1. Write a Python Program to Add Two Matrices?

Ans:

In [8]:

```
import numpy as np
print('Enter order of matrices:')
m = int(input('Number of rows:'))
n = int(input('Number of columns:'))
print('Enter elements of matrix 1:')
entries = list(map(int, input().split()))
matrix1 = np.array(entries).reshape(m,n)
print('Enter elements of matrix 2:')
entries = list(map(int, input().split()))
matrix2 = np.array(entries).reshape(m,n)
print('Matrix 1: \n',matrix1)
print('Matrix 2: \n',matrix2)
Sum = matrix1 + matrix2
print(Sum)
```

```
Enter order of matrices:
Number of rows:2
Number of columns:2
Enter elements of matrix 1:
1 2 3 4
Enter elements of matrix 2:
1 2 3 4
Matrix 1:
 [[1 2]
 [3 4]]
Matrix 2:
 [[1 2]
 [3 4]]
[[2 4]
 [6 8]]
```

2. Write a Python Program to Multiply Two Matrices?

Ans:

In [3]:

```
import numpy as np
print('Enter order of matrix1:')
m1 = int(input('Number of rows:'))
n1 = int(input('Number of columns:'))
print('Enter elements of matrix 1:')
entries1 = list(map(int, input().split()))
matrix1 = np.array(entries1).reshape(m1,n1)
print('Enter order of matrix2:')
m2 = int(input('Number of rows:'))
n2 = int(input('Number of columns:'))
print('Enter elements of matrix 2:')
entries2 = list(map(int, input().split()))
matrix2 = np.array(entries2).reshape(m2,n2)
print('Matrix 1: \n',matrix1)
print('Matrix 2: \n',matrix2)
print('The result will be a ',m1, ' X', n2, ' matrix')
result= []
result = np.dot(matrix1,matrix2)

for r in result:
    print(r)
```

```
Enter order of matrix1:
Number of rows:2
Number of columns:3
Enter elements of matrix 1:
3 4 5 6 7 8
Enter order of matrix2:
Number of rows:3
Number of columns:2
Enter elements of matrix 2:
10 11 12 13 14 15
Matrix 1:
 [[3 4 5]
 [6 7 8]]
Matrix 2:
 [[10 11]
 [12 13]
 [14 15]]
The result will be a  2  X 2  matrix
[148 160]
[256 277]
```

3. Write a Python Program to Transpose a Matrix?

Ans:

In [7]:

```
import numpy as np
print('Enter order of matrix:')
m = int(input('Number of rows:'))
n = int(input('Number of columns:'))
print('Enter elements of matrix:')
entries = list(map(int, input().split()))
A = np.array(entries).reshape(m,n)
print('Matrix: \n',A)
def transpose(A, B):
    for i in range(n):
        for j in range(m):
            B[i][j] = A[j][i]
B = [[0 for x in range(m)] for y in range(n)]
transpose(A, B)
print("Transpose is")
for i in range(n):
    for j in range(m):
        print(B[i][j], " ", end='')
    print()
```

```
Enter order of matrix:
Number of rows:2
Number of columns:3
Enter elements of matrix:
1 0 2 2 0 1
Matrix:
 [[1 0 2]
 [2 0 1]]
Transpose is
1  2
0  0
2  1
```

4. Write a Python Program to Sort Words in Alphabetic Order?

Ans:

In [1]:

```
string = input("Enter a string: ")
words = [word.lower() for word in string.split()]
words.sort()
print("After sorting alphabetically:")
for word in words:
   print(word)
```

```
Enter a string: I am batman
After sorting alphabetically:
am
batman
i
```

5. Write a Python Program to Remove Punctuation From a String?

Ans:

In [2]:

```
import re
string = input("Enter a string: ")
res = re.sub(r'[^\w\s]', '', string)
print("After removing punctuation : " + res)
```

```
Enter a string: I "am" (Thejaswini)
After removing punctuation : I am Thejaswini
```