

Subject: 22AIE213

Lab Session: 02

Notes:

1. Please read the assignment notes carefully and comply to the guidelines provided.
2. Code should be checked into the GitHub. These details shall be provided in the Lab.
3. If you have not completed the prerequisite assignments, please complete them before the next lab session.

Coding Instructions:

1. The code should be modularized; The asked functionality should be available as a function. Please create multiple functions if needed. However, all functions should be present within a single code block, if you are using Jupyter or Colab notebooks.
2. There should be no print statement within the function. All print statements should be in the main program.
3. Please use proper naming of variables.
4. For lists, strings and matrices, you may use your input values as appropriate.
5. Please make inline documentation / comments as needed within the code blocks.

Mandatory Section

1. Write a function to calculate the Euclidean distance and Manhattan distance between two vectors. The vectors dimension is variable. Please don't use any distance calculation functions available in Python.
2. Write a function to implement k-NN classifier. k is a variable and based on that the count of neighbors should be selected.
3. Write a function to convert categorical variables to numeric using label encoding. Don't use any existing functionalities.
4. Write a function to convert categorical variables to numeric using One-Hot encoding. Don't use any existing functionalities.

Test The above functionalities using Unit Testing methods taught to you programming subjects.