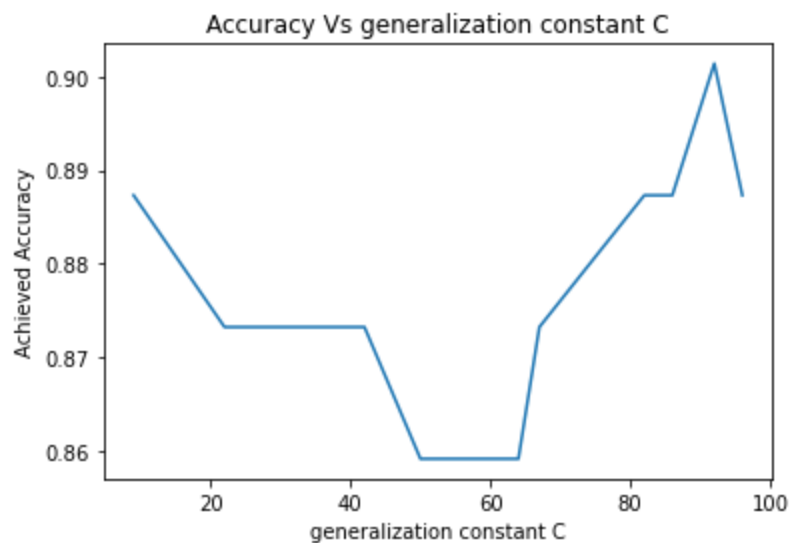# Report and Results

Neeladri Das   {18CS10036}
Avijit Mandal {18CS30010}
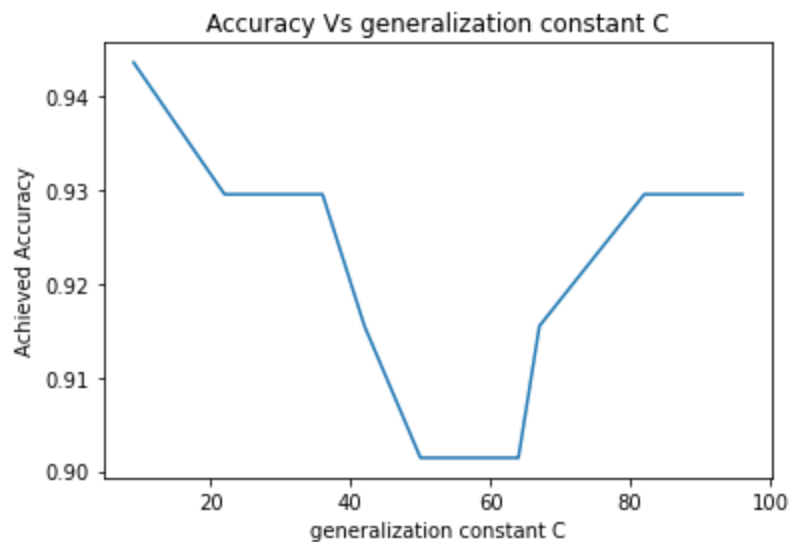
SVM Classifier

The Graphs Plotted For different C values with corresponding SVM kernel as follows:
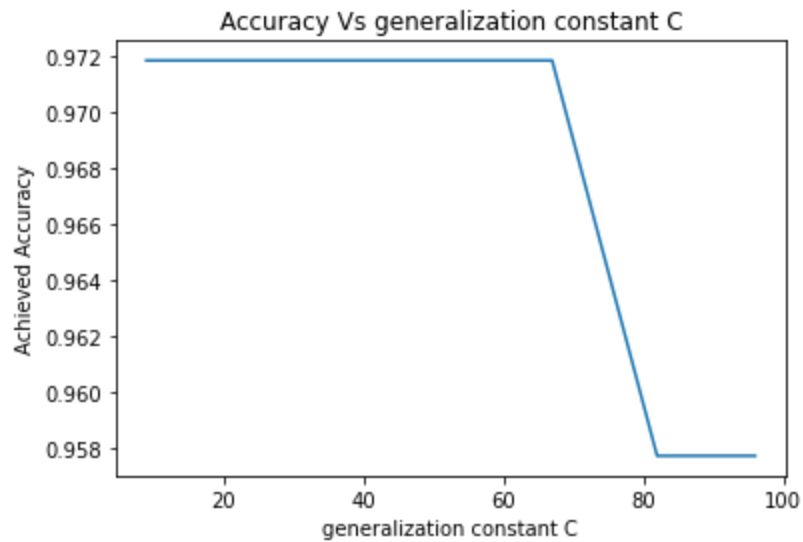
Linear SVM

