Email Spam Detection

- **Title:** Email Spam Detection using Decision Tree (Python)
  Objective:
  To classify emails as Spam or **Ham** using Machine Learning and Natural Language Processing (NLP).
  Goal:
  Build an intelligent system that filters out spam messages automatically.

Dataset & Preprocessing

- **Dataset:** `email.csv` containing two columns — *Message* and *Category*
  Steps:
- Encoded target labels (Spam/Ham) using **LabelEncoder**
- Converted text messages into numerical features using **CountVectorizer**
- Removed stopwords and limited features to top 5000 words
- Split dataset into **Training (80%)** and **Testing (20%)**

Model Building

- **Libraries:**
  Pandas, Scikit-learn, Matplotlib, Seaborn
  Training Process:
- Fitted the model on preprocessed training data
- Predicted categories for test messages
- Evaluated model using accuracy and classification metrics

Results & Evaluation

- **Accuracy:** 97.0%