**CSC 4740/6740 Data Mining**

**Assignment 2**

**Due Date: 11:59 am, Thursday, October 6, 2022**

1. (100 points) Please implement the algorithm for computing edit distance.

You need to submit the complete python file into iCollege.

You need to copy and paste the outputs of your algorithm in the console/terminal for the following two examples.

Example 1:

sString1 = "kitten" sString2 = "sitting"

Function:

Text

Description automatically generated

Output in your algorithm:

Graphical user interface, text, application

Description automatically generated

Example 2:

sString1 = "GAMBOL" sString2 = "GUMBO"

Output in your algorithm:

Graphical user interface, application

Description automatically generated

Explain what you observed and whether the output results make sense or not.

This is a dynamic programming problem, where we have to compute the minimum number of transformations needed to convert one string to another. It has a run time of O(m\*n), and a space complexity of O(m\*n), where m and n are lengths of respective strings. The results make sense for both, as you need 3 transformations to convert “kitten” to “sitting” and 2 transformations to convert “GAMBOL” to “GUMBO.”

“kitten” to “sitting”: We first need to replace k with s 🡪 “sitten”, one transformation.