BLOCK CHAIN BASED SECURE TAXATION SYSTEM

Mr. R. GOPALAN M.E[1], Mr. R. SUBASH[2], Mr. K. SELVAM[3]

Assistant Professor (SI.Gr), Department of ECE, Velalar College of Engineering and Technology, Erode, India[1] Student, Department of ECE, Velalar College of Engineering and Technology, Erode, India[2]

Student, Department of ECE, Velalar College of Engineering and Technology, Erode, India[3]

Abstract— Although there are a number of different methods available to fund public expenditure, the most important one is taxation. However, governments incur costs when collecting taxes. It is, therefore, important for a government to ensure the efficiency of its tax collection system and to collect taxes in such a way that only minimal costs are incurred. Providing transparent, controllable, secure, and real-time information is vital in terms of ensuring the effectiveness of a tax collection system. There is a lack of industry or government security standards for distributed networks. We proposed a Block Chain technology system to improve the efficiency of taxation one of the basic functions of a government is to deliver public services to citizens. Service delivery of this kind requires public expenditure. Hence, governments require resources to finance their expenditure system. Where every transactional data will be organized using the technology. A variety of information can be stored on the block chain including tax related data of the citizens of a country.

I. INTRODUCTION

In almost all developed countries, the salary or compensation process is itself digitized. But, there's a flaw in the tax of the salary process. There are a couple of government agencies which are involved with their own ledgers of data, in fact even duplicating data of other agencies. As per the traditional process, the employers are the intermediaries, who calculate the tax and transfer the tax and social security payments from the employee's salaries to the right agencies. By enforcing the block chain-based smart contract, this problem can be solved. The employers will only need to provide the salary figure of an employee and based on the contract terms, the tax and social security amounts will be auto-calculated. The net salary will be transferred to the employee while the tax to the relevant government agency. This will not only save time but also costs and reduce the chances of errors or frauds. The speed, accuracy and transparency of block chains could help to alleviate these burdens for taxpayers by decreasing the risk of fraud. Where block chains can allow sensitive or valuable data to be passed with accuracy and trust, it is not surprising that they are becoming more commonly embedded in day-to-day business processes. Governments and regulators are already looking to them to solve some common issues created by poor recordkeeping or that require high levels of proof such as identifying land ownership rights.

II. PROBLEMS IN EXISTING SYSTEM

In existing system from the collation, cleansing and verification of information to the preparation, validation and submission of returns, tax processes are largely paper-heavy and labor-intensive. The outsiders including individuals, organizations, companies, and foreign governments that want to obtain confidential taxpayer information and to access control passwords and protocols for the purpose of selling the information, blackmailing

taxpayers, causing political embarrassment to the tax payers, improving their negotiating position in criminal or civil actions, denying system availability, and modifying or destroying record. Employees, contractors, and vendors who are disgruntled or have been bribed to obtain such information for the above-stated purposes. Taxpayer data were processed on stand-alone systems andmoved physically on magnetic tape.

III. PROPOSED SYSTEM

It is designed in such a way that businesses which had never ever paid taxes in history were all compelled to abide by the law. The government thereby managed to ruffle many an industrial feather. The tax law according to experts is excellent in its drafting and aims for maximum benefit to businesses as well as consumers, and at the same time, increasing the government revenues. As the system becomes transparent, consumers will trust the government more and will co-operate in making the whole system viable and compliance will increase. Every entity will pay the tax directly to the tax authority and hence no question of refunds etc. Block chain addresses most of the current issues befuddling the government and the taxpayers. Due to the transparency of block chain the tax payers and the government can able to check and verify the tax payment details. As well as additionally the application calculates tax for the PF amount and without third party servers, the users can apply and claim the amount. The scalable architecture effect of block chain will provide much reliability on the stored transactional data.
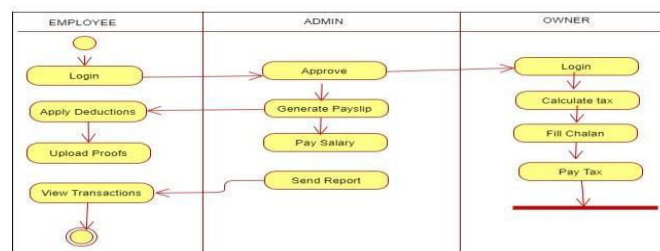
IV. PERFORMANCE REQUIREMENTS

Performance is measured in terms of the output provided by the application. Requirement specification plays an important part in the analysis of a system. Only when the requirement specifications are properly given, it is possible to design a system, which will fit into required environment. It rests largely in the part of the users of the existing system to give the required specifications because they are the people who finally use the system. This is because the requirements have to be known during the initial stages so that the system can be designed according to those requirements. It is very difficult to change the system once it has been designed and on the other hand designing a system, which does not cater to the requirements of the user, is of no use. The requirement specification for any system can be broadly stated as given below:

¬ The system should be able to interface with the existing system ¬ The system should be accurate ¬ The system should be better than the existing system The existing system is completely dependent on the userto perform all the duties.

V. SYSTEM ARCHITECTURE

A data flow diagram is a graphical tool used to describe and analyze the movement of data through a system. These are the central tool and the basis from which the other components are developed. The transformation of data from input to output through processing, may be described logically and independently of physical components associated with the system. These are known as the logical data flow diagrams. The physical data flow diagrams show the actual implements and movement of data between people, departments and workstations. A full description of a system actually consists of a set of data flow diagrams. Using two familiar notations Yourdon, Gane and Sarson notation

develops the data flow diagrams. Each component in a DFD is labeled with a descriptive name. The process is further identified with a number that will be used for identification purpose. The development of DFD'S is done on several levels. Each process in lower level diagrams can be broken down into a more detailed DFD in the next level. The lop-level diagram is often called context diagram. It consist a single process bit, which plays a vital role in studying the current system. The process in the context level diagram is exploded into another process at the first level DFD. The idea behind the explosion of a process into more process is that understanding at one level of detail is exploded into greater detail at the next level. This is done until further explosion is necessary and an adequate amount of detail is described for analysts to understand the process.

