```
!unzip "archive (8).zip"
```

```
Archive:  archive (8).zip
  inflating: IRIS.csv
```

```
!ls
```

```
'archive (8).zip'   IRIS.csv   sample_data
```

```
import pandas as pd
import numpy as np

from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score, f1_score, confusion_matrix

import seaborn as sns
import matplotlib.pyplot as plt
```

```
df = pd.read_csv("IRIS.csv")
df.head()
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa

Next steps: Generate code with df | New interactive sheet

```
X = df.drop(['species'], axis=1)
y = df['species']
```

```
X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.2, random_state=42
)
```

```
scaler = StandardScaler()
X_train = scaler.fit_transform(X_train)
X_test = scaler.transform(X_test)
```

```
svm = SVC(kernel='linear')
svm.fit(X_train, y_train)

y_pred = svm.predict(X_test)
```

```
accuracy = accuracy_score(y_test, y_pred)
print("Accuracy:", accuracy)
```

```
Accuracy: 0.9666666666666667
```

```
f1 = f1_score(y_test, y_pred, average='weighted')
print("F1 Score:", f1)
```

```
F1 Score: 0.9664109121909632
```

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

```
Confusion Matrix:
 [[10  0  0]
 [ 0  8  1]
 [ 0  0 11]]
```

```
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues')
plt.xlabel("Predicted")
plt.ylabel("Actual")
plt.show()
```