Congratulations! You passed!
TO PASS 1% or higher

Keep Learning

GRADE
100%

Interview Questions: Hash Tables (ungraded)

TOTAL POINTS 2

1. **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 n^2 (under suitable technical assumptions). **1 / 1 point**

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

   4 - SUM problem in n^2 complexity

   Correct
   Hint: create a hash table with $\binom{n}{2}$ key-value pairs.

2. **Hashing with wrong hashCode() or equals().** Suppose that you implement a data type `OlympicAthlete` for use in a `java.util.HashMap`. **1 / 1 point**

   - 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)`.

   Re-write hashcode(), equals.

   Correct
   Hint: it's code—try it and see!