

## SMART TENDER/CONTRACT MANAGEMENT SYSTEM USING BLOCKCHAIN

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### ABSTRACT

By and large, the Tenders or agreements are utilized by legislatures and organizations to get labour and products. Improper delicate administration prompts colossal misfortunes if there should arise an occurrence of broken rehearses. This incorporates inclining toward of project workers, ill-advised record support, absence of straightforwardness, hacking, information change and different issues. To beat this issue, we have utilized a straightforward and secure block chain innovation and to get by encryption combined with unquestionable square based engineering for exchange the board. For this situation we utilize block affix innovation to get exchange based archives alongside exchanges, for example, delicate reports, applications, bid recommendations, organization profiles, past records, endorsing official subtleties, dismissal subtleties to guarantee a totally straightforward offering process.

**Keywords:** Block Chain, Tenders, Bidders, Contractors.

### I. INTRODUCTION

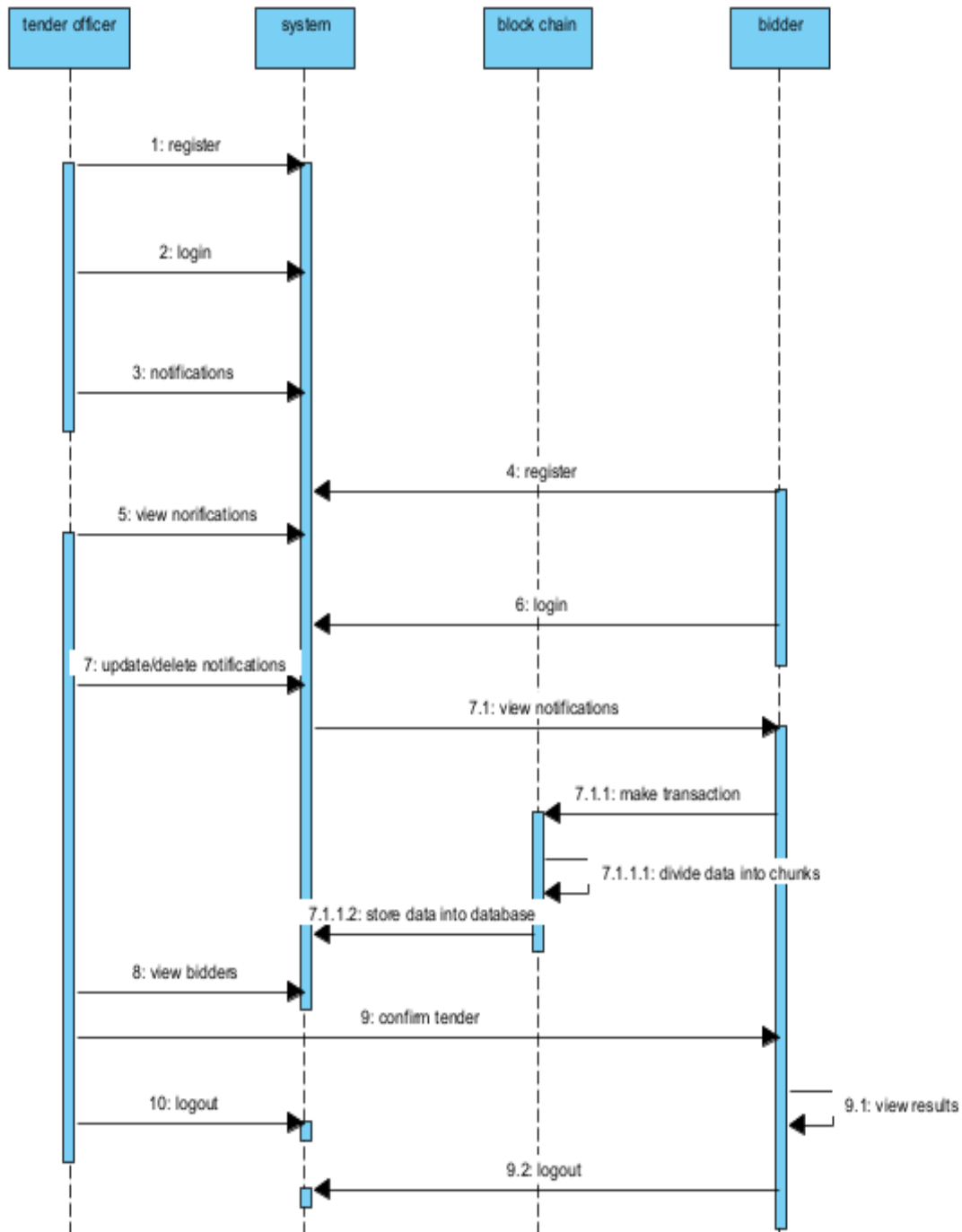
Current E-Tendering frameworks are 'absurd and open' implying that the data isn't imparted to all partners. For example, when a firm is chosen as the winner of a contract, other companies that bid on the same tender are not informed of why their bid was rejected and why a particular company was chosen as the winner. A corporation can request this information, but obtaining it is a time-consuming process. Despite the fact that checking these papers is possible, reviewing those takes time. Apart from not being transparent, these portals' security is a serious concern, leading to fraud and data tampering in a centralised database. If a hacker gains access to this centralised database, offers could be disclosed to rivals, resulting in significant financial and strategic losses. Because it focuses largely on decentralisation of information and is secured by encryption integrated with indisputable block-based architecture for transaction management, blockchain technology can be utilised to address these security concerns. As a result, Blockchain and Smart Contracts can be utilised to create a transparent, decentralised, and secure tendering framework that allows bidders to monitor portal functionalities and track all of the tender portal's activity. Explanation of the Blockchain Decentralization is at the heart of the blockchain concept. As a result, it might be considered a distributed database. In this example, the distributed database uses full replication, which means that each node has a complete copy of the blockchain. A process known as mining occurs whenever the blockchain needs to be updated due to a transaction. A block is made up of a number of transactions. The mined block is transmitted to all other nodes via a consensus procedure. In the header of these blocks, there will be a cryptographic hash that refers to the previous block in the chain. If a block is tampered with, the hash linked with it changes, requiring all subsequent blocks to be re-mined, which is impossible. In this way, blockchain makes use of the immutability attribute. The essence of blockchain is how it is implemented and what consensus protocol it uses.

