Problem

Validate (State calldata prev , ...)   where

then State prev growths as even non-transactions users

are submitted. This is because

Validate (State. prev, Transfer[] txs) == Hash nextRoot

where to get „Hash nextRoot" all „Transfer[] tx"

need to be applied to „State prev" and

remerkelized to see if its „Hash root" is

equal to „Hash nextRoot"

State prev size / cumulative users

```
struct Account {
    address id;
    int256 value;
} and

struct State {
    Account[] balances;
    Hash root;
}
```

H(...): Merkle tree of spents

Replace with UTXO model

```
struct Output {            and   struct (Un)spent {
    address id;                       Output[] (non)spents;
    int256 value                   }
}
```
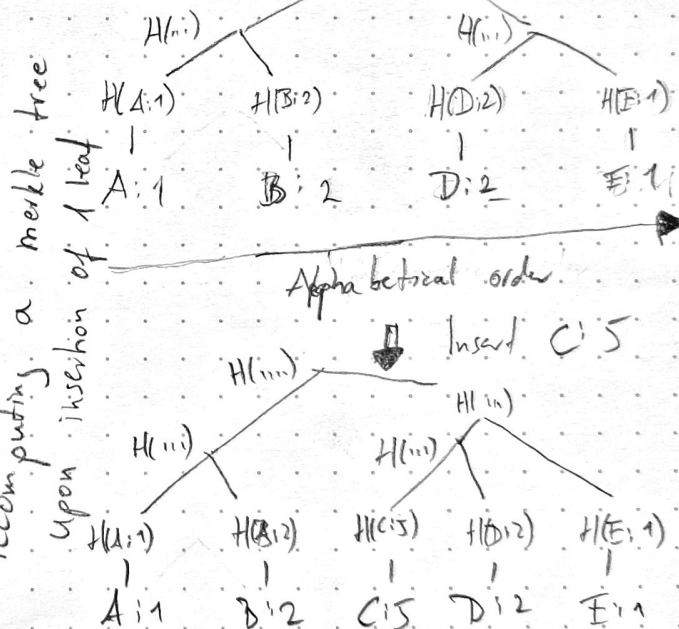
Problem: How expensive is cost of recomputing merkle root for 1 leaf removal/insertion.

How expensive is recomputing a merkle tree upon insertion of 1 leaf

H(...)

H(...)   H(...)

H(A:1)   H(B:2)   H(D:2)   H(E:1)

A:1   B:2   D:2   E:1

Alphabetical order

Insert C:5

H(...)

H(...)   H(...)

H(...)   H(...)

H(A:1) H(B:2) H(C:5) H(D:2) H(E:1)

A:1   B:2   C:5   D:2   E:1

Hashes : | | . | | what happens for larger trees?