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](#)
- .org: [Working with Excel files in](#)

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:**

```python
from openpyxl import load_workbook
workbook = load_workbook("Monthly_Expenses.xlsx")
sheet = workbook.active  # Access the first sheet
```

- **Reading Data:**

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

- **Writing Data:**

```python
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).

```python
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.