Artificial Neural Network
Lab Task 1

Scenario:

You are a data scientist working at a tech company that provides email filtering solutions to its users. Your team has been tasked with enhancing the spam detection system. You have access to a labeled email dataset containing spam and non-spam emails. Your goal is to preprocess this dataset, develop an SVM-based classification model, and fine-tune it for optimal performance. The final model will predict whether an incoming email is spam or not, based on its content.

To achieve this, you will:

1. Preprocess email content to extract meaningful numerical features.
2. Train and evaluate the model using various SVM kernels (e.g., linear, RBF, polynomial).
3. Tune hyperparameters to maximize accuracy.