Excel Report Generator

Introduction

The Excel Report Generator is a desktop-based tool designed to simplify data analysis by converting raw CSV files into interactive Excel reports. This project leverages Python libraries such as pandas, openpyxl, matplotlib, and Tkinter to automate data summarization, visualization, and reporting. It aims to help users with minimal technical expertise quickly analyze datasets, generate pivot tables, and create visually appealing reports.

Abstract

Organizations often handle large datasets stored in CSV files. Manually creating summaries and reports can be time-consuming and error-prone. The Excel Report Generator addresses this by providing a user-friendly application to import CSV files, automatically generate pivot tables, create charts, and export professional Excel reports. This project demonstrates Python-based automation for efficient data processing and reporting workflows.

Tools Used

1. **pandas** – For reading, cleaning, and analyzing CSV data.
2. **openpyxl** – To create, style, and export Excel files.
3. **matplotlib** – For creating charts and embedding them in reports.
4. **Tkinter** – For building a simple graphical interface with file upload and save dialogs.

Steps Involved in Building the Project

1. **Load CSV into pandas** – The user selects a CSV file through a Tkinter file dialog and loads it into a DataFrame.
2. **Create Pivot Tables** – Summarize data with totals, counts, and averages.
3. **Generate Charts with matplotlib** – Create visual representations of data.
4. **Export Styled Excel Using openpyxl** – Add formatting, styles, and charts.
5. **File Upload and Save Dialogs** – Simplify file selection and saving.
6. **Add Summary Statistics** – Include totals, mean, min, and max in reports.

Sample Table	
Row 1	Value 1
Row 2	Value 2

Sample chart screenshot placeholder

Conclusion

The Excel Report Generator automates the process of transforming raw CSV datasets into meaningful, styled Excel reports with charts and summary statistics. It is a robust and reusable tool for analysts, students, and professionals who work extensively with

structured data. This project highlights the power of Python libraries for data automation and reporting, making it an essential solution for efficient data analysis workflows.