

# Authentication system with Decentralized chat app

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## Abstract -

Authentication is the process of determining whether someone or something is, in fact, who or what it says it is. Authentication technology provides access control for systems by checking to see if a user's credentials match the credentials in a database of authorized users or in a data authentication server. Chatting is the method of using technology to bring people an idea together despite of the geographical barriers. The technology has been available for years but the acceptance was quite recent. Our project is an example of Decentralized Chat Application. Our project is made up of two application – The client application, which runs on user's web browser and server application, runs on any hosting servers on the network.

To start chatting client should get connected to server where they can do private and group chat together. Security measures taken during the last one. Our goal is to build a strong design community for everyone out there who want to connect and chat with each other across the world which can help people to get connected to each other and share their ideas privately.

**Key Words:** visual studio code, Authentication system, Chat App, Decentralized chat app, privacy and security.

## 1. INTRODUCTION

Decentralized applications are apps that run on a decentralized network (of peers) via (preferably trust-less) peer-to-peer (p2p) protocols. One of their biggest strengths is that they avoid any single point of failure. Unlike traditional apps, there is no single entity who can completely control their operation. D-apps are a relatively new concept (so a standard definition is still a bit elusive), but the most prolific set of examples are operating as Smart Contracts on the Ethereum blockchain. D-apps have become increasingly popular as new decentralized technologies such as blockchains and projects like the Interplanetary File System (IPFS) have gained more attention and momentum.

### 1.1 Project Features

- Authentication system enables users to secure authenticate to resource.

- After login user it has a platform that enables user to instant message and connect with each other through computers.

- User can also create a chat room/group and add members to chat with them.

- User can also share various types of files and folders in group or personally.

### About Security-

- As the name suggests, a decentralized application does not have a centralized server. It is basically a peer-to-peer network.

- Also, the data that is stored in block is almost impossible to view as a very secure encryption and hashing functions

(256 bits) are used.

- Also is a someone tries to make changes to the information in block then, he/she will have to make changes to all the copies of that block on whole blockchain network and that can be quite impossible.

## 1.2 Need of The Project

The need for decentralization is the key motivation behind the blockchain technology, and decentralization is achieved by distributing the computation tasks to all the nodes of the blockchain network. Decentralization solves several problems of traditional systems; the single point of failure is one such problem.

## 2. LITERATURE SURVEY

[1] Is a paper in which author has introduced all the uses and possible ways the blockchain can be used along with decentralization. Also, the author emphasizes on, what the future blockchain applications will be. There is also a detailed report on advantages it provides, different areas in which blockchain can improve computing and how it is better and the current traditional systems.

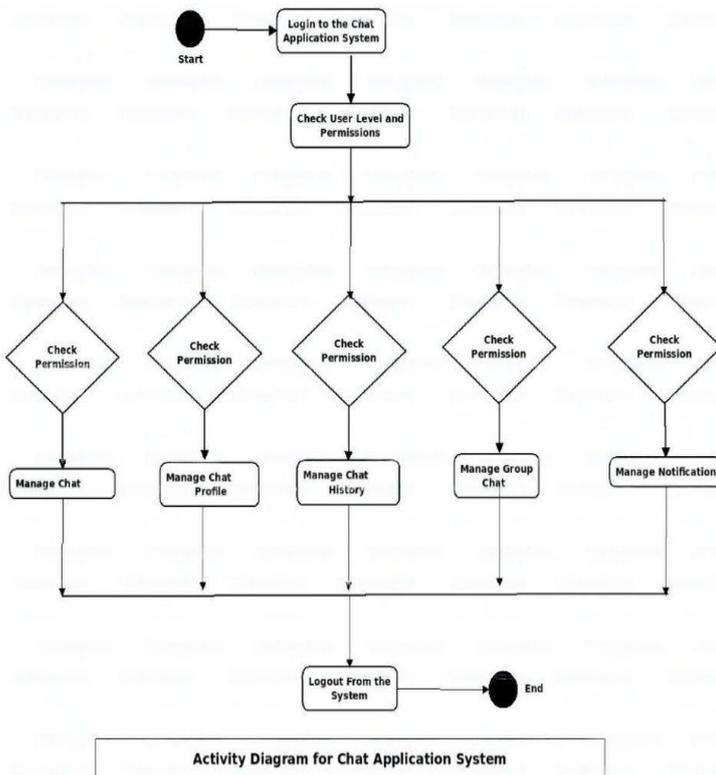
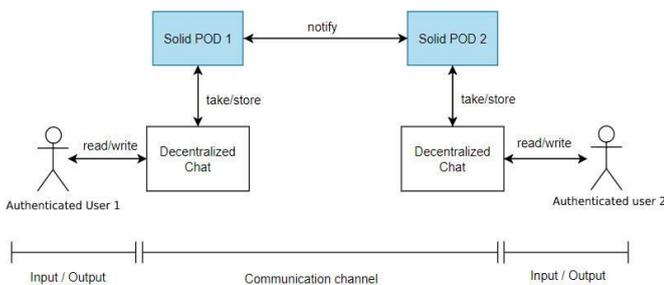


Chart -1: Activity diagram

### 2.1 Authentication with decentralized chat application – Detailed Workflow



### 3. CONCLUSIONS

In this project, we are developing an application that makes use of blockchain in a very efficient way. Blockchain has shown its potential for transforming traditional industry. Also, by eliminating the centralized approach, we can assure the safety and availability of data and communication. Decentralized applications tend to make the interaction between two people more efficient and simpler. The chatting process nowadays have a mediating node, while our software does not have any mediating device/node i.e., every person is connected by peer-to-peer network.

### 3.1 Project objectives

- The main objective of authentication is to allow authorized users to access the computer and to deny access to the unauthorized users
- Broadcasting Chat Server Application is going to be a text communication software, it will be able to communicate between two computers using point to point communication.
- The limitation of Live Chat is it does not support audio conversations. To overcome this limitation, we are concurrently working on developing better technologies.
- Companies would like to have a communication software wherein they can communicate instantly within their organization.
- The fact that the software uses an internal network setup within the organization makes it very secure from outside attacks.

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