

# Transpose and Flatten

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HackerRank

## 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  $N \times M$  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
```

1/2

3 4

### Sample Output

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

2/2

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```
1 import numpy
2 x,y=input().split()
3 arr=[]
4 for i in range(int(x)):
5     arr.append(list(map(int,input().split())))
6 n_arr=numpy.array(arr)
7 print(n_arr.transpose())
8 print(n_arr.flatten())
```