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# Revolutionizing Accreditation System: Basis for Proposing a Databank System Using Two-Factor Authentication and String Searching Algorithm

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**Abstract:** *Accreditation stands as a hallmark of quality assurance in higher education and ensures that academic institutions meet the rigorous standards set by the accrediting bodies. However, accreditation documents which are paramount for maintaining compliance with the accreditation standards are often inaccessible or, perhaps, prone to security threats. It is for this reason that the current exploration aims to transform the accreditation process of Saint Michael College of Caraga by proposing a web-based databank system using two-factor authentication and string searching algorithm. Through the utilization of descriptive research design using mixed-methodology research approach, the study investigates stakeholders' evaluation of the current document storage system and compelling needs for the proposed system. The research findings revealed that the current system lacks user authentication to identify the actual user, compromising data privacy (WM = 4.07) and vulnerable to ransomw are or other viruses that could potentially compromise the integrity of the documents (WM = 4.07). The respondents have a high level of agreement in terms of integration of a single web-based platform (WM= 4.60), two-factor authentication security(WM=4.60), and cloud-based solutions or advanced databases (WM=4.53). This comprehensive initiative will incorporate a cutting-edge string-searching algorithm to overcome limitations of the current document storage. Key functionalities such as secured storage, role-based access control, electronic clearance generation, and advanced reporting and analytics will be integrated to streamline accreditation workflows. The study highlights the importance of modernizing document management practices, improving accessibility, and ensuring compliance with accreditation standards, laying the groundwork for future enhancements and innovations.*

**Keywords:** Accreditation system, web-based databank framework, document management, string-searching algorithm, mixed-method research, efficiency, compliance, modernization.

## I. INTRODUCTION

Accreditation documents is paramount for maintaining compliance with accreditation standards and upholding institutional reputation. Recognizing this challenge, there is a compelling need for a modernized solution—a web-based databank system tailored specifically to the unique requirements of accreditation documents. Such system will revolutionize the management of accreditation materials by providing secure storage, efficient retrieval, and seamless adaptation to emerging technological advancements.

By addressing this need, the proposed system will not only streamline the accreditation process but also supports Saint Michael College of Caraga in its pursuit of continuous improvement and academic excellence. Moreover, it reinforces the institution's commitment to transparency, accountability, and the delivery of high-quality education, thereby enhancing its standing within the academic community and beyond.

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### 1.1 Objectives of the Study

The objectives of the study are as follows:

- To evaluate the current document storage and access method of Saint Michael College of Caraga.
- To propose a web-based databank framework using two-factor authentication mechanism and string – searching algorithm.
- To formulate recommendations for the enhancement and improvement of the accreditation system of Saint Michael College of Caraga.

## III. RELATED LITERATURE

### 2.1 Accreditation System in Higher Education Institutions and Use of Automated Software

Accreditation in higher education is a key process that ensures educational providers maintain quality standards and meet the expectations of the educational community and society at large.The main areas of the standards in higher education include mission, goals, and objectives; program administration; management of the program; quality assurance; learning and teaching; student administration and support services; educational resources, facilities, and equipment; financial planning and administration; employment process; research; and relationships with the community [2]. Previous studies in various national contexts explored the factors that can enhance the excellence of HEIs[9], demonstrated the impact of independent external peer assessment [11], and proved the achievement of organizational development through compliance of the published accreditation standards[1]. In this regard, accreditation is asserted an effective way to assess and improve the quality of education [12].

While institutional accreditation assesses the overall quality of an institution, academic program accreditation evaluates specific programs within institutions, offering a more detailed understanding of quality assurance mechanisms [6] that could serve a broad range of constituencies from the perspective of the profession and society. It should also assure that graduates will have the knowledge and skills required to practice the profession successfully and to be of service to their societies [4]. Researchers [3] believed that the growing emphasis on accountability, assurance of learning, and the rising concern about the quality of education shed light on the significance of the accreditation process at both program and institutional levels. They stressed that professional workforce is becoming internationally competitivethereforeHEIs are expected to flourish through their graduates and research in the global economy

Utilizing software management applications is vital in facilitatingHEIs for accreditation. For example, the College of Engineering at the Kwame Nkrumah University of Science and Technology (KNUST) in Ghana, developed the accreditation software called AccSOFT. The software aims to provide an easy way to track the accreditation status of all programs in the university and automatically generates materials required by theNational Accreditation Board (NAB). The AccSOFT software system will alsonotify assigned personal of the accreditation-related issues, generates a PDF files and required document formatcontaining the various accreditation status of respective programs, which will be endorsed to the concerned officers and authorities [8].

