Basic Programming assignment 8

1. Write a Python Program to Add two Matrices ?

In [1]:
```
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 ?

In [2]:
```
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 ?

In [3]:
```
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 ?

In [4]:
```
def sortString():
    in_string = input("Enter a String: ").title()
    sorted_list = sorted(in_string.split(' '))
    print(' '.join(sorted_list))
```

```
sortString()
```

```
Enter a String: Full stack data science by Ineuron
By Data Full Ineuron Science Stack
```

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

In [6]:

```
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 stack data science @ ineuron
Full stack data science  ineuron
```