Quadratic SVM

Radial Based SVM

Accuracy Vs generalization constant C

Results from SVM is summarized as follows:

| SVM Kernel	Max Accuracy Achieved	C Value
Linear	0.9014084507042254	92
Quadratic	0.9436619718309859	9
Radial	0.971830985915493	9.0, 22.0, 36.0, 42.0, 50.0, 51.0, 53.0, 59.0, 64.0, 67.0

MLP Classifier
The results of MLP classifier may vary every time due to different batch size of sgd and random splitting of data

The Graphs Plotted For different learning rate values with corresponding MLP architecture as follows:
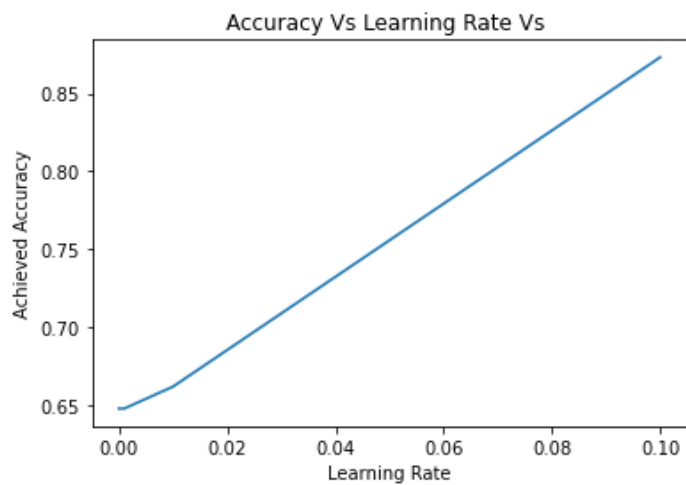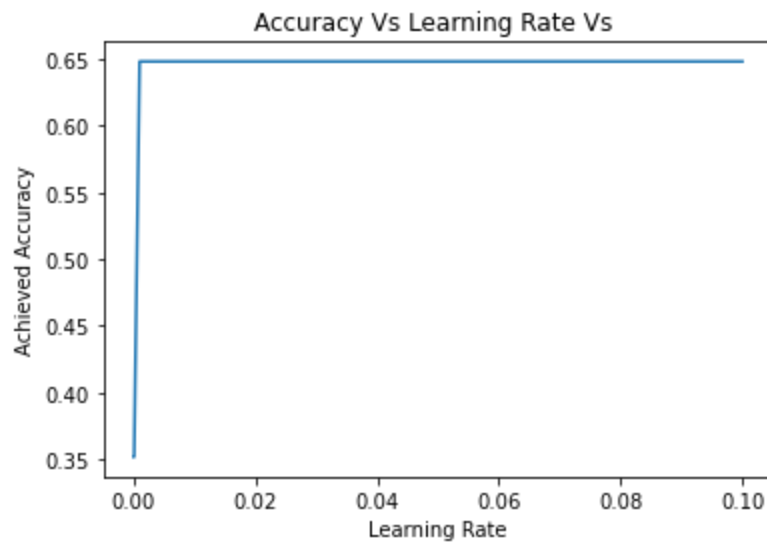
0 hidden layer

