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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, 7)
```

Task

You are given a two lists $m{A}$ and $m{B}$. Your task is to compute their cartesian product $m{A}\!\! imes\!\!m{B}$.

Example

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

Note: $m{A}$ and $m{B}$ 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 $m{A}$.

The second line contains the space separated elements of list $m{B}$.

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.

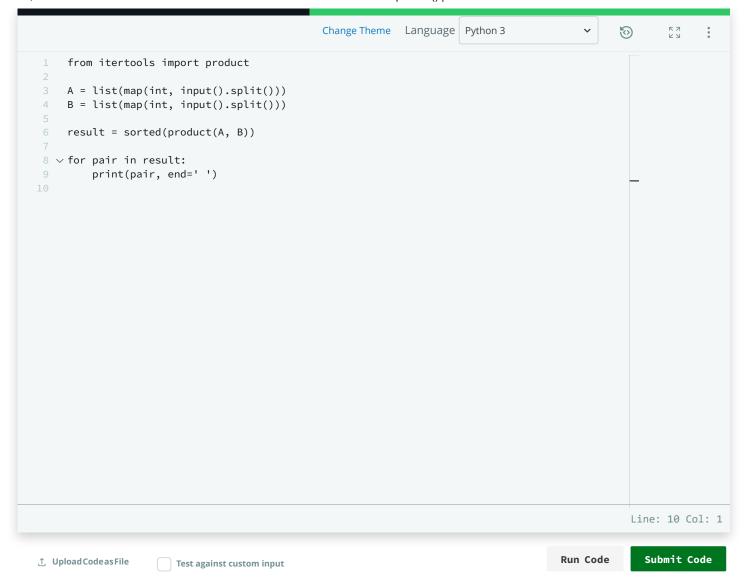
Sample Input

1 2 3 4

Sample Output

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

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