Attempt

Attempt 1

Question View

All questions

Attempt 1

Due on Sep 22, 2024 11:59 PM

Available on Sep 17, 2024 12:01 AM until Sep 22, 2024 11:59 PM

Written: Sep 22, 2024 5:03 PM - Sep 22, 2024 5:12 PM

Quizzes Event Log

Timing

Time Spent: 0:08:47

Time Limit: 1:00:00. Not exceeded

Evaluation Summary

Reset Evaluation

Attempt Grade

29 / 29

Student View Preview

29 / 29 - 100 %

Quiz Results

Match the definition with the most appropriate term

Expand section feedback

Question 1

Match the definition with the most appropriate term

- ✔ __1__ An array
- ✔ __9__ Occurs when a hash function assigns a disproportionate number of items to an index (or consecutive indices)
- ✔ __4__ Zero collisions
- ✔ __6__ A measure of how full the hash table is
- ✔ __8__ A collision resolution method where the collision is resolved by finding an address that is available (no key is stored there).

1. Hash table
2. Hash function
3. Collision
4. Perfect hash function
5. Uniform hash function
6. Load factor alpha
7. Separate chaining
8. Open addressing
9. Primary clustering
10. Secondary clustering

Save Time

5:12 PM

Score

Expand question 1 feedback

Question 2

Select each of the following operations that a hash table can NOT efficiently implement:

- [x] Inserting a new item
- [x] Retrieving the item with the largest value in the hash table
- [x] Searching for an item
- [x] Traversing all items (in order)

Save Time

5:12 PM

Score

4 / 4 (auto-graded)

Expand question 2 feedback

Question 3

Match the AVERAGE case efficiency for the following operations:

✓ __1__	Inserting an item into a hash table	**1.** O(1)
✓ __1__	Searching for an item into a hash table	**2.** O(n)
		3. O(n log n)
		4. O(n^2)
		5. O(n!)

Hashing

Update Retract

Score

4 / 4 (auto-graded)

Expand question 3 feedback

Question 4

Select each of the following that are requirements for a good hash function:

- [x] Evenly distributes items throughout the hash table
- [x] Fast / easy to compute
- [x] Involves the entire search key
- [x] Symmetrical (keys maps to locations and locations map to keys)
- [x] Uses a prime base, if it uses modulo arithmetic
- [x] Places items in sorted (ascending) order

Save Time

5:12 PM

Score

4 / 4 (auto-graded)

Expand question 4 feedback

Question 5

Match the collision handling technique with the scenario:

at the beginning)

1. Double hashing
2. Linear probing
3. Perfect hashing
4. Quadratic probing
5. Separate chaining

✔ __1__ less insertions than the table size(and does not need to support deletion and keys are not known ahead of time)

✔ __5__ Need to allow for deleting keys

✔ __5__ More insertions than the table size (and keys are not known ahead of time)

Save Time

5:12 PM

Score

6 / 6 (auto-graded)

Expand question 5 feedback

WORST case efficiency

Expand section feedback

Question 6

Match the WORST case efficiency for the following operations (assuming the scenario is appropriate for each collision handling technique):

1. O(1)
2. O(n)
3. O(n log n)

✔ __2__ Inserting an item into a hash table using double hashing

6. Load factor alpha

Save Time

5:12 PM

Score

4 / 4 (auto-graded)

Expand question 6 feedback