**Project 1: Predicting Loan Approval with Machine Learning Classifiers**

**Steps to run the notebook:**

1. It is advisable that this notebook is run either on jupyter notebook or on google colab.
2. It is essential to give the correct path of the datasets both training and testing for loading the data.
3. After the data sets are uploaded in the correct file path (for jupyter notebook and colab notebook), each cell can be run by clicking **shift+enter** keys.
4. Please note that the SVM model and the PCA-enhanced KNN and SVM models may take additional time to execute due to the computational complexity of SVM and the dimensionality reduction steps involved with PCA.

**Project Overview:**

The goal of this project is to develop and assess several machine learning models that use applicant data to forecast loan approval decisions. Classifying loan applications as approved or denied using different classifiers and figuring out the effects of dimensionality reduction strategies like Principal Component Analysis (PCA) on model performance are the main objectives.

The Machine learning classifier models include:

1. LDA
2. Decision trees
3. K nearest neighbours (KNN)
4. Support Vector Machine (SVM)

**DATASETS:**

We have two datasets:

1.Training Data: Contains data for training our models. It includes: 27 features related to loan applications (such as age, annual income, credit score, etc.). A target label indicating loan status: 0 for Approved and 1 for Denied.

2.Testing Data: Contains a separate set of samples for evaluating model performance.