

Results Observed

Q 4.

a. Accuracy = 0.98

Support Vectors = [14, 14]

b. First 50: accuracy = 0.98

Support vectors = [1, 1]

First 100: accuracy = 0.98

Support vectors = [2, 2]

First 200: accuracy = 0.98

Support vectors = [4, 4]

First 800: accuracy = 0.98

Support vectors = [7, 7]

Random 50: accuracy = 0.97

Support vectors = [2, 2]

c. Values are in Notebook

1. False

2. True

3. False

4. True

d. At $C=1$ I observed the lowest training error and test error.

Q 5.

a. No.of support vectors = [542 542]

Training Error = 0.0

Testing Error = 0.469

b. I observe lowest Training error with RBF kernel

RBF Kernel

No.of support vectors = [3000 3000]

Training Error = 0.0

Testing Error = 0.469

Polynomial Kernel

No.of support vectors = [642 691]

Training Error = 0.0004999999999999449

Testing Error = 0.469