

# EECE 5644 Fall 2019

## Homework 2

### Question 2:

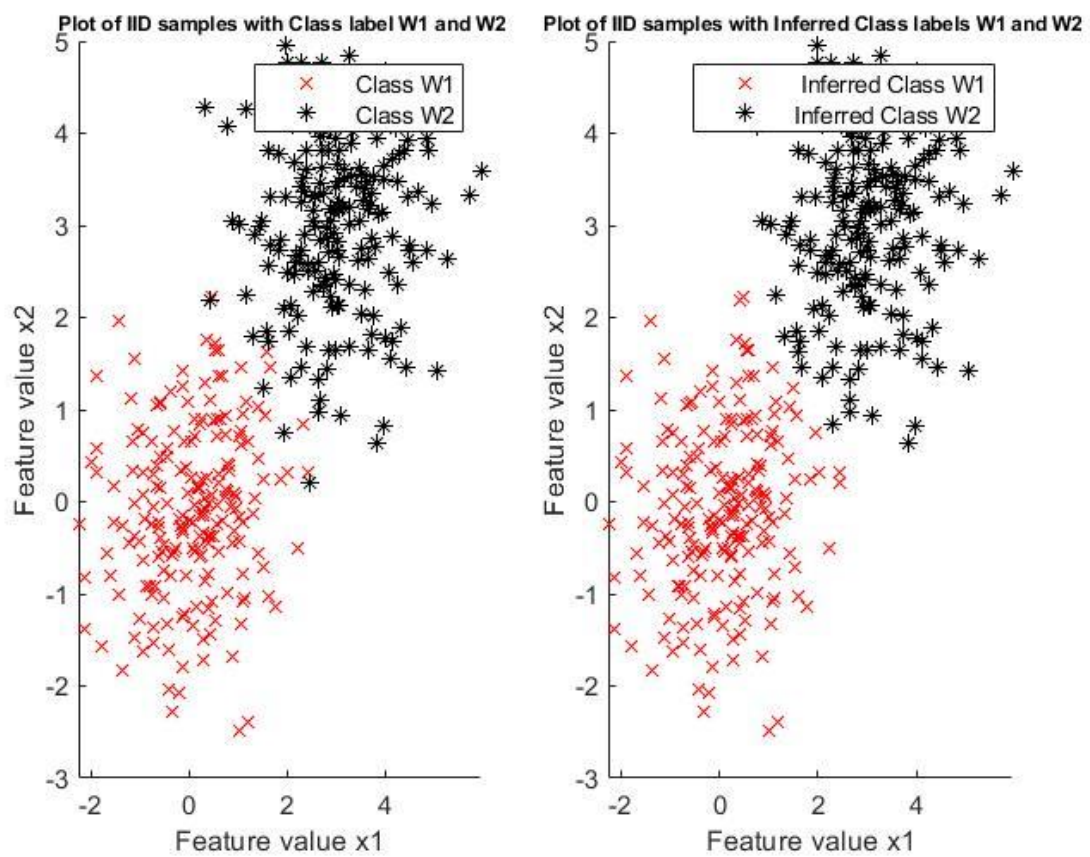
#### Case 1:

The number of Misclassification errors:

7

Probability of error:

