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Blockchain based News Application to combat Fake news

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Abstract— Blockchain technology has opened the door to the development of distributed systems, where security is a major issue. Here, any transaction captured is permanently recorded. Over the years, some unknown sources have been publishing lies and deceptive propaganda. Due to the lack of any control systems, these problems cannot be guaranteed. Thus, these unreliable sources can publish whatever they want, and in some cases, create chaos in the community. In recent times due to the easy availability of the internet and social media, inaccurate information can spread more quickly than before. In some cases, false stories are more appealing than real ones. Therefore, people have been misled. Using the benefits of Blockchain's peer-to-peer network concepts, we will discuss how to track and combat non-blocking news using a blockchain-based news app.

Keywords—*blockchain, decentralization, news application, fake news tracing.*

I. INTRODUCTION

Blockchain was a popular topic shortly after its introduction into cryptocurrency applications. Various sectors of the industry are actively trying to find this way to allocate people to their workplaces. In line with the provision of smart contract operations, sectors such as real estate, insurance, health care and much more are currently being used for their successful implementation. Due to the traceability, transparency and allocation of space in the blockchain environment, the issue of non-existent issues can be effectively addressed.

Disseminating misleading information and illegal news on social networks represents a major problem for researchers and social network service providers (SNPs) [1]. Also, counterfeit information and misleading information can tarnish the image of a country and jeopardize international relations.

With the advancement of AI technologies such as machine learning, in-depth reading and digital graphics, developing vicious bots to spread false news represents a major challenge. According to Gartner's predictions for 2018, more people will read and believe false stories than real stories by 2020.

While AI has an excellent opportunity to detect misleading information, it is more capable of creating false content on social media. Unfortunately, more recently, the ability of AI algorithms to detect false stories is lower than their ability to construct them. Therefore, it has become an urgent need to seek out more robust and effective technologies to address this problem. Creating blockchain- based solutions has the potential to change the way information is developed and disseminated. Blockchain can provide reliable, consistent, reliable, and transparent services for building a reliable social system.

In terms of the blockchain concept, our system will take advantage of blockchain security, consistency and transparency to create trust between shared issues. We will provide speculation, which can be applied to low-level news programs and provide authenticity of other matters among disruptive users, meaning the institution and other relevant organizations that use the records.

II. LITERATURE SURVEY

While the blockchain offers many advantages over the current medium structure, the body involved in using it has penetrated into major technologies such as social media, small. Moreover its implementation in following false news and finding a solution to this misleading information transfer remains low. Authors in [2], however, have proposed a Proof of Trustworthiness system that uses a statistical model to mark posts as false information using data science in a news set. Other research on the topic in [3] states that distributed and distributed ledger systems are very effective in using a clear, consistent and authoritative data contractual record when compiling a list of peer-to-peer promises and information exchanges. In addition there was a study in [4] where the authors analyzed the ability to use the blockchain method to allow users to track all of their uploaded content on social networks. In addition to the previous study, the blockchain

contribution to the online community is Tweet Chain [5]. Described as a single blockchain model of a social media platform for published attachment-based communication method of operation, to ensure security within the communication network.

III. PROPOSED SYSTEM

Discovering and banning misleading information in the form of stories, articles, papers and other sources is a daunting task. As the size of the database grows, the time and resources used for the purpose increase. Therefore a tracking system from the source of the news is a must.

The proposed system follows a three-tier structure in which three different bodies interact with the data and finally after the creation, process and criticism, the news block is published and marked on the blockchain. As well as the big blockchain, we also have an ongoing blockchain function that keeps unfinished blocks by editors from being published on the big blockchain. In this project, an approved blockchain platform can provide online readers with a reliable way to verify its content and source. The approved blockchain platform can be used to verify any information regarding live news events, viral images and content ratings.

The first body in the News Agencies model has the authority to create news and integrate it into Work in Progress Blockchain. Media agencies also have the ability to view servers on a network and whether a large series is synchronized with a network or not.

The second body has editors who have the ability to edit news and add media to it which will be stored on IPFS and can be accessed by hashes. Finally they can publish information to the blockchain.

