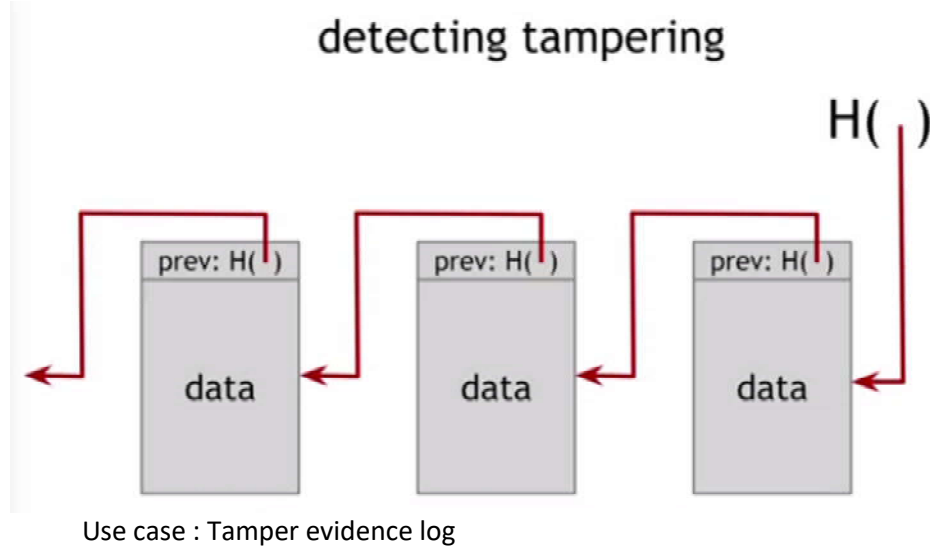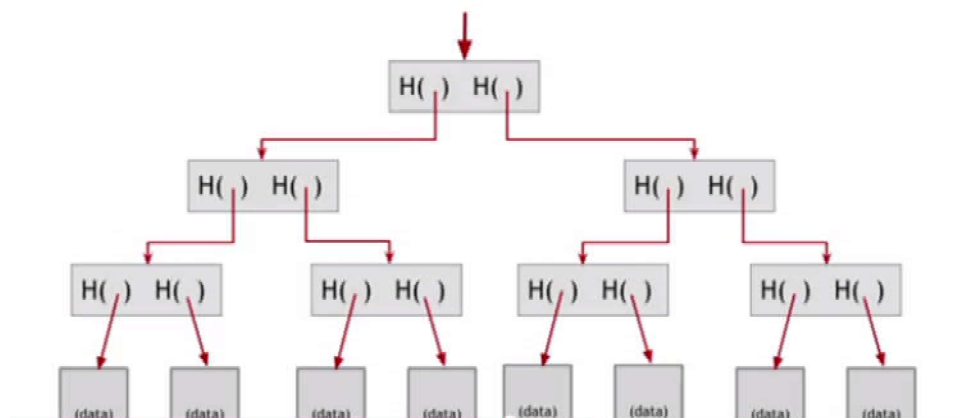# Hash Pointers and DS

15 August 2017   01:52 PM

Pointer to where something is and what is the hash of the info

Application : Ask to get info back , verify that it hasn't changed

Linked List using Hash Pointer is called Block Chain

detecting tampering

Use case : Tamper evidence log

binary tree with hash pointers = "Merkle tree"

Advantages:
1. We just have to remember hash pointer at top and we can travel down the tree.
   (Obviously the adversary cannot tamper this and hence tamper is detected)
2. O(logn) time to prove membership
3. Sorted Merkle Tree : Non membership in O(logn)

Any DS can be used which doesn't have a cycle since we cannot move our way up.