**Worksheet: Introduction to Excel and Interfacing with (openpyxl)**

**Objective:**

This worksheet will guide you through basic operations in Excel, then introduce you to automating and interacting with Excel spreadsheets using ’s openpyxl library.

**References:**

* Official openpyxl documentation: [openpyxl Documentation](https://openpyxl.readthedocs.io/)
* .org: [Working with Excel files in](https://docs.python.org/3/library/)

**Part 1: Getting Started with Excel**

1. **Basic Excel Interface**
   * Open Excel and familiarize yourself with the following elements:
     + Cells, Rows, Columns
     + Sheets, Tabs, and Navigation
     + The formula bar
     + Basic functions (e.g., SUM, AVERAGE, MIN, MAX)
2. **Creating a Simple Spreadsheet**
   * **Task:** Create a basic Excel spreadsheet to track monthly expenses with columns for Item, Date, Category, and Amount.
   * **Apply formulas:** Calculate totals for each category, and the overall monthly total.
3. **Save the Spreadsheet**
   * Save your Excel file as Monthly\_Expenses.xlsx for later use with openpyxl.

**Part 2: Introduction to openpyxl**

**1. Installation and Setup**

* **Installing openpyxl:** Open a terminal and install openpyxl by running:

pip install openpyxl

* **Understanding openpyxl:** This library allows you to create, read, and edit Excel .xlsx files directly in .

**2. Basic Operations in openpyxl**

* **Loading an Excel Workbook:**

from openpyxl import load\_workbook

workbook = load\_workbook("Monthly\_Expenses.xlsx")

sheet = workbook.active # Access the first sheet

* **Reading Data:**

print(sheet["A1"].value) # Prints the value in cell A1

* **Writing Data:**

sheet["E1"] = "Total" # Adds a new column heading for Totals in E1

workbook.save("Monthly\_Expenses.xlsx")

**3. Applying Formulas Using openpyxl**

* **Example:** Calculate the sum of all amounts in the “Amount” column (Column D).

sheet["E2"] = "=SUM(D2:D30)" # Example sum formula, adjust the range as needed

workbook.save("Monthly\_Expenses.xlsx")

**4. Practice Exercises**

* **Exercise 1:** Write a script that loads Monthly\_Expenses.xlsx, and reads and prints out all item names and amounts.
* **Exercise 2:** Add a new column titled "Discounted Price" where each value is 90% of the original price in the Amount column.
* **Exercise 3:** Calculate the monthly total of all expenses and write the result in the cell below the last expense in the Amount column.