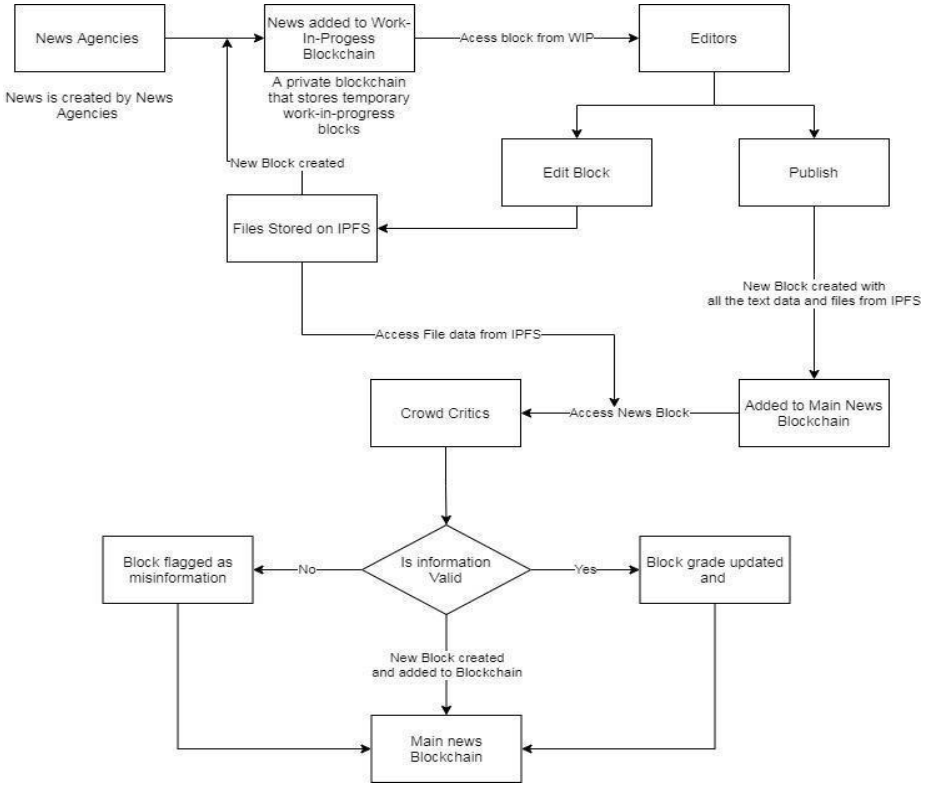
A third-party crowd of researchers can access news blocks from the main blockchain and data analysis can target them as Verified or Misinformed which will be embedded in the main blockchain.

The benefits of implementing the above model in blockchain are multiple. Some of them are:

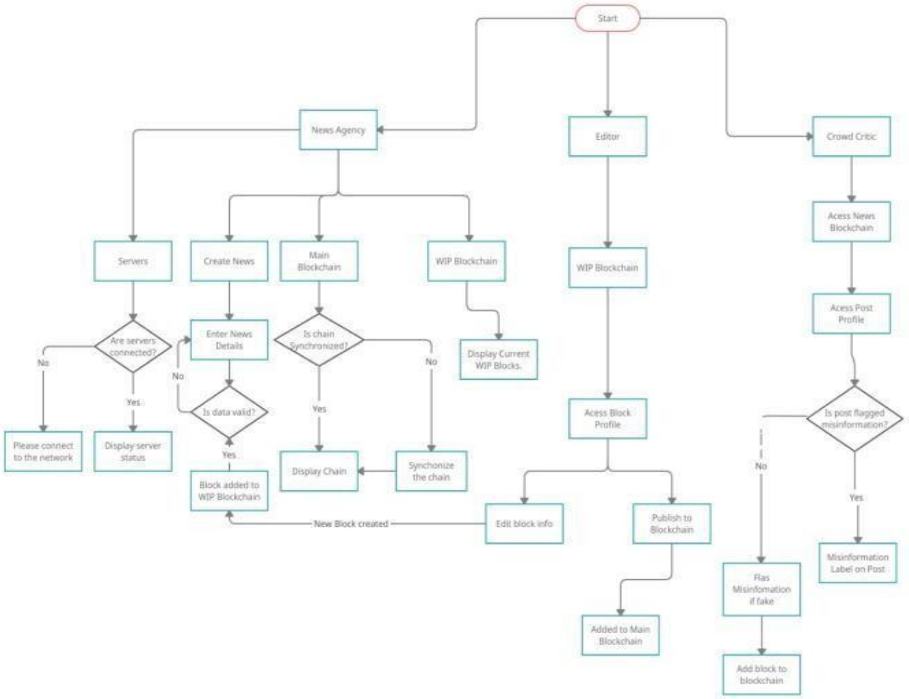
1. *Information Traceability*
2. *Immutability of news blocks*
3. *Transparency in news sector that is of utmost importance.*
4. *Decentralized architecture that helps in solving the problem of single point offailure.*

Even if one of the nodes is down, perhaps due to a compromise of security compromises, it is ensured that the entire web application continues to run smoothly and securely across all other nodes. When featured sites appear online, the latest version of the blockchain is copied collaboratively on these nodes from stable sites.

