Prerequisite Document for Offline Implementation

1. Software Requirements
1. Python 3.8 or later
Download from: https://www.python.org/downloads/
After installation, verify by running:
python --version

2. Jupyter Notebook (optional but recommended)
Install using pip:
pip install notebook
Launch with:
jupyter notebook
3. Text Editor or IDE (optional but useful)
VS Code: https://code.visualstudio.com/
PyCharm: https://www.jetbrains.com/pycharm/
Others: Sublime Text, Notepad++, etc
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2. Python Packages to Install
Run the following command in the terminal or command prompt to install all required libraries:
pip install pandas numpy matplotlib scikit-learn seaborn openpyxl xlrd

Explanation of packages:
pandas – for data manipulation, reading and writing CSV/JSON/Excel files.
numpy – for numerical calculations.
matplotlib – for creating charts and visualizations.
scikit-learn – for regression models and evaluation metrics.
seaborn – for advanced and attractive statistical plots.
openpyxl – for reading/writing Excel files (.xlsx format).
xlrd – for reading Excel files (.xls format).

You can verify by running:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.linear_model import LinearRegression
```
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3. Dataset Files to Download
Download these datasets:

1. Iris Dataset
File name: iris.csv
Download from: https://www.kaggle.com/datasets/uciml/iris

2. Titanic Dataset
File name: titanic.csv
Download from: https://www.kaggle.com/c/titanic/data
Use train.csv and rename it as titanic.csv.

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Prepare for file handling (read_csv, to_json, etc.), data exploration (head(), describe()), missing value handling, linear regression (slope, intercept, assumptions), train-test split, and evaluation metrics (MSE, R^2). Practice visualizations with matplotlib and seaborn. Use libraries like pandas, numpy, scikit-learn, openpyxl, and xlrd.
Note: This is not an exhaustive list. Review related concepts, functions, and practical examples to ensure thorough preparation.