

Let a palindromic partition be a partition of a string into palindromes.

(xox)(x)(o)      (x)(oxxo)      (x)(o)(x)(x)(o)      (x)(o)(xx)(o)

Figure 1: An example of four palindromic partitions of the string “xoxxo”.

**Question.** Given some string, how many palindromic partitions does it have?

**Related.**

1. What is the least number of parts  $p$  such that an arbitrary string of length  $\ell$  over a  $k$ -letter alphabet can be partitioned into  $p$  or fewer parts?
2. What is the length of the shortest string that cannot be partitioned into fewer than  $p$  parts?
3. How many length  $\ell$  strings require the “worst-case” number of parts?
4. Which length  $\ell$  strings have the greatest number of distinct partitions? The least?
5. What is the smallest number of parts that any string with  $m$  o’s and an arbitrary number of x’s can be partitioned into?

**References.**

<https://oeis.org/A298481> the number of ways to partition the binary representation of  $n$  into the minimal number of palindromic parts.