Find all distinct palindromic sub-strings of a given string

Given a string of lowercase ASCII characters, find all distinct continuous palindromic sub-strings of the string.

Examples:

Input: str = "abaaa"

Output: Below are 5 palindrome sub-strings

a

aa

aaa

aba

b

Input: str = "geek"

Output: Below are 4 palindrome sub-strings

e

ee

g

k