Sum and Prod ★

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sum

The sum tool returns the sum of array elements over a given axis.

```
import numpy

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

print numpy.sum(my_array, axis = 0)        #Output : [4 6]
print numpy.sum(my_array, axis = 1)        #Output : [3 7]
print numpy.sum(my_array, axis = None)     #Output : 10
print numpy.sum(my_array)                  #Output : 10
```

By default, the axis value is `None`. Therefore, it performs a sum over all the dimensions of the input array.

prod

The prod tool returns the product of array elements over a given axis.

```
import numpy

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

print numpy.prod(my_array, axis = 0)        #Output : [3 8]
print numpy.prod(my_array, axis = 1)        #Output : [ 2 12]
print numpy.prod(my_array, axis = None)     #Output : 24
print numpy.prod(my_array)                  #Output : 24
```

By default, the axis value is `None`. Therefore, it performs the product over all the dimensions of the input array.

Task

You are given a 2-D array with dimensions N×M.

Your task is to perform the *sum* tool over axis 0 and then find the *product* of that result.

Input Format

The first line of input contains space separated values of N and M.

The next N lines contains M space separated integers.

Output Format

Compute the sum along axis 0. Then, print the product of that sum.

Sample Input

```
2 2
1 2
3 4
```
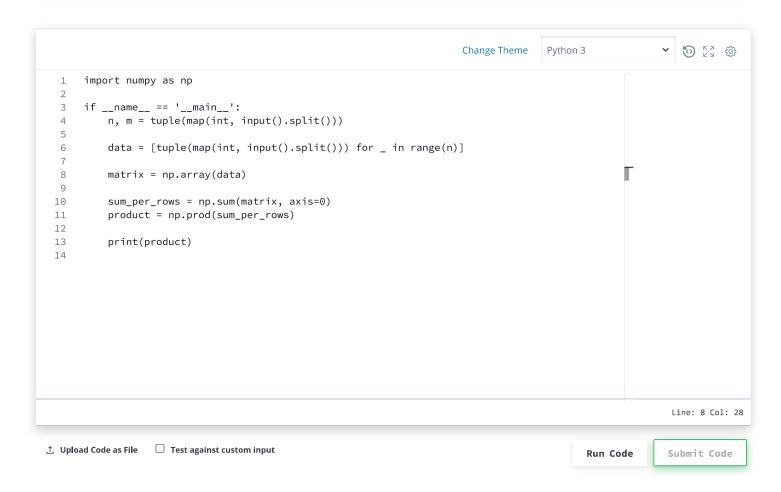
Sample Output

```
24
```

Explanation

The sum along axis **0** = [**4 6**]

The product of this sum = **24**

Python 3

```python
1    import numpy as np
2
3    if __name__ == '__main__':
4        n, m = tuple(map(int, input().split()))
5
6        data = [tuple(map(int, input().split())) for _ in range(n)]
7
8        matrix = np.array(data)
9
10       sum_per_rows = np.sum(matrix, axis=0)
11       product = np.prod(sum_per_rows)
12
13       print(product)
14
```

Line: 8 Col: 28

⬆ Upload Code as File   ☐ Test against custom input

Run Code   Submit Code

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64%

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✓ **Test case 0**

✓ **Test case 1** 🔒

Compiler Message

Success

✓ **Test case 2** 🔓

Input (stdin)

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

Expected Output

Download

```
1   24
```