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In [39]: import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.linear_model import LogisticRegression
from sklearn.discriminant_analysis import LinearDiscriminantAnalysis
from sklearn.metrics import accuracy_score, confusion_matrix

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

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In [24]: data = pd.read_csv('Iris.csv')
data.head()
```

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Out[24]:
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	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Class Label
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa

```
In [25]: X = data.iloc[:, :-1]
y = data['Class Label']
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In [26]: X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, ra
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In [27]: sc = StandardScaler()
X_train_scaled = sc.fit_transform(X_train)
X_test_scaled = sc.transform(X_test)
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In [28]: lda = LinearDiscriminantAnalysis()
X_train_lda = lda.fit_transform(X_train_scaled, y_train)
X_test_lda = lda.transform(X_test_scaled)
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In [29]: classifier = LogisticRegression()
classifier.fit(X_train_lda, y_train)
y_pred = classifier.predict(X_test_lda)
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In [30]: print(y_pred)
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['Iris-versicolor' 'Iris-setosa' 'Iris-virginica' 'Iris-versicolor'
'Iris-versicolor' 'Iris-setosa' 'Iris-versicolor' 'Iris-virginica'
'Iris-versicolor' 'Iris-versicolor' 'Iris-virginica' 'Iris-setosa'
'Iris-setosa' 'Iris-setosa' 'Iris-setosa' 'Iris-versicolor'
'Iris-virginica' 'Iris-versicolor' 'Iris-versicolor' 'Iris-virginica'
'Iris-setosa' 'Iris-virginica' 'Iris-setosa' 'Iris-virginica'
'Iris-virginica' 'Iris-virginica' 'Iris-virginica' 'Iris-virginica'
'Iris-setosa' 'Iris-setosa']
```



```
In [42]: plt.scatter(data['SepalLengthCm'], data['Class Label'])  
plt.show()
```

