Program No : 1

Aim : Perform all matrix operations using python (Using numpy)

PROGRAM

```
import numpy

array1 = []
n=int(input("Enter the array Size"))
for i in range(n):
    array1.append(int(input("Enter thr first array elements : ")))
array1=numpy.array(array1)
print(numpy.floor(array1))

array2=[]
for i in range(n):
    array2.append(int(input("Enter the second array elemensts : ")))
array2=numpy.array(array2)
print(numpy.floor(array2))

print("Array Addition ")
print(numpy.add(array1,array2))

print("Array Substraction ")
print(numpy.subtract(array1,array2))

print("Array Multiplication")
print(numpy.multiply(array1,array2))

print("Array Division")
print(numpy.divide(array1,array2))

print("Array Dot")
print(numpy.dot(array1,array2))

print("Array Squareroot")
print(numpy.sqrt(array1))

print("Array Summation of array1 ")
print(numpy.sum(array1))

print("Array Transpose of array1")
print(array1.T)
```

OUTPUT

```
C:\Users\ajcemca\AppData\Local\Programs\Python\Python39\python.exe C:/Users/ajcemca/PycharmProjects/Sam/numpymatrix.py
Enter the array Size 3
Enter thr first array elements : 4
Enter thr first array elements : 6
Enter thr first array elements : 10
[ 4.  6. 10.]
Enter the second array elemensts : 2
Enter the second array elemensts : 3
Enter the second array elemensts : 5
[2. 3. 5.]
Array Addition
[ 6  9 15]
Array Substraction
[2 3 5]
Array Multiplication
[ 8 18 50]
Array Division
[2. 2. 2.]
Array Dot
76
Array Squareroot
[2.         2.44948974 3.16227766]
Array Summation of array1
20
Array Transpose of array1
[ 4  6 10]
```