The main purpose of this application is to eliminate internal data management defects while keeping the required functionality complete. We achieve this by enabling the use of multiple servers using a blockchain to manage records linked to cryptographic hashes. A data search tool within the block is also installed to download student data and retrieve it in JSON format. Data downloaded as such a dictionary of various keys and values while having the URL links for PDFs and image files.



IV. FLOWCHART



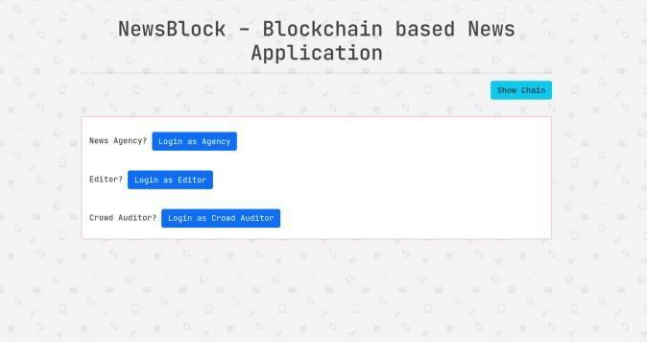
V. IMPLEMENTATION

The current implementation of the above mentioned project is as follows.

A. *Connecting nodes in a network*

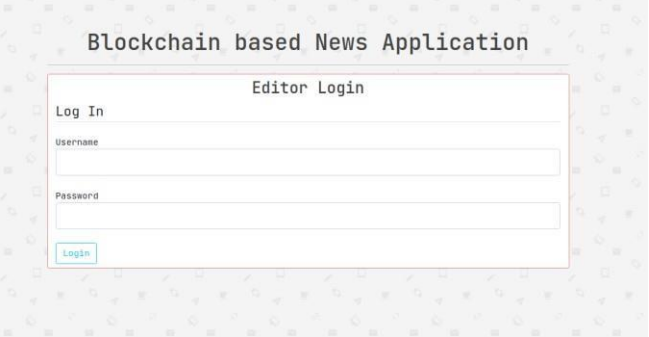
Our first step is to start all the nodes and connect them to the system. This way every node has the addresses of all the nodes in the network to which the blockchain will be synced. After the nodes are activated and configured, a sample blockchain with genesis block is generated across all different nodes. The sync function works across all nodes in the network to check for the latest updated version of the blockchain.

B. *Home Page and Login System*

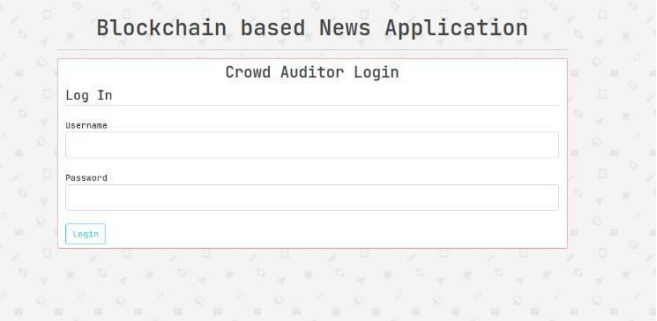


The homepage contains three categories of login to the system such as a news agency, editor or public auditor. Each entry page is shown below:

Login system for News Agency



Login for Editor

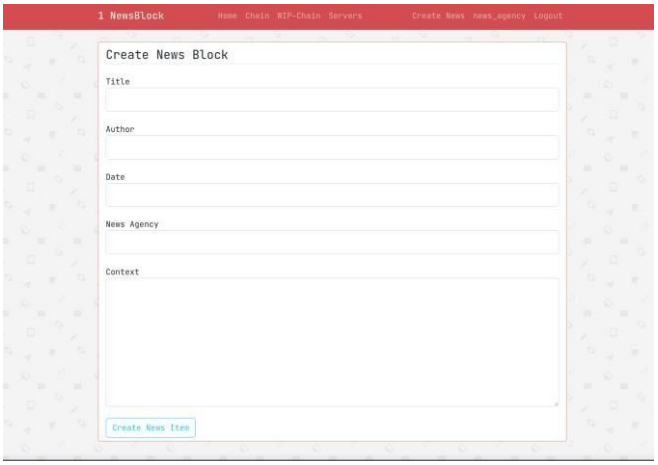


Login system for Crowd Auditors.

C. *Creation of News Item by News Agency*

The server information is visible on homepage

Network information about all nodes in the network and the address of a particular server are visible on the home page. This is helpful when talking about areas with disabilities.

