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Batch: H1

```
+*In[1]:*+ [source, ipython3]
```

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

```
+*Out[1]:*+
```

```
[[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[6]:*+ [source, ipython3]
```

```
import numpy as np b=np.loadtxt('testmarks2.csv',delimiter=',',skiprows=1,dtype=float) print(b)
```

```
+*Out[6]:*+
```

```
[[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[7]:*+ [source, ipython3]
```

```
c=np.add(a,b) print(c)
```

```
+*Out[7]:*+
```

```
[[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[13]:*+
```

```
[source, ipython3]
```

```
c=np.subtract(a,b) print(c)
```

```
+*Out[13]:*+
```

```
[[ 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[14]:*+
```

```
[source, ipython3]
```

```
c=np.multiply(a,b)
```

```
print(c)
```

```
+*Out[14]:*+
```

```
[[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[15]:.*
```

```
[source, ipython3]
```

```
c=np.divide(a,b)
```

```
print(c)
```

```
.*Out[15]:.*
```

```
[[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[19]:.*
```

```
[source, ipython3]
```

```
c=np.transpose(a) print(c)
```

```
Out[19]:
```

```
[[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[26]:
```

```
[source, ipython3] c=np.mean(a,0)
```

```
print(c)
```

```
Out[26]:
```

```
[805.5 42.394 27.344 28.263 26.674]
```

```
In[27]:
```

```
[source, ipython3]
```

```
c=np.max(a,0) print(c)
```

```
Out[27]:
```

```
[810.    46.95 28.88 31.3    28.53]
```

```
+*In[28]:*+
```

```
[source, ipython3]
```

```
c=np.min(a,0)
```

```
print(c)
```

```
+*Out[28]:*+
```

```
[801.  39.24 25.63 26.16 25.21]
```

```
+*In[ ]:*+ [source, ipython3]
```