### 2.2 Two-Factor Authenticationfor Enhanced Security System

The Two-Factor Authentication (2FA) scheme is the foundational element of a zero-trust security model promise a higher protection level.It is an effective way to protect against many security threats that target user passwords and accounts, such as phishing, brute-force attacks, credential exploitation and more [5].In the study of Eldefrawy, et.al., a one-time-password (OTP)-Based Two-Factor Authentication using mobile phones was experimented for online banking security.Their novel 2FA scheme eliminated the process of sending SMS-based OTPs and reduced the restrictions imposed by SMS especially for international roaming and delays[7].The 2FA scheme also ensures that if one of the factors inclusive of a consumer's password is stolen or breached, the other factors provide a further layer of protection and assurance of the person's identity. This is proven in the study of Naidu, wherein a different out-of-band channel can be used to complete the second factor authentication process. The approving push notification, an example of out-of-band authentication, is sent over the mobile network. In the absence of the physical device, attackers cannot steal the account owner's identity to gain access to their accounts, corporate networks, cloud storage, financial information, etc. stored in their applications [10].

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### 2.3 String Searching Algorithm for Text Mining

The String Searching Algorithm plays an important component in solving many problems such as text editing, data retrieval and symbol manipulation. However, there are numerous issues involved in string searching. The algorithm works by finding every instance (or the first instance) of a pattern in a text, where the pattern and the text are strings across an alphabet. This is the goal of the string searching or string-matching problem. Reporting every incident is what authors are interested in. It is generally known that in the worst case (for fixed rn), the search time for a pattern of length rn in a text of length n (where n > m) is O(n). Furthermore, it is necessary to verify at least n - rrt + 1 characters in the worst scenario [Pdv77]. However, the constant in the linear component might vary significantly between methods. In the worst scenario, for instance, the constant multiple for the Knuth-Morris-Pratt [KMP77] method is two, whereas it is rn in the naïve approach. The naïve approach, the Knuth Morris-Pratt algorithm [KMP77], several variations of the Boyer-Moore [BM77] algorithm, the shift-or algorithm [BYG89], and the probabilistic Karp-Rabin [KR87] algorithm are the most significant string-matching techniques that we offer. Included are the experimental findings for one sample of English text and a random text. Additionally, we examine each algorithm's primary theoretical outcomes [13].

## III. METHODOLOGY

### 3.1 Research Approach

This study adopts a mixed-method research approach, combining quantitative and qualitative approach as well as the development methodologies to comprehensively investigate and address the objectives of enhancing the accreditation system at Saint Michael College of Caraga. The quantitative component involves the collection and analysis of numerical data through surveys and structured questionnaires to assess the current document storage and access method. Meanwhile, the qualitative dimension focuses on gathering rich, descriptive insights into stakeholders' experiences and recommendations through in-depth interviews and focus group discussions. Additionally, the planning phase of the investigation, entails identifying the features and functionalities of the prototype web-based databank system tailored to the institution's needs and compliance with the accrediting bodies.

### 3.2 Survey Questionnaire

The survey questionnaire utilized in this study served as a structured tool for collecting data from respondents regarding their perspectives on the current document storage and access method at SMCC. The questionnaire comprises a series of closed-ended and Likert scale questions which is designed to quantify respondents' views on various aspects of the accreditation system. The questions are tailored to assess the challenges faced by stakeholdersregarding the current document storage and access method, their preferences for improvements, their perceptions of the proposed web-based databank system, and desired features for a new system. Additionally, the questionnaire includes open-ended questions to allow respondents to provide detailed insights and suggestions. The instrument is structured to gather comprehensive data that will inform the development of the prototype system and guide recommendations for enhancing the accreditation process. The survey questionnaire adopted the online platform via Google form.

