

Q1

Given a string s containing the characters () { } [].

Write a function that takes this string and returns true if the string form valid parentheses

Example: s = "()"

Should return true

s="(){}[]"

Should return true

s="["

Should return false

s="(()))"

Should return false

Q2

Given a list of integers and a number, S. Determine if there are two numbers in the list that add up to S.

Example list = 1 , 2, 3, 4, 5, 6, 7 sum=11

Return true because 4 + 7 = 11

Example list = 1, 10, 17, 20 , 50 sum = 31

Return false as no two numbers in the list will add up to this sum.

Q3

Fibonacci series is defined by $\text{fib}(1) = 1$, $\text{fib}(2) = 1$ and for $n > 2$

$\text{fib}(n) = \text{fib}(n-1) + \text{fib}(n-2)$

(i) Write an iterative and a recursive version of the Fibonacci series.

(ii) Find out which one is faster and why

Q4

Write a function that takes a 2D matrix as an argument and returns a boolean indicating whether the matrix is symmetric or not.

Q5

Write a function `getTopKMax(List<Integer> list, int k)` that returns the list of top k maximum integers from the list.

Q6

Given a list of integers, filter out all integers which are even.

Use lambda expression for it.

Q7

What are the different Thread states in Java?

Q8

Given two strings. Write a function that determines if they are anagrams of each other.

Q9

Given a list of integers, remove all negative integers from it.

Q10

What is the difference between Hashmap and LinkedHashMap?

Q11

What is the difference between a Set and a List