



## Social Media Using Blockchain

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**Abstract:** The use of social media applications is increasing day in and day out, the most common issue with this is data privacy and security for the users. The current Centralized social media apps commodify users personal information for numerous uses, such as targeting ad's, etc. Hence there arises a need for a Decentralised Social Media app which will be designed by keeping the User as the central entity. Blockchain technology is the most reliable solution now for this purpose. We aim to create a Decentralized Social Media App which will allow the user to have full control over their data, and ensure high security for their personal information. It will also provide its users free will to express themselves, without any central authority controlling their actions.

**Keywords** - blockchain, decentralization, network, privacy, security, social media.

### I. INTRODUCTION

Social media is now a representation of social beings. According to research, Indians spend about minimum 2 hours on social media every day. In India, the number of social media users has been growing currently (i.e., in the year 2021) at a steady rate of 448 million due to deep penetration of internet connectivity among people. The range of Internet users in India is 624 million that is around 45% of the total population of India. Whatsapp, YouTube, Facebook, Instagram and Twitter are the most widely used social media applications. In India, YouTube has been the most used social media platform in 2021 having 85.80% of the social media users, whereas 79% of the users in India have profiles on Facebook making it the second most popular platform. Instagram has 70.6% of social media users in India. The most popular messenger app in India is WhatsApp, having 79% of India's total users, followed by Facebook Messenger which has 62%. All these have one point of commonality - "Centralization". Centralized Applications are run by a central authority, the ones who have direct access to our personal information and can control our actions on this network. So, to tackle this we have Decentralization [3].

"Decentralization" is termed when there is no central authority controlling anybody's action. We do have such systems available in the world currently, unfortunately it's worth isn't known to all [4]. There are various components of a decentralized social network that sets it apart from a regular social network site. The first key difference is that it isn't a standalone application / website that you can access - it is a combination of various different communities who each own an instance of the code. Secondly, anonymity depends on the user's preference [5][6]. For example - you can connect with users on other networks or even cross-platforms. You get a few common features on any existing social media platforms such as post content, share it with others, collaborate, comment, use hashtags, and like / dislike [7]. But their UI is not as intuitive compared to the centralized platforms. It is not as user-friendly as compared to its centralized versions. Their major USPs are - privacy, freedom of speech, and decentralization [8]. The stand out feature is that they allow users to monetize and earn incentives equivalent to crypto-currencies. There is a decentralized alternative for each of the big tech centralized platforms available today. Facebook — Minds, Diaspora, MeWe; YouTube — Minds, DTube; Instagram — Karma; WhatsApp — Signal, Twitter — Mastodon. There arises a need for a unique ecosystem that attracts users and the profits to its businesses. There are many decentralized social networking sites joining this ecosystem such as Mastodon, Minds, Happening among several others [9]. While they are still in the research phase of the decentralized tech community, for us this is a significant step in the right direction.

## II. RELATED WORK

Following is the literature survey undertaken on the research papers available:

### 2.2.1: Blockchain in Social Networking

In this paper we analyzed that Blockchain with reference to Social Networking will combine the benefits of OSN with central servers and DOSN. Data in this case is saved in a distributed format. Although the customers need to ask for permission to view anything. The profiles are encrypted and saved in the blockchain therefore secure. It has separate storage and control services. This paper concludes that a fast boom in the utilization of social networks affects the production of the potential infrastructure which assures higher privacy and a potential method to perform more actions with smart contracts and apps [10].

### 2.2.2: all.me

That's all. me is a virtual ecosystem primarily based totally on a social community with a completely unique reward method, market and a payment solution. A partner relationship is maintained to set up sharing of advertising revenue. The community rewards customers through sharing part of advertising revenue and in doing so indicates appreciation to folks that actively use all.me. Users can earn as much as 50% of advertising revenue [11]. The platform no longer pressures customers to carry out marketing-associated activities (viewing ads, clicking on advert links, etc.) and advertising on all.me complies with the widely-generic advert standards for social channels. At the same time, customers are rewarded for his or her social pastime and popularity within the platform. The more humans use all.me, the greater interactions and transactions are made with ME. This contributes to the market value of the currency. To conclude, all.me creates a new economic system primarily based totally on financial technology, that's a ready-made and working infrastructure that lures the customers and simplifies their everyday lifestyles in multiple clicks.