### 3.3 Participants of the Study

In this study, the participants refer to a group of individuals selected based on their role as process owners involved in the accreditation process at Saint Michael College of Caraga. A total of fifteen (50) process owners were identified by the researcher as the target respondents due to their common characteristics and direct involvement in accreditation-related activities. These individuals hold key responsibilities in managing and overseeing various aspects of the accreditation system, making them particularly knowledgeable about the challenges and requirements of the process. By focusing on process owners, the study gathered insights from stakeholders who play a central role in the accreditation process, ensuring that perspectives obtained are relevant and informative for enhancing accreditation practices at the institution.

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### 3.4 Sampling Method

A non-probability sampling approach using convenience sampling was utilizedto select participants from the population of process owners based on their accessibility and availability at the time of data collection. The process owners were directly approached and invited to participate in the study with the aim of capturing insights from individuals who are actively engaged in accreditation-related activities at SMCC. While convenience sampling may not ensure representation of the entire population of process owners, it is chosen for its practicality and efficiency in accessing participants who possess valuable knowledge and experiences relevant to the research objectives.

### 3.5 Data Gathering Procedure

The data gathering procedure for this study begun with the selection of participants from the population of process owners involved in the accreditation process at SMCC. Through convenience sampling, participants were identified based on their accessibility and availability. Once selected, participants were provided with comprehensive information about the study objectives, procedures, and their rights as research subjects, and informed consent was obtained. After the participants completed the structure online survey, they were invited to participate in an in-depth interview or focus group discussions for qualitative insights into their experiences and recommendations regarding the accreditation system. Data collection is conducted either in-person or remotely, ensuring confidentiality and anonymity. Quantitative data is analyzed using descriptive statistics, while qualitative data is analyzed using thematic analysis to identify recurring themes. The integration of quantitative and qualitative findings informs the development of recommendations to enhance the accreditation process and improve document management practices. Finally, participants were given the opportunity to validate the research findings and provide feedback on the proposed recommendations, ensuring that the study's conclusions accurately reflect their perspectives and experiences.

### 3.6 Data Analysis

The data collected underwent a thorough analysis and interpretation process, incorporating both quantitative and qualitative methodologies for a comprehensive understanding of the accreditation system at SMCC. Quantitative data from structured questionnaires were analysed using descriptive statistics, such as frequencies, percentages, weighted means, and standard deviations, to summarize respondents' perspectives on document storage, challenges, and improvement preferences. Table 1.0 presents the guide to determine the interpretation of the weighted mean from the level of agreement of the different users involved in the study.

**Table 1:** The Interpretation of Range of the Weighted Mean

| Range of the Weighted Mean | Interpretation |
|---|---|
| 4.51 – 5.00 | Strongly Agree (for the questions asked) |
| 3.51 – 4.50 | Agree (for the questions asked) |
| 2.51 – 3.50 | Moderately Agree (for the questions asked) |
| 1.51 – 2.50 | Disagree (for the questions asked) |
| 1.50 and below | Strongly Disagree (for the questions asked) |

Meanwhile, qualitative data from in-depth interviews and focus group discussions underwent thematic analysis, identifying recurring themes and patterns within participants' experiences and recommendations. Through integration of quantitative and qualitative findings, a holistic view of the accreditation system emerged, allowing for validation and enrichment of research outcomes.

## IV. RESULTS AND DISCUSSION

This chapter presents the findings of the research and discusses the implications. It further explains the data the collected and what it reveals to address the research objectives. The interpretation of results is contextualized within the study's objectives and providing actionable insights to improve document management practices and enhance the accreditation process at the institution.

