In [49]:
```
from matplotlib import pyplot as plt
```

In [1]:
```
import pandas as pd
```

In [3]:
```
df=pd.read_csv("C:\\Users\\User\\Desktop\\IRIS.CSV")
```

In [4]:
```
df
```

Out[4]:

	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
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	Iris-virginica
146	6.3	2.5	5.0	1.9	Iris-virginica
147	6.5	3.0	5.2	2.0	Iris-virginica
148	6.2	3.4	5.4	2.3	Iris-virginica
149	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 5 columns

In [13]:
```
features=df.iloc[:,:-1].values
label=df.iloc[:,-1].values
```

In [12]:
```
df["species"].value_counts()
```

Out[12]:
```
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: species, dtype: int64
```

In [16]:
```
from sklearn.model_selection import train_test_split
```

In [35]:
```
x_train,x_test,y_train,y_test =train_test_split(features,label)
```

In [36]:
```
x_train.shape,x_test.shape,y_train.shape,y_test.shape
```

Out[36]:
```
((112, 4), (38, 4), (112,), (38,))
```

In [37]:
```
from sklearn.neighbors import KNeighborsClassifier
```

In [39]:
```
knn=KNeighborsClassifier().fit(x_train,y_train)
```

In [40]:
```
y_pred=knn.predict(x_test)
```

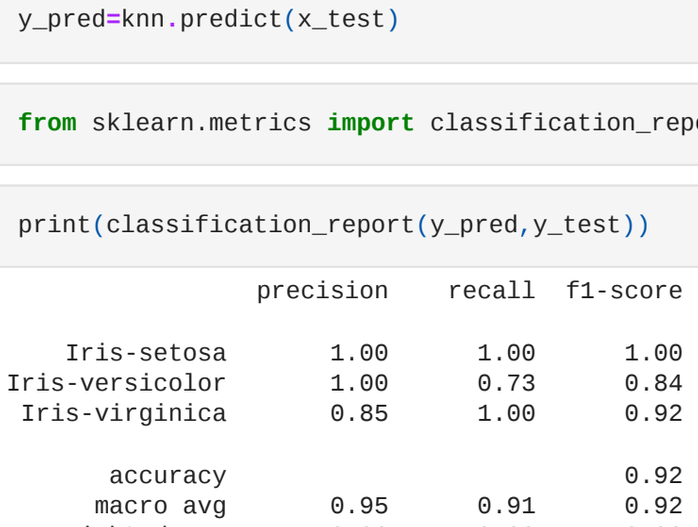
In [42]:
```
from sklearn.metrics import classification_report
```

In [44]:
```
print(classification_report(y_pred,y_test))
```

```
                 precision    recall  f1-score   support

    Iris-setosa       1.00      1.00      1.00        10
Iris-versicolor       1.00      0.73      0.84        11
 Iris-virginica       0.85      1.00      0.92        17

       accuracy                           0.92        38
      macro avg       0.95      0.91      0.92        38
   weighted avg       0.93      0.92      0.92        38
```

In [46]:
```
from sklearn.metrics import plot_confusion_matrix
plot_confusion_matrix(knn, x_test, y_test)
plt.title('Confusion Matrix')
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_9140/3817823699.py in <module>
      1 from sklearn.metrics import plot_confusion_matrix
      2 plot_confusion_matrix(knn, x_test, y_test)
----> 3 plt.title('Confusion Matrix')

NameError: name 'plt' is not defined
```



In [ ]: