

```
In [1]: import numpy as np
a=np.loadtxt('testmarks1.csv',delimiter=',',skiprows=1,dtype=float)
print(a)
```

```
[[801.    43.05  27.79  28.7   27.79]
 [802.    43.47  28.52  28.98  27.89]
 [803.    42.24  28.16  28.16  25.63]
 [804.    39.24  26.16  26.16  26.16]
 [805.    40.9   26.03  27.27  25.65]
 [806.    39.47  26.31  26.31  25.21]
 [807.    41.68  25.63  27.79  25.46]
 [808.    42.19  27.61  28.13  26.21]
 [809.    44.75  28.35  29.83  28.21]
 [810.    46.95  28.88  31.3   28.53]]
```

```
In [2]: b=np.loadtxt('testmarks2.csv',delimiter=',',skiprows=1,dtype=float)
print(b)
```

```
[[801.    28.48  34.18  30.56  22.23]
 [802.    28.1   33.72  30.68  22.82]
 [803.    26.16  31.39  28.2   22.53]
 [804.    26.16  31.39  28.78  20.93]
 [805.    26.1   31.32  28.22  20.82]
 [806.    25.45  30.54  27.73  21.05]
 [807.    26.16  31.39  28.01  20.51]
 [808.    27.44  32.93  28.83  22.08]
 [809.    28.63  34.35  31.03  22.68]
 [810.    30.35  36.42  31.38  23.1  ]]
```

```
In [4]: c=np.add(a,b)
print("Addition of two arrays is:",c)
```

```
Addition of two arrays is: [[1602.    71.53  61.97  59.26  50.02]
 [1604.    71.57  62.24  59.66  50.71]
 [1606.    68.4   59.55  56.36  48.16]
 [1608.    65.4   57.55  54.94  47.09]
 [1610.    67.    57.35  55.49  46.47]
 [1612.    64.92  56.85  54.04  46.26]
 [1614.    67.84  57.02  55.8   45.97]
 [1616.    69.63  60.54  56.96  48.29]
 [1618.    73.38  62.7   60.86  50.89]
 [1620.    77.3   65.3   62.68  51.63]]
```

```
In [6]: d=np.subtract(a,b)
print("The subtraction of two arrays is :",d)
```

```
The subtraction of two arrays is : [[ 0.    14.57 -6.39 -1.86  5.56]
 [ 0.    15.37 -5.2  -1.7   5.07]
 [ 0.    16.08 -3.23 -0.04  3.1  ]
 [ 0.    13.08 -5.23 -2.62  5.23]
 [ 0.    14.8  -5.29 -0.95  4.83]
 [ 0.    14.02 -4.23 -1.42  4.16]
 [ 0.    15.52 -5.76 -0.22  4.95]
 [ 0.    14.75 -5.32 -0.7   4.13]
 [ 0.    16.12 -6.    -1.2   5.53]
 [ 0.    16.6  -7.54 -0.08  5.43]]
```

```
In [7]: e=np.multiply(a,b)
print("The multiplication two arrays is:",e)
```

```
The multiplication two arrays is: [[6.4160100e+05 1.2260640e+03 9.4986220e+02 8.7707200e+02 6.1777170e+02]
 [6.4320400e+05 1.2215070e+03 9.6169440e+02 8.8910640e+02 6.3644980e+02]
 [6.4480900e+05 1.1049984e+03 8.8394240e+02 7.9411200e+02 5.7744390e+02]
 [6.4641600e+05 1.0265184e+03 8.2116240e+02 7.5288480e+02 5.4752880e+02]
 [6.4802500e+05 1.0674900e+03 8.1525960e+02 7.6955940e+02 5.3403300e+02]
 [6.4963600e+05 1.0045115e+03 8.0350740e+02 7.2957630e+02 5.3067050e+02]
 [6.5124900e+05 1.0903488e+03 8.0452570e+02 7.7839790e+02 5.2218460e+02]
 [6.5286400e+05 1.1576936e+03 9.0919730e+02 8.1098790e+02 5.7871680e+02]
 [6.5448100e+05 1.2811925e+03 9.7382250e+02 9.2562490e+02 6.3980280e+02]
 [6.5610000e+05 1.4249325e+03 1.0518096e+03 9.8219400e+02 6.5904300e+02]]
```

```
In [18]: f=np.transpose(a)
print("The transpose of a is :",f)
```

```
The transpose of a is : [[801.    802.    803.    804.    805.    806.    807.    808.    809.    810.  ]
 [ 43.05  43.47  42.24  39.24  40.9   39.47  41.68  42.19  44.75  46.95]
 [ 27.79  28.52  28.16  26.16  26.03  26.31  25.63  27.61  28.35  28.88]
 [ 28.7   28.98  28.16  26.16  27.27  26.31  27.79  28.13  29.83  31.3  ]
 [ 27.79  27.89  25.63  26.16  25.65  25.21  25.46  26.21  28.21  28.53]]
```

```
In [19]: g=np.transpose(b)
print("The transpose of b is :",g)
```

```
The transpose of b is : [[801.    802.    803.    804.    805.    806.    807.    808.    809.    810. ]
[ 28.48  28.1  26.16  26.16  26.1  25.45  26.16  27.44  28.63  30.35]
[ 34.18  33.72  31.39  31.39  31.32  30.54  31.39  32.93  34.35  36.42]
[ 30.56  30.68  28.2   28.78  28.22  27.73  28.01  28.83  31.03  31.38]
[ 22.23  22.82  22.53  20.93  20.82  21.05  20.51  22.08  22.68  23.1  ]]
```

```
In [24]: h=np.mod(a,b)
print("The mod of a and b is : ",h)
```

```
The mod of a and b is : [[ 0.    14.57 27.79 28.7   5.56]
[ 0.    15.37 28.52 28.98  5.07]
[ 0.    16.08 28.16 28.16  3.1  ]
[ 0.    13.08 26.16 26.16  5.23]
[ 0.    14.8   26.03 27.27  4.83]
[ 0.    14.02 26.31 26.31  4.16]
[ 0.    15.52 25.63 27.79  4.95]
[ 0.    14.75 27.61 28.13  4.13]
[ 0.    16.12 28.35 29.83  5.53]
[ 0.    16.6   28.88 31.3   5.43]]
```

```
In [25]: i=np.divide(a,b)
print("The division of a and is :",i)
```

```
The division of a and is : [[1.          1.51158708 0.81304857 0.93913613 1.25011246]
[1.          1.54697509 0.84578885 0.94458931 1.22217353]
[1.          1.6146789   0.89710099 0.99858156 1.13759432]
[1.          1.5          0.83338643 0.90896456 1.24988055]
[1.          1.56704981 0.83109834 0.96633593 1.23198847]
[1.          1.55088409 0.86149312 0.94879192 1.1976247  ]
[1.          1.59327217 0.81650207 0.99214566 1.24134569]
[1.          1.53753644 0.83844519 0.97571974 1.1870471  ]
[1.          1.56304576 0.82532751 0.96132775 1.24382716]
[1.          1.54695222 0.7929709   0.99745061 1.23506494]]
```

```
In [28]: k=np.mean(a)
print("The mean of a is :",k)
```

The mean of a is : 186.03499999999997

```
In [29]: l=np.mean(b)
print("The mean of b is :",l)
```

The mean of b is : 183.35659999999996

```
In [30]: m=np.max(a)
print("The max of a is :",m)
```

The max of a is : 810.0

```
In [31]: n=np.max(b)
print("The max of b is :",n)
```

The max of b is : 810.0

```
In [36]: o=np.average(a)
print("The average of o is :",o)
```

The average of o is : 186.03499999999997

```
In [37]: p=np.average(b)
print("The average of b is :",p)
```

The average of b is : 183.35659999999996

```
In [ ]:
```