Machine Learning Lab - Assignment 9

Group A – Python Program

1. Maximum and Minimum K elements in Tuple
Input : test_tup = (3, 7, 1, 18, 9), k = 2 , Output : (3, 1, 9, 18)

2. Adding Tuple to List and vice – versa
The original list is : [5, 6, 7] , The container after addition : [5, 6, 7, 9, 10]

3. Modulo of tuple elements
The original tuple 1 : (10, 4, 5, 6) , The original tuple 2 : (5, 6, 7, 5) , The modulus tuple : (0, 4, 5, 1)

4. Update each element in tuple list

5. Multiply Adjacent elements
The original tuple : (1, 5, 7, 8, 10) : output : (5, 35, 56, 80)

6. Python – Combinations of sum with tuples in tuple list
The original list : [(2, 4), (6, 7), (5, 1), (6, 10)]
The Summation combinations are : [(8, 11), (7, 5), (8, 14), (11, 8), (12, 17), (11, 11)]

7. Python – All pair combinations of 2 tuples
Input : test_tuple1 = (7, 2), test_tuple2 = (7, 8)
Output : [(7, 7), (7, 8), (2, 7), (2, 8), (7, 7), (7, 2), (8, 7), (8, 2)]

8. Remove Tuples of Length
Input : test_list = [(4, 5), (4,), (8, 6, 7), (1,), (3, 4, 6, 7)], K = 2
Output : [(4,), (8, 6, 7), (1,), (3, 4, 6, 7)]

Group B – Program on Classification Algorithm

9. Use the **Adm_Pred.csv dataset**
a) Read all the dataset using a dataframe
b) Update Research Experience (0=no, 1=yes), Admitted (0=no, 1=yes). Admitted is the target variable.
c) Perform 80-20, 70-30 and 65-35 division for train and test set
d) Apply **Linear Regression classifier** and display Accuracy
e) Generate Confusion matrix
f) Display Precision, Recall, F1-Score , Sensitivity , Specificity , Kappa stat .
g) Generate a bar graph for 3 accuracies obtained

10) Use same dataset in QS 9 and apply preprocessing techniques
a) Apply **Logistic Regression classifier** and display Accuracy for all the divisions
b) Generate a bar graph for 3 accuracies obtained.
c) Generate Confusion matrix
d) Display Precision, Recall, F1-Score , Sensitivity , Specificity , Kappa stat .
e) Generate a bar graph for 3 accuracies obtained