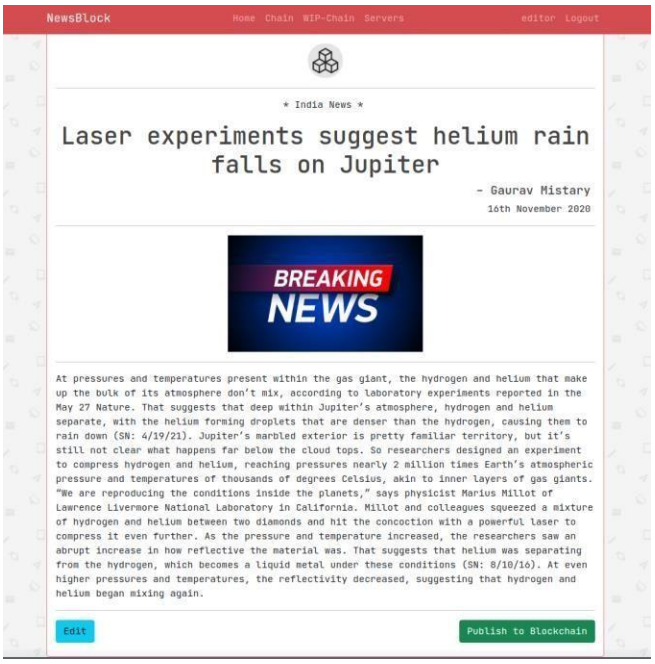


News Item creation form.

At this stage the blockchain contains only the genesis block. The news agency then creates a news item that will be integrated into an ongoing blockchain operation which is a private blockchain. After the data is presented as input and verified, the data is placed in a block with additional fields such as index, previous hash and timestamp. The previous hash field of the newly built block is verified with the hash of the entire previous block. If both hashes are the same, a block is added to the blockchain.

The news block is thus created in WIP Blockchain

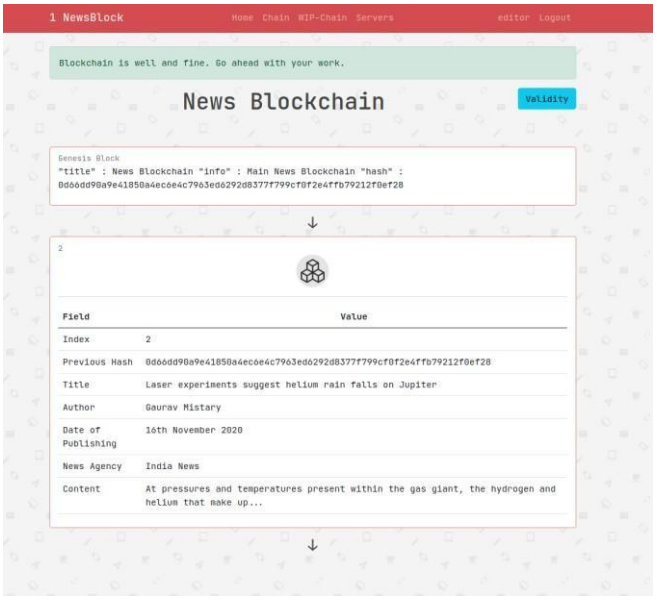
D. Editing and publishing the news item block by the editor



Block Profile page accessed by the editor

As we can see in the picture above that the editor has the ability to edit content. The editor can also upload photos and video files that will be stored on IPFS and when the block is published, it can be accessed by hash address.

The Publish to Blockchain action removes the current block from the WIP blockchain and inserts it into a larger blockchain with hashes with fields such as index, timestamp and previous hash.



.News block successfully appended to the blockchain.

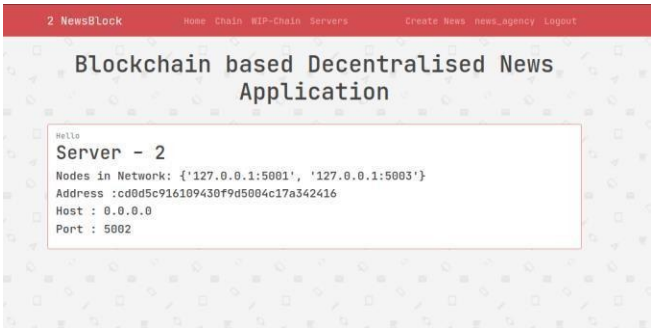
E. Verification and flagging of news item by crowd critic

Block profile view for crowd critic

As shown, the block profile page has functionality designed to mark data as false information. Critics of the mob can analyze news and photographic images and media affiliated with IPFS and label it as false information if it is found to be inactive.

