Assignment 1:-

1. Weather CLI Tool:

• Objective: Build a command-line tool that fetches weather information for a given city using a public API like OpenWeatherMap. The tool should display the current weather, temperature, humidity, and wind speed.

• Key Concepts: Working with APIs (using requests module), JSON parsing, command-line arguments (using argparse or click).

2. Web Scraper:

• Objective: Create a Python script that scrapes news headlines from a website and stores the data in a text file or prints it to the console. You could target a simple news or blog site for easier HTML structure.

• Key Concepts: HTTP requests, HTML parsing with BeautifulSoup or similar, file I/O, possibly dealing with web scraping ethics and legality.

3. Personal Finance Tracker with GUI:

• Objective: Develop a graphical application (using Tkinter or PyQt) that allows users to input their expenses and incomes, categorize them, and visualize their financial habits over time through charts.

• Key Concepts: GUI development, event-driven programming, possibly integrating with a plotting library like Matplotlib for visualizations.

4. Encryption/Decryption Tool:

• Objective: Implement a tool that can encrypt and decrypt text files using a simple algorithm (e.g., Caesar cipher, Vigenère cipher) and a custom key. Aim to build a CLI first, then possibly a simple GUI.

• Key Concepts: String manipulation, working with files, understanding basic encryption concepts, GUI (optional), command-line interface for usability.