### 2.2.3: Blockchain Based Decentralized Online Social Network

In this paper, they have designed a blockchain-based framework for decentralized OSN termed BCOSN. Combining smart contracts, they have taken the blockchain as a trusted server to implement the functionalities which might have once been provided through central servers in conventional OSNs. Compared to the prevailing DOSNs, the BCOSN can offer efficient, secure and privacy-aware functionalities of authentication, newsfeed notification, and friend recommendation. Meanwhile, they have also provided users with fine-grained encryption to protect data privacy. A collection of algorithms has been designed primarily based totally on smart contracts to assemble a concrete scheme beneath the framework of the BCOSN [12].

### 2.2.4: Ushare

A conceptual answer for developing a user centric social community that might permit customers to manage, trace and securely share content material was offered in this paper. It has been argued that the decentralization, anonymity, traceability and censorship resistance of blockchains may want to help this sort of platform. Ushare, the proposed platform might permit those and greater. It might also help offsite encryption of data and ways to share them via the blockchain. The functionalities might be brought via 4 middle components: the blockchain that might maintain file of ownership of facts objects and wide variety of stocks made, a relationship device that might permit programmable code to be carried out at the blockchain and manage the wide variety of allowed shares for a data item, a hash desk that shops encrypted facts that person stocks and, finally, a local personal certificates authority that manages a person's circles, encryption keys and controls access to content material [13].

### 2.2.5: When Blockchain meets Online Social Network

Blockchain era is taken into consideration as one of the most important disruptive technologies of the millennium. Several fields have attempted to apply it through exploiting its intrinsic characteristics. In this paper, they proposed a survey of Blockchain based Online social media, through explaining the most important traits of each technical and social, and we defined the contemporary systems. They listed numerous contemporary issues of those systems and additionally proposed an answer that's a probable new version which faces the issues indexed above regarding using the blockchain. They defined how the proposed version represents an extension of the Decentralized Online Social Networks and the Blockchain, as a device to control access management. They are reading the proposed version, for you to compare the impact of privacy policies on social media. They plan to assess numerous privacy rules approaches, and plan to analyze greater in element contemporary BOSNs, consisting of Steemit, through retrieving facts from the blockchain for you to compare how the social activities of BOSN's users are a long way from the contemporary OSN one [14].

### 2.2.6: A Case Study of Steemit

In this paper, they offered an empirical evaluation of Steemit, a blockchain-primarily based totally incentivized social media platform in which no single entity can take control of the information and users are rewarded for the contributions they make. They analyzed over 539 million operations performed through 1.12 million customers all through the duration 2016/03 to 2018/08. The effects confirmed thrilling details about core functions of Steemit, specifically its decentralized control and its reward system. This study on decentralization in Steemit indicates the real stage of decentralization in Steemit is far lower than the proper stage, indicating that DPoS consensus protocol might not be a desirable method for organizing a highly decentralized social media platform. In Steemit, customers can create and percentage contents as blog posts. Once posted, a blog can get replied, reposted or voted through different users. Depending on the weight of acquired votes, posts get ranked and the top ranked posts make it to the front page. All data generated through Steemit users are saved in the Steem-blockchain. Similar to different blockchains like Bitcoin and Ethereum, facts saved in the Steem-blockchain are publicly available and it's far more difficult to be manipulated. At the center of Steemit are its decentralization and its cryptocurrency-pushed reward system used for rewarding the content creators and curators [15].

## III. METHODOLOGY

- The first stage of our project is creating a mobile application.
- The second stage is creating a database which will store data locally.
- The third stage is to integrate an active learning model.
- The fourth stage is to integrate the api for blockchain and file sharing.

