Software Requirements Specification

Flood Risk Factor Visualization Tool

1. Functional Requirements

Data Input:

- The software must load a CSV file (`flood.csv`) containing numerical data on environmental factors and a target column named `FloodProbability`.

Visualization:

- Generate a scatter plot for each factor vs. `FloodProbability`.
- Display all scatter plots in a grid layout.
- Each scatter plot should include:
  - Title
  - Labeled axes
  - Grid lines for readability

User Output:

- Display the generated scatter plots in a single window.

2. Non-Functional Requirements

Platform:

- OS: Windows, macOS, or Linux
- Environment: Python 3.7+

Performance:

- Should handle small to medium-sized datasets (up to ~100,000 rows) efficiently.

Usability:

- Run via a Python script in Jupyter Notebook or any IDE (e.g., VS Code, PyCharm).

3. Software Requirements

Programming Language:

- Python 3.7 or higher

Libraries/Dependencies (installable via pip):

- pandas - for reading and manipulating the CSV file
- matplotlib - for generating scatter plots

Installation Command:

pip install pandas matplotlib

4. Input File Format

- CSV file named `flood.csv` located at: `./flood.csv` or `/mnt/data/flood.csv`

- Must contain several numeric columns (factors)

- One column named `FloodProbability` (target)