0.0175



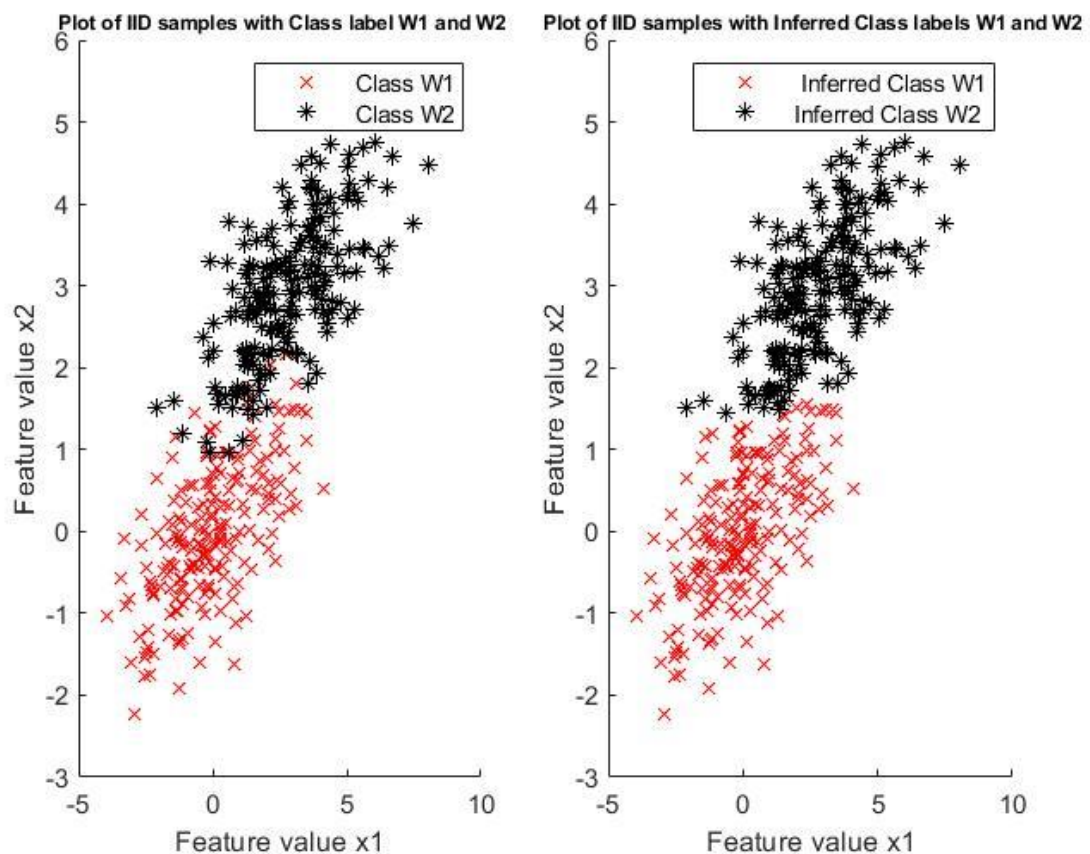
## Case 2:

The number of Misclassification errors:

14

Probability of error:

0.0350



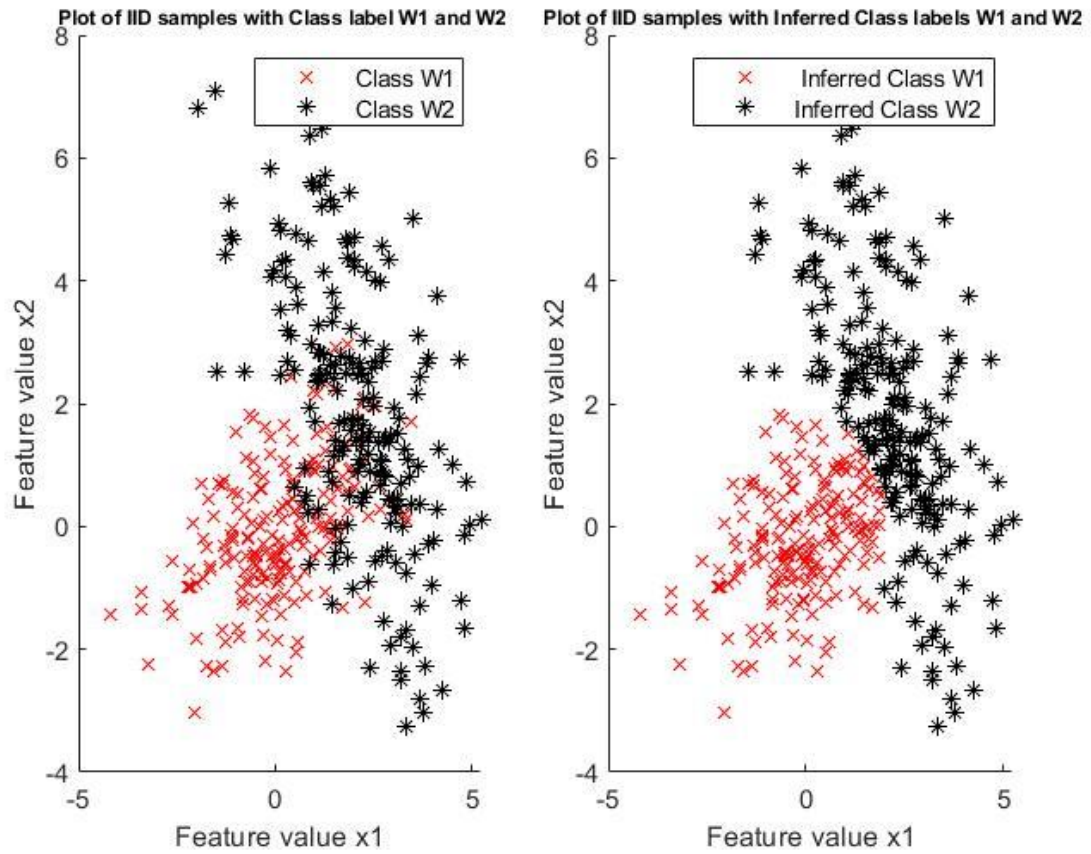
## Case 3:

