**RESULT VALIDATION AND VERIFICATION SYSTEM FOR KADUNA POLYTECHNIC (KADPOLY E-VERIFY)**

**BY**

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***A PROJECT PROPOSAL SUBMITTED TO THE***

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**ABSTRACT**

*Forgery has long crept into our educational system and, counterfeit and forged certificate and document have upper hand in various certificate and degrees awarding institution. Invalid studentship has become greater than valid studentship. The need for student verification system has become necessary to check mate and expunge invalid studentship, invalid document and invalid certificate yielding to authenticity of certificate and documents. This research work implemented student verification system for Kaduna polytechnic (Kadpoly e-Verify). The proposed model is concerned with monitoring the studentship of students, keeping students basic academic record, tracking students if there is malpractice of any kind and verifying every certificate of Kaduna polytechnic, Kaduna state in the future. This research work will be a web-based application and will be implemented on a relational database system (SQLite). HTML (hypertext markup language), CSS (cascading style sheet) and Django(python) are the modern languages used in implementing this system.*

**CHAPTER ONE**

**INTRODUCTION**

* 1. **Background of the Study**

Information and Communication Technology is one of the diverse industries in the world that is increasing development in a certain country. Verification is the process of establishing the truth, accuracy, or validity of something such as the verification of official documents (Musee, 2017).

Most of the applicants falsify their educational credentials. What's more, industry experts cite academic fraud as the most common lie on resumes. This poses the greatest danger to an organization. This has been accelerated by applicants who falsify the information. The risks involved in not verifying the applicant’s certificate details include, greater recruiting and replacement costs, increased employee turnover, compromised business performance, embarrassment, and a negative impact on Kaduna polytechnic reputation.

Therefore, for this case, a computerized system to obtain graduates certificates records and verification should be introduced in the school which will enable several recruiters to verify the certificate records from the ones issued in the system and the ones that they have.

**1.2 Problem Statement**

Recently employers have been experiencing has high alarming rate of fake certificates (Taylor, 2017). This is due to the traditional paper-based prototype of verification. The issue of forgery of printed certificates is one that is frequently encountered. Similarly, the low skill level required to counterfeit academic certificates is a major issue. The difficulty of the traditional verification process has resulted in unnecessary delays as well as inconvenient long-distance travel for verification purposes. However, with advancements in information and computer technology, a paradigm shift from traditional-based verification to real-time verification is required.

**Existing System**

The current verification system for educational credentials predominantly relies on a traditional, paper-based approach, which has proven to be susceptible to manipulation and fraud. This system requires employers and educational institutions to physically verify certificates and documents, often leading to time-consuming processes, delays, and logistical challenges. The reliance on manual verification procedures not only exposes institutions to the risk of accepting forged documents but also results in increased operational inefficiencies and resource utilization. The lack of real-time validation mechanisms leaves room for fraudulent activities to go undetected, compromising the credibility of educational qualifications and the trust within the academic and professional ecosystem.

**Proposed System**

To address the limitations of the existing system, a transformative solution is proposed a computerized verification system. This system harnesses the power of information and communication technology to create a secure, efficient, and reliable platform for validating educational credentials. The proposed system will allow educational institutions like Kaduna Polytechnic to digitize certificate records and facilitate seamless verification processes for employers, recruiters, and other stakeholders. By integrating advanced security features, such as encryption and authentication protocols, the proposed system aims to thwart fraudulent activities and ensure the integrity of verified documents. This technological advancement will expedite the verification process, eliminate geographical barriers, reduce costs associated with manual verification, and enhance the overall trustworthiness of educational credentials.

**1.3 Motivation**

The impetus for this study arises from the escalating concern of fraudulent educational credentials, particularly within the Information and Communication Technology sector. The prevalence of applicants falsifying their qualifications, combined with the ease of manipulating traditional paper-based verification processes, highlights the urgent need for a modernized approach. The repercussions of academic fraud extend beyond individual organizations, encompassing increased costs, elevated turnover rates, compromised business efficiency, and reputational damage to institutions like Kaduna Polytechnic. This study is motivated by the imperative to counter academic fraud, streamline verification processes, and offer a secure and efficient means of validating certificate records through an innovative computerized system. The goal is to enhance the integrity of educational credentials and modernize the verification process, thereby establishing a dynamic solution that safeguards against fraud while fostering trust and efficiency in the authentication of academic achievements.

