Requirements for SMS spam detection(jupyter notebook)

1. Required Libraries
    a. numpy
    b. pandas
    c. nltk
    d. string
    e. collection
    f. streamlit (for web app frame)

2. Machine Learning and Processing
    a. sklearn

3. Data Visualization
    a. matplotlib
    b. seaborn
    c. wordcloud

4. Model Persistance
    a. pickle

5. Required Files (make sure you have this file)
    a. spam.csv

6. Note:
    a. Ensure you have ISO-8859-1 encoding support when reading the CSV.
    b. If using Jupyter Notebook, add %matplotlib

inline before plotting.

c. The script saves the trained model and vectorizer using pickle, so ensure write permissions are available.

Requirements (for app.py)

1. Required Libraries for (Web App Framework)
    a. nltk
    b. streamlit
    c. string
    d. pickle
    e. scikit-learn

2. Required Files
    - **vectorizer.pkl** (TF-IDF vectorizer saved using pickle)
    - **model.pkl** (Trained machine learning model saved using pickle)

3. Running the Streamlit App
    - streamlit run your_script.py
    - (Replace your_script.py with the actual script filename.)
    - Ensure the model.pkl and vectorizer.pkl files were correctly saved and are compatible.