

itertools.product() ★

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itertools.product()

This tool computes the [cartesian product](#) of input iterables.

It is equivalent to nested for-loops.

For example, `product(A, B)` returns the same as `((x,y) for x in A for y in B)`.

Sample Code

```
>>> from itertools import product
>>>
>>> print list(product([1,2,3],repeat = 2))
[(1, 1), (1, 2), (1, 3), (2, 1), (2, 2), (2, 3), (3, 1), (3, 2), (3, 3)]
>>>
>>> print list(product([1,2,3],[3,4]))
[(1, 3), (1, 4), (2, 3), (2, 4), (3, 3), (3, 4)]
>>>
>>> A = [[1,2,3],[3,4,5]]
>>> print list(product(*A))
[(1, 3), (1, 4), (1, 5), (2, 3), (2, 4), (2, 5), (3, 3), (3, 4), (3, 5)]
>>>
>>> B = [[1,2,3],[3,4,5],[7,8]]
>>> print list(product(*B))
[(1, 3, 7), (1, 3, 8), (1, 4, 7), (1, 4, 8), (1, 5, 7), (1, 5, 8), (2, 3, 7), (2, 3, 8), (2, 4, 7), (2, 4, 8), (2, 5, 7), (2, 5, 8)]
```

Task

You are given a two lists ***A*** and ***B***. Your task is to compute their cartesian product ***A* × *B***.

Example

```
A = [1, 2]
B = [3, 4]

AxB = [(1, 3), (1, 4), (2, 3), (2, 4)]
```

**Note:** ***A*** and ***B*** are sorted lists, and the cartesian product's tuples should be output in sorted order.

Input Format

The first line contains the space separated elements of list ***A***.

The second line contains the space separated elements of list ***B***.

Both lists have no duplicate integer elements.

Constraints

0 < ***A*** < 30

0 < ***B*** < 30

Output Format

Output the space separated tuples of the cartesian product.

Sample Input

```
1 2
3 4
```

Sample Output

```
(1, 3) (1, 4) (2, 3) (2, 4)
```



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```
1  from itertools import product
2
3  A = list(map(int, input().split()))
4  B = list(map(int, input().split()))
5
6  result = sorted(product(A, B))
7
8  for pair in result:
9      print(pair, end=' ')
10
```

Line: 10 Col: 1

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41%



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Next Challenge

 <b>Test case 0</b>	Compiler Message				
 Test case 1 	Success				
 Test case 2 	Input (stdin) <a href="#">Download</a>				
 Test case 3 	<table><tr><td>1</td><td>1 2</td></tr><tr><td>2</td><td>3 4</td></tr></table>	1	1 2	2	3 4
1	1 2				
2	3 4				
 Test case 4 	Expected Output <a href="#">Download</a>				
 Test case 5 	<table><tr><td>1</td><td>(1, 3) (1, 4) (2, 3) (2, 4)</td></tr></table>	1	(1, 3) (1, 4) (2, 3) (2, 4)		
1	(1, 3) (1, 4) (2, 3) (2, 4)				