svm

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Experiment NO 5Write a program perform classification tasks over given data using Support Vector Machine and evaluate its performance

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```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
```

```python
iris = pd.read_csv("IRIS.csv")
iris.shape
iris.head()
```

```
   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
```

```python
# Split the data into attributes/features and labels/target
X = iris.drop('species', axis=1)
y = iris['species']
y
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.20)
X_train
from sklearn.svm import SVC
svclassifier = SVC(kernel='rbf')
svclassifier.fit(X_train, y_train)
```

```
SVC()
```

```python
#To make predictions
y_pred = svclassifier.predict(X_test)
from sklearn.metrics import classification_report, confusion_matrix
print(confusion_matrix(y_test,y_pred))
print(classification_report(y_test,y_pred))
```

```
[[11  0  0]
 [ 0  7  1]
 [ 0  0 11]]
                 precision    recall  f1-score   support

    Iris-setosa       1.00      1.00      1.00        11
Iris-versicolor       1.00      0.88      0.93         8
 Iris-virginica       0.92      1.00      0.96        11

       accuracy                           0.97        30
      macro avg       0.97      0.96      0.96        30
   weighted avg       0.97      0.97      0.97        30
```

[ ]: