Project 1: Calculator Application

3.1 Overview

The Calculator Application is a console-based program that performs basic arithmetic operations. It was designed to be more advanced than a simple calculator by including additional features like memory storage and calculation history.

3.2 Features

- Addition, Subtraction, Multiplication, and Division
- Calculation History – Keeps track of the last 10 calculations.
- Memory Function – Stores a result for future use.
- Error Handling – Handles invalid inputs and division by zero gracefully.

3.3 Implementation Details

Language: Python 3.x
Data Structures: deque from collections for history management
Concepts Used: Functions, loops, conditionals, exception handling, input validation

3.4 Outcomes

The project successfully performs all required operations with additional advanced features. It helped me understand how to structure a Python program, handle user inputs, and store temporary data efficiently.

4. Project 2: To-Do List Application

4.1 Overview

The To-Do List Application is a Python project that helps users manage daily tasks. It supports adding, viewing, deleting, and marking tasks as completed. The project also includes persistent storage using JSON, allowing tasks to be saved even after the program is closed.

4.2 Features

- Add new tasks
- View all tasks
- Delete tasks
- Mark tasks as completed
- Persistent storage using JSON
- (Optional) GUI version using Tkinter

4.3 Implementation Details

Language: Python 3.x
Modules: json for storage, tkinter for GUI
Concepts Used: File handling, data persistence, user input, and GUI design

4.4 Outcomes

This project enhanced my understanding of file handling, data management, and persistent storage in Python. It also provided valuable experience in building simple graphical user interfaces.

5. GitHub Repository

All the source code for the internship projects has been uploaded to my GitHub repository: https://github.com/m-zohaib-shahid/CODING-SAMURAI-INTERNSHIP-TASK

This repository contains:
- Source code for both projects
- README files with detailed documentation
- Project structure and setup instructions

6. Skills Gained

Through this internship, I significantly improved my skills in the following areas:

- Python programming fundamentals
- Functions, loops, and conditionals
- File handling and data storage (JSON)
- GUI development using Tkinter
- Version control using Git and GitHub
- Project documentation and presentation
- Problem-solving and debugging skills

7. Conclusion

Completing this internship with Coding Samurai has been a valuable and enriching experience. It allowed me to apply theoretical knowledge to real-world problems and gain practical exposure to Python development.

The projects I built during this internship not only improved my technical skills but also enhanced my confidence as a developer. This experience has motivated me to continue learning and exploring advanced topics in software development.

I respectfully submit this report as part of my internship completion and kindly request consideration for the Internship Completion Certificate and, if possible, a Letter of Recommendation (LOR) based on my performance and project work.

Submitted on: 5th October 2025
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