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# Blockchain Technology in Bharat Judicial System: Imminent Revolution in Bharat Judiciary

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### Abstract—

We are aware of the numerous difficulties our Bharat judicial system faces in administering justice and handling legislation. In our country, a lot of unethical behavior is committed since it enriches the chain of people who work in the system. We can use the incredible technology known as Blockchain Technology to stop these malpractices. Blockchains are decentralized, secure ledger systems that may run independently without the need for a central managing or coordinating body, doing away with the requirement for middlemen and trust in the process. By integrating the blockchain with the legal system, we can speed up and increase system transparency. In 2022, the total number of pending cases of all types and at all levels rose to 50 million or 5 crores. The lack of a system and delays brought on by lawyers' sporadic availability are the main causes of these delays. The courts will save time and see a reduction in the backlog of cases by giving lawyers UIDN (Unique Identification Number) or by obtaining the Aadhar Card API and connecting their information with the Aadhar No. and connecting them via blockchain so that once a lawyer is allocated to a case on a certain date and time, he can no longer be assigned to another case on the same date and time. Blockchain technology will provide a resilient and tamper-resistant cover to the judicial system because of its distributed nature and will also increase the transparency of the system. Transparency is a key feature of blockchains that are fully public ledgers. It will guarantee that once a case is assigned to a lawyer, it becomes an entirely public ledger that cannot be changed. There will be a Smart Contract between the attorney and the majesties. A smart contract is a computerized transaction protocol that automates a number of conditional activities that have been predetermined and agreed upon. This makes sure that no action taken can be disputed. Immutability will be provided, ensuring that no modifications may be made to the system and reducing corruption as a result. In the future, we will be able to see a transparent, anti-corruption court system with no open cases, and we will also be able to keep an accurate database for the attorneys in our nation with a review system.

**Index Terms—**justice, legislation, blockchain technology, de- centralized

## I. INTRODUCTION

Bharat, one of the largest nations in the world with a fantastic population, has a very powerful judicial system intrinsic to the courts' hierarchy and structure. In Bharat currently, there are 25 High Courts. The overall number of judges sanctioned in these high courts is 1114, with 840 permanent judges and the remaining 274 sanctioned for additional judges. There are 672 district courts. According to established rules, it may take the form of a district court for each district or two or more districts. Because of some gaps in our legal system, we face a slew of issues, and the backlog of pending cases is growing exponentially. As a result, many people are unable to obtain justice.

According to information accessible on the National Judicial Data Grid (NJDG), the total number of cases pending in the high courts and district and subordinate courts as of July 14 is 60,62,953 and 4,41,35,357, respectively. As a result, many people are unable to obtain justice. One of the primary causes for the large number of cases pending in the courts is a lack of available lawyers at the time of trial. The number of Advocates/Lawyers in Bharat is expected to exceed 1.5 million (15 lakh) by March 2023. Despite the availability of so many lawyers, many of them are not available during the trial.

What actually happens is that many lawyers refuse to appear in court during the trial, claiming that they are preoccupied with another case. Because of this, court time is being wasted as well as an increase in the number of pending cases. This malpractice is carried out for the benefit of the guilty, as

the party gains more time to conceal proofs and other evidence and, in some situations, develop fake witnesses. This type of misconduct can be eliminated from the system if everyone works with loyalty. However, because of the financial benefits to lawyers, it has been done for a long time.

Consider the following scenario:

Assume there is a dealer X who works with two parties Y and Z. A disagreement emerged between the parties and the dealer as a result of some unfavourable circumstances, and the situation deteriorated to the point where both parties filed a lawsuit against the dealer. In response, the dealer initiated a complaint against both parties individually. Let A be the dealer's lawyer, and both parties unintentionally hired the same lawyer B. Let the first hearing in court be of dealer X and party A, and after hearing both the lawyers of dealer X and party Y, the court assigns them a date five days later than the initial date. Let the second hearing in court be of dealer X and party Z, and after hearing both the lawyers of dealer X and party Z, the judge assigns them the same date as party

A. The condition of conflict arises because the lawyers for parties A and B are the same and cannot be present at both sessions at the same time. In this situation, the court's time is wasted, a new date is issued to one of the parties, and the case is stacked among other files of outstanding cases, making it impossible to achieve a conclusion. Many times, this is done on purpose to give investigators more time to hide clues and seal witnesses' mouths.

