

```
import pandas as pd
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.linear_model import Perceptron
from sklearn.metrics import accuracy_score, classification_report
```

```
iris = load_iris()
```

```
X = iris.data          # Features
y = iris.target        # Class labels
```

```
X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.25, random_state=42
)
```

```
model = Perceptron(max_iter=1000, eta0=0.1, random_state=42)
model.fit(X_train, y_train)
```

```
Perceptron(eta0=0.1, random_state=42)
```

```
y_pred = model.predict(X_test)
```

```
print("Accuracy:", accuracy_score(y_test, y_pred))
print("\nClassification Report:\n",
      classification_report(y_test, y_pred, zero_division=0))
```

```
Accuracy: 0.8421052631578947
```

```
Classification Report:
```

	precision	recall	f1-score	support
0	0.88	1.00	0.94	15
1	1.00	0.45	0.62	11
2	0.75	1.00	0.86	12
accuracy			0.84	38
macro avg	0.88	0.82	0.81	38
weighted avg	0.87	0.84	0.82	38

```
# New flower sample: sepal length, sepal width, petal length, petal
width
```

```
new_sample = [[5.9, 3.0, 5.1, 1.8]]
```

```
prediction = model.predict(new_sample)
```

```
print("Predicted Flower:", iris.target_names[prediction[0]])
```

```
Predicted Flower: virginica
```