

DAY – 8

[12.02.2025]

Exp : 31-35

The screenshot shows the Google Colab interface with two code cells. The top cell (Cell 26) contains code for a KNeighborsClassifier, which achieves 100% accuracy. The bottom cell (Cell 27) contains code for KMeans clustering, resulting in four segments labeled 0, 1, 0, 1.

```
[26] ✓ 0s
    import numpy as np
    from sklearn.neighbors import KNeighborsClassifier
    from sklearn.metrics import accuracy_score
    X = np.array([[25,120],[45,140],[30,130],[50,150]])
    y = np.array([1,0,1,0])
    m = KNeighborsClassifier(3).fit(X,y)
    p = m.predict(X)
    print("Accuracy:", accuracy_score(y,p))

... Accuracy: 1.0

[27] ✓ 0s
    import numpy as np
    from sklearn.cluster import KMeans
    X = np.array([[500,5],[700,7],[200,2],[900,9]])
    model = KMeans(2, random_state=0).fit(X)
    print("Segments:", model.labels_)

... Segments: [0 1 0 1]
```

The image shows a Jupyter Notebook interface with three code cells. The sidebar on the left contains icons for file operations, search, and other notebook functions.

Cell 23:

```
[23] import numpy as np
      from sklearn.cluster import KMeans
      X = np.array([[200,2],[300,3],[800,8],[900,9],[400,4]])
      model = KMeans(n_clusters=2, random_state=0).fit(X)
      print("Customer Segments:", model.labels_)
```

Output: Customer Segments: [1 1 0 0 1]

Cell 24:

```
[24] import numpy as np
      from sklearn.linear_model import LinearRegression
      from sklearn.metrics import r2_score
      X = np.array([[800],[1000],[1200],[1500]]); y = np.array([40,50,60,75])
      m = LinearRegression().fit(X,y)
      p = m.predict(X)
      print("R2 Score:", r2_score(y,p))
```

Output: R2 Score: 1.0

Cell 25:

```
[25] ✓ 0s import numpy as np
      from sklearn.linear_model import LinearRegression
      X = np.array([[1000,100],[1500,120],[2000,150]])
      y = np.array([5,7,10])
      model = LinearRegression().fit(X,y)
      print("Predicted Price:", model.predict([[1600,130]])[0])
```

Output: Predicted Price: 7.999999999999999