**1.4 Aim and Objectives of the Study**

The project is aimed at designing a working platform in Kaduna Polytechnic that will be used nationally and perhaps internationally in verifying the records of academic certificates for all graduates from Kaduna Polytechnic in Nigeria.

**Objectives**

The objectives of this research work are as follows:

1. To create a system that would verify all Kaduna Polytechnic certificate records making sure that they are all valid and original.
2. System should eliminate the problem of using fake certificates which are used in different applications and registration for recruitment.
3. Reduce the cost of parsing information and efficiently manage the Results information of the students.

**1.5 Methodology**

The method used for collecting data on this research work are documentation and observation of the environment. In the development process of the application, a deliberate and meticulous selection of programming languages was undertaken to ensure its seamless functionality and optimal user experience. The chosen programming languages include HTML5, CSS3, JavaScript, Python (Django), and SQLite, each serving specific roles within the web-based framework. HTML5 was chosen for its adeptness in structuring content, while CSS3 facilitated aesthetic enhancements. JavaScript enriched the application's interactivity, Python (Django) formed the robust backend foundation, and SQLite was employed for efficient data management. These choices were guided by the application's web-based nature, ensuring a harmonious integration of languages to create a comprehensive, user-friendly, and dynamic tutorial platform.

**1.6 Summarized Literature Review**

Clement (2018). Employers have been witnessing a highly alarming incidence of phony certificates as a result of the traditional paper-based verification method. This has made it difficult for them to determine the legitimacy of a certificate provided to them, as well as manage the certificates' records, particularly in learning institutions such as schools. As a result, recruiting organizations face far-reaching consequences such as increased recruiting and replacement costs, increased employee turnover, compromised business performance, embarrassment and negative impact on an organization's reputation, declining market value, lost customers and revenue, and civil and criminal liability.

Furthermore, the Agile Methodology approach was used, and ACRVP was built with Laravel PHP Artisan Framework and Bootstrap 4. Taylor Otwell invented Laravel, a free, open-source PHP web framework designed for the building of web applications using the model-view-controller architectural paradigm. Laravel aims to make development easier by simplifying common tasks found in most web projects, such as: robust background job processing, simple, fast routing engine, powerful dependency injection container, database agnostic schema migrations, multiple back-ends for session and cache storage, and real-time event broadcasting.

In conclusion, the researchers can clearly assert that if the certificate records verification procedure and its application were taken seriously internationally, it would undoubtedly contribute significantly to the acceptance of this unique technology. My expectation is that after the entire system has been built and deployed, the difficulties of having phony certificates and their records would be considerably decreased.

Emele et al. (2020). An Enhanced Web Base Certificate Verification System. Certificate verification is a big problem in organizations, educational institutions, recruiters, and employers. These issues were inevitably found after extensive research and analysis of the current system.

1. The manual technique of certificate verification always has a time lag.
2. Organizations and businesses do not have rapid and simple access to the current system.
3. Because certification verification takes time, it might be difficult to determine the legitimacy of an academic credential.
4. Service Defect

Moreso, research methodology outlines what research is, how it is carried out, how progress is measured, and what constitutes success. The technique used in this study is the object-oriented and design methodology (OOADM) while the programming language used for the front-end design was Hypertext Markup Language (HTML5), Cascading Style Sheet (CSS3), Bootstrap Framework and Back end design was achieved with Hypertext Preprocessor (PHP5) and My-Structural Query Language (MySQL).

In conclusion, the enhanced web-based certificate verification systems will be a helpful research tool that will not only open up new approaches for evaluating and validating certificates before accepting them but will also foster uniqueness and trust in companies. With the full implementation of this new system, corporate organizations, individuals, academic institutions, and the government will be able to check any certificate granted to individuals without first consulting the institution that provided it. Once registered with the entity that controls this software, the institution may be easily confirmed.

