Lab 12 Cybersecurity: Postlab Quiz

⚠ This is a preview of the published version of the quiz

Started: Oct 5 at 3:38pm

Quiz Instructions

Question 1	1 pts

How does the **HashMap Cache** improve upon the **LinkedKVStore Cache**?

○ Constant-time lookup

○ Bounded size

○ Better availability

Question 2	1 pts

How does the **Capped Hashmap Cache** improve upon the **Hashmap Cache**?

○ Constant-time performance

○ Bounded size

○ Only caches legitimate requests

Question 3	1 pts

Consider the CacheList. CacheNode's methods moveToFront() and removeLast().
Their runtime complexity is (let n be the number of items in the list).

○ moveToFront is O(n) and removeLast is O(n)

○ moveToFront is O(1) and removeLast is O(n)

○ moveToFront is O(n) and removeLast is O(1)

○ moveToFront is O(1) and removeLast is O(1)

Question 4   1 pts

When using average latency as a performance gauge, the **LRU Cache** improved upon the **Capped Hashmap Cache** (which lacked a suitable eviction policy) by a factor of

○ 2:1

○ 5:1

○ 10:1

○ 15:1

○ 30:1

Question 5   1 pts

Which of the following statements is false?

○ If a cache can perform key lookup in constant time, and assuming that that the miss penalty is constant as well, then its average latency depends solely on the miss rate

○ If a cache of size S can absorb a workload without causing cache misses, then so can a cache of 2 * S.

○ Increasing the cache size will always improve the miss rate (i.e., lower it).

Question 6   **1 pts**

Consider an **LRU Cache** with capacity 3. When faced with a sequence of requests whose keys are "A", "B", "C", "A", "D", the lookup of key "D" and subsequent insertion of its value will:

○ Cause a cache miss and "A" to be evicted

○ Cause a cache miss and "B" to be evicted

○ Cause a cache hit and "B" to be evicted.

○ Cause a cache hit and no eviction

Question 7   **0 pts**

Do you have any feedback/suggestions on these two labs for future offerings?

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