Ex-4 : Linear Discriminant Analysis
Instructions:
Visit the Machine Learning Repository then download the IRIS data and Dataset description
Read the Dataset Description as given below
Solve the 2 Problems given below (Both Excel and Program)
Paste your answers and Program here or a seperate Doc file and upload in GCR

Reg. No :

Refer UCI Machine Learning Repository for various standard Datasets, but here refer **IRIS dataset**
https://archive.ics.uci.edu/ml/datasets/Iris
https://archive.ics.uci.edu/ml/machine-learning-databases/iris/ (For Dataset download)

Title: Iris Plants Database Description
The data set contains 3 classes of 50 instances each, where each class refers to a type of iris plant.
One class is linearly separable from the other 2; the latter are NOT linearly separable from each other.
 --- Predicted attribute: class of iris plant.
Number of Instances: 150 (50 in each of three classes)
Number of Attributes: 4 numeric, predictive attributes and the class
Attribute Information:
   1. sepal length in cm
   2. sepal width in cm
   3. petal length in cm
   4. petal width in cm
   5. class:
      -- Iris Setosa
      -- Iris Versicolour
      -- Iris Virginica
Class Distribution: 33.3% for each of 3 classes.
Some analysis of Distributions are given below:

Problem - 1:
Represent the data in Excel to get the distribution as below
   Note: the dataset is in csv format (Comma separated value), you may need to preprocess it
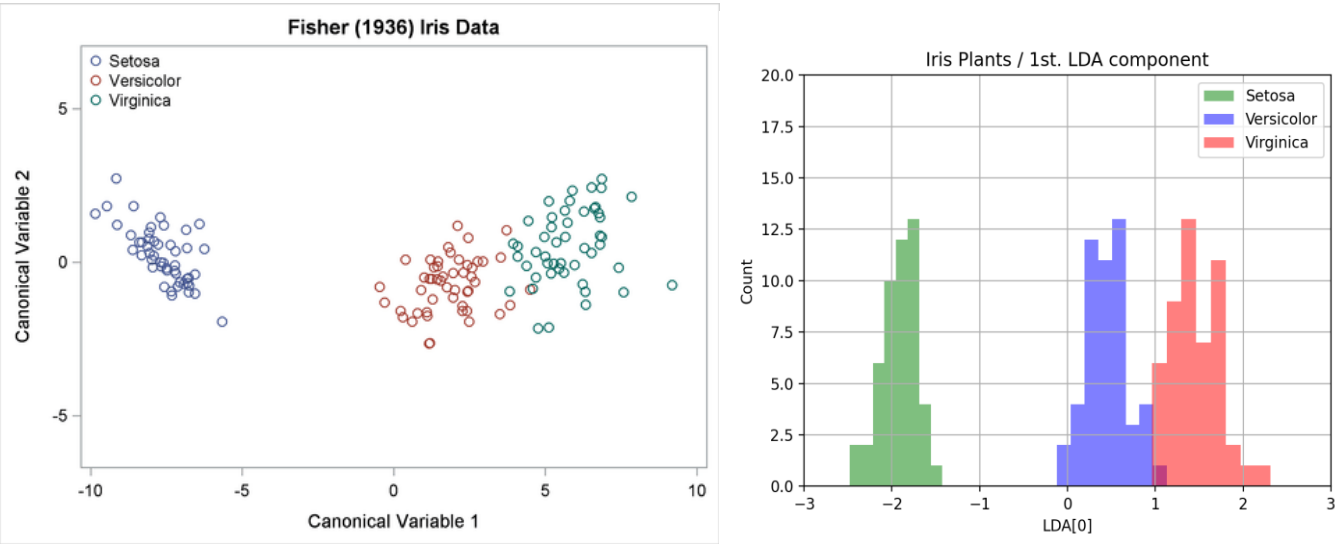
Problem-2:

Write a Program to Perform Discriminant Analysis and plot the data in Scatter plot using Petal Area and Sepal Area formula as below

Note: Sepal area = SepalLength * SepalWidth;

PetalArea = PetalLength * PetalWidth;

Program can be in any Language like Python / C / C++ / Java / MatLab etc

Discriminant Analysis of Iris Data Using Area