k-nn

June 28, 2024

[ ]:
```
import numpy as np
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score
import matplotlib.pyplot as plt
```

[ ]:
```
# Sampple Data
data = {
    'BP': [120,130,140,150,160,180,200,210, 220, 230], # Added two more data␣
 ↪points to match the length of Cholesterol and HeartRisk
    'Cholesterol':[200,220,240,260,280,300,320,340,360,380],
    'HeartRisk' : [0,0,0,0,1,1,1,1,1,1]
}
#create data  farme
df = pd.DataFrame(data)
```

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```
#featuring and target
x = df[['BP', 'Cholesterol']]
y = df['HeartRisk']
```

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```
#Instantiae the k-NN classifier
k=3
knn = KNeighborsClassifier(n_neighbors=k)
#fit the model
knn.fit(x,y)
```

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```
KNeighborsClassifier(n_neighbors=3)
```

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```
new_data = np.array([[150,250]])
prediction = knn.predict(new_data)
if prediction == 0:
    print('No Heart Disease')
else:
    print('Heart Disease')
```

```
No Heart Disease
```

```
/usr/local/lib/python3.10/dist-packages/sklearn/base.py:439: UserWarning: X does
not have valid feature names, but KNeighborsClassifier was fitted with feature
names
  warnings.warn(
```