

Miniproject

Distributed Systems Advanced



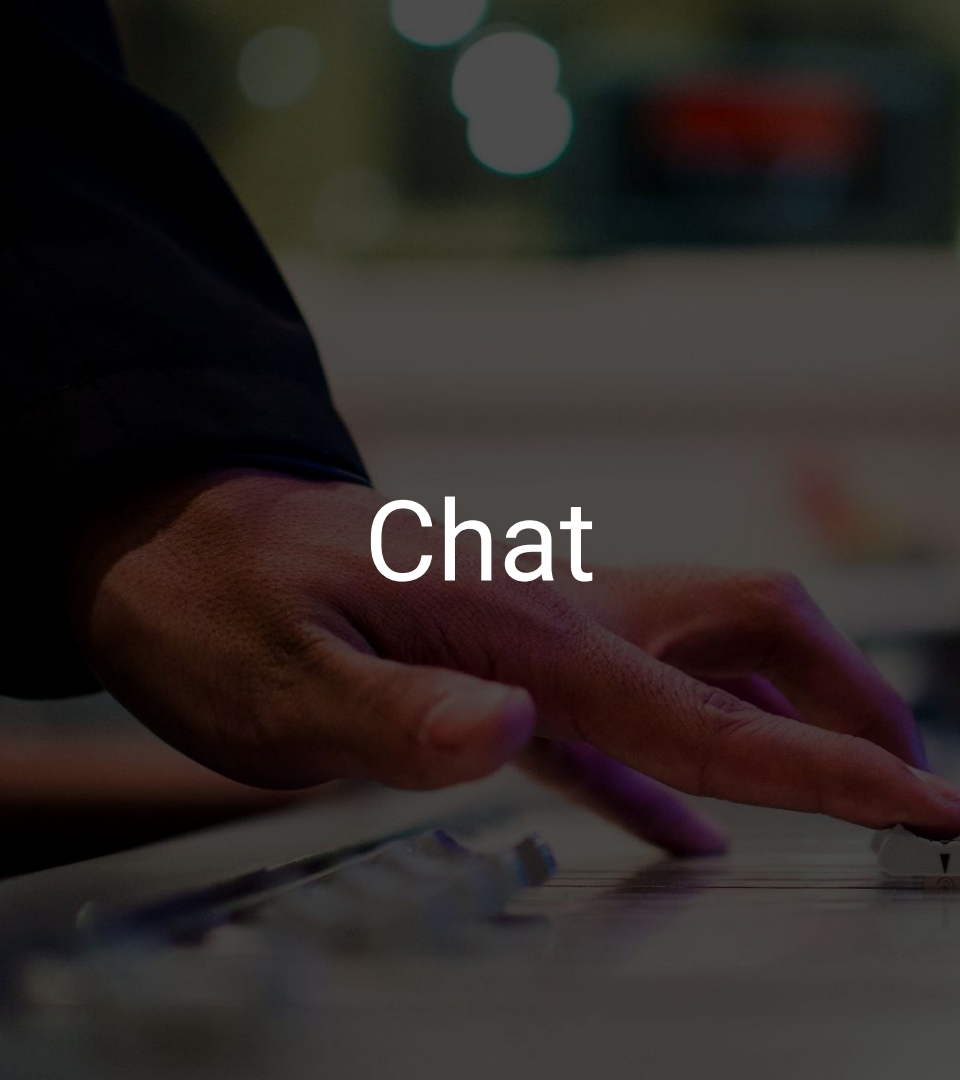
The Task

Create a fully-distributed, P2P messaging application with an integrated, blockchain-based notary service.

Requirements:

