Lab - 3
Introduction to Machine Learning
AY 2021-22, Semester - I

Instructions:

1. Prepare one code (Python file) containing all the functions of Q1, and another code for Q2 named Q1.py and Q2.py.
2. Put both the codes in a folder named <Lab1_YourRollNo>, create a zip file and upload in google-classroom.
3. Submit a single report (*pdf file/preferably LaTex*) containing all the steps that you have followed to obtain the result. There is no need to add theory about the classifiers . Only write the steps that you have followed.
4. Any submission received in another format or after the deadline will not be evaluated.

Problem 1: Linear Regression Task

From the Dataset1 -

A. Use matplotlib library to make a scatter plot and also label both the axes.
B. Implement the linear regression model to predict the dependency between two variables..
    1. Implement linear regression using the inbuilt function “LinearRegression” model in sklearn.
    2. Print the coefficient obtained from linear regression and plot a straight line on the scatter plot.
    3. Now, implement linear regression without the use of any inbuilt function.
    4. Compare the results of 1 and 3 graphically..

Problem 2: Logistic Regression Task

From the Dataset2 -

A. Split the dataset into training set and test set in the ratio of 70:30 or 80:20
B. Train the logistic regression classifier(using inbuilt function: LogisticRegression from sklearn)
C. Print the confusion matrix and accuracy.

Note:
In the lab itself you are supposed to do Part A of problem 1 and in part B , solve 1 and 2 points.