Mean, Var, and Std 🛊





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mean

The mean tool computes the arithmetic mean along the specified axis.

```
import numpy

my_array = numpy.array([[1, 2], [3, 4]])

print numpy.mean(my_array, axis = 0)  #Output : [ 2. 3.]

print numpy.mean(my_array, axis = 1)  #Output : [ 1.5 3.5]

print numpy.mean(my_array, axis = None)  #Output : 2.5

print numpy.mean(my_array)  #Output : 2.5
```

By default, the axis is None. Therefore, it computes the mean of the flattened array.

var

The var tool computes the arithmetic variance along the specified axis.

```
import numpy

my_array = numpy.array([[1, 2], [3, 4]])

print numpy.var(my_array, axis = 0)  #Output : [ 1. 1.]

print numpy.var(my_array, axis = 1)  #Output : [ 0.25 0.25]

print numpy.var(my_array, axis = None)  #Output : 1.25

print numpy.var(my_array)  #Output : 1.25
```

By default, the axis is None. Therefore, it computes the variance of the flattened array.

std

The std tool computes the arithmetic standard deviation along the specified axis.

```
import numpy

my_array = numpy.array([[1, 2], [3, 4]])

print numpy.std(my_array, axis = 0)  #Output : [ 1. 1.]

print numpy.std(my_array, axis = 1)  #Output : [ 0.5 0.5]

print numpy.std(my_array, axis = None)  #Output : 1.11803398875

print numpy.std(my_array)  #Output : 1.11803398875
```

By default, the axis is None. Therefore, it computes the standard deviation of the flattened array.

Task

You are given a 2-D array of size $N \times M$.

Your task is to find:

1. The mean along axis ${f 1}$

- 2. The var along axis 0
- 3. The std along axis *None*

Input Format

The first line contains the space separated values of ${\pmb N}$ and ${\pmb M}$.

The next ${\pmb N}$ lines contains ${\pmb M}$ space separated integers.

Output Format

First, print the mean.

Second, print the var.

Third, print the std.

Sample Input

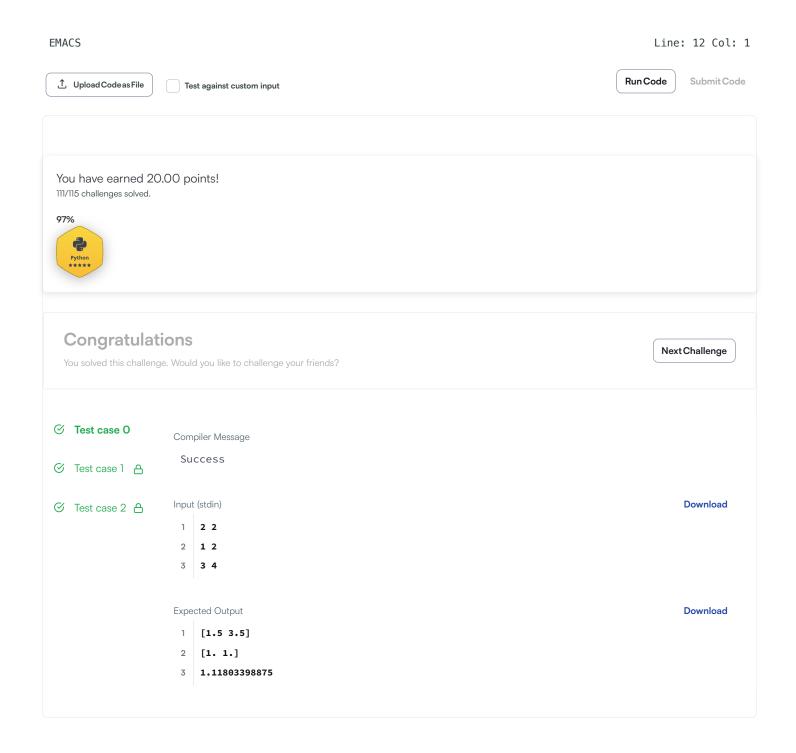
- 2 2
- 1 2 3 4

Sample Output

```
[ 1.5 3.5]
[ 1. 1.]
1.11803398875
```

```
Change Theme Language Python 3 🗸 5
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```
1
    import numpy as np
 2
    n, m = map(int, input().split())
 3
 4
     arr = np.array([input().split() for _ in range(n)], int)
 5
    print(np.mean(arr, axis=1))
 6
 7
     print(np.var(arr, axis=0))
 8
 9
     # round is used to meet the requirement
10
     print(round(np.std(arr),11))
11
12
```



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