write a program to solve binary classifiaction using svm, and also find the optimum kernel for solving problem

In [34]:
```
from sklearn.datasets import load_breast_cancer
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score
from sklearn.model_selection import train_test_split
```

In [35]:
```
cancer = load_breast_cancer()
```

In [36]:
```
X,y = cancer.data,cancer.target
```

In [37]:
```
xtrain,xtest,ytrain,ytest = train_test_split(X,y,test_size=0.2, random_state=1
```

In [38]:
```
kernels =['linear','poly','rbf']
kernels
```

Out[38]:
```
['linear', 'poly', 'rbf']
```

In [39]:
```
best_kernel = None
```

In [40]:
```
best_accuracy = 0
```

In [43]:
```
for kernel in kernels:
    model = SVC(kernel=kernel)
    model.fit(xtrain,ytrain)
    ypred=model.predict(xtest)
    accuracy=accuracy_score(ytest,ypred)
    print('For',kernel,' kernel accuracy is ', accuracy)
    if accuracy > best_accuracy:
        best_accuracy = accuracy
        best_kernel=kernel

```

```
For linear  kernel accuracy is  0.956140350877193
For poly  kernel accuracy is  0.8947368421052632
For rbf  kernel accuracy is  0.9035087719298246
```

In [42]:
```
print('for the given problem best kernel is : ' , best_kernel ,' with best acc
```

```
for the given problem best kernel is :  linear  with best accuracy  0.95614035087
7193
```

In [ ]:
```

```