```python
# ------------------------------------------------------------
# Q4: Confusion Matrix for Iris Classification
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from sklearn.datasets import load_iris
from sklearn.tree import DecisionTreeClassifier
from sklearn.model_selection import train_test_split
from sklearn.metrics import confusion_matrix, ConfusionMatrixDisplay

# 1. Load data
iris = load_iris()
X = iris.data
y = iris.target

# 2. Train-test split
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.2, random_state=42)

# 3. Train model
clf = DecisionTreeClassifier(random_state=42)
clf.fit(X_train, y_train)

# 4. Predictions
y_pred = clf.predict(X_test)

# 5. Confusion matrix
cm = confusion_matrix(y_test, y_pred)
disp = ConfusionMatrixDisplay(confusion_matrix=cm,
display_labels=iris.target_names)
disp.plot(cmap='Blues')
```
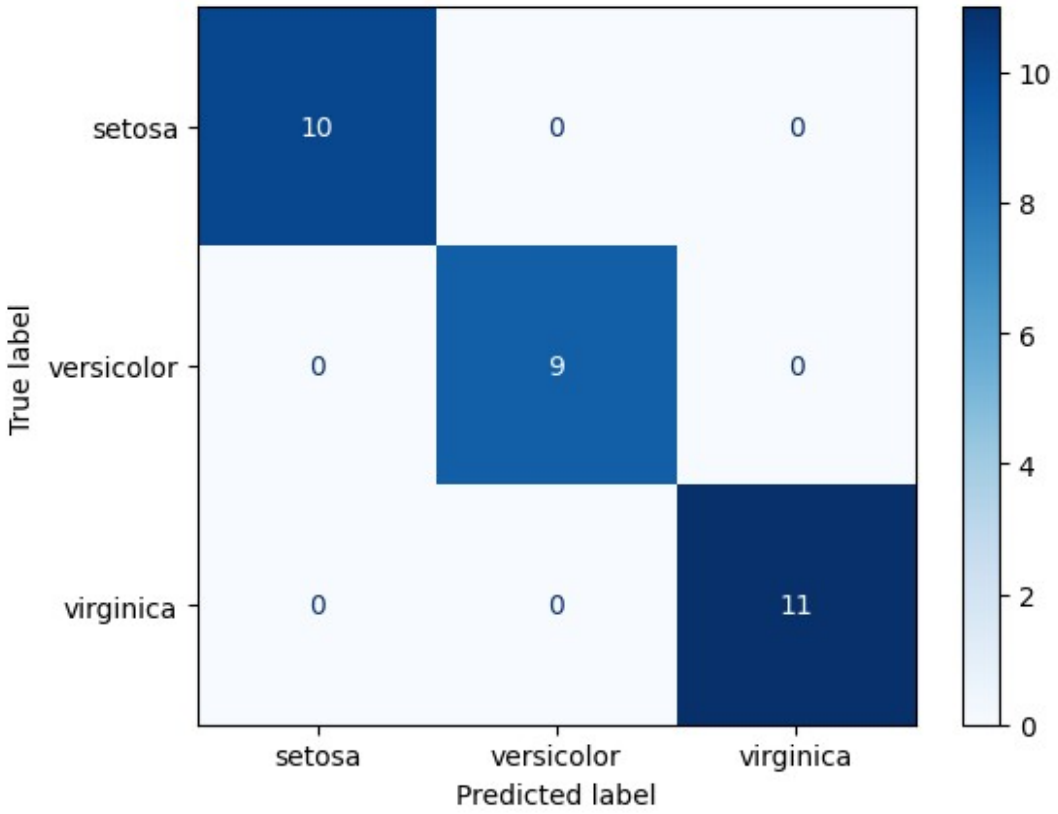

```
<sklearn.metrics._plot.confusion_matrix.ConfusionMatrixDisplay at
0x25ba8624d70>
```


setosa
versicolor
virginica
True label
10
0
0
0
9
0
0
0
11
setosa
versicolor
virginica
Predicted label
10
8
6
4
2
0