Statistical Learning

Homework #4

Duncan Wilson  
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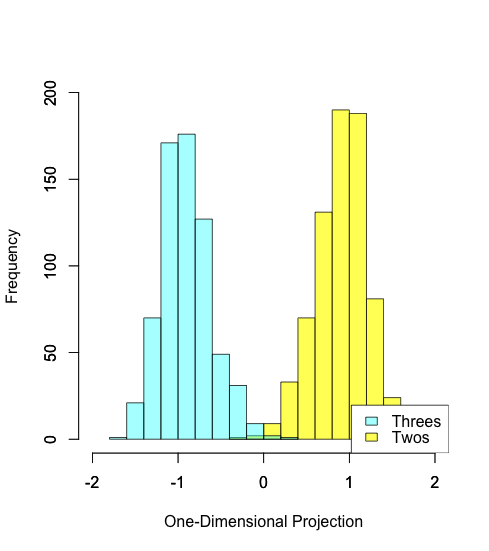
Problem 2.

Perform Fisher Discriminant Analysis on three subsets of the zip-code data.

The dimensionality is reduced by projecting from down to by the following process:

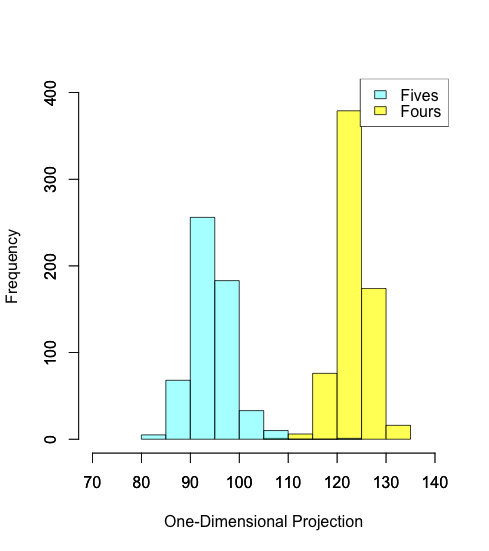
with

Here is the histogram from comparing the 2’s against the 3’s:



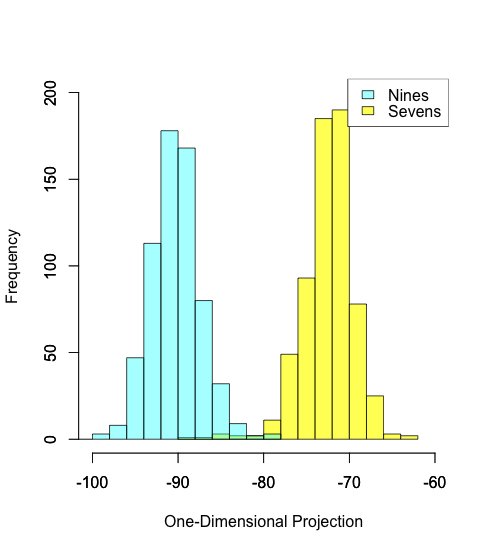
After fitting a Gaussian to each of these distributions, the program produced classification on the dimension-reduced test set with 95.88% percent accuracy.

Here is the histogram from comparing the 4’s against the 5’s:



After fitting a Gaussian to each of these distributions, the program produced classification on the dimension-reduced test set with 98.05% percent accuracy.

Here is the histogram from comparing the 4’s against the 5’s:



After fitting a Gaussian to each of these distributions, the program produced classification on the dimension-reduced test set with 94.75% percent accuracy.