

Draw a Staircase

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Question

Given a number n, printed a staircase with n steps.

Example:

Input: 4

Output:

```
#  
##  
###  
####
```

Explanation and Algorithm

Since you are iterating through the numbers 1 to your given n, you should use a for loop. For each i in your for loop, you will print i # characters consecutively on a new line. To do this you will need another for loop nested in your first, which prints i # characters. After your nested loop terminate, print a new line character.

Hints

1. You have to draw one step for each number from 1 to n. What is the best way to iterate through those numbers?
2. A for loop is the most effective way to iterate through the numbers.
3. What is different about each step that you draw? Each step has one more # character than the step previous. How would you print the correct number of characters?

Code

```
public static staircase(int n){
    for(int i=0; i<n; i++){
        for(int j=1; i<=j; j++){
            System.out.print("#");
        }
        System.out.println("");
    }
}
```

Big O analysis

The first loop takes n steps, and the nested loop takes $\frac{n(n-1)}{2}$, so the runtime is $O(n^2)$.

Sources

Question, answer and other material taken from [hackerrank.com](https://www.hackerrank.com)