VI. SYSTEM TESTING

The software engineering process can be viewed as a spiral. Initially system engineering defines the role of software and leads to software requirement analysis where the information domain, functions, behavior, performance, constraints and validation criteria for software are established. Moving inward along the spiral, we come to design and finally to coding. To develop computer software we spiral in along streamlines that decrease the level of abstraction on each turn. A strategy for software testing may also be viewed in the context of the spiral. Unit testing begins at the vertex of the spiral and concentrates on each unit of the software as implemented in source code. Testing progress is done by moving outward along the spiral to integration testing, where the focus is on the design and the construction of the software architecture. Talking another turn on outward on the spiral we encounter validation testing where requirements established as part of software requirements analysis are validated against the software that has been constructed. Finally, we arrive at system testing, where the software and other system elements are tested as a whole.

VII. SYSTEM SECURITY

Security system can be divided into four related issues: The protection of computer based resources that includes hardware, software, data, procedures and people against unauthorized use or natural.

Disaster is known as System Security.

- ➤ Security
- ➤ Integrity
- ➤ Privacy
- ➤ Confidentiality

SYSTEM SECURITY refers to the technical innovations and procedures applied to the hardware and operation systems to protect against deliberate or accidental damage from a

defined threat.

DATA SECURITY is the protection of data from loss, disclosure, modification and destruction.

SYSTEM INTEGRITY refers to the power functioning of hardware and programs, appropriate physical security and safety against external threats such as eavesdropping and wiretapping.

PRIVACY defines the rights of the user or organizations to determine what information they are willing to share with or accept from others and how the organization can be protected against unwelcome, unfair or excessive dissemination of information about it.

CONFIDENTIALITY is a special status given to sensitive information in a database to minimize the possible invasion of privacy. It is an attribute of information that characterizes its need for protection.

VIII. RESULT
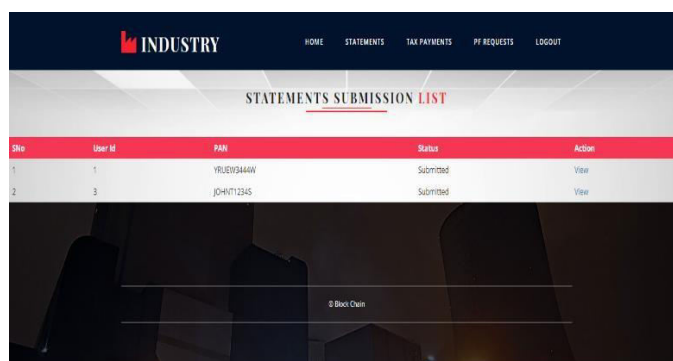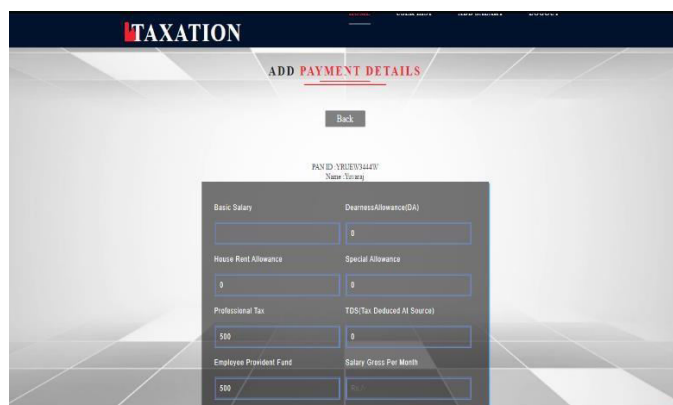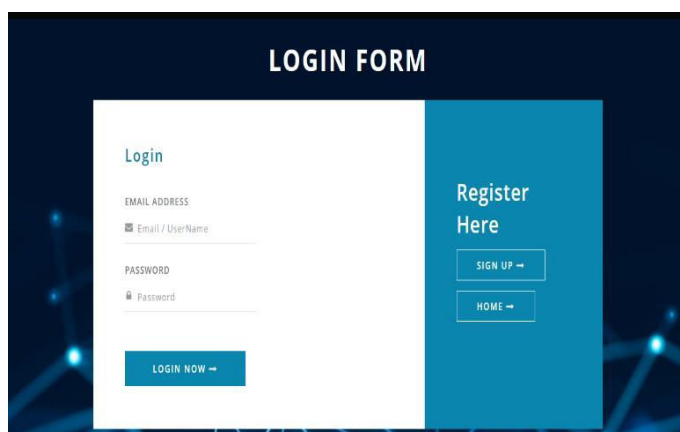
IX. CONCLUSION

While block chain is not the cure all for the tax system, it could be applied in a number of areas to reduce the administrative burden and collect tax at a lower cost, helping to narrow the tax gap. The Internet revolutionized the way information is exchanged, block chain is transforming the way we exchange value The Block chain is a forward looking highly digitized system. Taxation systems as a use case of Block chain were discussed and analyzed. Every government desires minimum leakages in their tax revenues.

X. FUTURE ENHANCEMENT

➢ Block chain holds a lot of promise and governments all over the world are quite excited aboutimplementing blockchain in the tax systems.

➢ The government will have to rope in data scientists land IT professionals to design a blockchainplatform for GST.

➢ With the current government and its emphasis on digital India, Block chain seems to be the idealsolution for efficient tax collection.

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