

In[1]:

```
import sklearn

from sklearn.datasets import load_breast_cancer

from sklearn.svm import SVC

from sklearn.model_selection import train_test_split

from sklearn.metrics import classification_report, confusion_matrix
```

In[2]:

```
A = load_breast_cancer()

X = A.data

Y = A.target

X_train, X_test, y_train, y_test = train_test_split(X, Y ,test_size = 0.30, random_state = 101)
```

In[3]:

```
model = SVC()

model.fit(X_train, y_train)

predictions = model.predict(X_test)

print(classification_report(y_test, predictions))
```

In[4]:

```
from sklearn.model_selection import GridSearchCV
```

In[5]:

```
param_grid = { 'C': [0.1, 1, 10, 100],  
               'gamma': [1, 0.1, 0.01, 0.001, 0.0001],  
               'gamma':['scale', 'auto'],  
               'kernel': ['linear'] }
```

```
grid = GridSearchCV(SVC(), param_grid, refit = True, verbose = 3, n_jobs = -1)
```

In[6]:

```
grid.fit(X_train, y_train)
```

```
print(grid.best_params_)
```

```
grid_predictions = grid.predict(X_test)
```

```
print(classification_report(y_test, grid_predictions))
```