A blockchain based Voting system
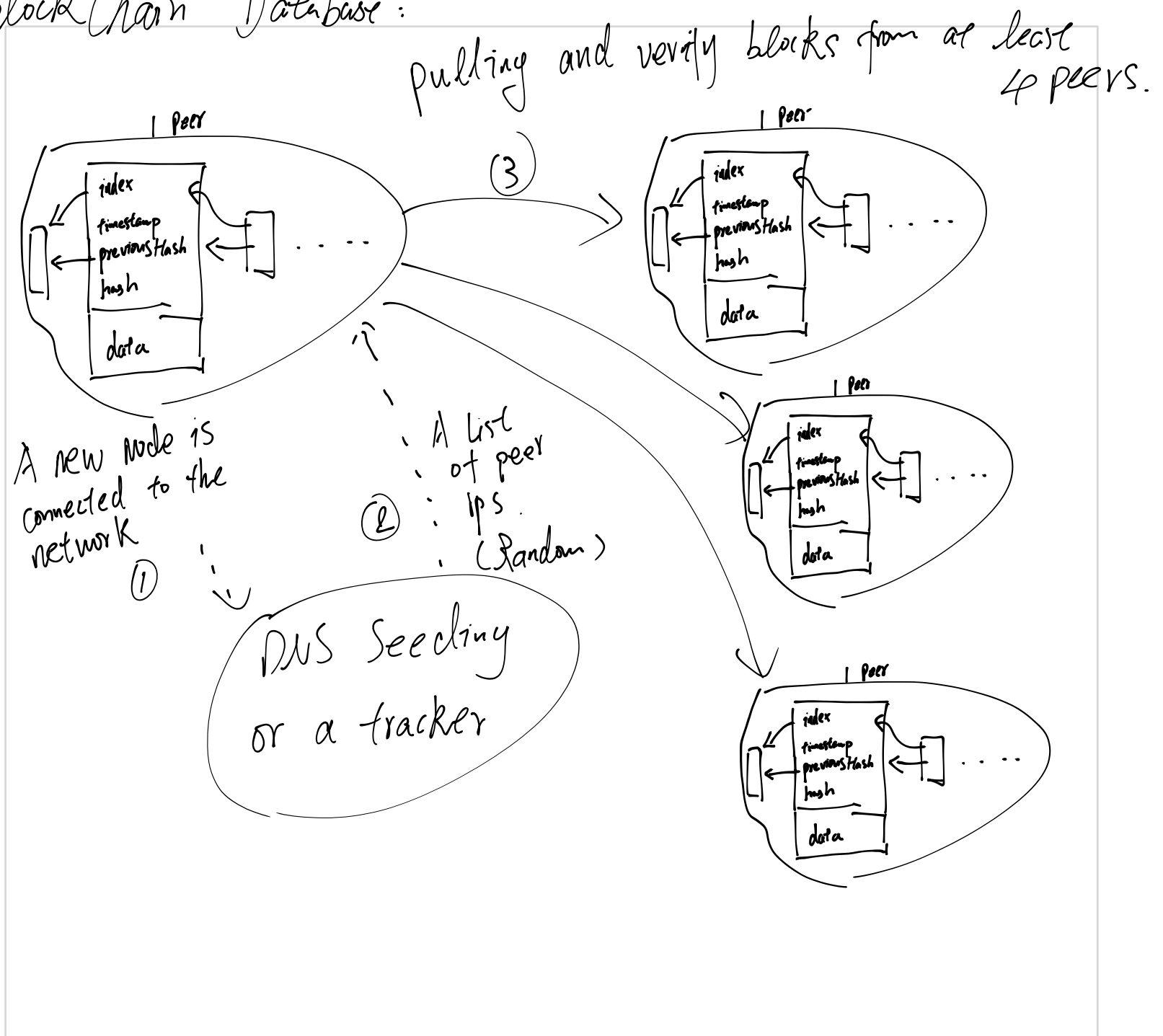
This project includes:

① A blockchain database with DNS seeding

② A voting system based on ① ; possible interface would be a webApp based on Flask.

