

Sign Letters - Overview

You are planning a surprise birthday party for Dr. Summet. You have decided to print out messages from his friends to post around the room, and nothing could be more impressive than huge banners with one letter per piece of paper. And what could be better than displaying them so that each letter is posted multiple times according to its position in the message? See below:

C	S	1	8	0	3
	S	1	8	0	3
		1	8	0	3
			8	0	3
				0	3
					3

In the example above, you need one C, two S's, three 1's, and so on. It seemed like a good idea when you first proposed it, anyway; but here's your task: you will write a program which will make a list of letters to be printed (one letter per page). One difficulty: Your printer will run out ink after a certain number of letters, so you have to stop producing letters at a pre-set limit.

You will write a function ***iterate***, which will iterate through strings and stop after hitting a limit.

Iterate

The *iterate* function will be given two parameters: a string and an integer limit. The function should return a list containing a multiple of each character in a list, (one first letter, two second letters, etc). You can use the position of the letter in the string to figure out how many copies to make. Don't forget to stop when the number of characters in the list reaches the integer limit.

Parameters:

message - a string representing the message to be printed,
e.g. "Happy Birthday!"

limit - an integer representing the maximum number of
characters to return in the return list.

Return value:

a list containing the characters of the expanded message, eg.

[H,a,a,p,p,p,p,p,p,p,y,y,y,y,y , , , , , ,B,B,B,B,B,B,B,...]

note: this is 1 H, 2 a, 3p, 4p, 5y, 6 , 7B, and so on.

Examples:

```
>>> a = iterate("Hi, my name is Jay Summet!",23)
>>> a
['H', 'i', 'i', ',', ',', ',', ' ', ' ', ' ', ' ', ' ', 'm',
'm', 'm', 'm', 'y', 'y', 'y', 'y', 'y', 'y', ' ', ' ', '
']

>>> a = iterate("Supercalifragilisticexpialadocious",42)
>>> a
['S', 'u', 'u', 'p', 'p', 'p', 'e', 'e', 'e', 'e', 'r',
'r', 'r', 'r', 'r', 'c', 'c', 'c', 'c', 'c', 'c', 'a',
'a', 'a', 'a', 'a', 'a', 'a', 'l', 'l', 'l', 'l', 'l',
'l', 'l', 'l', 'i', 'i', 'i', 'i', 'i', 'i']
```