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### 4.1 Demographics Profile of the Respondents

| Process Owner's Department | Frequency | Percentage | Rank |
|---|---|---|---|
| College of Computing and Information Sciences | 3 | 20% | 1 |
| Health Services Office | 2 | 13% | 2 |
| Office of the Student Affairs and Services | 2 | 13% | 2 |
| PMO | 2 | 13% | 2 |
| Community Extension Services | 1 | 7% | 3 |
| College of Tourism, Hospitality, & Management | 1 | 7% | 3 |
| Senior High School | 1 | 7% | 3 |
| Research Instruction & Innovation Department | 1 | 7% | 3 |
| College of Arts and Sciences | 1 | 7% | 3 |
| Quality Assurance | 1 | 7% | 3 |
| **TOTAL** | 15 | 100% | |

**Table 2:** The Profile of the Respondents in terms of Process Owner's Department

Table 2 outlines the different process owners across different departments. Majority of the respondents were from the College of Computing and Information Sciences comprising 20% of the total population. Each process owners are committed in maintaining quality standards set by accreditors through diligent oversight, continuous improvement initiatives, and proactive engagement with accreditation processes. Their roles ensure smooth functioning and support the organization's goals effectively.

**Table 3:** The Profile of the Respondents in terms of Process Owner's Position

| Process Owner's Position | Frequency | Percentage | Rank |
|---|---|---|---|
| Dean | 3 | 20% | 1 |
| Heads of Offices | 3 | 20% | 1 |
| Faculty | 2 | 13% | 2 |
| School Nurse | 2 | 13% | 2 |
| Vice President for Academic Affairs | 1 | 7% | 3 |
| PMO Staff | 1 | 7% | 3 |
| Coordinator | 1 | 7% | 3 |
| Principal | 1 | 7% | 3 |
| Computer Technician | 1 | 7% | 3 |
| **TOTAL** | 15 | 100% | |

Table 3 displays the organization's staff roles. It shows three Deans and three Heads of Offices, each at 20% respectively. There are also two Faculty members and two School Nurses, each at 13% accordingly. Other roles like Vice President for Academic Affairs, PMO Staff, Coordinator, Principal, and Computer Technician are listed at 6.66%. In total, 15 process owners were identified.

**Table 4:** The Profile of the Respondents in terms of Gender

| Gender | Frequency | Percentage |
|---|---|---|
| Male | 4 | 27% |
| Female | 11 | 73% |
| **TOTAL** | 15 | 100% |

Table 4 depicts the gender distribution of survey respondents. Out of the 14 participants, 4 were identified as male, representing approximately 27% of the total, while 11 identify as female, constituting approximately 73%. This breakdown offers insight into the gender composition within the surveyed group, with females comprising the majority at 73% and males at 27% of the total respondents.

### 4.2 The Evaluation of the Current Document Storage and Access Method of Saint Michael College of Caraga

Table 5 evaluates the current document storage and access method of SMCC and highlights significant challenges in its document management processes. These challenges include the absence of robust user authentication mechanisms (WM=4.07), which raises concerns about unauthorized access and threats such asdata breaches and data loss that can

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potentially compromising security, and privacy as well as the vulnerability to ransomware or other viruses (WM = 4.07) and lack of individual process owner's authentication (WM = 3.87) that can jeopardize document integrity. Additionally, the current document storage is not properly organizedas evidenced by inefficient filing and categorization practices that hinder prompt document retrieval.The current system's vulnerability underscores the urgency for improvement. Despite these challenges, stakeholders concur on the necessity to enhance document storage and access practices, recognizing the imperative of fortifying security protocols. Addressing disorganization, implementing stringent authentication measures, and fortifying security are crucial steps toward enhancing efficiency and safeguarding sensitive information. Based on the study of Kommey, B. et.al [8], these challenges were also likely observed in the National Accreditation Board (NAB) In Ghana.