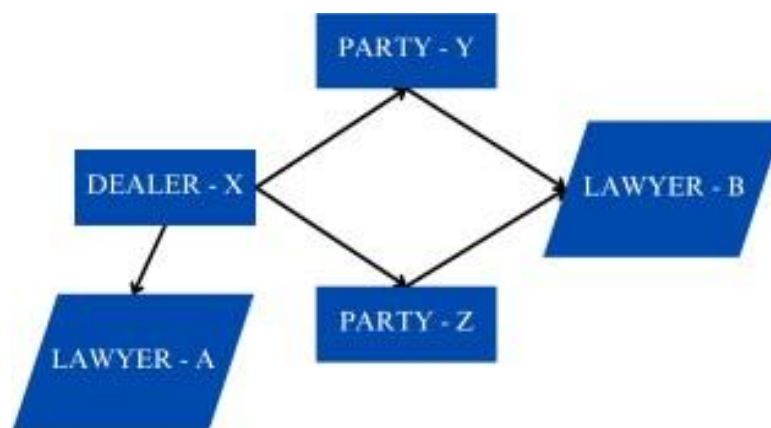


Fig. 1. DIAGRAMMATIC REPRESENTATION OF THE ASSIGNMENT OF LAWYERS

(Fig. 1) depicts the assignment of lawyers and their relationship with the clients in the above case. Now let's have a look at the condition of the clash also.

In (Fig. 2), we can see the problem that arose owing to a lawyer's availability due to a scheduling conflict. Our legal system is behind precisely due to this type of mismanagement. To avoid this issue, we can improve system administration by utilizing developing technology.

## II. SOLUTION FOR ABOVE PROBLEM

We can use the special features of Blockchain technology to create such a system that these clashes would not be possible. Blockchain technology arose from the crypto-anarchist ideology (which prioritizes privacy, political freedom, and economic freedom) and was introduced by Satoshi Nakamoto[?]. These are digital ledgers that are tamper apparent and resistant to tampering and are typically implemented in a distributed form (i.e., without a central repository) and without a central authority (i.e., a bank, enterprise, or government). At its most basic, they allow a community of users to record transactions in a shared ledger within that community so that no transaction can be modified once published under regular blockchain network functioning. [2]

Blockchain can be considered as a decentralized database that

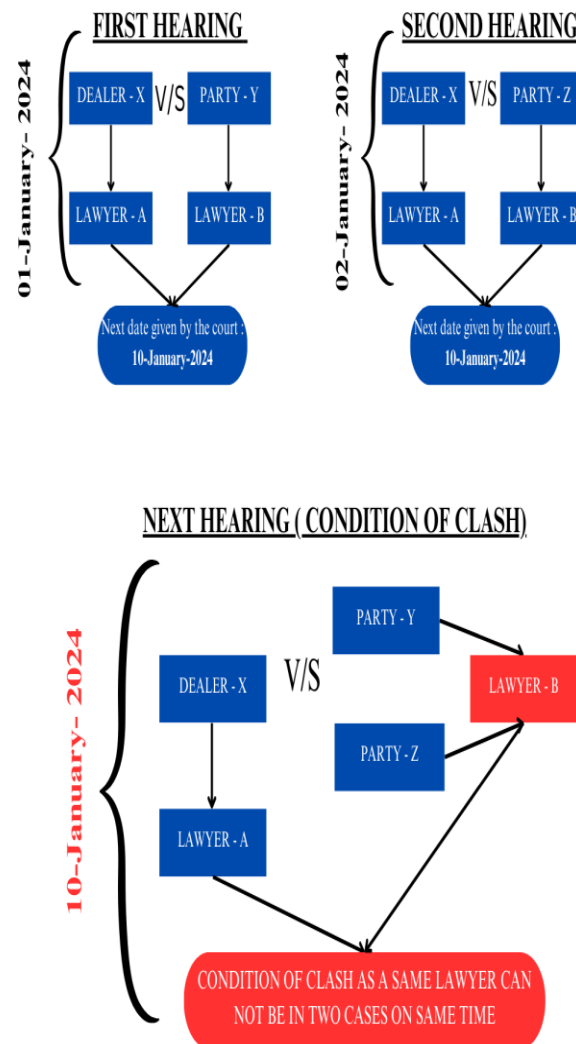


Fig. 2.

