

Ex 2.2 Bayes Classifier

Source code located in Source directory

$P(C_i)$ for each class:

Class 0: 0.336735

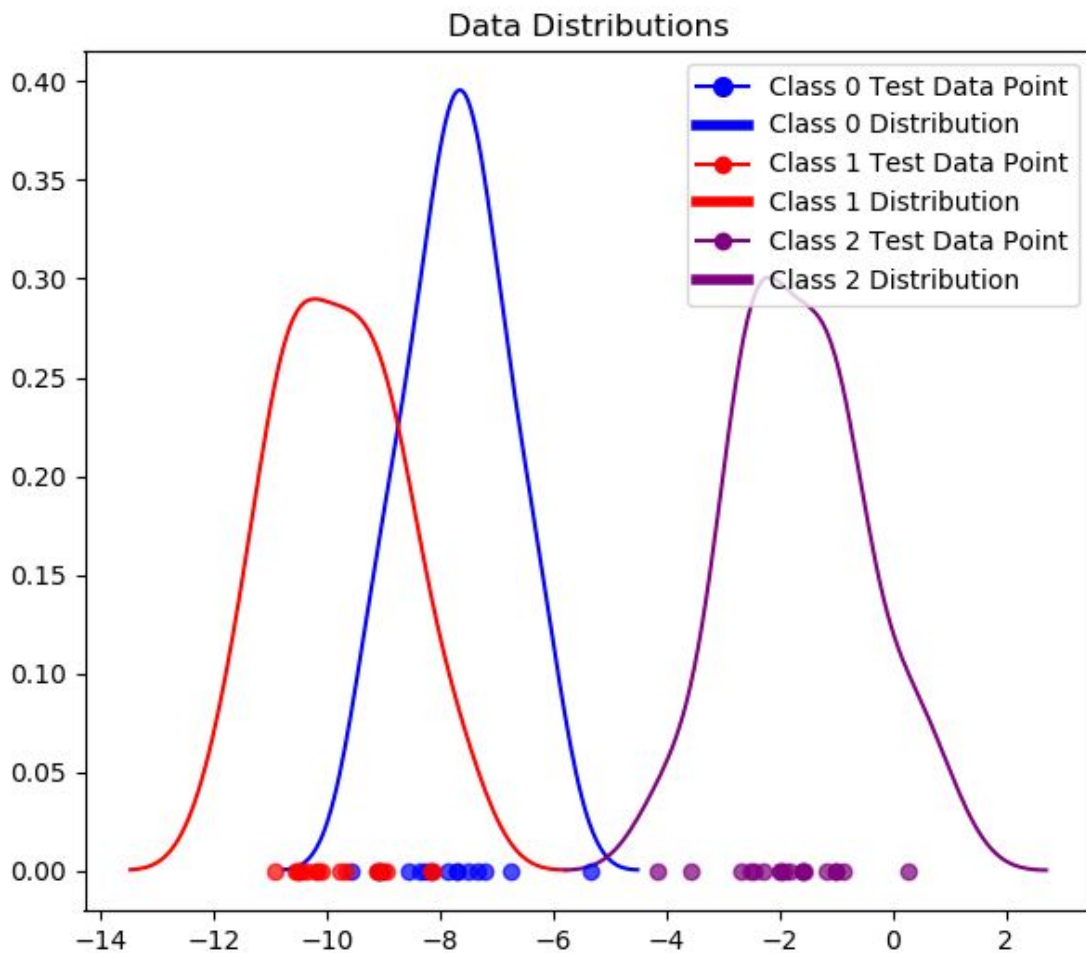
Class 1: 0.336735

Class 2: 0.326531

$P(C_i)$ can be found in directory Results/Bayes/p(ci).csv

$P(x|C_i)$ can be found in directory Results/Bayes/p(x|ci).csv

$P(x|C_i) * P(C_i)$ can be found in directory Results/Bayes/p(x|i)_x_p(ci).csv



In the photo above, the lines represent the data distribution for the training data. The individual points represent the testing sets actual class values.

Accuracy:

45/50 Correct = 90% total accuracy.

Confusion Matrix:

	Predicted 0	Predicted 1	Predicted 2
Actual 0	12	2	0
Actual 1	3	15	0
Actual 2	0	0	18

Solution Discussion:

- 1) The training dataset was divided by class into separate lists
- 2) The mean of each class was calculated
- 3) The counts of each class was calculated
- 4) The standard deviation of each class was calculated
- 5) $P(c_i)$ was calculated
- 6) $P(x|c_i)$ was calculated
- 7) $P(x|c_i) * P(c_i)$ was calculated and each object was assigned the class from the max obtained value for a given c_i class.