4-SUM. Given an array a[] of n integers, the 4-SUM problem is to determine if there exist distinct indices i, j, k, and l such that a[i]+a[j]=a[k]+a[l]. Design an algorithm for the 4-SUM problem that takes time proportional to n2 (under suitable technical assumptions).

Note: these interview questions are ungraded and purely for your own enrichment. To get a hint, submit a solution.

Thank you for your response.

Hint: create a hash table with (n2) key-value pairs.

Correct

1 / 1 points

2.

Hashing with wrong hashCode() or equals(). Suppose that you implement a data type 𝙾𝚕𝚢𝚖𝚙𝚒𝚌𝙰𝚝𝚑𝚕𝚎𝚝𝚎 for use in a 𝚓𝚊𝚟𝚊.𝚞𝚝𝚒𝚕.𝙷𝚊𝚜𝚑𝙼𝚊𝚙.

Describe what happens if you override 𝚑𝚊𝚜𝚑𝙲𝚘𝚍𝚎() but not 𝚎𝚚𝚞𝚊𝚕𝚜().

Describe what happens if you override 𝚎𝚚𝚞𝚊𝚕𝚜() but not 𝚑𝚊𝚜𝚑𝙲𝚘𝚍𝚎().

Describe what happens if you override 𝚑𝚊𝚜𝚑𝙲𝚘𝚍𝚎() but implement 𝚙𝚞𝚋𝚕𝚒𝚌 𝚋𝚘𝚘𝚕𝚎𝚊𝚗 𝚎𝚚𝚞𝚊𝚕𝚜(𝙾𝚕𝚢𝚖𝚙𝚒𝚌𝙰𝚝𝚑𝚕𝚎𝚝𝚎 𝚝𝚑𝚊𝚝) instead of 𝚙𝚞𝚋𝚕𝚒𝚌 𝚋𝚘𝚘𝚕𝚎𝚊𝚗 𝚎𝚚𝚞𝚊𝚕𝚜(𝙾𝚋𝚓𝚎𝚌𝚝 𝚝𝚑𝚊𝚝).

Thank you for your response.

Hint: it's code—try it and see!