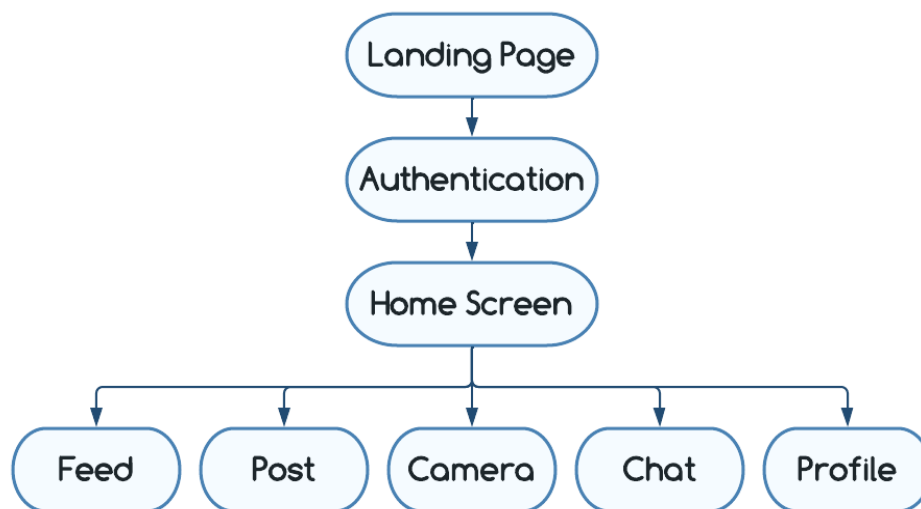


Fig 1: Flowchart of Social Media Application

The following is the process that will be followed for integrating an active learning model that will handle the deployment of the application after updates on the basis of consensus.

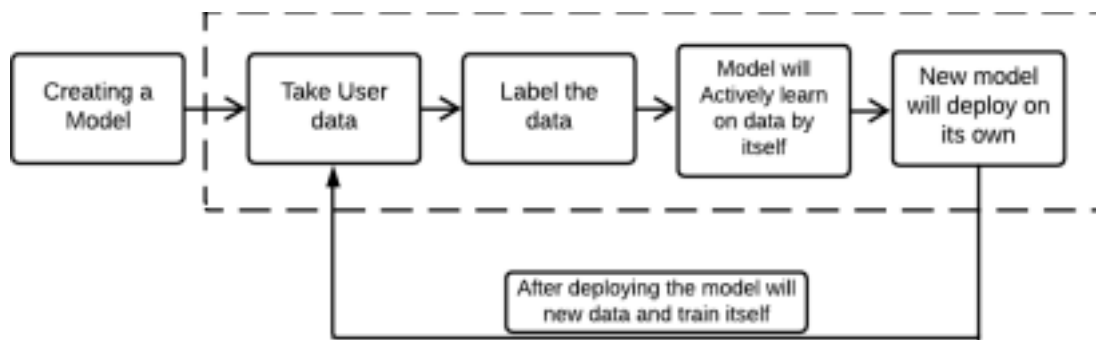
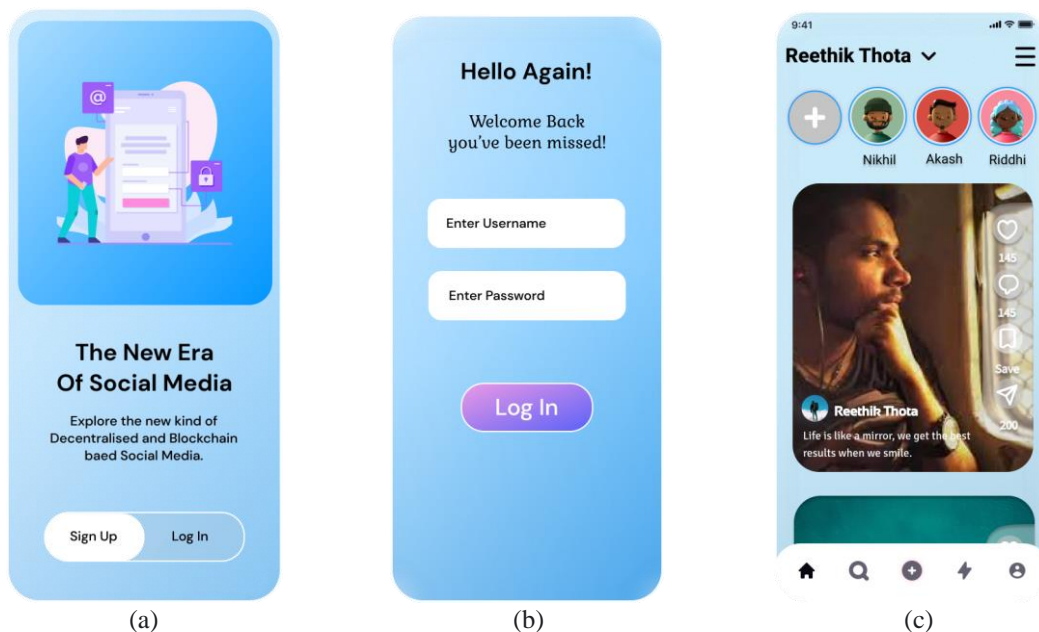


Fig 2: Flowchart on how Active Learning model works

### Model based on Active learning:

Active learning is a technique used for prioritizing data which is to be labeled in so as to have the best possible outcome on training a supervised model. In our application Active learning is used as the amount of data is simply too huge to be labeled and a few precedence desires are to be made to label the data in a clever way. The data points that have been selected for labeling and training a model are optimized using active learning. After feeding some manually labeled data the model will train itself on it. Once the best technique has been selected to prioritize the labeling, this process may be iteratively repeated. A new model can be trained on the newly labeled data set, which has been based on the priority score. The model will be further deployed on the basis of consensus from the users.