The number of Misclassification errors:

47

Probability of error:

0.1175



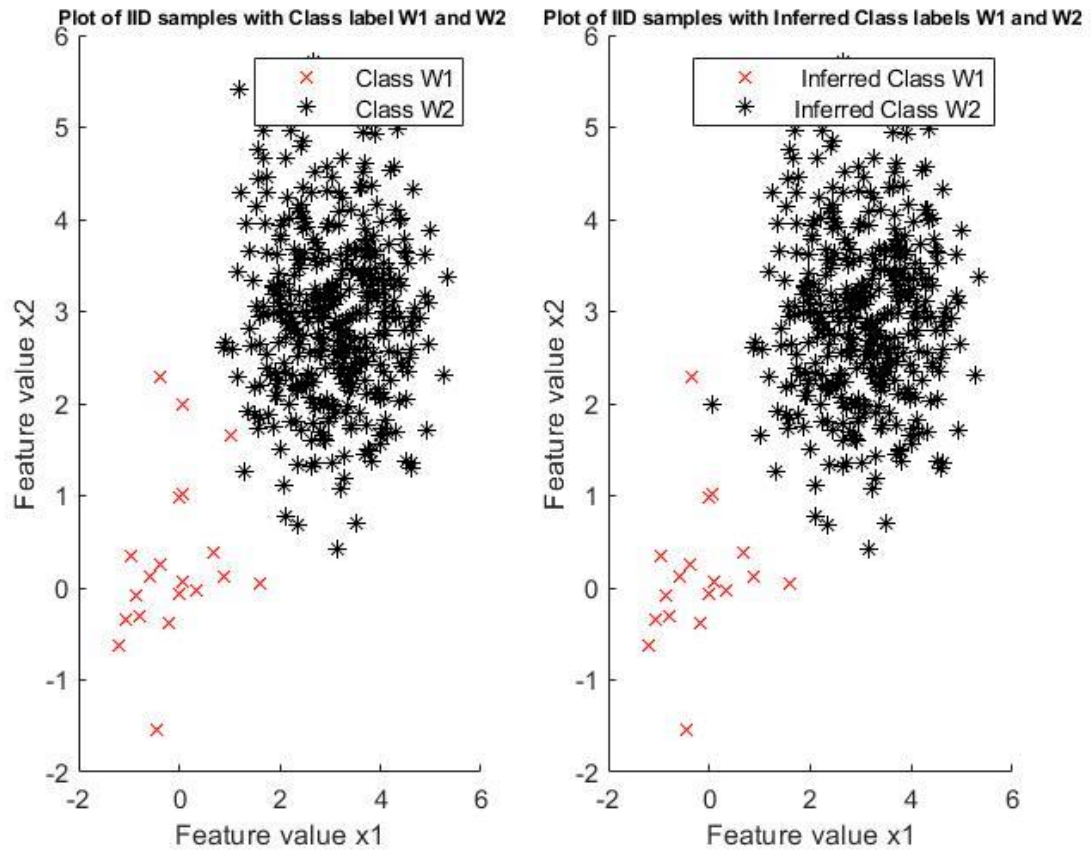
Case 4:

The number of Misclassification errors:

2

Probability of error:

