Assignment 8 Solutions

1. Write a Python Program to Add two Matrices ?

In [6]:
```
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([[4,5,6],[1,2,3],[7,8,9]],[[9,8,7],[4,5,6],[3,2,1]])
addMatrices([[3,4,2],[7,7,7],[1,1,1]],[[5,3,4],[3,4,5],[3,2,1]])
```

```
Inputs: [[4, 5, 6], [1, 2, 3], [7, 8, 9]],[[9, 8, 7], [4, 5, 6], [3, 2, 1]]
Output: [[13, 13, 13], [5, 7, 9], [10, 10, 10]]
Inputs: [[3, 4, 2], [7, 7, 7], [1, 1, 1]],[[5, 3, 4], [3, 4, 5], [3, 2, 1]]
Output: [[8, 7, 6], [10, 11, 12], [4, 3, 2]]
```

2. Write a Python Program to Multiply two Matrices ?

In [10]:
```
a = [[1,2,3],[4,5,6],[7,8,9]]
b = [[1,4,7],[2,5,8],[3,8,6]]

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, 38, 41], [32, 89, 104], [50, 140, 167]]
```

3. Write a Python Program to transpose a Matrix ?

In [11]:
```
a = [[4,5,6],[7,8,9],[1,2,3]]
b = [[3,1],[6,7],[8,9]]
c = [[4,5,6],[7,8,9]]

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)
```

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

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

In [14]:
```
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 ?

In [ ]:
```
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()
```

In [ ]:
```

```