Capstone Archiving Management System with Citation and Reference Generator

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Abstract

The advent of rapid communication technology has brought about transformative changes in human life, particularly in the way information and documentation are managed. With the proliferation of the internet, online documentation has become a prevalent trend, revolutionizing how students access educational materials. This shift towards digital resources has significantly impacted modern education and training, making content readily available across various devices and locations. Additionally, in today's modern offices, electronic documents are progressively replacing their paper counterparts, enabling efficient retrieval and management of information, thereby enhancing worker productivity.

This paper focuses on the development and implementation of the " Capstone Archiving Management System with Citation and Reference Generator," designed to address the challenges faced by School Library and Capstone Coordinators. Currently, CHMSU-FT relies on outdated methods for archiving and recording capstone projects, involving the cumbersome process of printing hardbound copies, which not only consumes substantial paper but also occupies valuable physical space within the institution.

The significance of this system lies in its potential to enhance the efficiency of capstone project archiving and retrieval, benefiting students and professors by providing quick and easy access to relevant materials. Furthermore, capstone coordinators and librarians will experience a significant reduction in administrative workloads, ultimately contributing to an improved educational experience. Additionally, this system may serve as a valuable reference for future researchers aiming to build upon or refine this innovative archiving solution.

Keywords: *Capstone Projects, Citation and Reference Generator, Archiving System*

I. INTRODUCTION

The rapid evolution of communication technologies has brought about a profound transformation in human life, impacting various aspects of our daily routines. Notably, it has led to significant changes in people's lifestyles. With the pervasive rise of the internet, a noteworthy trend has emerged: the shift towards online documentation. This trend is particularly evident in the realm of education, where students can now access books and documents online, obviating the need for physical visits to libraries. The internet has become indispensable for educational platforms, facilitating the digitization of learning materials. This digitization, often facilitated by web applications, streamlines educational processes, enhancing accessibility and efficiency. As noted, technology plays a pivotal role in modern education and training, offering the invaluable advantage of content availability across a spectrum of devices and locations [1].

In the corporate world, a similar transformation is unfolding. Traditional paper-based documents are progressively giving way to their electronic counterparts in modern offices. This transition serves the critical purpose of ensuring that any stored document can be swiftly retrieved whenever needed. Given the prevalent issue of information overload burdening office workers, efficient and effective retrieval mechanisms have become indispensable in enhancing overall productivity [2]. As articulated, the management of documents using information technology stands as one of the most paramount challenges of this era. This challenge is underscored by the fact that a substantial proportion of invaluable organizational information exists in document form, including business forms, reports, letters, memos, policy statements, contracts, and agreements. Furthermore, many vital business processes within organizations hinge upon the seamless flow of documents [3, 4].

This research focuses on addressing a pertinent issue faced by educational institutions—the outdated practices of recording and archiving capstone projects in hardbound paper formats. Currently, these institutions grapple with the arduous task of printing and storing physical copies of capstone documents, leading to significant paper consumption and the inefficient use of physical space within school premises [5].

In response to these challenges, we introduce the "Capstone Archiving Management System with Citation and Reference Generator." This system is designed to serve students, faculty, and library personnel by providing an organized and easily accessible platform for capstone documents. Notably, it incorporates a citation and reference generator, simplifying the referencing process. The primary aim is to digitize and modernize archiving and recording practices, reducing reliance on paper-based methods. This system aims to enhance efficiency and sustainability while simultaneously offering an invaluable tool to capstone coordinators and librarians, streamlining their workload.

In conclusion, the Capstone Archiving Management System with Citation and Reference Generator represents a crucial step in aligning educational institutions with the digital age, offering a sustainable and efficient solution for capstone project management. It addresses the challenges posed by outdated archiving methods while contributing to a more streamlined and accessible educational ecosystem.

Conceptual Framework

The conceptual framework of this system is visibly presented and illustrates the flow of operations, aiding users and readers in comprehending its functionality. The objective of this study is to enhance the current manual method of presenting capstone project information within the Institution or Organization Library.
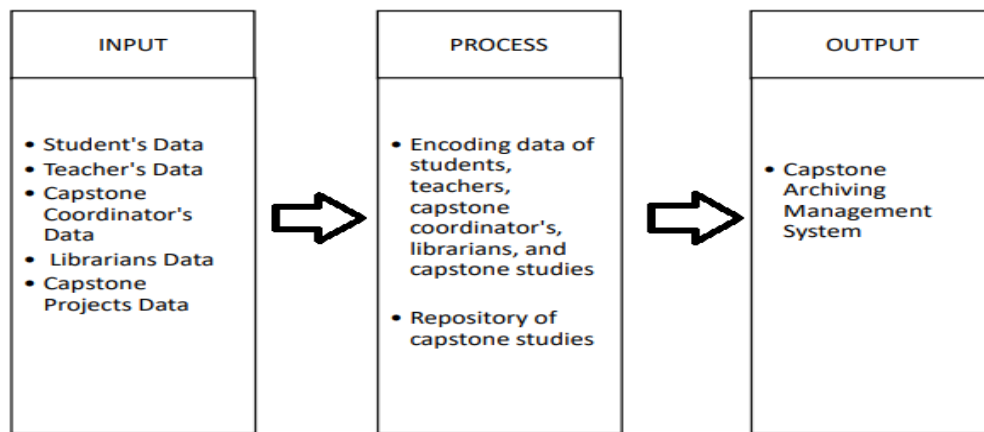

Figure 1: Conceptual Framework of the Study

II. METHODOLOGY

2.1 Research Design

This research is categorized as descriptive-developmental, as its primary objective is to assess and evaluate the extent, efficiency, effectiveness, and satisfaction levels of end-users participating in the pilot testing of the Capstone Archiving Management System with Citation and Reference Generator.

Descriptive research, in contrast to exploratory research, is inherently conclusive in nature. It entails the collection of quantifiable data, which can be subjected to statistical analysis to draw meaningful inferences about the target audience.

Evaluation research serves the purpose of providing valuable information to decision-makers, particularly policymakers, regarding the potency and effectiveness of a program. This assessment encompasses factors such as effectiveness, cost-efficiency, and overall performance.

2.2 Software Development Life Cycle

The Software Development Life Cycle or SDLC is a process used by the software industry to design, develop, and test high-quality software. This discusses the research strategy, procedures, and system phases that were used during development. The approach used by the researchers in developing the system is the prototype method. The idea behind the prototyping model is that instead of freezing the requirements before a design or coding can proceed, a throwaway prototype is built to understand the requirements. This prototype was developed based on the currently known requirements for the system. By using prototypes, the researchers can

get an "actual feel" of the system since the interactions with prototypes can enable them to better understand the requirements of the desired system. Prototyping is an enchanting idea for complex and large systems for which there's no automatic process or existing system to help determine the requisites.
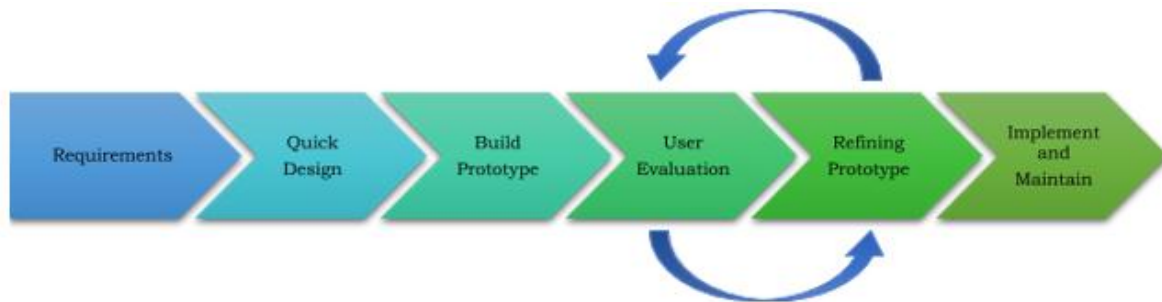

Figure 2: Prototyping Model

Figure 2.0 uses the Prototyping Model that the researchers process starts with a basic prototype of an existing set of pages of the software requirements and simulates the data to enhance the evolving versions until the integrated complete system is implemented and ready to be deployed.

Requirement Phase

        The researchers chose the project and determine their skills and responsibilities in the system. The researchers plan about the target of the proposed system that can give satisfaction to the benefactors of the system. The researchers conduct meetings to discuss the system requirements, distribute the works of each individual, and do research. Scheduling activities until the project has been finished. The researchers determine who will be using the system, its functionality to the user and we do teamwork for all the works.

Quick Design Phase

        The researchers will start collecting data and all information needed for the system. The researchers conduct an interview with the library administrator and analyze the process of the current system and the requirements used to make the project possible. Depending on the complexity of the system, the process for gathering requirements has a clearly defined process of its own. This process comprises a gathered repeatable process that utilizes certain methods to capture, record, communicate, and oversee prerequisites.

Build Prototype Phase

        The researchers wanted to develop a system design that would be used. The researchers wanted to design a user-friendly system for every user of this system. During this phase, it will establish best practices and methods to follow for this phase by way of functional and design specifications, and it will perform a risk analysis to identify threats and vulnerabilities in your software.

User Evaluation Phase

        In this phase, the researchers developed a code based on the requirements, tested the input and output functionality of the system to make sure that the system is working and the quality of the system.

Refining Prototype Phase

        After the tests have been done to ensure the quality of the system, the researchers conduct a survey to the user of the system to test and to check the errors in the system. The purpose of this error will be arranged to software and to give it to the administrator when the system is correctly implemented.

Implementation Phase

        The system is ready to be utilized and to be presented to the user by the features and details of documentation. After the refining prototype phase where the system is proven that is effective and efficient.

Maintenance Phase

        In this phase, the last portion of SDLC, this stage is the time that the system will be upgraded or updated by the company's needs.
The system needed maintenance in sequence to keep the system functionalities.

2.3 Process Model

Process modeling involves the visual representation of activities that capture, modify, store, and transfer data within a system and its surroundings, as well as among various system components. In this study, the researcher utilized Data Flow Diagrams (DFD) and Architectural Diagrams to illustrate the logical design. The Architectural Diagram will display the network design for the user and end up for citation generation. It shows that the system needs the students and faculty to access through the server to be able to get information for the efficiency to deliver the needs of information they are going to cite. The DFD shows the activity flow and processes of the whole system. It shows how it works and shows the process between the system and the students.
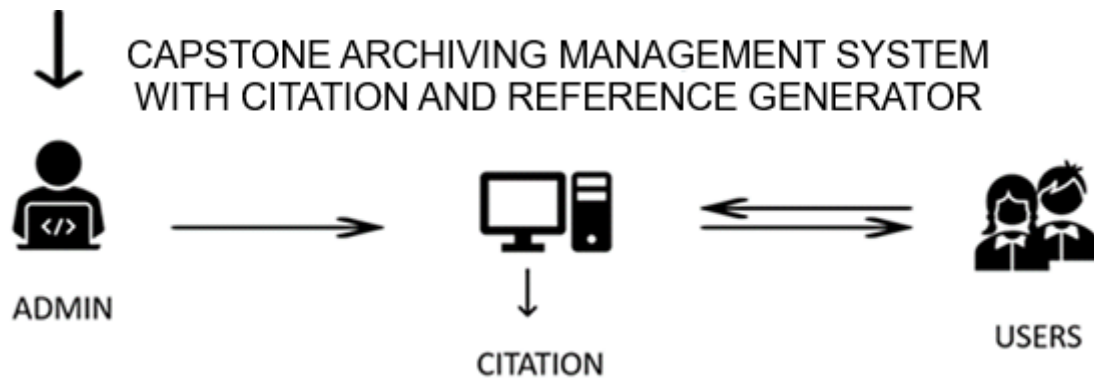

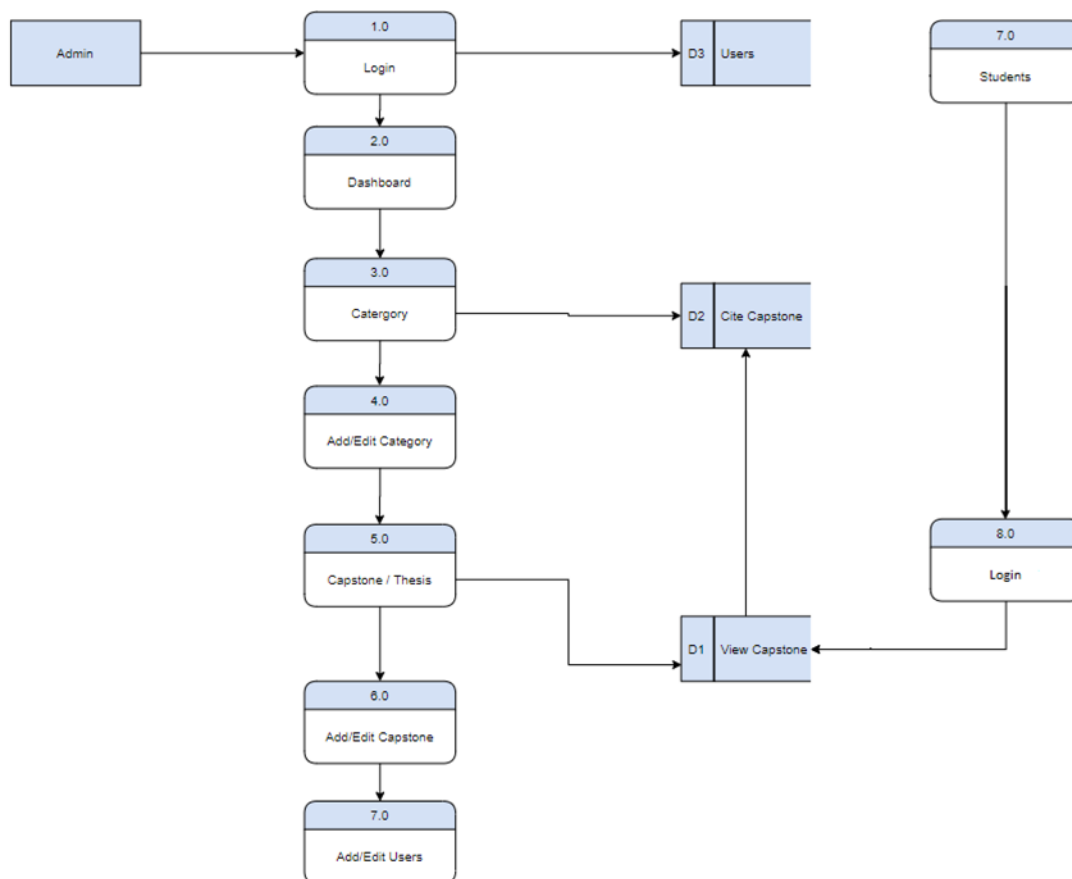**Figure 3.1: Context Architectural Diagram of the Developed System**

Figure 3.2: Data Flow Diagram of the Developed System

2.4 Testing Evaluation

The development system, Capstone Archiving Management System with Citation and Reference Generator, will undergo user acceptance testing by the users of the system, which include the students, capstone coordinator, and client. This system will target the students in that they can electronically access and search for capstone studies easily. The respondents to the system were twenty (20) people who were randomly selected from the library personnel, students, and faculty of CHMSU-FT specifically in the program of information technology who are familiar with the capstone subject.

III. PRESENTATION OF DATA AND INTERPRETATION OF RESULTS

This Chapter will exhibit the result of the data analysis and result interpretation conducted for the system Capstone Archiving Management System with Citation and Reference Generator which will be implemented at the CHMSU-FT Library Personnel, Faculty, and Students.

3.1 Level of Usefulness of the Capstone Archiving Management System with Citation and Reference Generator

From gathered results on Figure 4 in line with the usefulness Capstone Archiving Management System with Citation and Reference Generator, it yielded to a Mean Score of 4.71 which can be interpreted as Strongly Agree. The results proved that the system is useful and helping the user to be more effective, more productive, and meets their needs. It has also met their expectations as to the usefulness of the system.

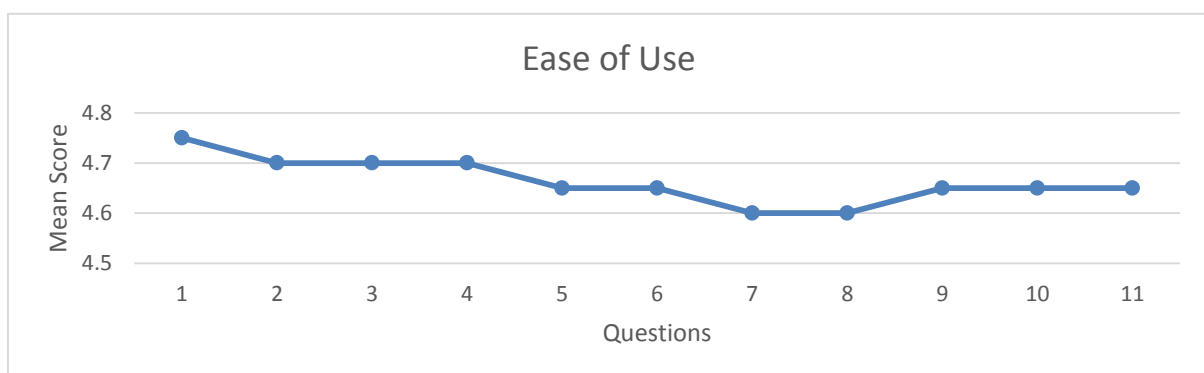**Figure 4: The Level of Usefulness of the developed system**
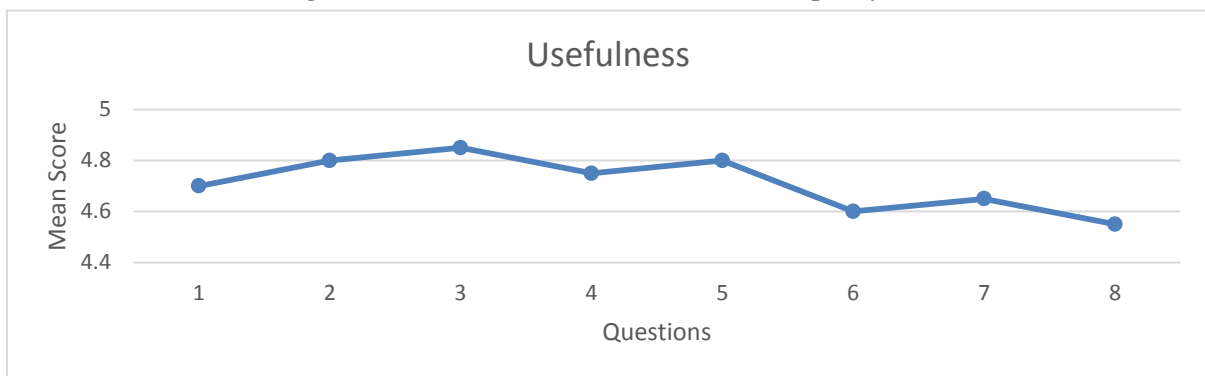
Legend: 4.21– 5.00 (Strongly Agree); 3.41 – 4.2 (Agree); 2.61 – 3.4 (Neutral); 1.11 – 2.6 (Disagree); 1.00 – 1.8 (Strongly Disagree)

3.2 Level of Ease of Use of the Capstone Archiving Management System with Citation and Reference Generator

With regards to the Ease of Use the researchers also led to a Mean Score of 4.66 as seen in Figure 5 which can be interpreted as Strongly Agree. It shows that it is easy, simple, and flexible to use. It is also considered as user-friendly and would be liked by anyone who will use it.

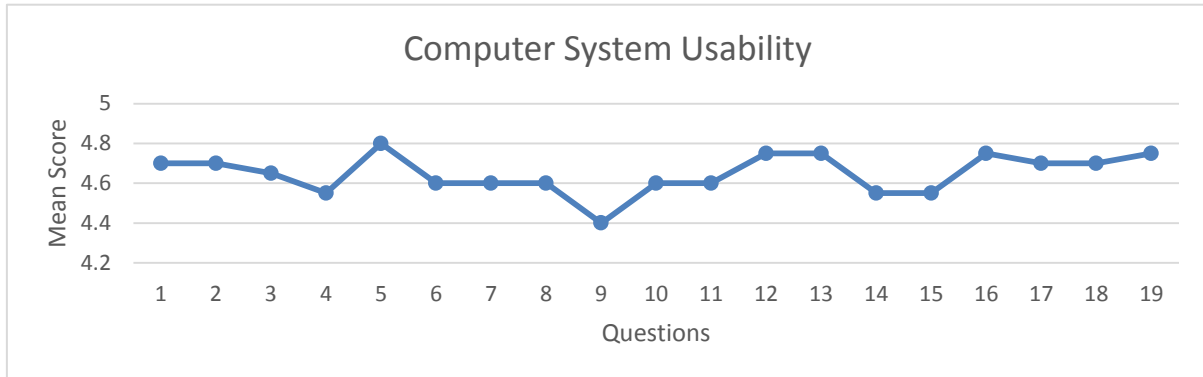**Figure 5: The Level of Ease of Use of the developed system**

Legend: 4.21– 5.00 (Strongly Agree); 3.41 – 4.2 (Agree); 2.61 – 3.4 (Neutral); 1.11 – 2.6 (Disagree); 1.00 – 1.8 (Strongly Disagree)

3.3 Level of Computer System Usability of the Capstone Archiving Management System with Citation and Reference Generator

In totality, the Computer System Usability yielded to a Mean Score of 4.66 on Figure 6 which interprets as Strongly Agree. It shows that the respondents can effectively and efficiently complete their work using this system, and that they are comfortable in using this system. They can also be productive in their work with the help of this system. Overall, the respondents were very much satisfied in this system.

Figure 6: The Level of Computer System Usability of the developed system

Legend: 4.21– 5.00 (Strongly Agree); 3.41 – 4.2 (Agree); 2.61 – 3.4 (Neutral); 1.11 – 2.6 (Disagree); 1.00 – 1.8 (Strongly Disagree)

IV. CONCLUSION

Based on the findings, data and feedback that was being gathered in all chapters, the researchers therefore conclude that the system is operational. By that, the users strongly agree that the implementation of system is useful to the school library because it can easily search and cite the capstone studies and the usability on the user which implies that the user finds it effortless to accomplish basic searching and quickly citing of capstone that they need.

V. REFERENCES

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