Patrick et al. (2019). A Generic Certificate Verification System for Nigerian Universities. Certificates are issued by institutions to people who have fulfilled the prerequisites for graduation. However, because of the availability of modern and low-cost scanning and printing technology, certificate forgery has risen, threatening the integrity of both the certificate holder and the university that issued the certificate. As a result, document validation and verification have become critical responsibilities.

Moreso, the system stores certificates in a NoSQL database (MongoDB), and the front-end design is done in PHP. The three parties engaged in the suggested approach to achieve correct certificate verification are the university, the graduate, and the verifier. Using the presented paradigm can provide several advantages. These advantages include enhanced work processes, simplicity of use and maintenance by the University for the Verification Process, and a longer operational duration owing to the usage of MongoDB (a NoSQL database that permits even horizontal scaling).

Finally, this online certificate-checking method prevents academic certificate forgery. It provides less cost involvement and convenience to both developers and users, i.e. significant ease of use by employers because they can obtain original certificates from schools easily and quickly, as opposed to other traditional methods of verification such as manual method, QR code, Watermark, facial recognition, and biometric technology, which are more expensive.

Dinesh et al. (2020). Educational Certificate Verification System Using Blockchain. After the interview procedure is over, the employer takes a long time to provide an offer letter. The employer must authenticate the certificate from the certificate issuing body in order to verify its authenticity. The employer spends a significant amount of time verifying the authenticity of the certificate. To finish the selection procedure, the whole certificate verification process takes longer. To address this issue, Blockchain provides a verified distributed ledger with a cryptographic technique to combat academic certificate forgery.

Futhermore, the system's method for issuing digital certificates is as follows. The first step is to produce the certificate hash value using double SHA256. In the block, save the fixed length hash value as a transaction. This transaction is validated by blockchain members; if it is accepted as a legitimate transaction, the block is added to the current blockchain. The consensus algorithm will be used to accept and reject proposals. The consensus algorithm can be chosen based on the number of nodes and the number of transactions. The system will create the corresponding QR code and inquiry string code to include in the hardcopy certificate. The system includes a device for authenticating hardcopy certificates through phone scanner or online.

Finally, the key characteristics of blockchain applications are transparency and data immutability. It is a distributed ledger in which nodes in the network check and reach a final consensus before adding data to the network. The process of generating academic certificates is open and dispersed among parties, and any organization or party may use this blockchain system to check the information of any academic certificate. academic institutions can work with other employers to publish credentials on the blockchain in order to eliminate false educational certificates.

**1.7 Conclusion**

This research work is an effort toward the elimination of fake certificates in learning institutions. As discussed in the introduction chapter of this study, verification of academic certificates is one of the important research areas today. This work contributes towards solving problems in academic fraud. A part of this work focused on the application of the proposed prototype as proof of concept. In our proof of concept, the prototype was able to verify the student’s academic details as they are in the database which was uploaded by the school.

**1.8 References**

Clement, M. (2018). Academic Certificate Record Verifying Platform: department of computing

science studies (CSS) of faculty of science and technology

Dinesh Kumar, K., Senthil, P., & Manoj Kumar, D. S. (2020). Educational certificate verification

system using blockchain. *International Journal of Scientific and Technology Research, 9*(3), 82–85.

Emele, I. C., Oguoma, S. I., Uka, K. K., & Nwaoha, E. C. (2020). An Enhanced Web Base

Certificate Verification System*. OALib, 07*(07), 1–15.

Oblikwu, P., & Dekera, K. (2019). A Generic Certificate Verification System for Nigerian

Universities. *International Journal of Computer Science and Mobile Computing, 8*(2019), 137–148.

SEBoK v. 1.9 , November 17 2017, System verification, Retrieved from

http://sebokwiki.org/wiki/Systems\_Engineering\_and\_Management on 26th May 2018

Thua Huynh, T., & Khoa Pham, D. (2019). EUNICERT: Ethereum Based Digital Certificate

Verification System. International Journal of Network Security & Its Applications