

Question 1:

Check if a given string is a palindrome and return true or false based on the result, only with the help of recursion. You can not use string buffer or inbuilt string features like reverse etc.

Test cases:

1. Sample Input: "AKA"
Sample output: True
2. Sample Input: "JAVA"
Sample output: False
3. Sample Input: "LEVEL"
Sample output: True

Question 2:

Design a vending machine which will have the following features.

- a. Customers can select and add products to their own cart and then can check out all the items with the selected payment option to get the total amount.
- b. Payment methods can be of two types: cash and card. If a customer chooses to pay using a card they have to pay double the amount, which is not the case for cash Payment.
- c. Vending machines have to be loaded with some products at first. which have a limited capacity (let's assume 5 products).
- d. Each Product will have a different price and name assigned to it.

Design an LLD (Low-Level Design) using java to implement a vending machine with similar features.

Question 3:

Given a sorted array of integers "nums" and an integer target, return indices for two numbers such that they add up to the target. You may assume that each input would have exactly one solution, and you may not use the same element twice. You can return the answer in any order.

Example:

nums = [2,7,11,15], target = 9

Output: [0,1], nums[0] + nums[1] = 9.

nums = [2,4,6], target = 6

Output: [0,1], nums[0] + nums[1] = 6.

nums = [4,4], target = 8

Output: [0,1], nums[0] + nums[1] = 8.

Question 4:

Write a program to find the power X over N in $O(\log n)$ time complexity.

Question 5:

You are given an array of integers. Your task is to create the largest number possible using those integers.

Input: [11, 2]

Output: "211"

Input: [2, 30, 56]

Output: "56302"
