Symmetric Difference ★

Objective

Today, we're learning about a new data type: sets.

Concept

If the inputs are given on one line separated by a space character, use split() to get the separate values in the form of a list:

```
>> a = raw_input()
5 4 3 2
>> lis = a.split()
>> print (lis)
['5', '4', '3', '2']
```

If the list values are all integer types, use the map() method to convert all the strings to integers.

```
>> newlis = list(map(int, lis))
>> print (newlis)
[5, 4, 3, 2]
```

Sets are an unordered bag of unique values. A single set contains values of any immutable data type.

CREATING SETS

```
>> myset = {1, 2} # Directly assigning values to a set
>> myset = set()  # Initializing a set
>> myset = set(['a', 'b']) # Creating a set from a list
>> myset
{'a', 'b'}
```

MODIFYING SETS

Using the add() function:

```
>> myset.add('c')
>> myset
{'a', 'c', 'b'}
>> myset.add('a') # As 'a' already exists in the set, nothing happens
>> myset.add((5, 4))
>> myset
{'a', 'c', 'b', (5, 4)}
```

Using the update() function:

```
>> myset.update([1, 2, 3, 4]) # update() only works for iterable objects
>> myset
{'a', 1, 'c', 'b', 4, 2, (5, 4), 3}
>> myset.update({1, 7, 8})
>> myset
{'a', 1, 'c', 'b', 4, 7, 8, 2, (5, 4), 3}
>> myset.update({1, 6}, [5, 13])
>> myset
{'a', 1, 'c', 'b', 4, 5, 6, 7, 8, 2, (5, 4), 13, 3}
```

REMOVING ITEMS

Both the discard() and remove() functions take a single value as an argument and removes that value from the set. If that value is not present, discard() does nothing, but remove() will raise a KeyError exception.

```
>> myset.discard(10)
>> myset
{'a', 1, 'c', 'b', 4, 5, 7, 8, 2, 12, (5, 4), 13, 11, 3}
>> myset.remove(13)
>> myset
{'a', 1, 'c', 'b', 4, 5, 7, 8, 2, 12, (5, 4), 11, 3}
```

COMMON SET OPERATIONS Using union(), intersection() and difference() functions.

```
>> a = {2, 4, 5, 9}
>> b = {2, 4, 11, 12}
>> a.union(b) # Values which exist in a or b
{2, 4, 5, 9, 11, 12}
>> a.intersection(b) # Values which exist in a and b
{2, 4}
>> a.difference(b) # Values which exist in a but not in b
{9, 5}
```

The union() and intersection() functions are symmetric methods:

```
>> a.union(b) == b.union(a)
True
>> a.intersection(b) == b.intersection(a)
True
>> a.difference(b) == b.difference(a)
False
```

These other built-in data structures in Python are also useful.

Task

Given 2 sets of integers, M and N, print their symmetric difference in ascending order. The term symmetric difference indicates those values that exist in either M or N but do not exist in both.

Input Format

The first line of input contains an integer, M.
The second line contains M space-separated integers.
The third line contains an integer, N.
The fourth line contains N space-separated integers.

Output Format

Output the symmetric difference integers in ascending order, one per line.

Sample Input

```
4
2 4 5 9
4
2 4 11 12
```

Sample Output

```
5
9
11
12
```

Change Theme | Python 3

```
def symmetric_difference(m, n):
    result = m.difference(n).union(n.difference(m))

    return result

if __name__ == '__main__':
    m = int(input())
    m = set(map(int, input().split()))

    n = int(input())
    n = set(map(int, input().split()))

    result = symmetric_difference(m, n)

    result = sorted(list(result))

    for n in result:
        print(n)

```

Line: 19 Col: 1

Upload Code as File | Test against custom input | Run Code | Submit Code

You have earned 10.00 points!

You are now 55 points away from the gold level for your python badge.

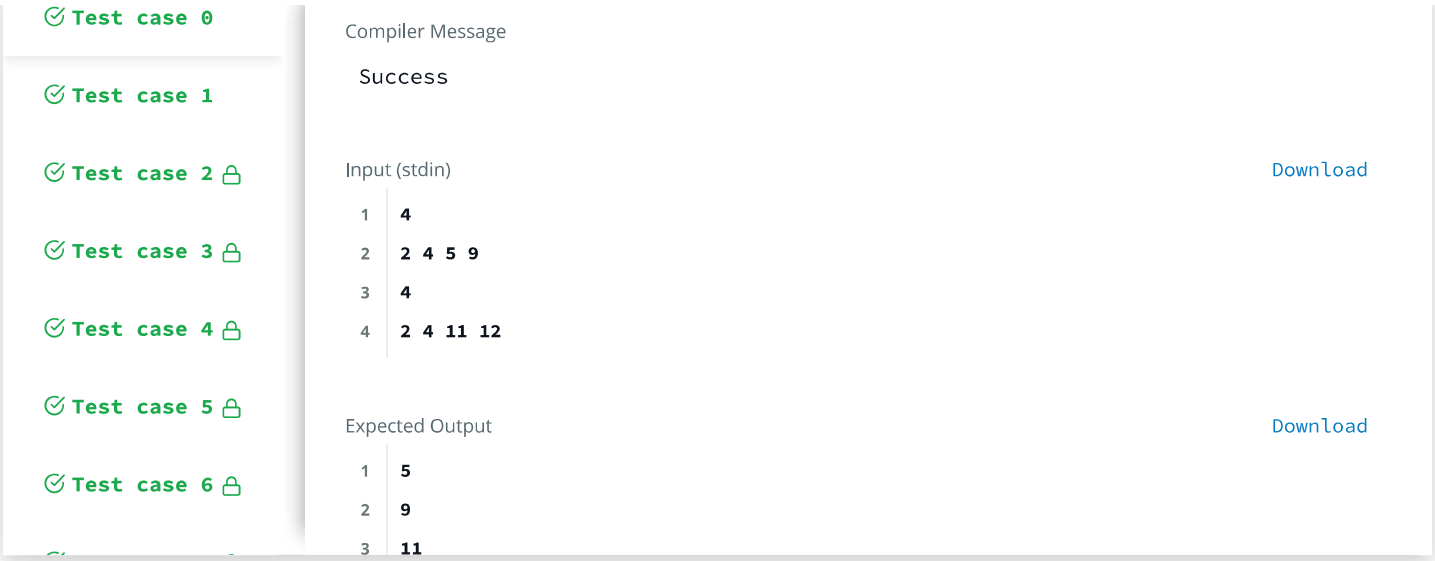
69% 345/400

Python ★★★★

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge


Test case 0
Test case 1
Test case 2
Test case 3
Test case 4
Test case 5
Test case 6
Compiler Message
Success
Input (stdin)
Download
1 4
2 2 4 5 9
3 4
4 2 4 11 12
Expected Output
Download
1 5
2 9
3 11