```
from sklearn import svm
from sklearn import datasets
cancer = datasets.load_breast_cancer()
print("Labels: ", cancer.target_names)
print("Labels: ", cancer.feature_names)
```

```
Labels:  ['malignant' 'benign']
Labels:  ['mean radius' 'mean texture' 'mean perimeter' 'mean area'
 'mean smoothness' 'mean compactness' 'mean concavity'
 'mean concave points' 'mean symmetry' 'mean fractal dimension'
 'radius error' 'texture error' 'perimeter error' 'area error'
 'smoothness error' 'compactness error' 'concavity error'
 'concave points error' 'symmetry error' 'fractal dimension error'
 'worst radius' 'worst texture' 'worst perimeter' 'worst area'
 'worst smoothness' 'worst compactness' 'worst concavity'
 'worst concave points' 'worst symmetry' 'worst fractal dimension']
```

```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(cancer.data, cancer.target, test_size=0.4)

classifier = svm.SVC(kernel='linear')

classifier.fit(X_train, y_train)

y_pred = classifier.predict(X_test)

from sklearn import metrics
print("Accuracy:",metrics.accuracy_score(y_test, y_pred))
```

```
Accuracy: 0.9298245614035088
```

```
# Get support vector indices
support_vector_indices = classifier.support_
print(support_vector_indices)
```

```
[  0  10  19  20  35  46  51  57  92 104 225 233 234 251 272 308 309 332
   3  88 100 107 126 139 149 152 153 191 224 261 326 338 340]
```

```
import matplotlib.pyplot as plt
# Get support vectors themselves
support_vectors = classifier.support_vectors_

# Visualize support vectors
plt.scatter(X_train[:,0], X_train[:,1],c=y_train, s=50, cmap='autumn')
plt.scatter(support_vectors[:,0], support_vectors[:,1], color='blue')
plt.title('Linearly separable data with support vectors')
plt.xlabel('X1')
plt.ylabel('X2')
plt.show()
```