

Maulana Azad National Institute of Technology, Bhopal

Department of Computer Science and Engineering

Date:	06-Jan-2023	Session:	Jan-May 2023
Branch:	M.Tech. (AI)	Semester:	II
Subject Code:	AI 525	Subject:	Deep Learning Lab
Faculty Name: Dr. Nilay Khare			

Lab Assignment 1:

Deadline: 5:00PM 11-Jan-2023 (Wednesday)

1) Implement **k-NN** algorithm on Python.

- Install Anaconda3-2022.10
- Generate points in **2-dimensional space** randomly using random number generator function of python. Consider that no point extends beyond 50 on both x and y axis i.e. If $P_1 = (x_1, y_1)$ then $|x_1| \leq 50$ and $|y_1| \leq 50$. Number of points to be generated must be at least 200 and at most 500.
- Taking different cases for **k = 3, 5, and 7**, run **k-NN** algorithm on the generated points.
- Now generate 10 new points and categorize these points to the suitable nearest neighbor.
- Extend the code to consider points of **N-dimensional space**.

Submission Guidelines:

1) Before submission ensure that:

- There should be **no plagiarism in the code**. If found then 0 marks will be assigned for that assignment.
- The assignment should be submitted within the allotted **time limit**.

2) Create a single pdf/word file which contains the following:

- a) Scholar number and name of the scholar.
- b) Lab Assignment number and date of the assignment.
- c) Implementation code of all the tasks in the assignment.
- d) Result/Screenshot of the implemented code on test data.
- e) Remarks/Explanation of the code, if required.

3) Submit the pdf/word file in the below google form link:

https://docs.google.com/forms/d/e/1FAIpQLSf2t2l2xq-Py_AQQuowNhO6xN9wTCOCRX5Hy2mQuQgXrByukg/viewform?vc=0&c=0&w=1&flr=0