can store information and is particularly adaptive to dealing with asset transactions. However, it is built on key pillars that distinguish it from a standard database and place it among the leading developing technologies. [1]

Some of the major key features of blockchain beneficial for our judicial system are as follows:

- **Decentralized :** The database has been distributed, and all participants have received copies of all information. They are able to validate this data without the need for a centralised authority. When a transaction is updated, a new block is produced and connected to the blocks that came before it. At random intervals, Blockchain network node ledger data is matched. This method is secure from hackers since there is no financial information or party identities, and the data is public in real time. [1] Blockchain is useful in networks comprising multiple organizations because of its decentralization and real-time information updating. Integrating it into the judicial system will be extremely beneficial since, by utilizing this function of the blockchain, the data of all lawyers will be available for all courts, hence improving system transparency.
- **Non-repudiable :** This method employs both public key and private key cryptography. The creator/sender cannot afterward disclaim their motive in creating or transmitting the material. It indicates that once a date is allocated to a lawyer, there will be no alterations to the date.
- **Smart Contract :** Data sharing policies. The Blockchain is governed by its participants. They agreed on the types of transactions in advance, which are kept in the chain as smart contracts [1]. This is one of the most useful and crucial features to be used in our system as the rules and regulations of giving the next date to lawyers by the court and also the rules of assignment of the dates and presentation of the cases and other laws to be followed while the hearing of the cases.
- **Avoidance of third parties :** A standard commercial transaction consists of two parts: a public ledger entry detailing the transaction and private messages between the persons involved concerning identities, transaction security keys, and location. The combination of these two components, as well as the system's decentralization, allows for the avoidance of a trusted third party intermediary (e.g., banks, exchanges, brokerage firms, or price reporting agencies), allowing for the execution of a transaction with limited cost and time, and in a secure manner [1]. It will increase system transparency because currently, those who have good connections with those in power have their hearings expedited due to the involvement of some members of courts who are at the managerial level, but this will no longer be possible after the integration of blockchain technology because it will not include any third party. [2]

- **Consensus-based and trustiness** : As previously stated, participants independently validate a transaction. Because of the decentralized storage and the presence of several copies of the database, participants must reach an agreement on the source of truth and thereby validate the transaction [1]. The consensus process prevents mistakes or fraudulent activities from affecting the database. Because there are so many copies of data and it is decentralized, when a date is assigned to a case and its related lawyers, the lawyer cannot deny it. As a result, it also provides immutability. [9]

- **Data encryption via cryptography and immutability**

: Cryptography is one of the most crucial cornerstones of Blockchain. In fact, cryptographic methods (such as the Secure Hash Algorithm SHA-256) are required for digital signatures and data integrity, preventing block modification after the transaction has been authenticated and recorded. Because of this cryptographic technique, data recorded on the Blockchain is immutable and unique [1].

Adoption of this technology, however, brings with it obstacles and constraints, such as interoperability, governance, and scalability. [3]

The Hyperledger fabric can be used. It is the de facto standard for corporate blockchain solutions and the modular blockchain framework. The open, modular architecture, designed as a platform for creating enterprise-grade applications and industrial solutions, employs plug-and-play components to handle a wide range of use cases. It has advanced privacy controls so only the data you want to be shared gets shared among the “permission” (known) network participants. Only the courts can have authorization over the data and hence increase the privacy and security of data as well. We are saving the energy of the mining process by using Hyperledger Fabric since it does not rely on Pos or Pow consensus. The Hyperledger Foundation claims that its private blockchain is more scalable and allows more transactions per second than public blockchains.