### II. RELATED WORK

- 1. Tender Officer:** Tender officer will login into the account after registration and update the notification regarding the tender process. There is a option where they can modify or delete the notification part. Now the officer will download the tender files for which were register by the bidders and decrypt the data from downloaded files to get the information of bidders. Once after getting the information of bidders a confirmation mail sent to the bidders as the acceptance for their tender applications.
- 2. Bidder:** Bidders will login into the account after registration and they will view the tender notifications. If the bidder is okay with tender description he/she will provide their information in text file to the bidder officer. After sending the application they can check the response from the tender officer can make a tender to the tender officer by providing data in a text file.
- 3. Blockchain:** The blockchain is used to store an encrypted formate by dividing the data into chunks. Here apply the hash code on chunks for hiding the data after converting it into an encrypted format which is stored in a database.

### III. PROPOSED WORK

Block chain technology is used in the proposed Tender Management System to ensure that the entire tender management process is secure and efficient. Encryption and an irrefutable block-based architecture for transaction management safeguard a block chain. This allows the system to maintain a basic transparent transaction with only the information that the system needs to know.



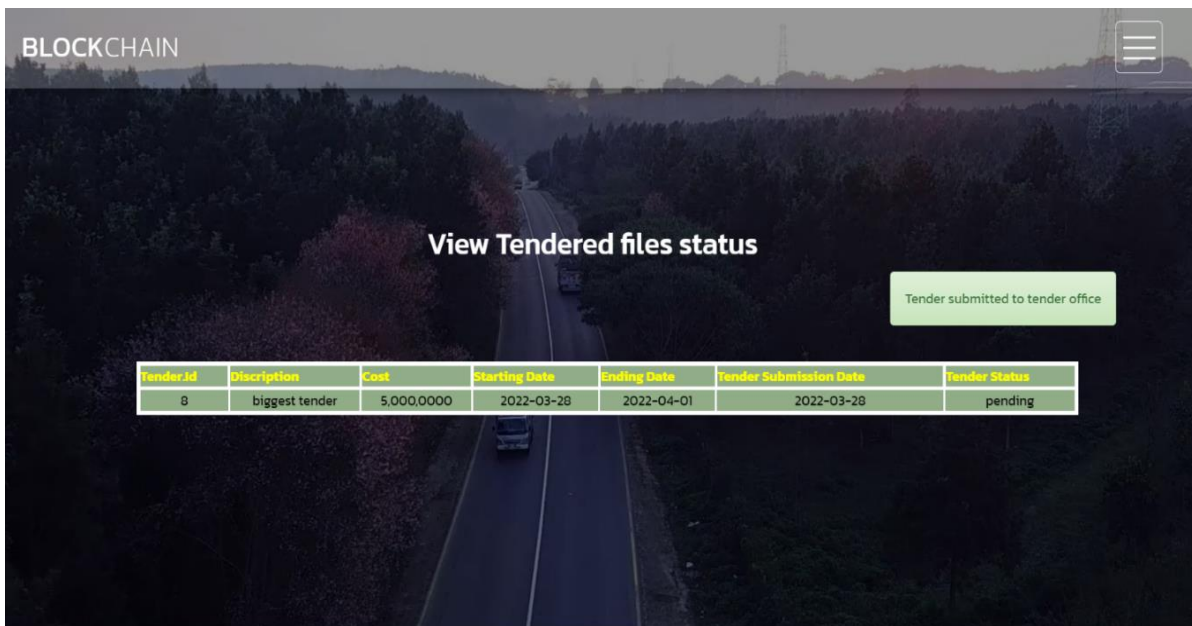
### IV. TEST CASES

Input	Output	Result
Input text file	Providing security on data files using block chain techniques.	Success

**V. TEST CASES MODEL BUILDING**

S.NO	Test cases	I/O	Expected O/T	Actual O/T	P/F
1	Upload text file	Text file path.	Store files in to database successfully.	File uploaded successfully	P
2	Login	Enter valid email ,password and secret key	Login to the Userhome page successfully	Login to the Userhome page successfully	P
3	Login	Enter invalid email or password or secret key	Invalid credentials login failed	Login failed	F
4	Make a tender	Provide information regarding tender.	Block chain will divide the data into chunks and generate the hash code for the uploaded file and store the data into database	Tender submitted successfully	P
5	Download file	By clicking download button file will be downloaded	File downloaded successfully	File downloaded successfully	P
6	Confirm tender	Tender officer sent the confirmation email to the particular bidder.	Confirm the bidder successfully	Confirm the bidder successfully	P

**VI. RESULTS**



Thanks for choosing online smart tender.  
Congratuaations for woning this tender.

Regards,  
Tender Officer.

Mail Delivery Subsystem <mailer-daemon@googlemail.com>  
to me ▾

10:24 PM (12 minutes ago) ☆ ↶ ⋮

## VII. CONCLUSION

Traditional technologies and design patterns cannot be employed in applications such as tender portals, where transparency and security are paramount, because they jeopardise these objectives. As previously stated, there are numerous security needs for a tendering framework that cannot be met simply by creating and bidding on contracts through a centralised tender platform. Only fair, open, decentralised technologies, such as Blockchain and Smart Contracts, can meet the security and openness criteria of this type of application. In this paper, we'll look at how such a system may be created, including the many procedures required and how they're implemented. The security and openness requirements of this type of application can only be met by using Block chain and Smart Contracts are examples of fair, open, and decentralised technologies. In this paper, we'll look at how such a system may be created, including the many procedures required and how they're implemented. Only fair, open, decentralised technologies, such as Block chain and Smart Contracts, can meet the security and openness criteria of this type of application. In this paper, we'll look at how such a system may be created, including the many procedures required and how they're implemented.

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