LESOTHO REVENUE AUTHORITY HACKATHON – 2021

BLOCKHAIN

BACKGROUND

Enterprises, regulatory bodies, individuals, and researchers are fascinated by this nascent technology and are exploring its application within their respective fields. Blockchain is celebrated as a disruptive technological advancement because of its equitable offering: it is a distributed ledger that records and stores data once it has been validated by the computers or nodes on the ledger's network. Every block of data that gets added to the existing chain is backed by the principles of cryptography.

There are numerous benefits that emerge from the above definition of a blockchain, one of the most lauded being decentralization. A blockchain dis-intermediates the fundamental role played by centralized authorities and third parties in the verification and validation of data or transactions, by allowing an open network of nodes perform the necessary tasks. This reduces cost, augments efficiency, and creates a less trusted ecosystem; benefits that cannot be achieved with manual, legacy processes. Transparency is inherent in a public blockchain, because everyone on the network has access to the ledger.

There are still certain challenges that blockchains have not yet overcome. Legacy transaction processing networks are known to process thousands of transactions in a second. Conversely,

blockchain networks are considerably slow when it comes to transactions per second. Blockchain technology gained traction by introducing decentralization and transparency across various platforms, supported by a large network of nodes.

With over thousands cryptocurrencies and thousands of projects that are leveraging distributed ledger technology, numerous blockchain networks have floated to the surface. Most of these blockchains work in silos and do not communicate with the other peer-to-peer networks. With the wide variety of networks that exist today, there are no universal standards for blockchain applications. Standardization can help reduce costs, develop more efficient consensus mechanisms, and introduce interoperability.

Proof-of-work (PoW) was the first consensus mechanism for validating transactions and eliminating the need for centralization, and was introduced by Bitcoin's blockchain. These protocols require users to submit proof of 'work' by solving complex mathematical puzzles, and require tremendous computing power.

PROBLEM STATEMENT

Tajikistan Revenue Authority (TRA) has shared data in the local directory. This same data, this data is sourced from multiple revenue stakeholders groups in the revenue sector of the named country. As an Engineer, you are required to use the shared data and create a sensible optimized blockchain solution for the revenue agency. Grant all stakeholders access to aesthetically pleasing dashboards, considering data science and blockchain lifecycle.