



SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade
ASPproved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

23AMB201 - MACHINE LEARNING

II YEAR IV SEM

UNIT III – UNSUPERVISED LEARNING ALGORITHMS

TOPIC 12 – Implement K nn to classify the dataset

Redesigning Common Mind & Business Towards Excellence



Build an Entrepreneurial Mindset Through Our Design Thinking FrameWork



Knn-means

```
import numpy as np
from sklearn.neighbors import KNeighborsClassifier

# Step 1: Dataset - height (cm), weight (kg), label
X = np.array([
    [150, 45],
    [160, 50],
    [170, 65],
    [165, 55],
    [155, 47],
    [180, 75],
    [175, 80],
    [158, 48]
])
y = np.array([
    'underweight',
    'underweight',
    'normal',
    'normal',
    'underweight',
    'normal',
    'normal',
    'underweight'
])
```

```
➡ Predicted Class: underweight
   BMI: 19.81
```

```
[ ] knn = KNeighborsClassifier(n_neighbors=3)
     knn.fit(X, y)
```



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

```
[ ] new_member = np.array([[162, 52]])
    prediction = knn.predict(new_member)

# BMI Calculation
height_m = new_member[0][0] / 100
weight_kg = new_member[0][1]
bmi = weight_kg / (height_m ** 2)

print("Predicted Class:", prediction[0])
print("BMI:", round(bmi, 2))
```