Lab 12

Q1: Compute the linear Discriminant project for the two-dimensional dataset

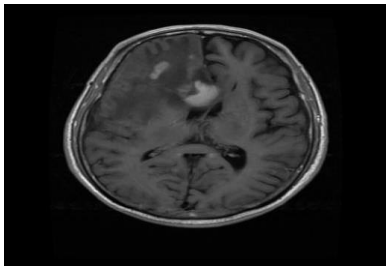
Sample for class w1, X1=(x1,x2)={(6,3),(2,4),(6,5),(3,3),(4,4),(7,8)}

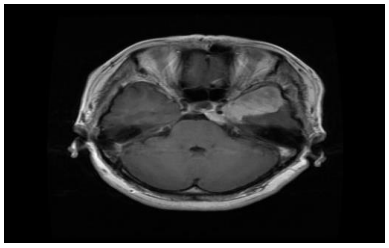
Sample for class w2, X2=(x1,x2)={(9,10),(7,9),(9,5),(8,7),(10,8),(10,10)}

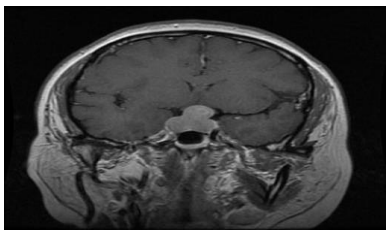
Q2: We have dataset with 6×100-dimensional array. Create random dataset with 6 features and 100 number of samples, Apply PCA for dimension reduction, also compute the dimension of scatter or covariance matrix for this dataset.

Q3: Repeat Q2 with LDA 6×100-dimensional array for classification. 50 samples represent class1 and 50 samples represents for class2.

Q4: We have feature matrix for brain tumor dataset, Apply PCA for dimension reduction and classify this dataset with and without dimension reduction for any machine learning model as you studied before.







Bag of visual words or other

Samples	F1	F2	fn	labels
1	--	--	--	1
2	--	--	--	1
…	--			2
n	--	--	--	3

PCA for dimension Reduction

Split features into training and testing

Any classifier(RF,SVM,DT,KNN)

Q5: Repeat Q4 for LDA for classification (you can use sklearn libraray for LDA classification)