

```
import pandas as pd
from sklearn.datasets import load_iris
from sklearn.linear_model import SGDClassifier
from sklearn.model_selection import train_test_split
from sklearn.metrics import accuracy_score, confusion_matrix
import matplotlib.pyplot as plt

import seaborn as sns

iris=load_iris()
df=pd.DataFrame(data=iris.data,columns=iris.feature_names)
df['target']=iris.target
print(df.head())

sepal length (cm)  sepal width (cm)  petal length (cm)  petal width (cm) \
0                 5.1              3.5                1.4               0.2
1                 4.9              3.0                1.4               0.2
2                 4.7              3.2                1.3               0.2
3                 4.6              3.1                1.5               0.2
4                 5.0              3.6                1.4               0.2

target
0      0
1      0
2      0
3      0
4      0

X = df.drop('target',axis=1)
X

sepal length (cm)  sepal width (cm)  petal length (cm)  petal width (cm)  ...
0                 5.1              3.5                1.4               0.2
1                 4.9              3.0                1.4               0.2
2                 4.7              3.2                1.3               0.2
3                 4.6              3.1                1.5               0.2
4                 5.0              3.6                1.4               0.2
...               ...
145                6.7              3.0                5.2               2.3
146                6.3              2.5                5.0               1.9
147                6.5              3.0                5.2               2.0
148                6.2              3.4                5.4               2.3
149                5.9              3.0                5.1               1.8

150 rows × 4 columns
```

Next steps: [Generate code with X](#) [View recommended plots](#) [New interactive sheet](#)

```
y=df['target']
y
```

◆ What can I help you build?

⊕ ▶

```
target

X_train, X_test, y_train, y_test=train_test_split(X,y,test_size=0.2,random_state=42)
sgd_clf=SGDClassifier(max_iter=1000,tol=1e-3)
sgd_clf.fit(X_train,y_train)
y_pred=sgd_clf.predict(X_test)

accuracy=accuracy_score(y_test,y_pred)
print(f"Accuracy: {accuracy:.3f}")

→ Accuracy: 0.700
145
```

```
cm=confusion_matrix(y_test,y_pred)
print("Confusion Matrix:")
print(cm)

→ Confusion Matrix:
[[145  0  0]
 [ 0  8  0]
 [ 0  0 11]]
dtypes: int64
```

```
plt.figure(figsize=(6,4))
sns.heatmap(cm,annot=True,cmap="Blues",fmt='d',xticklabels=iris.target_names)
plt.xlabel("Predicted Label")
plt.ylabel("True Label")
plt.title("Confusion Matrix")
plt.show()
```

