List Comprehensions

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Let's learn about list comprehensions! You are given three integers x, y and z representing the dimensions of a cuboid along with an integer n. Print a list of all possible coordinates given by (i, j, k) on a 3D grid where the sum of $i + j + k$ is not equal to n. Here, $0 \leq i \leq x; 0 \leq j \leq y; 0 \leq k \leq z$. Please use list comprehensions rather than multiple loops, as a learning exercise.

Example

$x = 1$

$y = 1$

$z = 2$

$n = 3$

All permutations of $[i, j, k]$ are:

$[[0, 0, 0], [0, 0, 1], [0, 0, 2], [0, 1, 0], [0, 1, 1], [0, 1, 2], [1, 0, 0], [1, 0, 1], [1, 0, 2], [1, 1, 0], [1, 1, 1], [1, 1, 2]]$.

Print an array of the elements that do not sum to $n = 3$.

$[[0, 0, 0], [0, 0, 1], [0, 0, 2], [0, 1, 0], [0, 1, 1], [1, 0, 0], [1, 0, 1], [1, 1, 0], [1, 1, 2]]$

Input Format

Four integers x, y, z and n, each on a separate line.

Constraints

Print the list in lexicographic increasing order.

Sample Input 0

```
1
1
1
2
```

Sample Output 0

```
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [1, 0, 0], [1, 1, 1]]
```

Explanation 0

Each variable x, y and z will have values of 0 or 1. All permutations of lists in the form $[i, j, k] = [[0, 0, 0], [0, 0, 1], [0, 1, 0], [0, 1, 1], [1, 0, 0], [1, 0, 1], [1, 1, 0], [1, 1, 1]]$. Remove all arrays that sum to $n = 2$ to leave only the valid permutations.

Sample Input 1

```
2
2
```

```
2
2
```

Sample Output 1

```
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [0, 1, 2], [0, 2, 1], [0, 2, 2], [1, 0, 0], [1, 0, 2], [1, 1, 1], [1, 1, 2], [1, 2, 0], [1, 2, 1], [1, 2, 2], [2, 0, 1], [2, 0, 2], [2, 1, 0], [2, 1, 1], [2, 1, 2], [2, 2, 0], [2, 2, 1], [2, 
```

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```python
# Link - https://www.hackerrank.com/challenges/list-comprehensions/problem?isFullScreen=false

if __name__ == '__main__':

    x_value = int(input())
    y_value = int(input())
    z_value = int(input())
    n_value = int(input())

    my_array = []

    for i in range(0, x_value + 1):
        for j in range(0, y_value + 1):
            for k in range(0, z_value + 1):
                if i + j + k != n_value:
                    my_array.append([i, j, k])

    my_array.sort()
    print(my_array)

```

Line: 20 Col: 1

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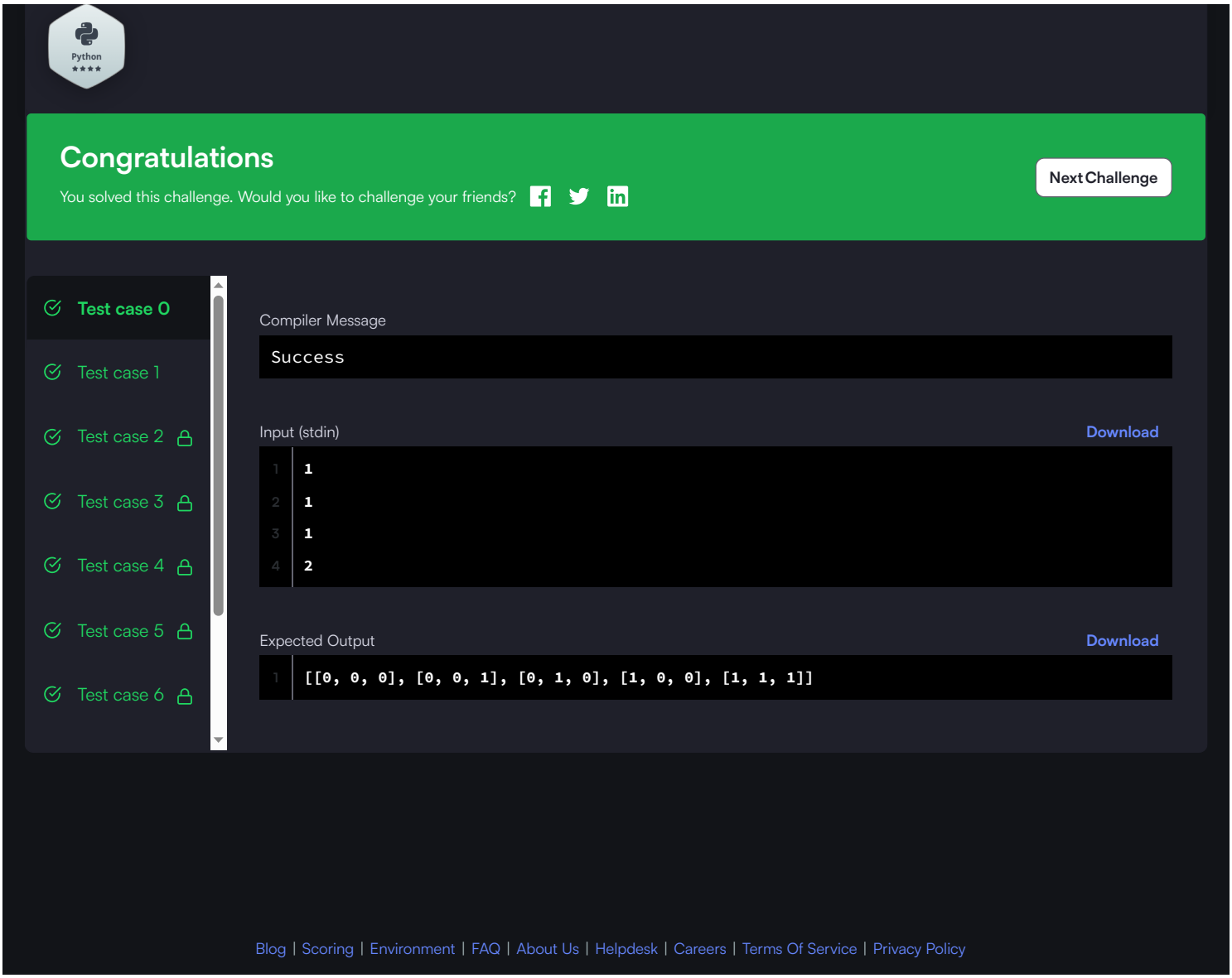
You are now 155 points away from the gold level for your python badge.

14% 245/400


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
1
1
2
Expected Output
Download
[[0, 0, 0], [0, 0, 1], [0, 1, 0], [1, 0, 0], [1, 1, 1]]
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