python_basic_programming_8

May 12, 2023

1. Write a Python Program to Add two Matrices ?

```python
[2]: 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 ?

```python
[3]: 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 ?

```
[4]: 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 ?

```
[6]: 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 ?

```
[7]: 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

[ ]: