

Name: _____

UCID: _____

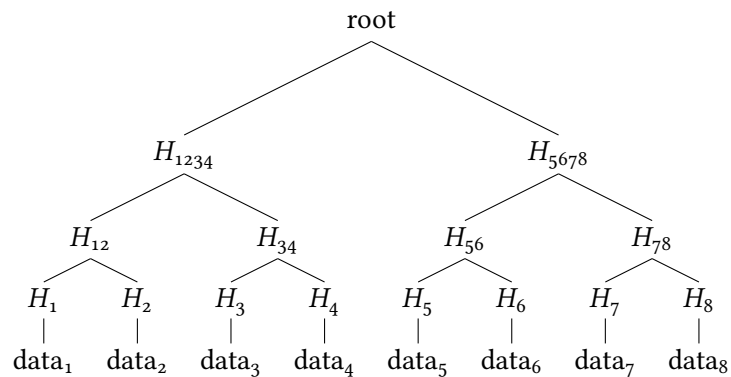
Worksheet 0x17

Wednesday, April 01, 2020

1. Solve your personalized instance of the 4-leading zeros puzzle (using sha256 as a hash function).
Enter the solution (i.e., the hash preimage):

And the resulting hash:

2. Suppose Alice holds the value “root” from the following Merkle tree.



What values must Bob reveal to Alice to convince her that “data₅” is in some leaf of the tree?

How does Alice use these values to verify Bob’s claim?

3. Come up with one original (to you) idea for how you might use a blockchain.