**Table 5:** Respondents' Evaluation on the Current Document Storage and Access Method of SMCC

| Statement No | Statements | WM | Description | SD |
|---|---|---|---|---|
| 1 | There are some issues with the current manual system of document storage. | 3.47 | **Moderately Agree** | **3.12** |
| 2 | The files are not properly organized and stored for easy retrieval. | 3.47 | **Moderately Agree** | **3.12** |
| 3 | The current manual system for storing accreditation documents lacks individual accounts for each process owner. | 3.87 | **Agree** | **3.48** |
| 4 | The current system lacks user authentication to identify the actual user, compromising data privacy. | 4.07 | **Agree** | **3.67** |
| 5 | The current system is vulnerable to ransomware or other viruses that could potentially compromise the integrity of the documents. | 4.07 | **Agree** | **3.71** |
| | **Average Weighted Mean** | **3.79** | **Agree** | |

### 4.3 The Respondents' Needs Analysis of the Proposed Web-based Databank System

Table 6 presents the assessment of the proposed web-based databank system produced several key findings regarding the respondents' perspectives. Respondents strongly emphasized the necessity of integrating document storage, management, and access within a single web-based platform, recognizing its pivotal role in improving the accreditation process (WM = 4.60). Moreover, security was also a paramount concern, with respondents strongly advocating for the implementation of two-factor authentication to safeguard accreditation documents (WM= 4.60). This is in accordance with the previous studies that 2FA improves protection of data by having extra layer of security [7][10]. Additionally, there was strong agreement on the importance of efficient storage methods, such as cloud-based solutions or advanced databases, for effectively managing accreditation documents (WM = 4.53). There was consensus among respondents that the new system should boast a user-friendly interface (WM = 4.47) and automate document versioning while effectively tracking revisions (WM = 4.47). These findings underscore the significance of a comprehensive and secure web-based platform in streamlining accreditation processes and enhancing document management efficiency. The evaluation of the system features of the proposed system also agreed to the to the automated system developed by Kommey, B.et. al [8] called AccSOFT software system that has the capability to automatically notify the concerned personal on accreditation-related issues through alerts and emails in a form of PDF file. The files are then forwarded to other offices within the institution.

**Table 6:** Respondents' Needs Analysis on the System Features of the Proposed System

| Statement No | Statements | WM | Description | SD |
|---|---|---|---|---|
| 1 | The integration of document storage, management, and access within a single web-based platform is necessary for improving the accreditation process. | 4.60 | **Strongly Agree** | **4.13** |

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| Statement No | Statements | WM | Description | SD |
|---|---|---|---|---|
| 2 | The efficient storage methods, such as cloud-based solutions or advanced databases, are essential for managing accreditation documents | 4.53 | **Strongly Agree** | **4.07** |
| 3 | The importance of integrating Two-Factor Authentication for securing the accreditation documents to ensure documents from potential threats online. | 4.60 | **Strongly Agree** | **4.13** |
| 4 | The importance for the new system to have a user-friendly interface | 4.47 | **Agree** | **4.00** |
| 5 | The essential for the new system to automate document versioning and track revisions effectively. | 4.47 | **Agree** | **4.00** |
| | **Average Weighted Mean** | **4.53** | **Strongly Agree** | |

### 4.3.2 Needs Analysis of the Specific Features andFunctionalities for the Proposed System

Table 7 presents the respondents' evaluation of the system's features and functionalities. The table provided the respondents' evaluation of various features and functionalities of a system, based on row scores and percentages of positive evaluations. Document Management and Version Control received the highest row score of 14 and a percentage of 93.3% positive evaluations, indicating that respondents found this feature highly useful. User Authentication and Role Management, Security Measures, and Reporting & Analytics all received a row score of 13 and an 86.7% positive evaluation, suggesting they were also deemed quite useful. This feature was also suggested byDmitrienko, A., et. Al [5] and Naidu, D. [10] such as the integration of Two Factor Authentication (2FA) schemes in the automated system for extract protection level. Other features such as Application and Submission Management, Comprehensive Search Functionalities, Offline Access and Sync, and Cross-Platform Compatibility received a row score of 10 or 66.7% positive evaluation, indicating moderate usefulness. Interoperability and Standards Compliance garnered a row score of 7 or 46.7% positive evaluation, suggesting a neutral perception among respondents. Conversely, Data Backup and Recovery received the lowest row score of 1 and a mere 6.7% positive evaluation, indicating it was the least useful feature. Overall, respondents expressed general positivity towards the system's features, with document management and security features being particularly well-received, while Data Backup and Recovery was identified as needing improvement.

