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 NXM.

Your task is to find:

1. The mean along axis 1

2. The var along axis $\mathbf{0}$

3. The std along axis $\boldsymbol{None}$

Input Format

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

The next $\boldsymbol{N}$ lines contains $\boldsymbol{M}$ 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 | Python 3

```
import numpy as np

if __name__ == '__main__':
    n, m = tuple(map(int, input().split()))

    matrix = []

    for _ in range(n):
        matrix.append(tuple(map(int, input().split())))

    matrix = np.array(matrix)

    mean = np.mean(matrix, axis=1)
    variance = np.var(matrix, axis=0)
    standard_deviation = np.std(matrix, axis=None)

    print(mean)
    print(variance)
    print(round(standard_deviation, 11))

```

Line: 1 Col: 1

Upload Code as File | Test against custom input | Run Code | Submit Code

You have earned 20.00 points!

71/115 challenges solved.

62%

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

Test case 0

Test case 1

Test case 2

Compiler Message

Success

Input (stdin) Download

```
2 2
1 2
3 4
```

Expected Output Download

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