Logistic_iris

June 27, 2025

[1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.linear_model import LogisticRegression
```

[2]:
```
from sklearn.datasets import load_iris
```

[4]:
```
iris=load_iris()
dir(iris)
```

[4]:
```
['DESCR',
 'data',
 'data_module',
 'feature_names',
 'filename',
 'frame',
 'target',
 'target_names']
```

[10]:
```
iris['feature_names']
```

[10]:
```
['sepal length (cm)',
 'sepal width (cm)',
 'petal length (cm)',
 'petal width (cm)']
```

[11]:
```
iris['target_names']
```

[11]:
```
array(['setosa', 'versicolor', 'virginica'], dtype='<U10')
```

[16]:
```
X=iris['data']
y=iris['target']
# iris['data_module']
```

[17]:
```
from sklearn.model_selection import train_test_split
```

[18]:
```
X_train,X_test,y_train,y_test=train_test_split(X,y,test_size=0.2)
len(y_train)
```

[18]:
```
120
```

[20]:
```
model=LogisticRegression()
model.fit(X_train,y_train)
```

```
/opt/conda/envs/anaconda-2024.02-py310/lib/python3.10/site-
packages/sklearn/linear_model/_logistic.py:460: ConvergenceWarning: lbfgs failed
to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-
regression
  n_iter_i = _check_optimize_result(
```

[20]:
```
LogisticRegression()
```

[24]:
```
y_predict=model.predict(X_test)
model.score(X_test,y_test)
```

[24]:
```
1.0
```

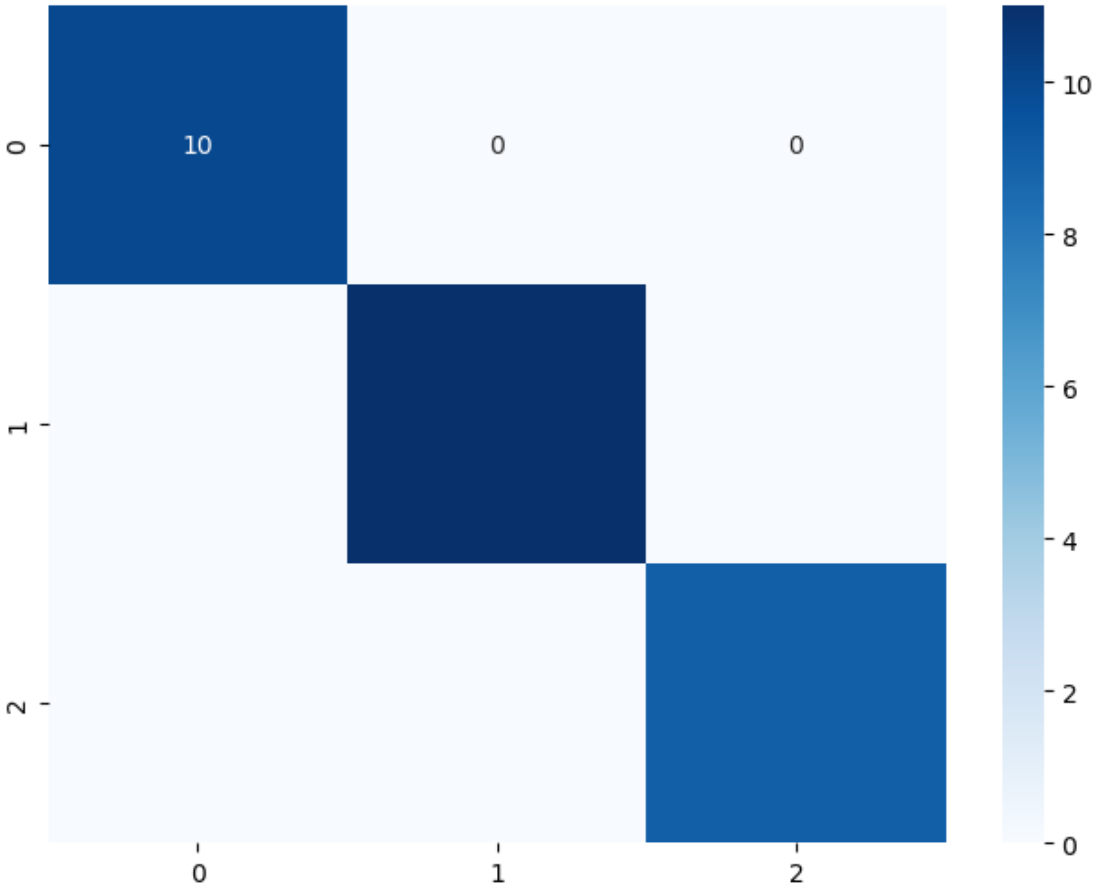
[25]:
```
from sklearn.metrics import confusion_matrix
```

[26]:
```
cm=confusion_matrix(y_test,y_predict)
cm
```

[26]:
```
array([[10,  0,  0],
       [ 0, 11,  0],
       [ 0,  0,  9]])
```

[28]:
```
plt.figure(figsize=(8,6),dpi=100)
sns.heatmap(cm,annot=True,fmt='d',cmap='Blues')
```

[28]:
```
<Axes: >
```


10
0
0
0
1
2
0
1
2
10
8
6
4
2
0