Ex.No-10 **KNearestNeighbours**

Aim:

ToimplementK-NearestNeighborsmachinelearningalgorithm.

Description:

1. ImportKNeighborsClassifierthroughsklearn

2. Providethenecessarydataset throughDataFrames

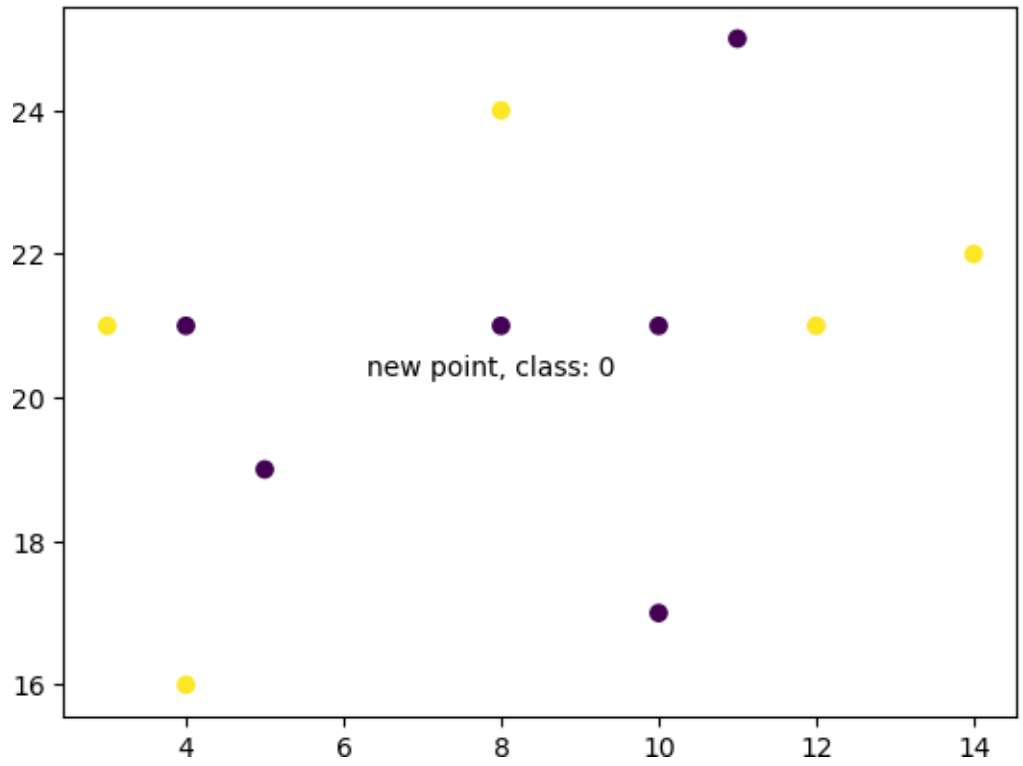
3. FinallywecanobtaintheKNN outputthroughmatplotlibasgraph

Program:

```
importpandasaspd
importmatplotlib.pyplotasplt
from sklearn.neighbors import
KNeighborsClassifierfile_path="Book8.csv"
df =
pd.read_csv(file_path)print("Orig
inalDataFrame:\n",df)x=df['x'].tol
ist()
y=df['y'].tolist()
classes=df['classes'].tolist()d
ata=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.pre
dict(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"newpoint,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:

Theprogramswererunsuccessfully