**Department of Computing**

**CS370: Artificial Intelligence**

**Class: BSCS 8C**

**Lab 1: Introduction to Python**

**Date: 26th February, 2021**

**Time: 9.00Am to 12.00Pm**

**Instructor: Dr. Hashir Moheed**

**Name: Kainat Tasadaq**

# Lab 1: Introduction to Python

# Lab Tasks

**Task #1**

*import numpy as np*

*def printDistance():*

*for t1 in range(lengthstr1 + 1):*

*for t2 in range(lengthstr2 + 1):*

*print(int(matrix[t1][t2]), end=" ")*

*print()*

*def levensheit():*

*for t1 in range(lengthstr1+1):*

*matrix[t1][0]=t1*

*for t2 in range(lengthstr2+1):*

*matrix[0][t2]=t2*

*a=0*

*b=0*

*c=0*

*for t1 in range(1,lengthstr1+1):*

*for t2 in range(1,lengthstr2+1):*

*if(str1[t1-1]==str2[t2-1]):*

*matrix[t1][t2]=matrix[t1-1][t2-1]*

*else:*

*a=matrix[t1-1][t2]*

*b = matrix[t1][t2-1]*

*c = matrix[t1 - 1][t2-1]*

*if(a<=b and a<=c):*

*matrix[t1][t2]=a+1*

*elif (b <= c and b <= a):*

*matrix[t1][t2] = b + 1*

*else:*

*matrix[t1][t2] = c + 1*

*str1=input("Enter The String#1")*

*str2=input("Ebter the String#2")*

*lengthstr1=len(str1)*

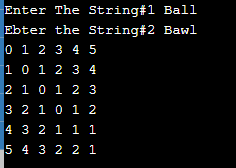
*lengthstr2=len(str2)*

*matrix=np.zeros((lengthstr1+1,lengthstr2+1))*

*levensheit()*

*printDistance()*

**OUTPUT**



**Task#2**

import numpy as np

def printDistance():

for t1 in range(lengthstr1 + 1):

for t2 in range(lengthstr2 + 1):

print(int(matrix[t1][t2]), end=" ")

print()

def levensheit():

for t1 in range(lengthstr1+1):

matrix[t1][0]=t1

for t2 in range(lengthstr2+1):

matrix[0][t2]=t2

a=0

b=0

c=0

for t1 in range(1,lengthstr1+1):

for t2 in range(1,lengthstr2+1):

if(str1[t1-1]==str2[t2-1]):

matrix[t1][t2]=matrix[t1-1][t2-1]

else:

a=matrix[t1-1][t2]

b = matrix[t1][t2-1]

c = matrix[t1 - 1][t2-1]

if(a<=b and a<=c):

matrix[t1][t2]=a+1

elif (b <= c and b <= a):

matrix[t1][t2] = b + 1

else:

matrix[t1][t2] = c + 1

ref=open("reference.txt",'r')

ref1=ref.read()

str1=ref1.split()

hypot=open("hypothesis.txt",'r')

hypo1=hypot.read()

str2=hypo1.split()

lengthstr1=len(str1)

lengthstr2=len(str2)

matrix=np.zeros((lengthstr1+1,lengthstr2+1))

levensheit()

print()

f = open("result.txt", "w")

f.write("Levenshtein distance is "+ str(int(matrix[lengthstr1][lengthstr2])))

f.close()

printDistance()

**OUTPUT**

