Stacks

(Assignment Questions)

Question 1 : Given the head of a singly linked list, return true if it is a Palindrome or false otherwise.[Go to Qs]

Examples :

Input: head = [1,2,2,1]
Output: true

Input: head = [1,2,3]
Output: false

Note - Use a stack to solve this problem.

Question 2 : Given an encoded string, return its decoded string.

The encoding rule is: k[encoded_string], where the encoded_string inside the square brackets is being repeated exactly k times. Note that k is guaranteed to be a positive integer.

You may assume that the input string is always valid; there are no extra white spaces, square brackets are well-formed, etc. Furthermore, you may assume that the original data does not contain any digits and that digits are only for those repeat numbers, k. For example, there will not be input like 3a or 2[4]. [Go to Qs]

Examples :

Input: s = "3[a]2[bc]"
Output: "aaabcbc"

Input: s = "2[abc]3[cd]ef"
Output: "abcabccdcdcdef"

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Question 3 : We have an absolute path for a file(Unix-style), simplify it. Note that absolute path always begins with '/'(rootdirectory), a dot in path represents current directory and double dot represents parent directory.[Go to Qs]

Examples :

Input: path = "/home//foo/"

Output: "/home/foo"

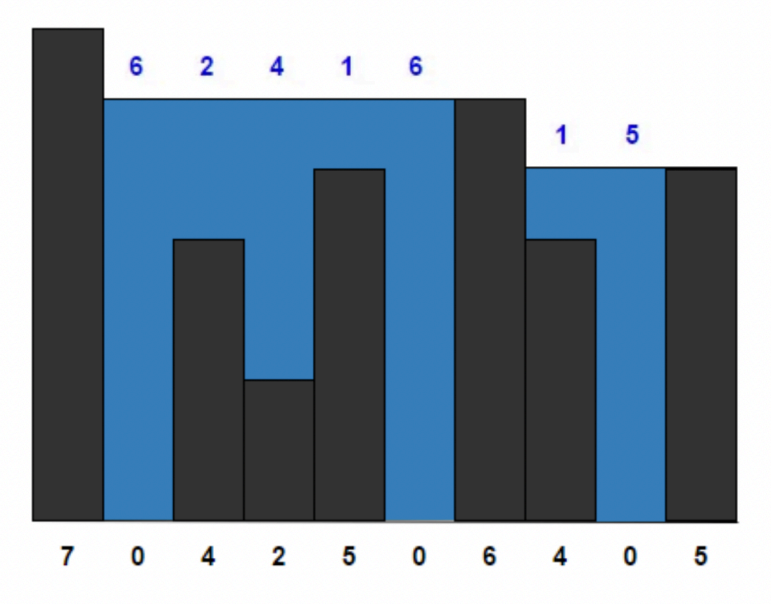
Explanation: Multiple consecutive slashes are replaced by a single one.

Input: path = "/home/user/Documents/../Pictures"

Output: "/home/user/Pictures"

Explanation: A double period ".." refers to the directory up a level.

Question 4 : Given n non-negative integers representing an elevation map where the width of each bar is 1, compute how much water it can trap after raining.[Go to Qs]



Examples :

Input: height = [7, 0, 4, 2, 5, 0, 6, 4, 0, 5]

Output: 25

Explanation: The above elevation map (black section) is represented by the array [7, 0, 4, 2, 5, 0, 6, 4, 0, 5]. In this case, 25 units of rain water (blue section) are being trapped.

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