### III. WORKFLOW

First, let us grasp our system's technique, which will assist us in comprehending our idea in more depth. Our administrator, who may be the bar council, will create certificates for each entity in the system. Our main entities are the courts and the judges. A unique ID will be provided to the lawyers by associating their information with the Aadhar No. by retrieving the Aadhar Card API. When a hearing begins, the court will request the unique ID of the lawyers and link it to the case ID. As soon as the lawyer grants permission to the court, all endorsing peers will check and verify the certificate, and the data will be forwarded to ordering services, where consensus will play an important role in arranging data in a specific order. The data will be sent to committing and endorsing peers before being stored in the blockchain with precise hash values. The approved data will be uploaded to the global state database. When the judge assigns the next date to the specific case ID at the end of the hearing, if any of the lawyers involved in the case is busy on another case on the date assigned by the judge, the system will display an occupied condition and the judge will assign another date to the case. And if the date is allocated to the lawyer, the lawyer can't discredit it since technology ensures immutability.

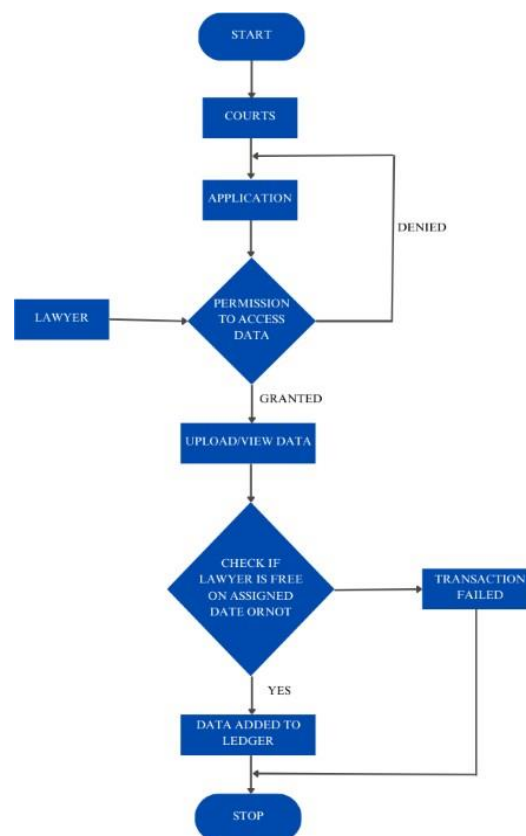


Fig. 3. Basic Flowchart

#### IV. UNIQUENESS IN BHARAT

In our country the judicial system has been working on the same pattern for a long time there has been no such method used in the judicial system of India till now. In 2012 BCI Chairman Manan Kumar Sharma said to create a database of lawyers to make a tracking mechanism with respect to the practitioners of the law across the country. Their objective is not the same as discussed above their objective is to track the lawyers of the country. Recently blockchain technology has been implemented in the judiciary but their vision is - If authorized by legislation or court order, the judiciary can employ blockchain to verify and certify electronic evidence during the trial phase. The evidence collector has the ability to gather evidence and upload it to blockchain servers. Using blockchain, electronically recorded evidence may not only be certified as legitimate but also quickly eliminated by judges. So there is no such idea till date.

#### V. CONCLUSION

The adoption of Blockchain technology in the judiciary is a promising advancement that has the potential to benefit the entire nation and our judicial system. It will reduce the number of files in the courts and free up many of the properties, lives, and assets that have been awaiting a verdict for a long time due to pending cases. The system will be more transparent because there will be no manipulations in case arrangements and court hearings, and lawyers will not be able to refuse to attend hearings by claiming that they are too busy with another case. The court's valuable time would be saved, which was previously lost due to lawyer unavailability. There will be suitable data on attorneys and their link with the cases in the lawyers' view as well. Third parties and brokers that eat money in lawsuits only to get the file heard in court would be barred. The window of time used by attorneys to maliciously remove or hide the clues will no longer be tolerated. This will result in a more efficient, transparent, and trustworthy judicial system.

#### VI. FUTURE DEVELOPMENTS

Future work will involve integrating our technique with Business Process Modelling to guide Blockchain initiatives from value definition to deployment. Furthermore, the future focus of our study will be on expanding the module pertaining to the leaves of judges and other court officials. In specifically, a module that will indicate case similarity based on previously recorded instances and will tie the case to the most comparable case, assisting officials in making choices.

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