**National University of Modern Languages, Islamabad**

**Department of Computer Science**

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**Course: Machine Learning**

**Assignment no 2 [CLO-2]**

**Topic: K-Nearest Neighbor Implementation using Scikit-learn**

Part 1: Dataset Import and Exploration

1. Import the necessary libraries, including scikit-learn.

2. Choose a dataset from scikit-learn's datasets module. For example, you can use the *Titanic* or another suitable dataset.

3. Load the dataset and display its description and feature information.

Part 2: Data Splitting

4. Split the dataset into a training set and a testing set using the `train\_test\_split` function from scikit-learn.

5. Use an appropriate ratio for the split (e.g., 80% training, 20% testing).

Part 3: Naïve Bayesian Implementation

6. Implement a Naïve Bayesian classifier class from scikit-learn.

7. Train the classifier on the training data.

8. Classify the test data and calculate accuracy.

***Viva of the code to be held in the lab on Tuesday.***

***Note:*** *This assignment is to be performed in the groups as approved by the instructor. Assignments are to be submitted in hard form to the Class Representative (CR). Deadline is Tuesday, October 22, 2024.*

*Instructor*

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