In [30]:

```
import numpy as np
import pandas as pd
from sklearn.datasets import load_iris
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier# Calculate precision
precision = precision_score(y_test, y_pred)
print("Precision:", precision)
from sklearn.metrics import accuracy_score
from sklearn.metrics import precision_score, recall_score, f1_score, confusion_matrix
```

In [31]:

```
# Load the Iris dataset
iris = load_iris()
X = iris.data
y = iris.target
```

In [32]:

```
# Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42
```

In [33]:

```
# Initialize KNN classifier
k = 3
knn = KNeighborsClassifier(n_neighbors=k)
```

In [34]:

```
# Train the classifier
knn.fit(X_train, y_train)
```

Out[34]:

```
▼       KNeighborsClassifier
KNeighborsClassifier(n_neighbors=3)
```

In [35]:

```
# Predict on the testing data
y_pred = knn.predict(X_test)
```

In [36]:

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

```
Accuracy: 1.0
```

In [37]:

```
# Print correct and wrong predictions
correct_predictions = X_test[y_pred == y_test]
wrong_predictions = X_test[y_pred != y_test]

print("Correct predictions:")
print(correct_predictions)
print("Wrong predictions:")
print(wrong_predictions)
```

```
Correct predictions:
[[6.1 2.8 4.7 1.2]
 [5.7 3.8 1.7 0.3]
 [7.7 2.6 6.9 2.3]
 [6.  2.9 4.5 1.5]
 [6.8 2.8 4.8 1.4]
 [5.4 3.4 1.5 0.4]
 [5.6 2.9 3.6 1.3]
 [6.9 3.1 5.1 2.3]
 [6.2 2.2 4.5 1.5]
 [5.8 2.7 3.9 1.2]
 [6.5 3.2 5.1 2. ]
 [4.8 3.  1.4 0.1]
 [5.5 3.5 1.3 0.2]
 [4.9 3.1 1.5 0.1]
 [5.1 3.8 1.5 0.3]
 [6.3 3.3 4.7 1.6]
 [6.5 3.  5.8 2.2]
 [5.6 2.5 3.9 1.1]
 [5.7 2.8 4.5 1.3]
 [6.4 2.8 5.6 2.2]
 [4.7 3.2 1.6 0.2]
 [6.1 3.  4.9 1.8]
 [5.  3.4 1.6 0.4]
 [6.4 2.8 5.6 2.1]
 [7.9 3.8 6.4 2. ]
 [6.7 3.  5.2 2.3]
 [6.7 2.5 5.8 1.8]
 [6.8 3.2 5.9 2.3]
 [4.8 3.  1.4 0.3]
 [4.8 3.1 1.6 0.2]]
Wrong predictions:
[]
```

```
In [ ]:
```

Loading [MathJax]/extensions/Safe.js