

## Part 3 : Comparing the performances of both the classifiers

### SVM Classifier

- In part 1(a), we implemented the SVM Classifiers with the default value of the generalization constant  $C = 1$ .

Kernel	Test Accuracy
Linear	79%
Quadratic	89%
Radial Basis Function	92%

- In part 1(b), we found the most suitable value of generalization constant  $C = 10$  and implemented the three SVM Classifiers with this value.

Kernel	Test Accuracy
Linear	77%
Quadratic	87%
Radial Basis Function	94%

### ANN Classifier

- In part 2(b) and 2(c), we implemented the ANN classifiers with different numbers of hidden layers, different number of nodes in each layer and different learning rates. The accuracy for each model is given below:

	0 hidden layer	1 hidden layer with 2 nodes	1 hidden layer with 6 nodes	2 hidden layers with 2 and 3 nodes	2 hidden layers with 3 and 2 nodes
Learning Rate=0.1	94.28%	94.28%	94.28%	62.85%	87.14%
Learning Rate=0.01	88.57%	90%	90%	62.85%	62.85%
Learning Rate=0.001	91.42%	62.85%	88.57%	62.85%	62.85%
Learning Rate=0.0001	82.85%	62.85%	67.14%	37.14%	37.14%
Learning Rate=0.00001	44.28%	62.85%	37.14%	37.14%	37.14%