

DCME—Decentralized Collaborative Markdown Editor

Proposal on Building Decentralized System— —Chao Teng

Description

a purely decentralized Markdown Editor which supports multiple users to edit a file simultaneously. The editor has the following basic functions:

1. new document

The people with full authority can new a blank file.

2. invite

Person with full authority can invite people and offer them the same authority with him, except the people invited can't new a document.

3. invite(READ-ONLY)

Person with full authority can invite people and offer them just the READ authority.

4. lock

Person with full authority can lock the file so that others can no longer edit this file. But this operation should be confirmed by all the people with full authority in the network.

5. unlock

Person who lock the file can unlock it when he finishes editing.

6. chat

public chat. The message will be seen by all the members in network.

7. kick out

If someone continue doing evil things, the person with full authority can raise a vote to kick him out. If the requirement is meet, this guy will be kicked out.

8. save file locally

Person with full authority can save file locally.

Scenario

A starter news a document. And then he can invite someone he trusts to modify the file together or simply read the file. The one who are invited can give the same authority to others. The users with full authority can simultaneously insert, delete and modify lines. The one with full authority can lock the document, but it should be confirmed by all of peers with same authorities. They can chat in windows. If someone behave really bad, others can try to kick him out, again need to be confirmed by others.

A simple version

Collaborative editing may really hard to implement. After doing some research, I find the valid way to do that is using Operation Transformation. However, it is really hard to implement because of the limited time and there are lots of edge cases. So instead, I choose to implement a simple version first. People in the network will be assigned to different paragraphs of that document. This is also very useful in reality, because people often work on different parts of the document, but they also want to know what others write in their own part. So we just assume there won't be conflict in people's operations.

If time permits, I will try to implement the full version of collaborative editing.