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# Write a programme for KNN classifier


from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score
import matplotlib.pyplot as plt
import numpy as np


# Generating random data for demonstration
np.random.seed(0)
X = 2 * np.random.rand(100, 1)
y = np.where(X > 1, 1, 0).reshape(-1,)  # Generating binary
classification labels based on X values

# Creating a K-Nearest Neighbors Classifier
model = KNeighborsClassifier(n_neighbors=3)  # Using 3 neighbors as an
example
model.fit(X, y)
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KNeighborsClassifier(n_neighbors=3)
```

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# Making predictions using the model
y_pred = model.predict(X)

# Evaluating the model
accuracy = accuracy_score(y, y_pred)

print("Accuracy:", accuracy)
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Accuracy: 1.0
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# Plotting the original data and the decision boundary (for 2D data)
plt.figure(figsize=(8, 6))
plt.scatter(X, y, alpha=0.7, label='Original Data')
plt.xlabel('X')
plt.ylabel('y')
plt.title('K-Nearest Neighbors Classifier Example')
plt.legend()
plt.show()
```

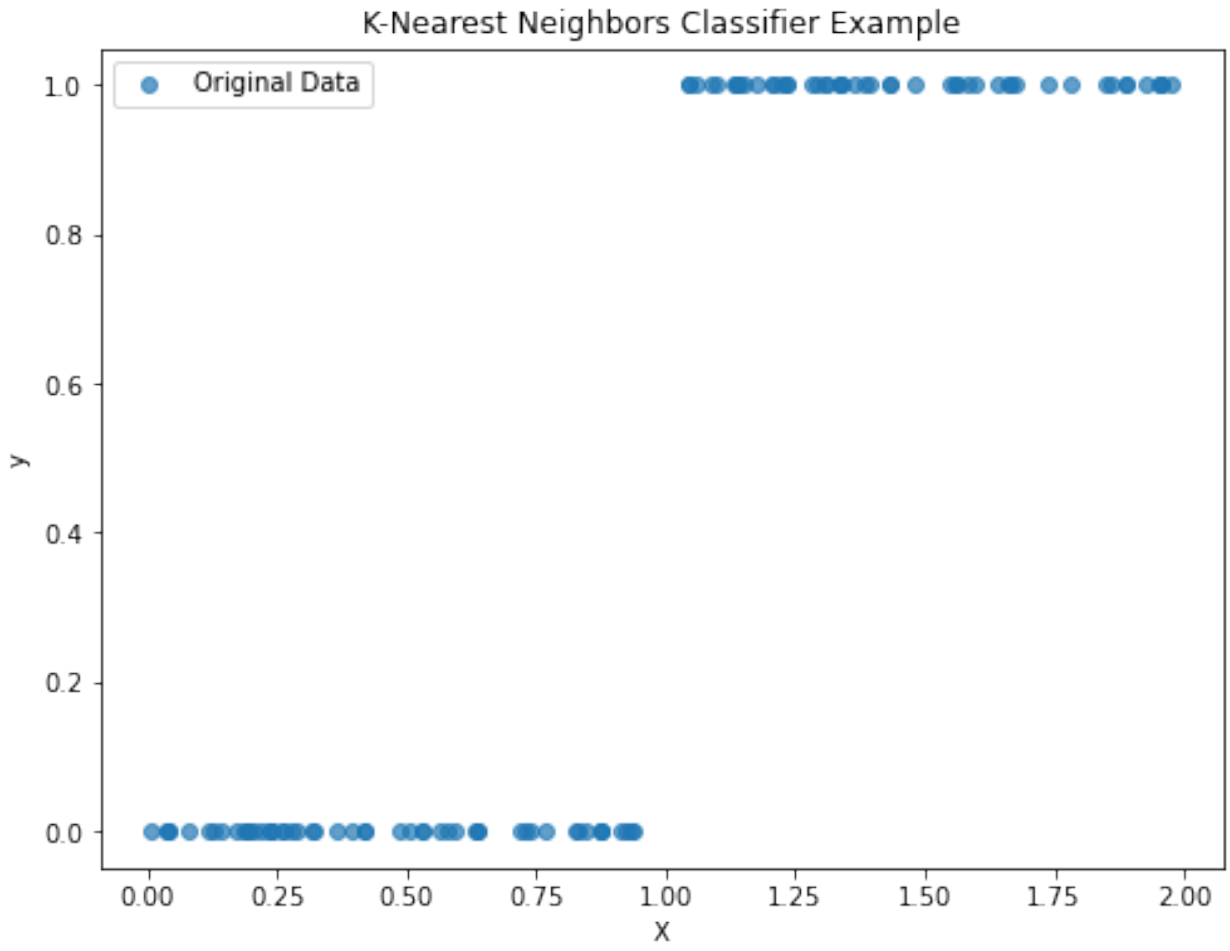
K-Nearest Neighbors Classifier Example
Original Data
1.0
0.8
0.6
0.4
0.2
0.0
y
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
X