## IV. RESULTS & DISCUSSION



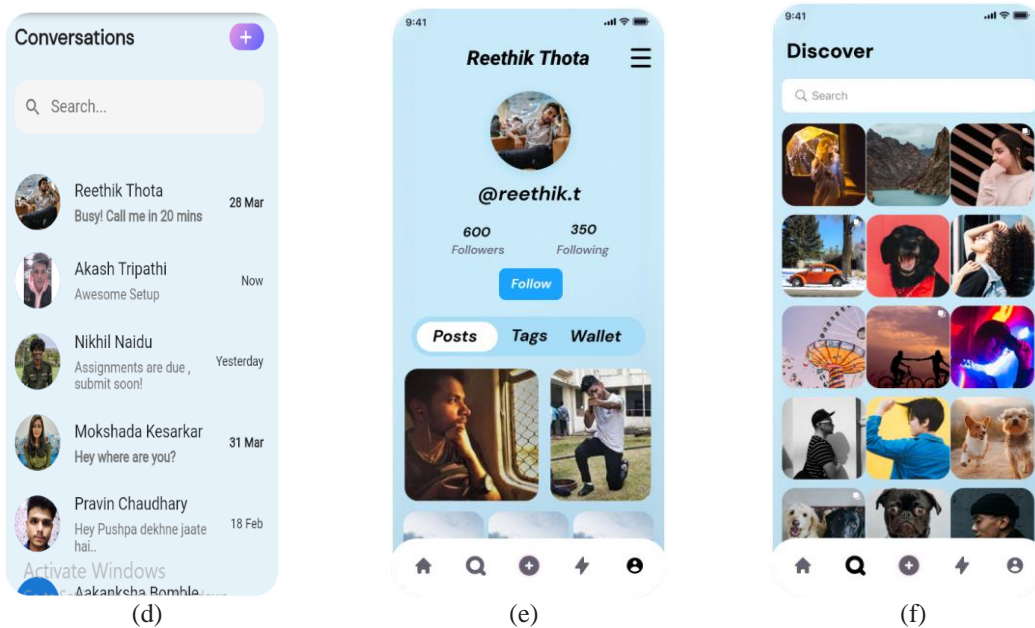


Fig 3: App comprises above screens : (a) Landing Screen ; (b) Login Page ; (c) Home Screen ; (d) Conversation Page ; (e) Profile Page; (f) Feed.

The name of our application is “Social App”. The person will first of all need to sign on and upload his/her very own info and all this info will be saved in a database locally. Since there's no unique host of that server, there will be no case of centralization. The consumer thereafter can log in if he/she has already registered. The Home Screen of the app has the feed wherein the user is updated about the latest posts of friends and those they follow; they could like and comment on the posts as well. Home Screen also includes a chat segment wherein the customers may have a one-on-one communication with anyone. With the help of the search segment provided in our app they could search numerous different users and build their connections. In the Profile segment the customers can get a summarized view of the posts, followers, and following.

## V. CONCLUSION

We see conventional social media growing because of the heightened advertising and experience it provides to its customers. However, on the other side, there are growing concerns over the facts and privacy breaches to which those platforms are regularly associated. For such issues the most ideal approach would be Blockchain based social media, along with its decentralized and distributed networks. Among different things, they allow customers to claim more control over their data. Moreover, in the absence of any centralized authority, users have the privilege of accessing privacy. In turn, this upholds the liberty of speech and expression, relieving customers of the misery of being prosecuted for his or her thoughts on social media. Our decentralized social media platform will offer the customers safety of their data by keeping the customers on the center, offering a platform wherein they could express freely and put-up numerous contents of numerous sorts and additionally allow the customers to earn cryptocurrencies upon posting and interacting. However, in spite of the various advantages, such uncensored platforms are rife with possibilities for criminal activities, which undermine the motive of ensuring freedom. That said, policies can also additionally be vital to make sure that decentralized blockchain social media's beliefs are actualized to offer advantages and now no longer harm.

In all, this domain's potentialities are numerous and with right handling, those can also additionally remodel the way we engage on the internet.

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