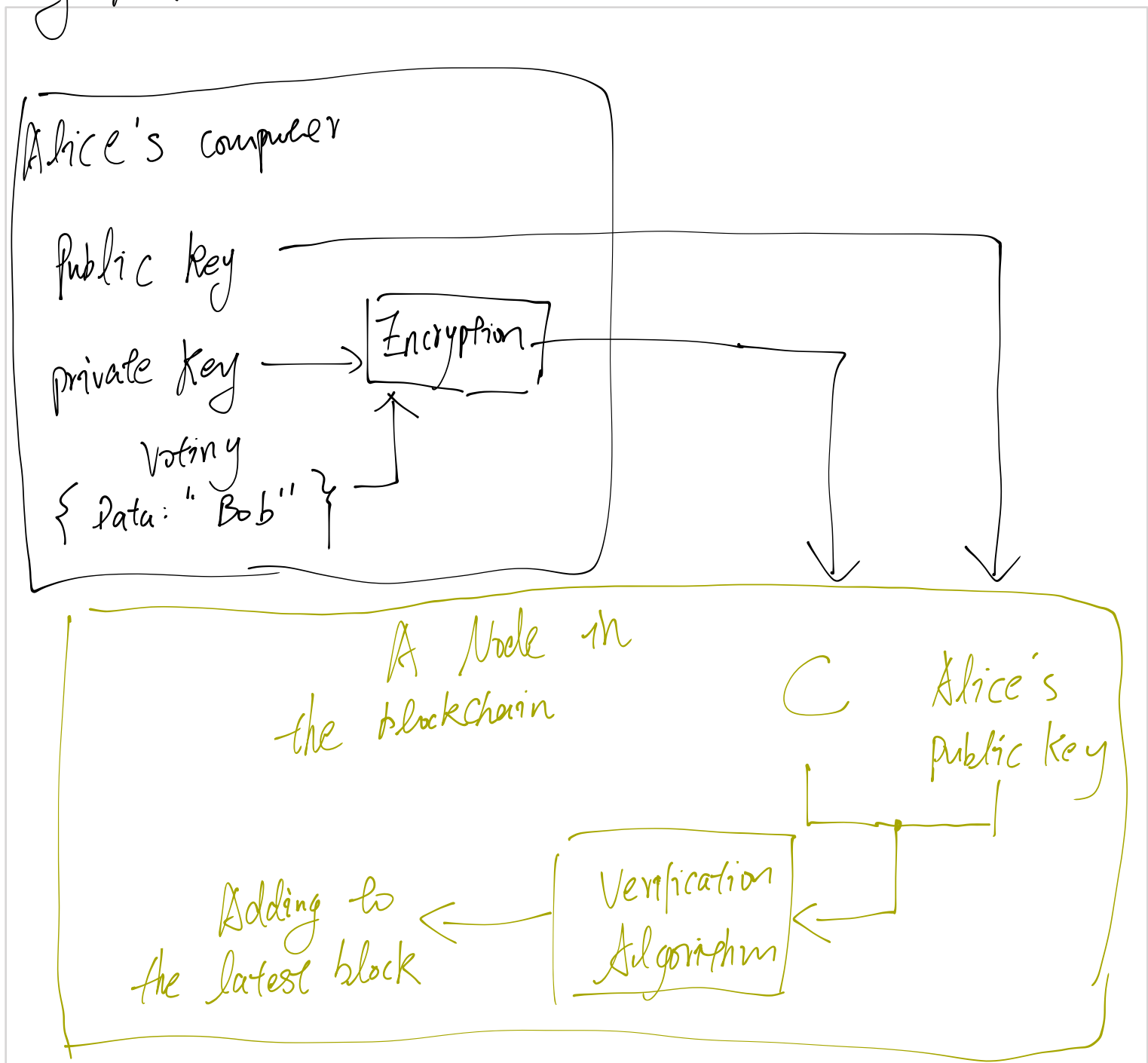③ I would pack all of these into a Docker image to unify testing and developing environments.

The BlockChain Database:

pulling and verify blocks from at least 4 peers.

(3)

Peer (top left block)
- index
- timestamp
- previousHash
- hash
- data

A new node is connected to the network ①

② A list of peer IPs. (Random)

DNS Seeding or a tracker

Peer (top right block)
- index
- timestamp
- previousHash
- hash
- data

Peer (middle right block)
- index
- timestamp
- previousHash
- hash
- data

Peer (bottom right block)
- index
- timestamp
- previousHash
- hash
- data

The challenging part of the P2P blockchain database is the handle of synchronization of peers as following:
  i) Proof of Work Algorithm
  ii) Conflicts resolving.

The voting module

Alice's computer

Public Key

private Key $\longrightarrow$ Encryption

Voting
{ Data: "Bob" }

A Node in
the blockchain

C Alice's
public Key

Adding to $\longleftarrow$ Verification
the latest block Algorithm

Vote Counting ☐ → ☐ → · · · · ☐   go through all blocks

The voting part is quite simple once we have a
functional blockchain database.