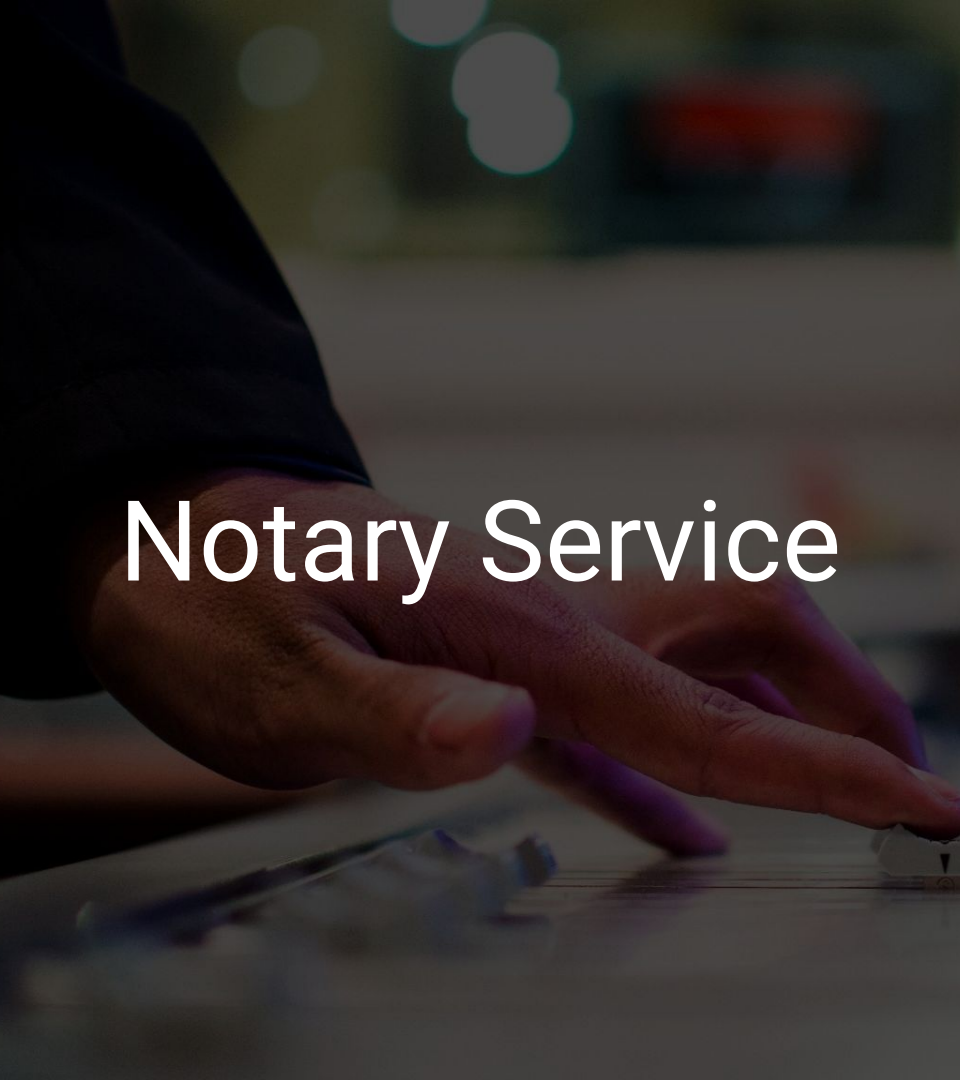
- Full decentralization and P2P mechanisms
- One-to-one and group communication
- Quickly and easily verify messages. Each user is connected to a wallet. Users can create verified messages from their connected wallet.



A close-up photograph of a person's hand holding a purple marker, writing on a whiteboard. The background is blurred, showing some bokeh lights. The word 'Chat' is overlaid in white text on the left side of the image.

Chat

- Messages are stored locally (per Node)
- DHT global storage is used for Person and Group Information
- Messages are sent directly

A close-up photograph of a person's hand holding a pen, signing a document. The background is blurred, showing what appears to be an office setting with some lights.

Notary Service

- Contract stores hash of message and the status
- Sender creates a message with state **PENDING**
- Recipient changes the state to **ACCEPTED** or **REJECTED**

Technologies

- *Java 10*
- *Java Spring*
- *TomP2P*
- *Web3J*
- *Solidity*
- *Ropsten Testnet (Ethereum)*
- *Infura*

An aerial photograph of the New York City skyline at dusk. The sky is a mix of dark purple, blue, and orange. The city is densely packed with skyscrapers, many of which are illuminated with their interior lights. The Empire State Building is prominent in the center, with its top lit in red and green. To the right, the Freedom Tower is visible, also with its top lit in green. The Hudson River is visible on the left, and the East River is on the right. The word "DEMO" is overlaid in large, white, sans-serif capital letters on the left side of the image.

DEMO

Supplementary

- *Offline Message Support*
- *Security in DHT and Smart Contracts*
- *Adding/Removing members from groups*

Questions

