Engineering Economy (MS-391)

Topic: Blockchain Based Verification for Academics

Group Members

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Background:

In Pakistan, the main organization in charge of verifying and attesting academic credentials is the Higher Education Commission (HEC). This process is essential for Pakistani professionals and students who wish to pursue higher education or employment opportunities abroad, where verified degrees are often required. However, the current attestation process has several issues that make it challenging for students and graduates to finish. Reports indicate that operational inefficiencies, frequent delays, and even short service outages in the HEC's attestation system leave applications in limbo. Additionally, the presence of scammers offering false attestation services erodes trust even more and exposes students to financial loss and fraud.

Blockchain technology provides a workable answer to these problems. Blockchain can help institutions issue and confirm academic diplomas quickly, transparently, and securely by establishing a decentralized, unbreakable digital record. Processing times would be shortened, fraud risk would be decreased, and reliance on centralized verification bodies would be greatly reduced. Blockchain has already been used by several universities worldwide for credential verification, which has enhanced data security, expedited processing, and raised confidence in the veracity of academic records.

The financial benefits of a blockchain-based verification system are noteworthy. Under such a system, students may be able to reduce the opportunity costs of waiting for verification, travel expenses, and the financial burden of attestation fees. Blockchain has the potential to streamline HEC operations, lower administrative expenses, and enhance resource allocation. Furthermore, a blockchain-based system will boost global confidence in Pakistani academic credentials, boosting the employability and global mobility of Pakistani graduates.
By analyzing the potential cost savings, efficiency gains, and fraud protection benefits, this study seeks to demonstrate how blockchain technology could revolutionize the attestation process and address pressing problems faced by Pakistani professionals and students.

Aims & Objectives:

This project aims to assess the feasibility of implementing a blockchain-based verification system for academic credentials in Pakistan in order to address issues with the Higher Education Commission's (HEC) current attestation approach. Important objectives include examining how blockchain technology can offer a secure, decentralized alternative and analyzing contemporary problems including fraud, inefficiencies, and delays. Through economic analysis, the study will assess potential cost savings, operational efficacy, and fraud prevention benefits. Additionally, it aims to evaluate the broader implications of blockchain on Pakistan's education and labor markets, propose a framework for integrating blockchain with HEC's systems, and promote global mobility by providing globally trustworthy verification of Pakistani credentials.

Key Research Questions:

- How would a blockchain-based solution address the operational problems, inefficiencies, and fraud concerns associated with the current academic certification process of Pakistan's Higher Education Commission (HEC)?

- What monetary benefits, such as reduced expenses and increased effectiveness, may blockchain technology provide for the authentication of academic credentials in Pakistan's higher education system?

Methodology:

We will employ effective strategies to solve our research problems and complete our study by the deadline. We will achieve this by conducting a survey to see how business leaders, academic institutions, and students feel about the current attestation process used by the HEC and potential blockchain-based alternatives.

The collected data will be analysed and contrasted using graphs and charts to highlight significant findings. This methodology will improve understanding of stakeholder viewpoints, the feasibility of integrating blockchain technology, and the anticipated financial impact of the proposed system.