

Examination Information System

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Abstract— In many universities there is still unsecured process for the management of the examinations of different departments. This process needs to be updated using the management system that helps in securing the data and efficiency of the examination management. This project helps in the development of a management system for the examinations in many universities using Blockchain technology. Blockchain is the latest sensation in the field of technology in matter of data security.

Block chain was conceptualized by Satoshi Nakamoto. Block chain is growing list of records called blocks, which were linked using cryptography. Each block contains a cryptographic hash of the previous block, a time strap and transaction data.

This project mainly depends on the encryption and decryption of the data. This can be done in Java script. The project mainly involves in algorithms like SHA256. This project helps in the development of the block chain technology in the field of organizations. The features like transparency and immutability helps in the development of the examination management system in block chain more efficiently.

Index Terms— Blockchain, Decentralization, Distributed System

I. INTRODUCTION

Blockchain become a new technology, a representative sample of research is presented, spanning over the last ten years, starting from the early work in this field. Various types of usage of blockchain and other digital ledger techniques, their challenges, applications, security and privacy issues were investigated. Some countries have already taken the initiative to improve their voting system by using blockchain technology and decentralized peer to peer network accompanied by a public ledger. Sierra Leone is the first country in the world to use blockchain Technology to verify votes in an election in March, 2018.

The lack of ability to change or delete information from blocks makes the blockchain the best technology for voting systems. Blockchain technology is supported by a distributed network consisting of a large number of interconnected nodes. Each of these nodes have their own copy of the distributed ledger (information) that contains the full history of all transactions the network has processed. There is no single authority that protect the network. If the majority of the nodes agree, they receive a transaction. This network allows users to remain anonymous.

Blockchain is a cryptographically engineered distributed ledger. It records all the transactions executed in a network. It is a chronological chain of blocks where every block consists of a block header. The block header records the hash of the

previous block along with a merkle root and a timestamp of the current block. This contributes towards ensuring the integrity of the blocks and enables the blockchain to detect any invalid blocks making it extremely secure. In this paper, we illustrate how using a peer to peer examination system supported by blockchain could solve the problems identified in the domain of security and integrity of current examination systems. We propose a framework for conducting decentralized examination using blockchain for better evaluation and maintenance of examination records such that the records are more credible, reliable and secure in juxtaposition with the current examination system. The current system of conducting examination suffers extreme cases of score manipulation in database either by students, external security breachers or by insiders with administrative access. These concerns can be addressed by the proposed blockchain based system.

II. EXISTING METHODOLOGY

The existing system does not contain any OTP generation. So any one who login the web application can view the result and can enter the marks in staff login. This is not secure.

A. DISADVANTAGES OF EXISTING SYSTEM

It does not contain security.

Only userid and password is needed to login the system.

Everyone know the password can view and enter marks.

III. PROPOSED SYSTEM

The proposed system is highly secure and transparency. It contains OTP generation and only the OTP is given the user can login the system and enter marks and can view the marks.

A. ADVANTAGES OF PROPOSED SYSTEM

The project contains block chain algorithm

It is the newest technology.

It is highly secure and transparency.

B. BLOCK DIAGRAM

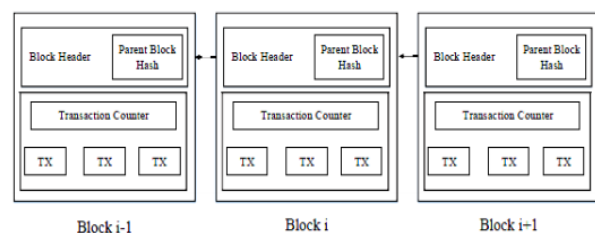


Fig.1. Block Diagram

C. METHODOLOGY

1) Blockchain

A block chain is originally block chain, is a growing list of records, called blocks, which are linked using cryptography. Every block contains a cryptographic hash of the previous block, a timestamp, and transaction data (generally represented as a Merkle tree root hash).

D. Blockchain Structure

This permits the participants to verify and audit transactions in expensively. A Blockchain database is managed autonomously using a peer-to-peer network and a distributed time stamping server. They are proved by mass collaboration powered by collective self-interests The result is a robust workflow where participant's uncertainty regarding data security is marginal. The utilization of a Blockchain removes the characteristic of infinite reproducibility from a digital asset. It confirms that each unit of value was transferred only once, solving the long-standing problem of doubled spending. Blockchain have been described as a value-exchange protocol. This Blockchain-based values can be finished quicker, safer and cheaper than with traditional systems A Blockchain can assign title rights because, when properly set up to detail the exchange agreement, it gives a record that compels offer and acceptance.

