

**Ex.No-
10**

KNearestNeighbours

Aim:

To implement K-Nearest Neighbors machine learning algorithm.

Description:

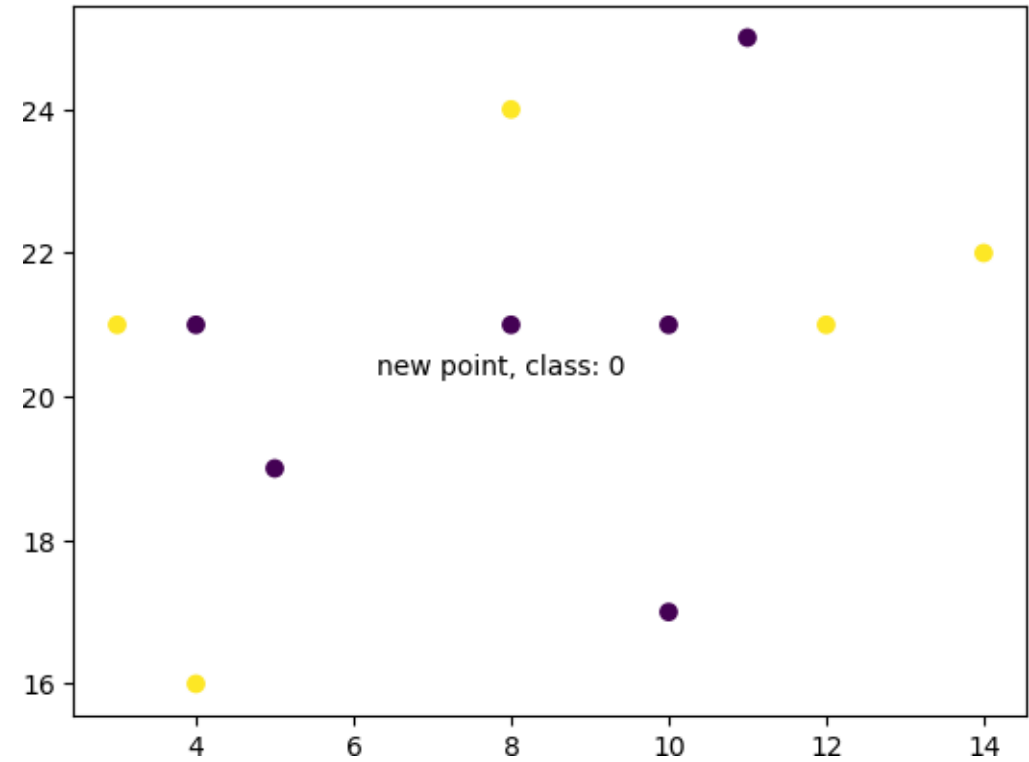
1. Import KNeighborsClassifier through sklearn
2. Provide the necessary dataset through DataFrames
3. Finally we can obtain the KNN output through matplotlib as graph

Program:

```
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.neighbors import
KNeighborsClassifier
file_path="Book8.csv"
df =
pd.read_csv(file_path)
print("Original DataFrame:\n", df)
x = df['x'].tolist()
y = df['y'].tolist()
classes = df['classes'].tolist()
data = list(zip(x, y))
knn =
KNeighborsClassifier(n_neighbors=1)
knn.fit(data, classes)
new_x = 8
new_y = 21
new_point =
[(new_x, new_y)]
prediction = knn.predict(new_point)
plt.scatter(x + [new_x], y + [new_y], c=classes +
[prediction[0]])
plt.text(x=new_x-1.7, y=new_y-0.7, s=f"new point, class: {prediction[0]}")
plt.show()
```

Output:

OriginalDataFrame	
xyclasses	
0421	0
1519	0
21017	0
3321	1
41125	0
5416	1
61422	1
71021	0
81221	1
9824	1



Result:

The programs were unsuccessful