**Table 7:** Respondents' Evaluation on Features/ Functionalities of the Proposed System

| Features | Row Score | Percentage | Rank |
|---|---|---|---|
| Document Management and Version Control | 14 | 93.3% | 1 |
| User Authentication and Role Management, | 13 | 86.7% | 2 |
| Security Measures | 13 | 86.7% | 2 |
| Reporting & Analytics | 13 | 86.7% | 2 |
| Application and Submission Management | 10 | 66.7% | 3 |
| Comprehensive Search Functionalities | 10 | 66.7% | 3 |
| Offline Access and Sync | 10 | 66.7% | 3 |
| Cross-Platform Compatibility | 10 | 66.7% | 3 |
| Interoperability and Standards Compliance | 7 | 46.7% | 4 |
| Data Backup and Recovery | 1 | 6.7% | 5 |

### 4.3.3 Primary Documents used in the Accreditation Process

Table 8 provides insights into the relative importance of various documents in the accreditation process, as indicated by scores and percentages. Instruction emerged as the most crucial document, scoring 8 and representing 53.3% of the importance. This underscores the significance of clear guidelines for accreditation success particularly on academics and instructions which is also indicated in the study of Darandari, E., and Cardew [3] and Darandari, E., and Wars, S. The researchers mentioned that the accreditation process should assure the graduates to have the knowledge and skills

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required by the job market. Following closely are Laboratories, Student Services, and Faculty, each scoring 7 and contributing 46.7% importance, indicating their pivotal role. Research holds moderate importance, scoring 5 and representing 33.3%. Conversely, documents like Social Orientation, Community Involvement, Philosophy, Objectives, Physical Plant, Facilities, Organization, and Administration are deemed less important, all scoring 2 and comprising 13.3% of the total importance each. It's essential to note that the weighting system used in this table may be tailored to a specific accreditation body or program.

**Table 8:** Primary Documents to deal with Accreditation Process

| Features | Row Score | Percentage | Rank |
|---|---|---|---|
| Instruction | 8 | 53.3% | 1 |
| Laboratories | 7 | 46.7% | 2 |
| Student Services | 7 | 46.7% | 2 |
| Faculty | 6 | 40% | 3 |
| Research | 5 | 33.3% | 4 |
| Social Orientation and Community Involvement | 3 | 20% | 5 |
| Philosophy and Objectives | 3 | 20% | 5 |
| Physical Plant and Facilities | 2 | 13.3% | 6 |
| Organization and Administration | 2 | 13.3% | 6 |
| Computer Repair & Maintenance | 1 | 6.7% | 7 |