0.0050



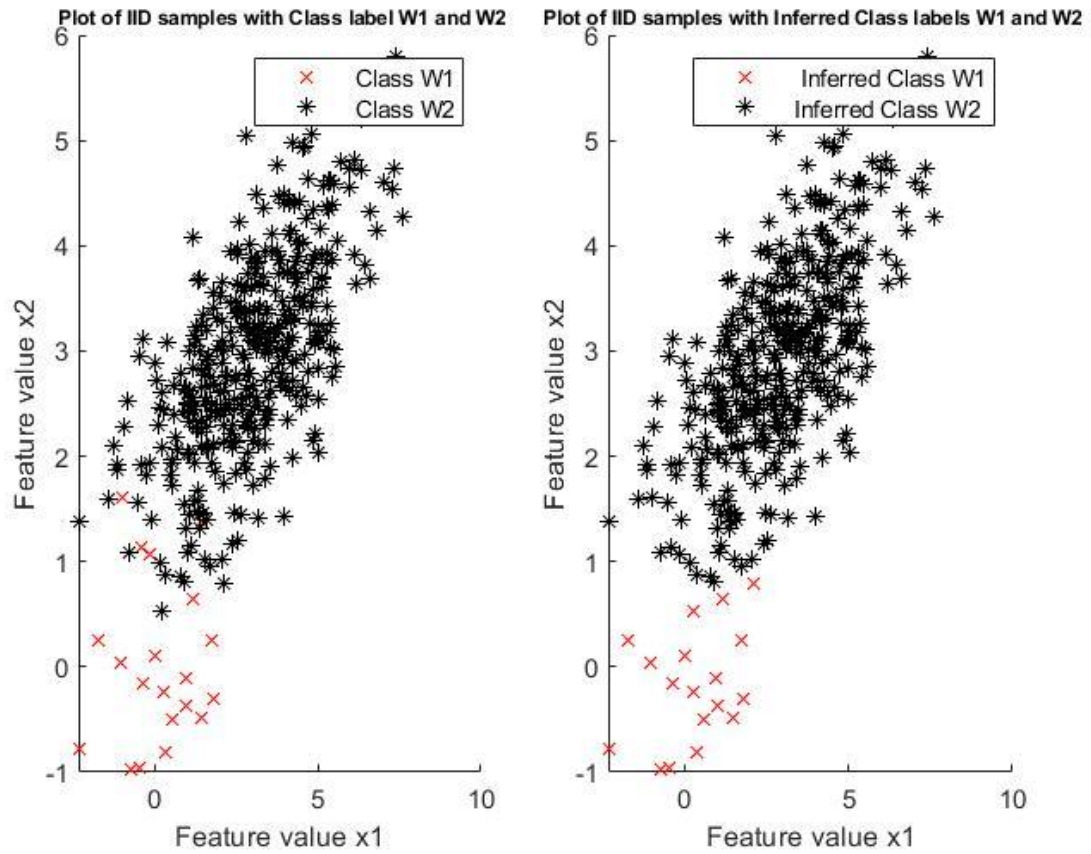
Case 5:

The number of Misclassification errors:

6

Probability of error:

0.0150



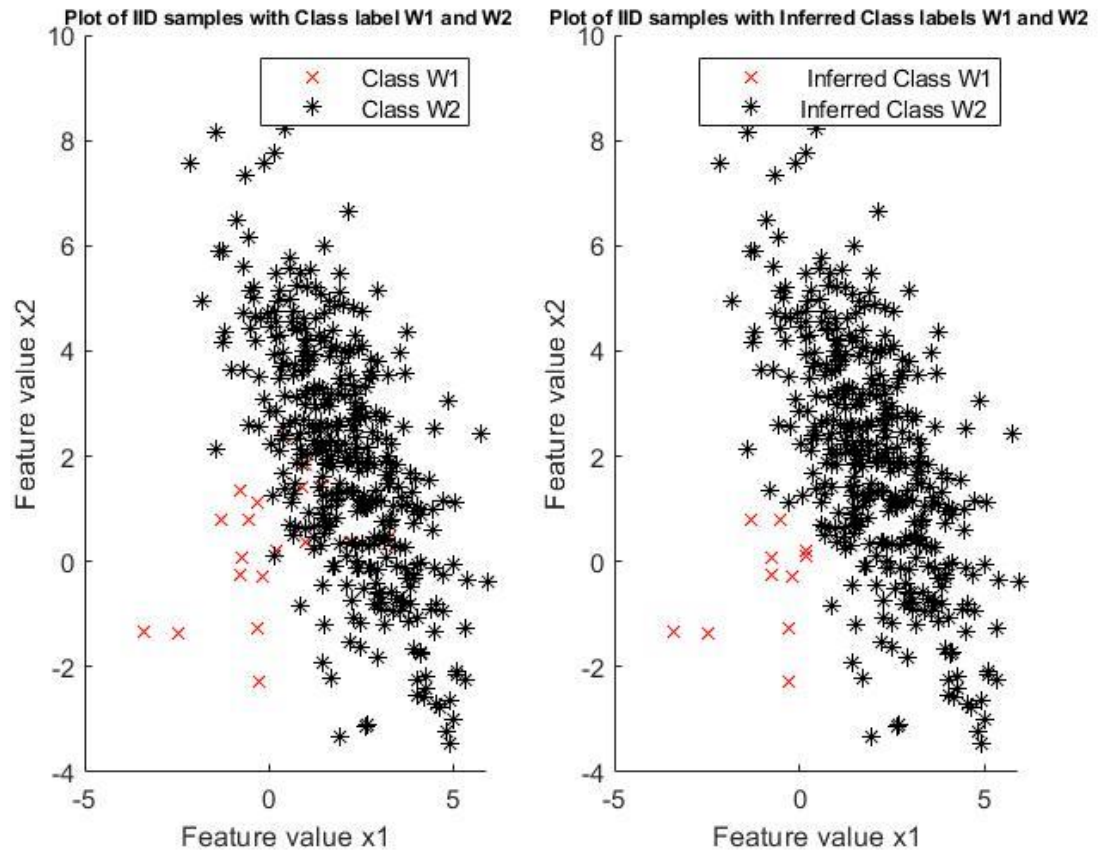
Case 6:

The number of Misclassification errors:

11

Probability of error:

0.0275



### Question 3:

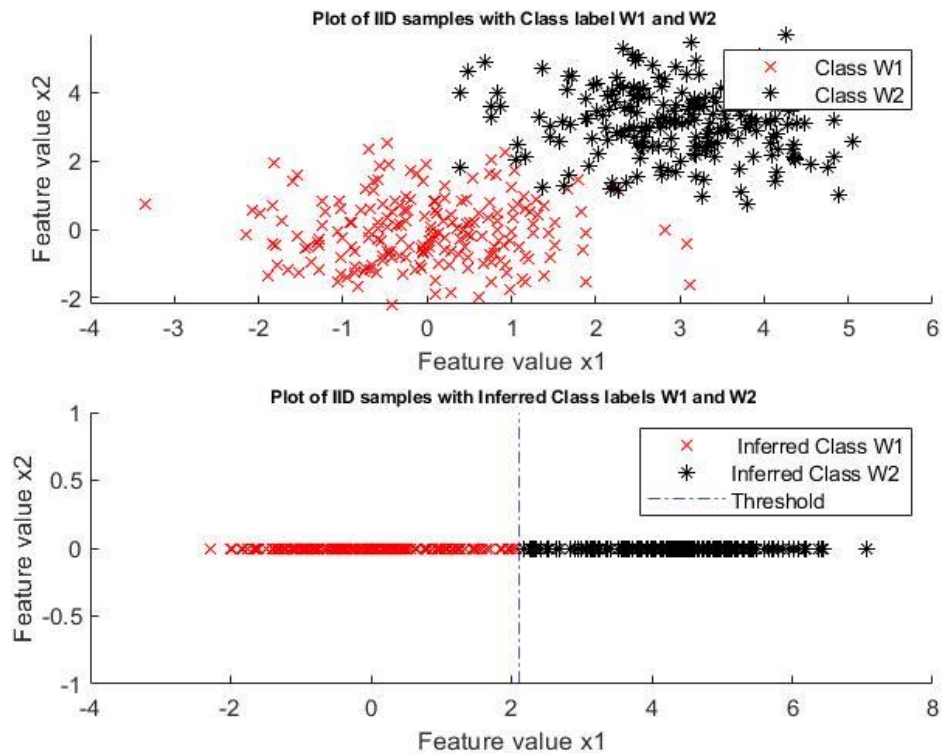
#### Case 1:

Threshold: 2.1213

The number of Misclassification errors: 6

Probability of error: 0.0150



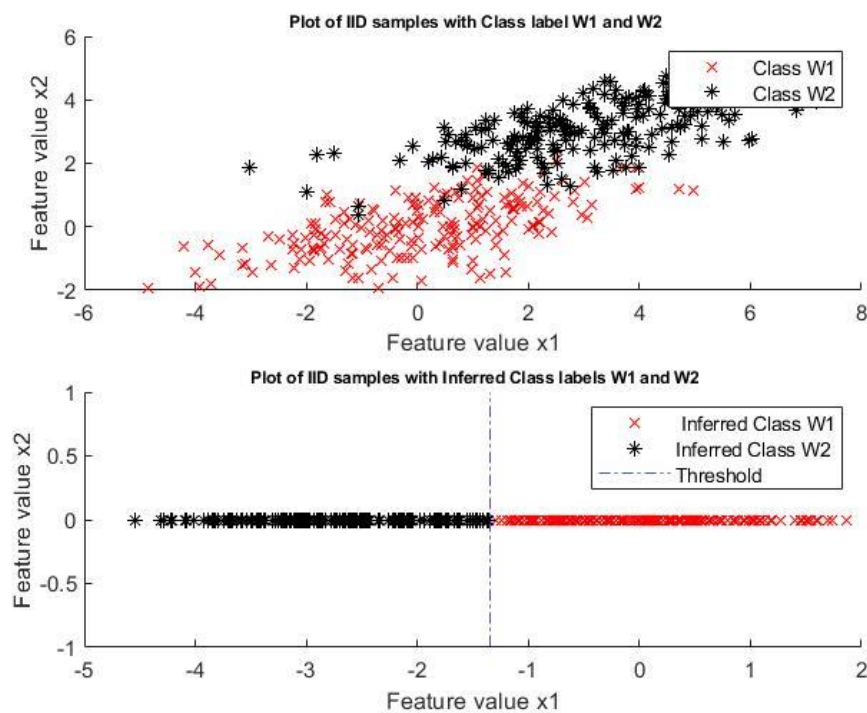


## Case 2:

Threshold: -1.3433

The number of Misclassification errors: 16

