Department of Computer Science
Forman Christian College University

COMP360: Introduction to AI
Spring 2024

Lab 7

FORMAN CHRISTIAN COLLEGE
(A CHARTERED UNIVERSITY)

Task 1 (10 Marks)	Viva (10 Marks)	Total (20 Marks)

KNN Classifier

Introduction:

- K-Nearest Neighbor is one of the simplest Machine Learning algorithms based on Supervised Learning technique.
- K-NN algorithm assumes the similarity between the new case/data and available cases and put the new case into the category that is most similar to the available categories.
- K-NN algorithm stores all the available data and classifies a new data point based on the similarity. This means when new data appears then it can be easily classified into a well suite category by using K- NN algorithm.
- K-NN algorithm can be used for Regression as well as for Classification but mostly it is used for the Classification problems.

Prerequisites:

- Taken or understood the given lecture on KNN algorithm.
- Know coding in Python.
- Interests in Learning new and exciting technologies.

Lab Instructions:

- Download the zipped folder from the Moodle and unzip it. Make sure there are two files "lab_KNN_Classifier.docx" and "diabetes.csv".
- Open a new notebook on Google Colabs and make a new notebook from **File>new notebook.** You will be required to sign in using your google email id. (Go ahead and signup/signin).
- Name your notebook as "KNN_Classifier_[your name]_[roll No]" and start work on.
- Start by uploading the data file that you have just downloaded from moodle and start working on in it.
- **Read File → Using Pandas Library**
- **Data Split for train and test → Using Sklearn.model.selection_train_test_split**
- ***Write your own function for KNN classifer in python from scratch. Use the following function name:***

KNN_Classifier

Expected Deliverable:

You are expected to submit the python notebook that you worked on using Google Colabs with the naming conventions given in above lab instruction.

Note: Do not cheat, your marks will be finalized at the time of your viva. Do not miss any instruction mentioned above especially the file name and function name. Ignoring the instruction will cost you deduction of marks.