1) Types of Blockchains

Currently, there are three types of Blockchain networks - public Blockchains, private Blockchains and consortium Blockchains.

a) Public Blockchains

A public Blockchain has absolutely no access restrictions. If anyone with an internet connection can send transactions to it as well as become a validator (i.e., participate in the execution of a consensus protocol). Basically, such that networks offer economic incentives for those who secure them and utilize some type of Proof of Stake or Proof of Work algorithm. Most known public Blockchains are Bitcoin and Ethereum.

b) Private Blockchains

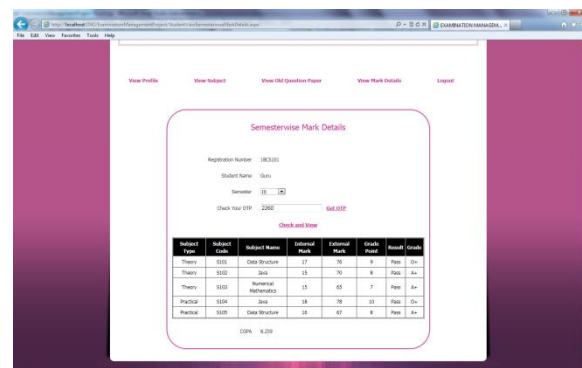
A private Blockchain is permissioned. One cannot able to join it unless invited by the network administrators. Participant and validator access is restricted. This Blockchain types are examined a middle-ground for companies that are interested in the Blockchain technology in general but are not comfortable with a level of control offered by public networks. They are used identify to incorporate Blockchain into their accounting and record-keeping procedures without sacrificing autonomy and running the risk of exposing sensitive data to the public internet.

c) Consortium Blockchains

A consortium Blockchain is generally said to be semi-decentralized. It, too, is permissioned but rather than of a single organization controlling it, a number of companies might each operate a node on such a network. The main administrators of a consortium chain confine users' reading rights as they see fit and only allow a limited set of trusted

nodes to execute a consensus protocol.

IV. EXPERIMENTAL EVALUATION



V. CONCLUSION

The online examination management is not secure in the current system. So there is a need to the new system with security and transparency. This project helps in the development of a management system for the examinations in many universities using Blockchain technology. Blockchain is the latest sensation in the field of technology in matter of data security. So by using block chain technology the security and transparency is implemented in this journal.

REFERENCES

- [1] Michael Crosby, Google,Nachiappan, Yahoo,Pradhan Pattanayak, Yahoo,Sanjeev Verma, Samsung Research America,Vignesh Kalyanaraman, Fairchild Semiconductor(2015);Blockchain Technology Beyond Bitcoin.
- [2] Freya Sheer Hardwick, Apostolos Gioulis, Raja Naem Akram, and Konstantinos Markantonakis (2018); E-Voting with Blockchain: An E-Voting Protocol with Decentralisation and Voter Privacy; arXiv:1805.10258v2 [cs. [1] Ahmed Ben Ayed(2017);A Conceptual Secure Blockchain –Based Electronic Voting System; International Journal of Network Security & Its Applications (IJNSA) Vol.9, No.3.
- [3] Pavel Tarasov and Hitesh Tewari(2017);The Future of E-Voting; IADIS International Journal on Computer Science and Information Systems Vol. 12, No. 2, pp. 148-165.
- [4] Zibin Zheng1, Shaoan Xie1, Hongning Dai2, Xiangping Chen4, and Huaimin Wang3(2017);An Overview of Blockchain Technology : Architecture,Consensus, and Future Trends; IEEE 6th International Congress on Big Data.
- [5] Jesse Yli-Huumo1, Deokyoan Ko2, Sujin Choi4*, Sooyong Park2, Kari Smolander3(2016); Where Is Current Research on Blockchain Technology?—A Systematic Review;PLOS-ONE.
- [6] Mahdi H. Miraz1, Maaruf Ali2(2018); Applications of Blockchain Technology beyond Cryptocurrency;Annals of Emerging Technologies in Computing (AETiC) Vol. 2, No. 1, 2018.