EXERCISE 1: MINIMUM DISTANCE CLASSIFICATION

Initialize seeds (rand and randn) random generator numbers to 0, generate two classes of 1000 elements each one using randnorm, the first with mean [0, 0] and covariance matrix C = [1 0.8; 0.8 2] and the second with mean [3, 3] and C = [1 -0.9; -0.9 2] and finally mix the data (use shuffle).

a) Decode a minimum distance classifier with the first 1600 data.

b) Perform the previous point using the Mahalanobis distance, and compare the results.

c) How are the boundaries between the classes? Can you draw them?