Project Title: Command-Line Data Analytics Tool

Objective:

You will create a Python program that runs in the terminal (command line) and helps users analyze data stored in CSV files. This tool will act like a basic version of Excel or Power BI, allowing users to see the contents of the file, check for missing values, and perform basic calculations on numeric columns such as Sales, Profit, Quantity, etc.

The goal is to help you practice reading files, using loops and conditions, writing functions, handling user input, and working with real-world data.

Problem Statement:

You have been asked to build a simple command-line data analysis tool. This tool should ask the user to upload a CSV file (such as a sales report) and provide a menu with options to explore and summarize the data. Users will be able to preview the data, check for missing values, and perform operations like calculating the sum, average, minimum, and maximum values of numeric columns.

This tool will be text-based, meaning users will interact with it by typing numbers or column names to make choices.

Tasks Breakdown:

1. Load CSV File

- Ask the user to enter the file name (e.g., `sales.csv`).
- Read the file using `csv.reader()` or `pandas.read_csv()` (optional).
- If the file is not found, show a message and stop the program.

2. Preview Data

- Show the total number of rows and columns in the file.
- Display all column headers (names).
- Print the first 5 rows so the user can see what the data looks like.
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3. Analyze Numeric Columns

- Show only the numeric columns to the user (for example: Sales, Profit, Quantity).
- Ask the user to choose one of these columns.
- Then ask which operation they want to perform:
  - Total (Sum)
  - Average (Mean)
  - Minimum value
  - Maximum value
  - Count of available values
- Perform the selected operation and show the result.

4. Check Missing Values

- Ask the user to select a column.
- Count how many rows in that column have missing or empty values.
- Display the number of missing entries.

5. (Optional) Text Histogram

- You can allow the user to create a simple text-based chart showing how the values are distributed.
- For example: Show how many values fall in the range 0–100, 101–200, etc.

Expected Output:

- The tool should display a clear menu and guide the user at each step.
- The program should keep running until the user chooses to exit.
- Results should be printed clearly so the user can understand the insights from the data.

Example:

Main Menu

```
Welcome to the Command-Line Data Analytics Tool

Main Menu:
1. Preview Data
2. Analyze Numeric Column
3. Check Missing Values
4. Exit
Enter your choice (1-4):
```

Sub-Menu (After Choosing Option 2 - Analyze Column)

```
Available Numeric Columns: Sales, Profit, Quantity, Discount
Enter the column name you want to analyze: Profit

Choose Operation:
1. Total (Sum)
2. Average (Mean)
3. Minimum Value
4. Maximum Value
5. Count of Values

Enter your choice (1-5):
```

Tips:

- Focus on writing clean, simple code.
- Handle errors (like wrong column names or missing files).
- Use built-in Python functions like `sum()`, `min()`, `max()`, `len()`, and `float()` for numeric analysis.
- Add comments in your code to explain what each part does.