### 4.3.4 Conceptual Framework of the Proposed Web-Based Databank System Using 2FA and String Searching Algorithm

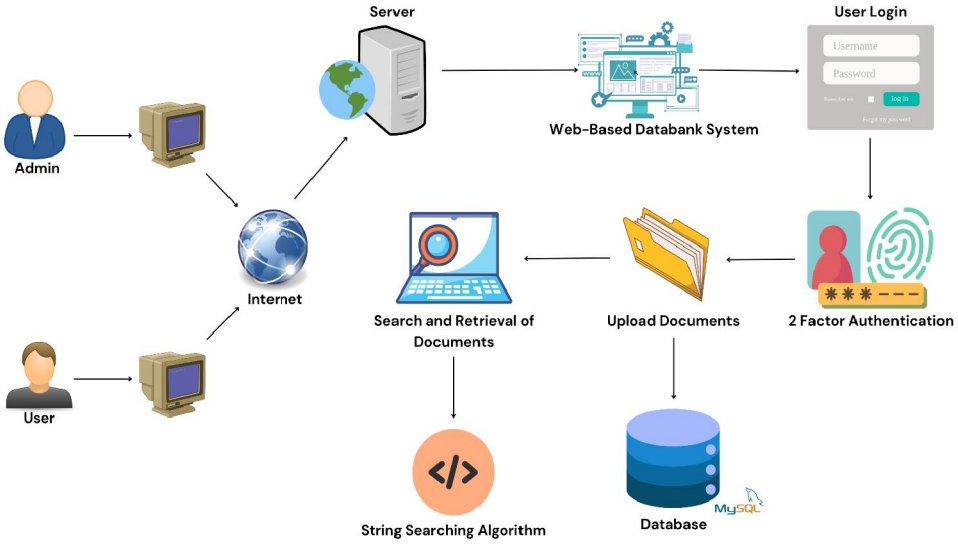


**Figure 1:** System's Conceptual Framework of the Proposed Web-Based Databank System

Figure 1 depicts the conceptual framework of the proposed web-based databank system. It begins with the creation of a user account, provided exclusively by the system administrator to avoid flood accounts and ensure controlled access. Upon logging in, the system employs Two-Factor Authentication (2FA) to verify the user's credibility by sending a verification code to their registered email or phone number. Once authenticated, users with appropriate permissions can upload accreditation documents, accompanied by metadata to facilitate future retrieval. The proposed system will employ a string searching algorithm, enabling efficient document retrieval based on user-inputted keywords or phrases. For e-clearance generation, heads and deans can initiate the process, specifying required documents and prompting users to upload any missing files. Security measures, such as two factor authentication and role-based access control, emphasize the system's commitment to intellectual property rights and data privacy, safeguarding sensitive information

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from unauthorized access. Additionally, audit trails monitor user activities to ensure compliance with organizational policies.