So after syncing to each server a block flag as false information will be displayed with a red banner. The current system proposes the use of data science in crowd criticism ratings where the posts are flagged according to the number of people marking them as false.

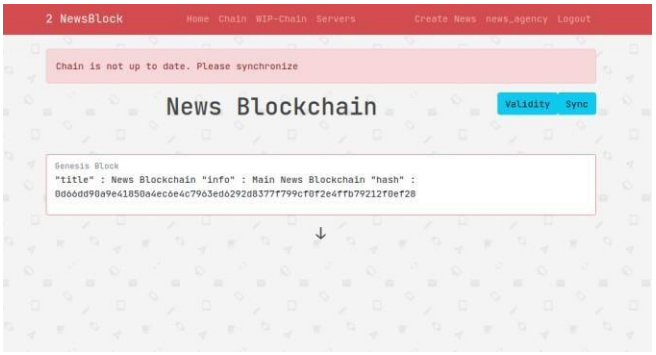
F. Synchronization on Multiple Servers in the network.



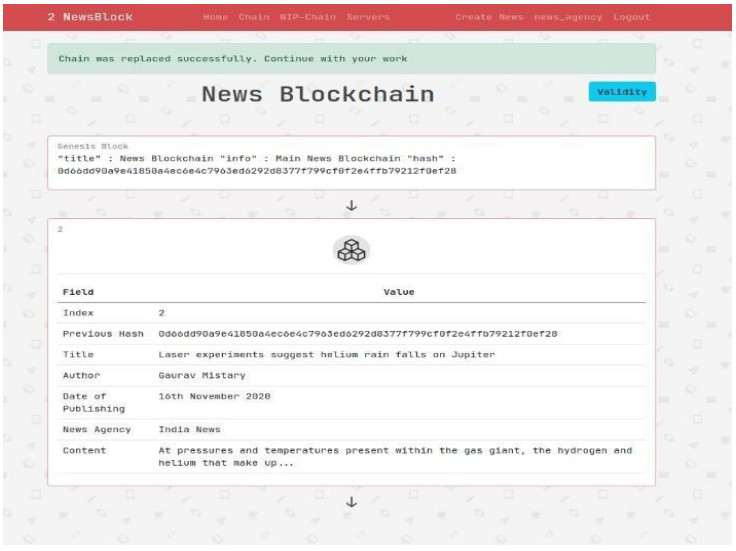
The home page as seen from another server with server info

As shown, nodes in a set of specific server nodes are active and active. Every server has a different address that helps sync the blockchain.

After the block has been successfully assigned to the main chain from a single server, this series is repeated across all nodes. The sync function checks the time stamp and current chain length in a node and compares it with a series of all other nodes. When a function detects the largest blockchain recently updated, it replaces the node chain with the largest chain found. The same function repeats for all nodes that maintain the same series as the parameter and changes each node chain with the most recently updated chain.



The chain on server 2 is unsynchronized.



The chain synchronization function is automatically executed whenever a new node is added to the network or an existing node restarts either due to malfunction of from attack recovery. This way we don't have to manually updated chains and keep the track of the correct version of the blockchain. Manual checks for chain synchronization can also be added

VI. SCOPE AND FUTURE ENHANCEMENTS

The implications of these results are likely to suggest additional blockchain algorithms for managing and controlling the distribution of online information that can be compared to those proposed. Prior to this study, the idea of using a blockchain to detect illegal news was only anecdotal. This study is limited by the absence of benchmarks and similar databases.

Ongoing activities and courses related to non- speculative discovery and speculation include multiple hackathons and online competitions, to create a marketable and feasible model, validating global predictions, such as plug-in or extensions in an online browser. The current tool allows you to label news as true or suspicious, but it does not provide a rating or label ahead of time, to show loyalty, which is needed to eliminate the real problem. The proposed model provides data tracking with data science in assisting in determining the flagged sources of information that is not progressively informed. With enough development and the inclusion of other features to add to the model, the future tool can look like this, where people can earn points for the article, and label the article and be rewarded with another form of credit accordingly.

VII. CONCLUSION

The purpose of the current study was to experiment using a novel algorithm based on the detection and protection of non-misleading information and information in all online and network environments. By using a distributed and unchanging blockchain ledger we can find a source of information that helps determine whether the media supporting the news is trustworthy or false. After completing the news verification process by submitting fraud tests and obtaining the final, this rating will be set high wherever the news is broadcast. Blockchain verifiers who verify test news are known as minor. Young professionals (e.g., news outlets, journalists, etc.) are rewarded with additional credits as a guarantee.

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