

```
In [1]: from sklearn.model_selection import train_test_split
from sklearn.ensemble import RandomForestClassifier
from sklearn.datasets import load_breast_cancer
from sklearn.metrics import accuracy_score
import pandas as pd
```

```
In [2]: breast_cancer_data = load_breast_cancer()
```

```
In [3]: df = pd.DataFrame(breast_cancer_data.data, columns=breast_cancer_data.feature_names)
df['target']=breast_cancer_data.target_names[breast_cancer_data.target]
df
```

mean radius	mean area	mean smoothness	mean compactness	mean concavity	mean concave points	mean symmetry	mean fractal dimension	...	worst texture	worst perimeter	worst area	worst smoothness	worst compactness	worst concavity	worst concave points	worst symmetry	worst fractal dimension	target
2.80	1001.0	0.11840	0.27760	0.30010	0.14710	0.2419	0.07871	...	17.33	184.60	2019.0	0.16220	0.66560	0.7119	0.2654	0.4601	0.11890	malignant
2.90	1326.0	0.08474	0.07864	0.08690	0.07017	0.1812	0.05667	...	23.41	158.80	1956.0	0.12380	0.18660	0.2416	0.1860	0.2750	0.08902	malignant
3.00	1203.0	0.10960	0.15990	0.19740	0.12790	0.2069	0.05999	...	25.53	152.50	1709.0	0.14440	0.42450	0.4504	0.2430	0.3613	0.08758	malignant
7.58	386.1	0.14250	0.28390	0.24140	0.10520	0.2597	0.09744	...	26.50	98.87	567.7	0.20980	0.86630	0.6869	0.2575	0.6638	0.17300	malignant
5.10	1297.0	0.10030	0.13280	0.19800	0.10430	0.1809	0.05883	...	16.67	152.20	1575.0	0.13740	0.20500	0.4000	0.1625	0.2364	0.07678	malignant
...
2.00	1479.0	0.11100	0.11590	0.24390	0.13890	0.1726	0.05623	...	26.40	166.10	2027.0	0.14100	0.21130	0.4107	0.2216	0.2060	0.07115	malignant
1.20	1261.0	0.09780	0.10340	0.14400	0.09791	0.1752	0.05533	...	38.25	155.00	1731.0	0.11660	0.19220	0.3215	0.1628	0.2572	0.06637	malignant
3.30	858.1	0.08455	0.10230	0.09251	0.05302	0.1590	0.05648	...	34.12	126.70	1124.0	0.11390	0.30940	0.3403	0.1418	0.2218	0.07820	malignant
3.10	1265.0	0.11780	0.27700	0.35140	0.15200	0.2397	0.07016	...	39.42	184.60	1821.0	0.16500	0.86810	0.9387	0.2650	0.4087	0.12400	malignant
7.92	181.0	0.05263	0.04362	0.00000	0.00000	0.1587	0.05884	...	30.37	59.16	268.6	0.08996	0.06444	0.0000	0.0000	0.2871	0.07039	benign

```
In [4]: X = breast_cancer_data.data
y = breast_cancer_data.target
X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=0.2)
```

```
In [5]: rnd_clf = RandomForestClassifier(n_estimators=500,max_leaf_nodes=16,n_jobs=-1)
rnd_clf.fit(X_train,y_train)
```

Out[5]:

```
RandomForestClassifier  
RandomForestClassifier(max_leaf_nodes=16, n_estimators=500, n_jobs=-1)
```

In [6]:

```
y_pred_rf = rnd_clf.predict(X_test)  
accuracy = accuracy_score(y_test, y_pred_rf)
```

In [7]:

```
print("actual : "+str(y_test))  
print("predicted : "+str(y_pred_rf))  
print("Accuracy : "+str(accuracy))
```

```
actual : [1 1 0 1 0 0 0 1 1 1 1 0 1 0 1 0 0 0 1 0 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1  
0 0 1 1 1 1 1 0 1 1 1 1 0 0 1 1 0 1 0 1 0 1 1 1 1 1 0 0 0 1 0 1 1 0 0 0 1  
0 0 0 1 1 1 0 0 1 1 0 1 1 0 1 0 0 1 0 1 1 1 1 1 1 1 0 1 1 0 1 0 1 0 0 0 1  
0 0 0]  
predicted : [0 1 0 1 0 0 0 1 1 1 1 0 1 0 1 0 0 0 1 0 1 1 1 1 1 0 1 1 1 1 1 1 1 1 1 1  
0 1 1 1 1 1 0 1 1 1 1 0 0 1 1 0 1 0 1 0 1 1 1 1 1 1 0 0 0 1 1 1 1 0 0 0 1  
0 0 1 1 1 1 0 0 1 1 0 1 1 0 1 0 0 1 0 1 1 1 1 1 1 1 0 1 1 0 1 0 1 0 0 0 1  
0 0 0]  
Accuracy : 0.9649122807017544
```