MCA – 5161 Machine Learning – Repeated Lab
07JULY2022 to 09JULY2022

Lab-01:

(1) Sum of n integers. Take n value and data from user. Display the appropriate output.

(2) Program to check for number and string palindromes.

(3) Create an empty list and empty array. Take data from the user and transform from one object to another.

(4) Perform the following N * N matrix operations: (a) Addition (b) Multiplication (c) Inverse of the given matrix.

Lab-02:

(1) Create a data set with 2 integer valued columns, 2 float valued columns and One non-numeric column. The minimum number of tuples should be 10.

(2) The data should be saved in a .csv file. Read the .csv file and display the content.

(3) Display the 5 number summary of the integer column data. Also display the box plot of the integer columns.

Lab-03:

For the given data set plot the following:

(1) Histograms (2) Scatter plots (3) Bar charts and (4) Pie charts

Lab-04:

For the given data sets perform the following regression operations:

(1) Write a user-defined function LINREG(X, Y). Display the RMSE and R-Square Values for the data.

(2) **Multi-Linear Regression Problem:** Identify the Dependent and Independent variables in the given data set. Draw the IV – IV and Iv-DV plots. Also display the correlation values for the dependent and independent variables.

(3) For the above data fit a Logistic regression model and display the accuracy scores.

(4) Tabulate the scores of the above models.

Lab-05:

Apply the KNN and Naïve Bayes Classifiers on the given data set with the following variations in the parameter values:

(a) K = 3, 4, 5. (b) Train-Test Split Ratios: 70-30; 80-20; 60-40.

Record the Classification model Accuracy Scores for each combination of the above parameter values.

Lab-06:

(1) Apply the SVM (Support Vector Machine) Classifier on the given data set with the following variations in the parameters:

Train-Test Split Ratios: 70-30; 80-20; 60-40

(2) Apply the K-Means clustering algorithm with K = 2, 3 and the initial centroids as the tuples: set-01: {39, 78, 125} and set-02: {49, 89, 129}with the input data set as iris.csv.

Lab-07:

Apply the following classifiers using the pipeline object and record the accuracy:

Classifiers: KNN, NB, SVM

(a) For KNN k – values – {2, 3, 4} & (b) Train-Test Split Ratios: 70-30; 80-20; 60-40.