Quiz #2

Due Nov 14 at 11:59pm **Points** 100 **Questions** 20
Available after Nov 7 at 12am **Time Limit** 60 Minutes

Submission Details:

Time:	22 minutes
Current Score:	90 out of 100
Kept Score:	90 out of 100

Instructions

This quiz is timed for one hour (60 minutes). You are free to have open notes, book, whatever you want but you may only take this quiz once!

Good luck!

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	22 minutes	90 out of 100

Score for this quiz: **90** out of 100
Submitted Nov 14 at 11:43am
This attempt took 22 minutes.

Question 1 — 5 / 5 pts

Hash maps can have duplicate values.

- Correct! ◉ True
- ○ False

Question 2 — 5 / 5 pts

"Hashing" means converting which of the following to an array index?

- ○ Value
- Correct! ◉ Key

Question 3 — 5 / 5 pts

Assuming each key maps to a different index, we can insert into a hash map in:

- ○ O(log n)
- ○ O(n log n)
- Correct! ◉ O(1)
- ○ O(n)

Question 4 — 5 / 5 pts

If all keys map to the same index in a classic Hash map, retrieving values from the Hash map would (worst case) take:

- ○ O(log n)
- Correct! ◉ O(n)
- ○ O(1)
- ○ O(n log n)

Question 5 — 5 / 5 pts

Hash maps use space complexity to improve average time complexity.

- Correct! ◉ True
- ○ False

Question 6 — 0 / 5 pts

HashTable is Java's thread safe version of a HashMap.

- Correct Answer ○ True
- You Answered ◉ False

Question 7 — 5 / 5 pts

Hash maps are *classically* implemented using:

- ○ Array of Arrays
- ○ Array of Binary Trees
- ○ Arrays
- Correct! ◉ Array of Linked Lists

Question 8 — 5 / 5 pts

Hash maps can have duplicate keys.

- ○ True
- Correct! ◉ False

Question 9 — 5 / 5 pts

In our custom HashMap, HashChain is a wrapper for a LinkedList.

- Correct! ◉ True
- ○ False

Question 10 — 0 / 5 pts

With Hash maps, we should use small arrays that resize larger over time.

- You Answered ◉ True
- Correct Answer ○ False

Question 11 — 5 / 5 pts

Which is NOT a requirement of recursion?

- ○ Step condition
- Correct! ◉ Helper / Wrapper methods
- ○ Starting condition
- ○ Ending condition

Question 12 — 5 / 5 pts

Omitting an ending condition in a recursive method causes:

- ○ No problems
- ○ Heap space exception
- Correct! ◉ Stack overflow
- ○ Infinite Loop

Question 13 — 5 / 5 pts

Using a return statement in a method is equivalent to a "pop" off the program stack.

- Correct! ◉ True
- ○ False

Question 14 — 5 / 5 pts

Recursive solutions are often less efficient than iterative solutions.

- Correct! ◉ True
- ○ False

Question 15 — 5 / 5 pts

The benefit of wrapper methods for recursion is *best* said to be:

- ○ Encapsulation
- ○ Polymorphism
- Correct! ◉ Abstraction
- ○ Inheritance

Question 16 — 5 / 5 pts

The best possible general purpose sort in the worst case is:

- ○ O(log n)
- Correct! ◉ O(n log n)
- ○ O(n)
- ○ O(n^2)

Question 17 — 5 / 5 pts

Selection sort is completed in:

- ○ O(n ^ 2)
- ○ O(n log n)
- Correct! ◉ O(n * n/2)
- ○ O(n)

Question 18 — 5 / 5 pts

Assuming an *unsorted* array, the max value problem is solved in:

- ○ O(n log n)
- ○ O(log n)
- Correct! ◉ O(n)
- ○ O(1)

Question 19 — 5 / 5 pts

Quicksort is better than MergeSort when we need an optimal performance guarantee.

- ○ True
- Correct! ◉ False

Question 20 — 5 / 5 pts

Assuming there are 64 items in a *sorted* array, binary search will finish in no more than this iterations.

- ○ 32
- ○ 384
- ○ 64
- Correct! ◉ 6

Quiz Score: **90** out of 100