Accuracy Vs Learning Rate Vs
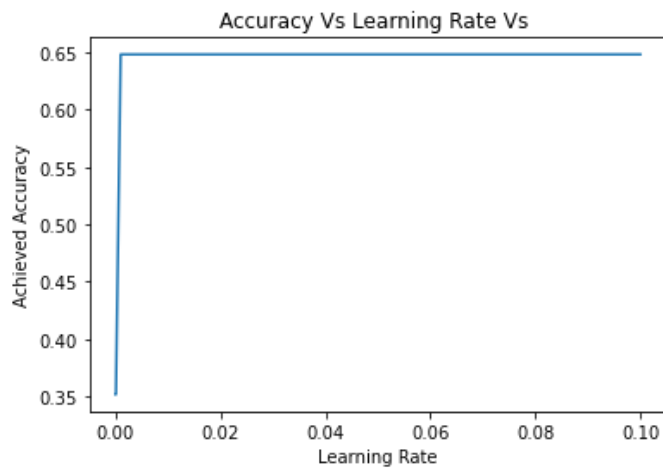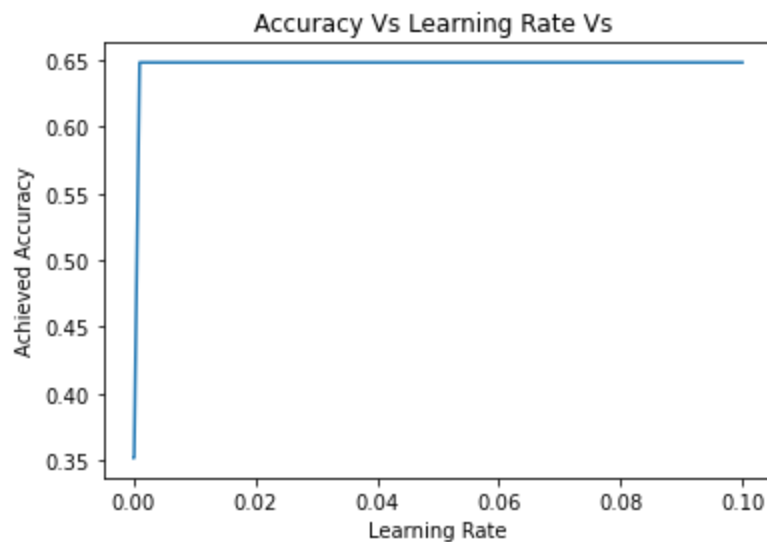

1 hidden layer with 6 nodes

Accuracy Vs Learning Rate Vs
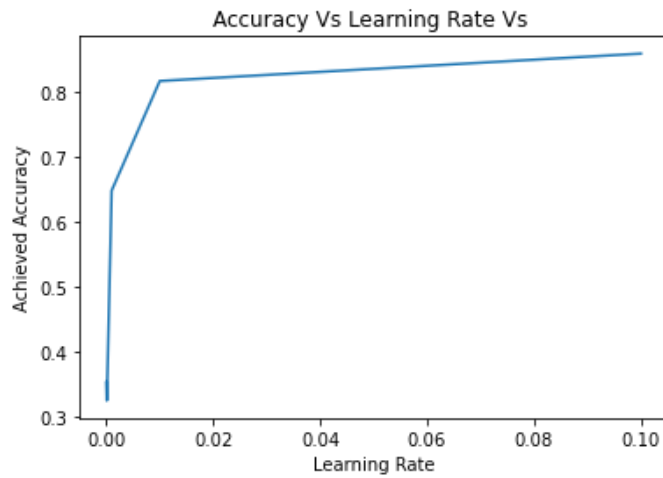
1 hidden layers with 2 nodes respectively¶

Accuracy Vs Learning Rate Vs

2 hidden layers with 2 and 3 nodes respectively

Accuracy Vs Learning Rate Vs

2 hidden layers with 3 and 2 nodes respectively

Accuracy Vs Learning Rate Vs

The Model with best Performance

 The result may vary every time because of random splitting and different batch size of sdg

```
MLP artitecture  = 1 Hidden Layer with 2 Nodes
Learning Rate     = 0.1
maximum iteration = 200
optimizer         = stochastic gradient descent
batch size        = min(200, n_samples)
activation        = logistics [ f(x) = 1 / (1 + exp(-x))]
```

```
Accuracy        = 0.8732394366197183
```

Comparing the performances of both the classifiers

Classifier	Max Accuracy Achieved
SVM	0.9577464788732394
MLP	0.8732394366197183