### 4.3.5 Development Architecture of the Proposed Web-Based Databank System Using 2FA and String Searching Algorithm

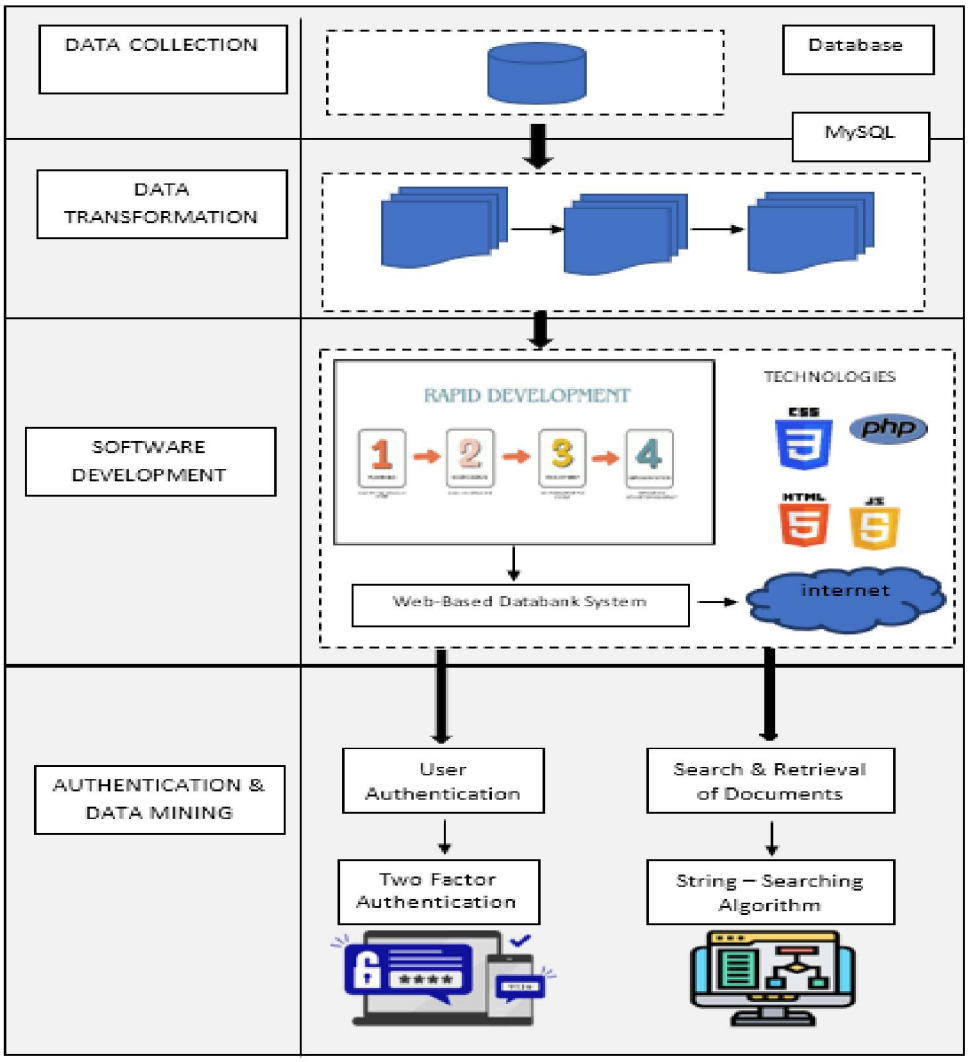


**Figure 2:** System's Development Architecture of the Proposed Web-Based Databank System

Figure 2 illustrates the System Development Architecture for the Web-Based Databank System, showcasing the four key stages: Data Collection, Data Transformation, Software Development, and Authentication & Data Mining. In the Data Collection Stage, various sources contribute data, which undergoes transformation in the subsequent stage to ensure compatibility and cleanliness. The Software Development Stage highlights the creation of the web-based system, emphasizing the use of HTML, CSS, MySQL, PHP, and jQuery to build interfaces, manage databases, and code functionalities. Finally, the Authentication & Data Mining Stage underscores the implementation of robust security measures, including two-factor authentication, and the application of data mining techniques to streamline the search and retrieval of documents within the databank, enhancing the system's usability and efficiency. This figure encapsulates the iterative process of system development, ensuring data integrity, usability, security, and efficiency throughout the system's lifecycle.

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### 4.4 Suggestions and Recommendations for the Enhancement and Improvement of the Accreditation System of Saint Michael College of Caraga

The respondents have collectively proposed several recommendations to enhance and improve the accreditation system of Saint Michael College of Caraga. These include the implementation of individual accounts for each process owner, facilitating easy access and submission of documents while embedding relevant guidelines and policies within the system. Furthermore, they have suggested providing thorough orientation for new process owners, maintaining, and improving the sustainability and integrity of each process, and offering resources and support to help institutions meet accreditation standards, particularly in under-resourced areas. Suggestions also include ensuring a secured and organized system, automating processes and document checking, and leveraging a Web-Based Databank System for enhanced data security. Collectively, these recommendations aim to streamline accreditation processes, enhance efficiency, and strengthen the security and integrity of documentation at Saint Michael College of Caraga.

## V. CONCLUSIONS AND RECOMMENDATIONS

The evaluation of Saint Michael College of Caraga's current document storage and access method revealed both strengths and areas for improvement. While the existing system provides ease of access for authorized personnel, limitations such as restricted search functionality and potential security vulnerabilities were identified. The respondents offer valuable insights into areas for revolutionizing within the accreditation system of SMCC. it is recommended to implement individual accounts for process owners, ensuring easy access and submission of documents using string search algorithm. Additionally, embedding relevant guidelines and policies within the system will provide clarity and guidance to stakeholders. To enhance sustainability and integrity, thorough orientation sessions should be conducted for new process owners, emphasizing the importance of adherence to accreditation standards. Furthermore, the institution should allocate resources and support to under-resourced areas, facilitating their compliance with accreditation requirements. Leveraging a Web-Based Databank System will enhance data security and streamline processes, ensuring efficient document management. Overall, the proposed recommendations present an actionable roadmap for Saint Michael College of Caraga to strengthen its accreditation system, enhance efficiency, and uphold the highest standards of educational quality and institutional performance.

## VI. ACKNOWLEDGEMENT

The researchers wish to express gratitude to friends, colleagues, and all contributors, particularly the management and staff of Saint Michael College of Caraga, for their unwavering support during both successes and challenging times. Their camaraderie has enriched the research journey. Every contribution, regardless of size, has not gone unnoticed, and the researchers acknowledge the profound impact on their personal and professional development. Lastly, the researchers acknowledge fate's role in shaping their experiences, opportunities, and personal growth.

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