


```
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
```



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)
```

```

      ^
      v

```

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



```
Accuracy: 0.700
```

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



```
Confusion Matrix:
[[10  0  0]
 [ 1  0  8]
 [ 0  0 11]]
150 rows x 3 columns
```

```
dtype: 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()
```

