

Restore IP Addresses

Question: Given a string containing only digits, restore it by returning all possible valid IP address combinations.

For example: Given "25525511135",

Return ["255.255.11.135", "255.255.111.35"]. (Order does not matter).

Solutions:

class Solution:

@param s, a string

@return a list of strings

def restoreIpAddresses(self, s):

solution = []

self.restoreIpAddressesRec(s,0,0,[],solution)

return solution

def restoreIpAddressesRec(self, s, index, octets, tempSolution, solution):

if len(s)-index<4-octets:

return

if len(s)-index>3*(4-octets):

return

if octets==4:

if index== len(s):

tempSolution.pop()

solution.append("".join(tempSolution))

tempSolution.append('.')

return

for size in range(1,4):

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if s[index]!='0' and size>1:
    break
if int(s[index:index+size])>255:
    break
tempSolution.append(s[index:index+size])
tempSolution.append('.')
self.restoreIpAddressesRec(s,index+size,octets+1,tempSolution,
solution)
tempSolution.pop()
tempSolution.pop()
Solution().restoreIpAddresses("25525511135")
```