# Assignment 8

#### Write a Python Program to Add two Matrices ?

***Answer:***

**def** addMatrices(a,b):  
 print(f'Inputs: {a},{b}')  
 **if** len(a) == len(b):  
 out\_matrix = []  
 **for** ele **in** range(len(a)):  
 **if** len(a[ele]) == len(b[ele]):  
 out\_matrix.append([])  
 **for** sub\_ele **in** range(len(a[ele])):  
 out\_matrix[ele].append(a[ele][sub\_ele]+b[ele][sub\_ele])  
 **else**:  
 print('Both Matrices must contains same no of rows and columns')   
 **else**:  
 print('Both Matrices must contains same no of rows and columns')  
 print(f'Output: {out\_matrix}')  
  
addMatrices([[1,2,3],[4,5,6],[7,8,9]],[[9,8,7],[6,5,4],[3,2,1]])  
addMatrices([[2,3,5],[1,1,1],[2,2,2]],[[4,3,5],[1,2,3],[3,2,1]])

Inputs: [[1, 2, 3], [4, 5, 6], [7, 8, 9]],[[9, 8, 7], [6, 5, 4], [3, 2, 1]]  
Output: [[10, 10, 10], [10, 10, 10], [10, 10, 10]]  
Inputs: [[2, 3, 5], [1, 1, 1], [2, 2, 2]],[[4, 3, 5], [1, 2, 3], [3, 2, 1]]  
Output: [[6, 6, 10], [2, 3, 4], [5, 4, 3]]

#### 2. Write a Python Program to Multiply two Matrices ?

***Answer:***

a = [[1,2,3],[4,5,6],[7,8,9]]  
b = [[1,4,7],[2,5,8],[3,6,9]]  
  
def multiply\_matrice(a,b):  
 output = []  
 if len(a[0]) == len(b):  
 for ele in range(len(a[0])):  
 output.append([0 for ele in range(len(b[0]))])  
 for i in range(len(a)):  
 for j in range(len(b[0])):  
 for k in range(len(b)):  
 output[i][j] += a[i][k]\*b[k][j]  
 print(output)   
 else:  
 print('Matrix Multiplication is Not Possible')  
   
multiply\_matrice(a,b)

[[14, 32, 50], [32, 77, 122], [50, 122, 194]]

#### 3. Write a Python Program to transpose a Matrix ?

***Answer:***

a = [[1,2,3],[4,5,6],[7,8,9]]  
b = [[1,2],[4,5],[7,8]]  
c = [[1,2,3],[4,5,6]]  
  
def generate\_transpose(in\_matrix):  
 out\_matrix = []  
 for ele in range(len(in\_matrix[0])):  
 out\_matrix.append([0 for i in range(len(in\_matrix))])  
 for i in range(len(in\_matrix)):  
 for j in range(len(in\_matrix[i])):  
 out\_matrix[j][i] = in\_matrix[i][j]  
 print(f'{in\_matrix} -> {out\_matrix}')  
   
generate\_transpose(a)  
generate\_transpose(b)  
generate\_transpose(c)

[[1, 2, 3], [4, 5, 6], [7, 8, 9]] -> [[1, 4, 7], [2, 5, 8], [3, 6, 9]]  
[[1, 2], [4, 5], [7, 8]] -> [[1, 4, 7], [2, 5, 8]]  
[[1, 2, 3], [4, 5, 6]] -> [[1, 4], [2, 5], [3, 6]]

#### 4. Write a Python Program to sort Words in an Alphabatical Order ?

***Answer:***

def sortString():  
 in\_string = input("Enter a String: ").title()  
 sorted\_list = sorted(in\_string.split(' '))  
 print(' '.join(sorted\_list))  
  
sortString()

Enter a String: Ineuron Full Stack Data Sciecne  
Data Full Ineuron Sciecne Stack

#### 5. Write a Python Program to remove Punctuations From a String ?

**Answer:**

def removePunctuatuions():  
 punctuations = '''!()-[]{};:'"\,<>./?@#$%^&\*\_~'''  
 in\_string = input('Enter a String: ')  
 out\_string = ''  
 for ele in in\_string:  
 if ele not in punctuations:  
 out\_string += ele  
 print(out\_string)  
   
removePunctuatuions()

Enter a String: "Full Stacks DS" @ Ineuron   
Full Stacks DS Ineuron