Probability of error: 0.0400

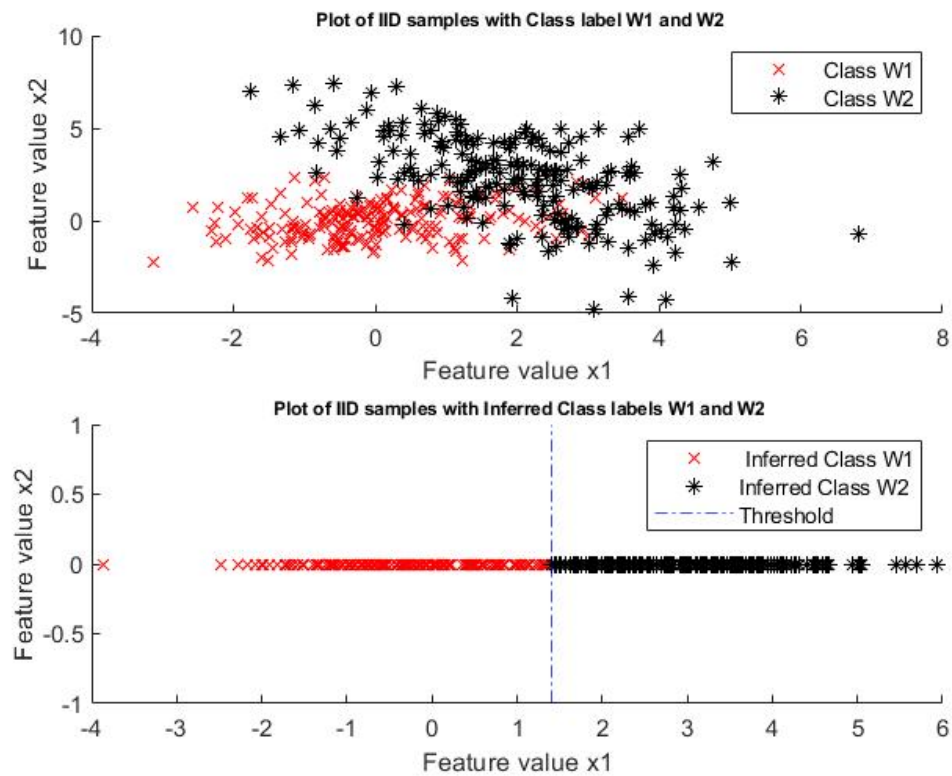


### Case 3:

Threshold: 1.3973

The number of Misclassification errors: 51

Probability of error: 0.1275



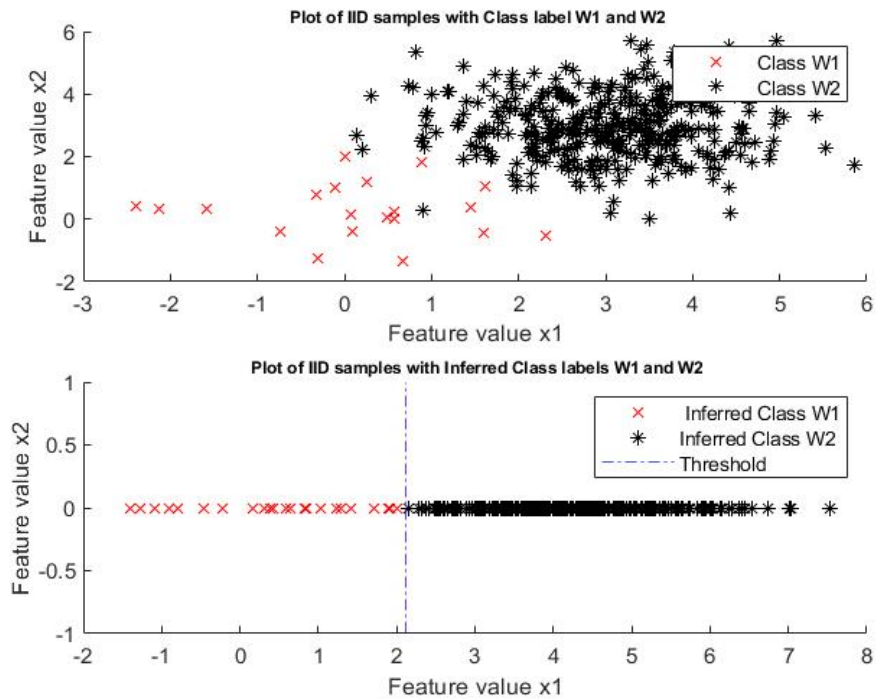
### Case 4:

