

Integer Partition

ZPRAC-16-17-Lab9

ANNOUNCEMENT:

Up to 20% marks will be allotted for good programming practice. These include

- Comments for non trivial code
- Indentation: align your code properly

Up to 50% marks can be deducted if you do not use recursion

Integer Partition [30 points]

Given a positive integer N , you need to print out all distinct partitions of N in increasing order. A partition of N is a way to write N as a sum of positive integers (greater than 0). Two sums are considered the same if they only differ in the order of their constituents. For example,

Input: 4

Output:

1 1 1 1

1 1 2

1 3

2 2

Explanation: Each partition sums to 4, the input, and is printed in an increasing order. Also, note that since, 1 3 and 3 1 are the same, only 1 3 is printed.

Constraints: $0 \leq n \leq 50$

Input: n

Output: All distinct partitions in increasing order, each in a new line