```
from sklearn import datasets

cancer_data = datasets.load_breast_cancer()
print(cancer_data.data[5])
```

```
[1.245e+01 1.570e+01 8.257e+01 4.771e+02 1.278e-01 1.700e-01 1.578e-01
 8.089e-02 2.087e-01 7.613e-02 3.345e-01 8.902e-01 2.217e+00 2.719e+01
 7.510e-03 3.345e-02 3.672e-02 1.137e-02 2.165e-02 5.082e-03 1.547e+01
 2.375e+01 1.034e+02 7.416e+02 1.791e-01 5.249e-01 5.355e-01 1.741e-01
 3.985e-01 1.244e-01]
```

```
print(cancer_data.data.shape)
#target set
print(cancer_data.target)
```

```
(569, 30)
[0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 1 0 0 0 0 0 0 0 0 1 0 1 1 1 1 1 0 0 1 0 0 1 1 1 1 0 1 0 0 1 1 1 1 0 1 0 0
 1 0 1 0 0 1 1 1 0 0 1 0 0 0 1 1 1 0 1 1 0 0 1 1 1 0 0 1 1 1 1 0 1 1 0 1 1
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 0 1 0 0 1 1 1 1 1 1 0 1 1 1 1 1 0 1 1 1 0 0 1 1 1 1 1 1 0 1 1 1 1 1 1 1
 1 0 1 1 1 1 1 0 1 1 0 1 1 1 1 1 1 1 1 1 1 1 1 0 1 0 0 1 0 1 1 1 1 1 0 1 1
 0 1 0 1 1 0 1 0 1 1 1 1 1 1 1 1 0 0 1 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 0 1
 1 1 1 1 1 1 0 1 0 1 1 0 1 1 1 1 1 1 0 0 1 0 1 0 1 1 1 1 1 1 0 1 1 0 1 0 1 0 0
 1 1 1 0 1 1 1 1 1 1 1 1 1 1 1 0 1 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 1 1 1 1 1 1 1 0 0 0 0 0 0 1]
```

```
from sklearn.model_selection import train_test_split

cancer_data = datasets.load_breast_cancer()

X_train, X_test, y_train, y_test = train_test_split(cancer_data.data, cancer_data.target, test_size=0.4,random_state=109)
```

```
from sklearn import svm
#create a classifier
cls = svm.SVC(kernel="linear")
#train the model
cls.fit(X_train,y_train)
#predict the response
pred = cls.predict(X_test)
```

```
from sklearn import metrics
#accuracy
print("acuracy:", metrics.accuracy_score(y_test,y_pred=pred))
#precision score
print("precision:", metrics.precision_score(y_test,y_pred=pred))
#recall score
print("recall" , metrics.recall_score(y_test,y_pred=pred))
print(metrics.classification_report(y_test, y_pred=pred))
```

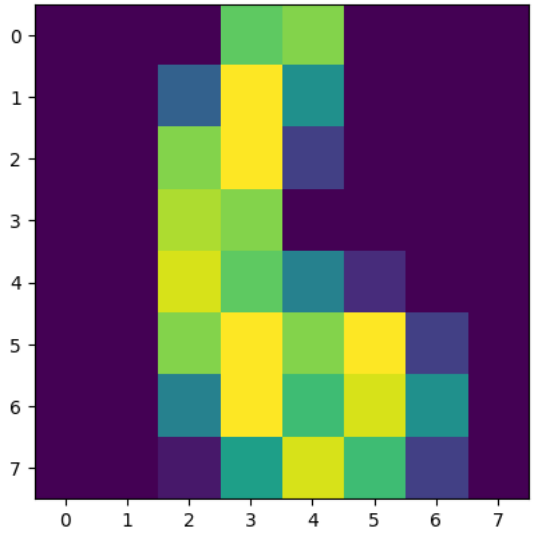
```
acuracy: 0.9649122807017544
precision: 0.9642857142857143
recall 0.9782608695652174
              precision    recall  f1-score   support

           0       0.97      0.94      0.96        90
           1       0.96      0.98      0.97       138

    accuracy                           0.96       228
   macro avg       0.97      0.96      0.96       228
weighted avg       0.96      0.96      0.96       228
```

Character recognition with SVM

```
import matplotlib.pyplot as plt
from sklearn import datasets
from sklearn import svm
#loading the dataset
letters = datasets.load_digits()
#generating the classifier
clf = svm.SVC(gamma=0.001, C=100)
#training the classifier
```

```
X,y = letters.data[:-10], letters.target[:-10]
clf.fit(X,y)
#predicting the output
print(clf.predict(letters.data[:-10]))
plt.imshow(letters.images[6], interpolation='nearest')
plt.show()
```

```
[0 1 2 ... 5 7 9]
```



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