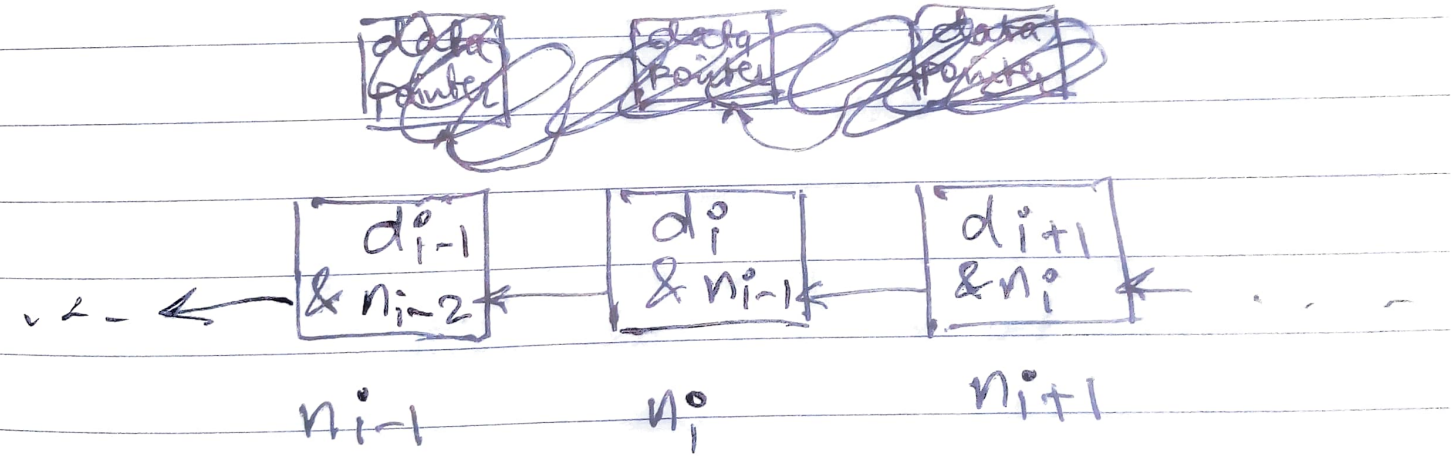
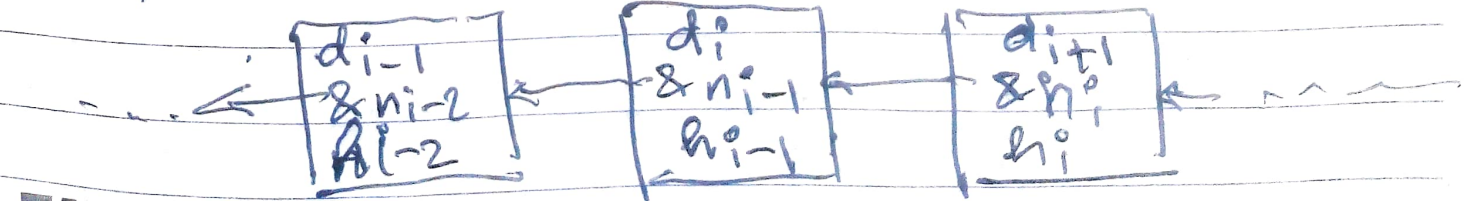
Evaluation 3

The data structure under consideration is a reversed link list data-structure, where each node has data and a pointer to the previous node. Such a data-structure is used in blockchains.

1. Standard pointer Implementation:
Each node stores data and a link to the previous node.

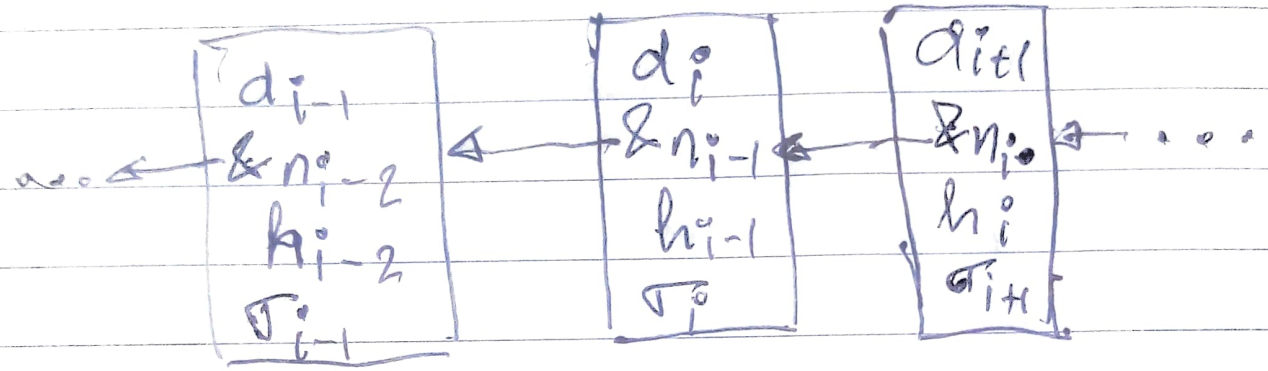


2. Hash pointer Implementation:
Each node stores data, link to the previous node and a hash of the previous node.



3. Hash and sign pointer Implementation

Each node stores data, link to previous node, a hash of previous node and a digital signature of the data, link and hash by the owner of that node.



a) Advantages of hash pointer:

Each of the nodes containers hash of the previous blocks data. So if the data is modified by anyone, they will have to replace all nodes after the modified node.

b) Advantages of hash and sign pointer

Hash and sign pointer makes a more secure scheme against mutability. Signature with each node means that if a node is modified, the signature would have to match along with the signature and hash of all the following node.