Transpose and Flatten

Transpose

We can generate the transposition of an array using the tool `numpy.transpose`.

It will not affect the original array, but it will create a new array.

```
import numpy

my_array = numpy.array([[1,2,3],
                        [4,5,6]])
print numpy.transpose(my_array)

#Output
[[1 4]
 [2 5]
 [3 6]]
```

Flatten

The tool flatten creates a copy of the input array flattened to one dimension.

```
import numpy

my_array = numpy.array([[1,2,3],
                        [4,5,6]])
print my_array.flatten()

#Output
[1 2 3 4 5 6]
```

Task

You are given a NxM integer array matrix with space separated elements (N = rows and M = columns).

Your task is to print the transpose and flatten results.

Input Format

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

The next N lines contains the space separated elements of M columns.

Output Format

First, print the transpose array and then print the flatten.

Sample Input

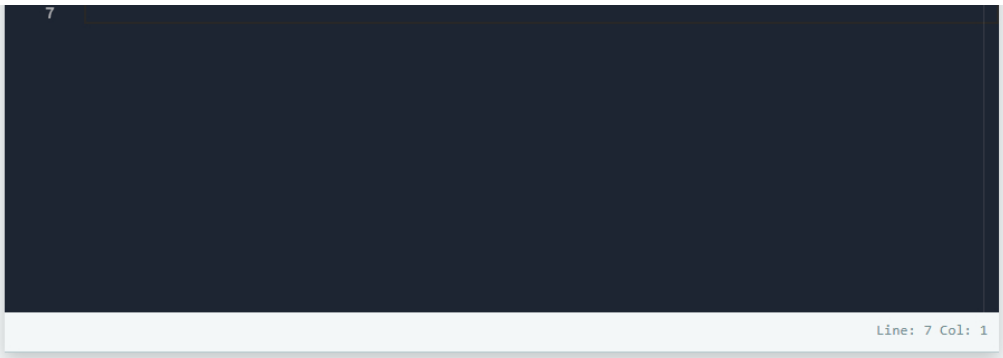
```
2 2
1 2
3 4
```

Sample Output

```
[[1 3]
 [2 4]]
[1 2 3 4]
```



```
1  import numpy
2  n, m = map(int, input().split())
3
4  storage = numpy.array([input().strip().split() for _ in range(n)], int)
5  print (storage.transpose())
6  print (storage.flatten())
```



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You have passed the sample test cases. Click the submit button to run your code against all the test cases.