ASSIGNMENT #7

1. A financial institution wants to use SVM to predict credit card fraud. Explain how SVM can be formulated as a constrained optimization problem. Discuss the role of quadratic programming in solving this problem and how it helps in finding the optimal decision boundary.
   Objective: Understand the mathematical formulation of SVM as a constrained optimization problem and its practical application in fraud detection.

2. An e-commerce company wants to use SVM to classify customer reviews as positive or negative. Discuss the difference between using a linear SVM and a nonlinear SVM for this task. Provide examples of scenarios where a nonlinear SVM might outperform a linear SVM.
   Objective: Compare linear and nonlinear SVMs in the context of sentiment analysis for customer reviews.