Threshold: 2.1213

The number of Misclassification errors: 3

Probability of error: 0.0075



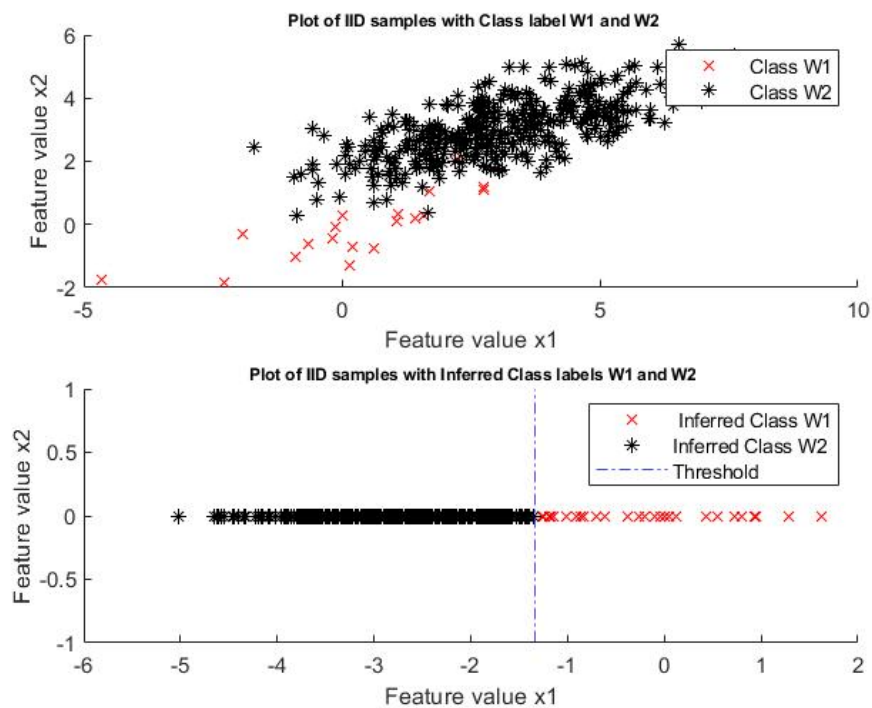


## Case 5:

Threshold: -1.3433

The number of Misclassification errors: 13

Probability of error: 0.0325

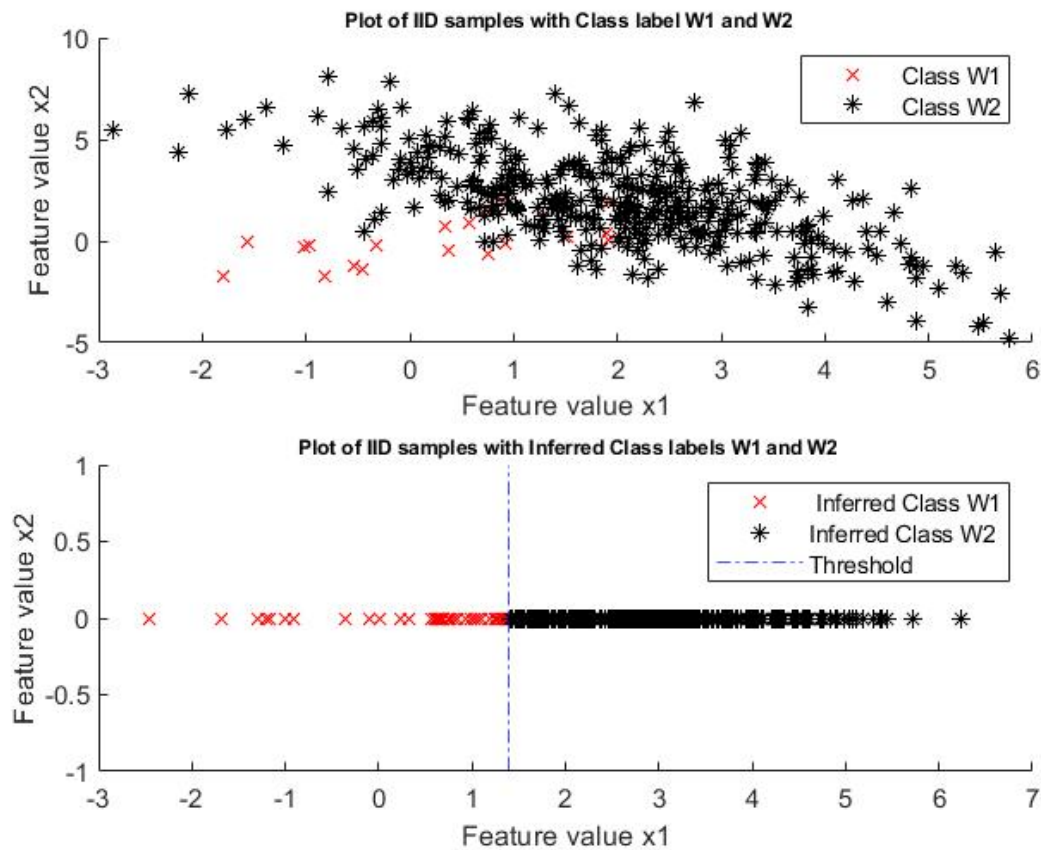


## Case 6:

Threshold: 1.3973

The number of Misclassification errors: 32

Probability of error: 0.0800



## References:-

1. [https://en.wikipedia.org/wiki/Linear\\_discriminant\\_analysis](https://en.wikipedia.org/wiki/Linear_discriminant_analysis)
2. An Introduction to Machine Learning - Smola & Vish