Exercise Programs

Topic Covered	Problem Definition
Data Cleaning, Handling Missing Values, and Visualization	 Identify and handle missing values in the air quality dataset & Perform data visualization to understand pollution trends. Handle missing values in the Titanic dataset & Visualize survival patterns.
Classification	 Naïve Bayes Classifier: Apply e1071 package on the Titanic dataset to predict survival. Support Vector Machine (SVM): Train an SVM model using the e1071 package on the mtcars dataset. k-Nearest Neighbors (k-NN) Classifier: Use class package to classify handwritten digits from the mnist dataset.
Regression	 Multiple Linear Regression: Predict house prices using multiple independent variables from the Boston Housing dataset (MASS package). Logistic Regression: Predict whether passengers survived on the Titanic dataset using glm(). Polynomial Regression: Fit a polynomial regression model on synthetic nonlinear data.
Clustering	 Hierarchical Clustering: Perform hierarchical clustering on the mtcars dataset and create a dendrogram. DBSCAN Clustering: Use the dbscan package to cluster noisy data points.

Sample Lab Records

Each experiment must be written with problem definition, theory background, and screenshots of the source program and input/output. A sample laboratory record is given below.

Laboratory Course Name Term Work

Name of the Student: XYZ

Roll No: ##

Programme: MCA Year: March 2025

Semester: 4

Experiment Date:	No:	1	
Problem definition:			
R Program;			
OUTPUT: (Paste Screen shots from R studio).			