

ISAT U Miagao Campus Students Thesis Archiving and Profiling System

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Abstract: The Iloilo Science and Technology University Miagao Campus has developed a student thesis-achieving system for storing and compiling completed student research, benefiting both the research and development office and the University Library. However, the system is not online and lacks a user-friendly interface. This study aims to generate an online student thesis archiving and profiling system that displays research titles and abstracts arranged by year, course, author, and adviser, with the ability to file and retrieve data from the system's database.

The development of the system employed the prototyping model in software development life cycles, with strict adherence to the ISO 25010 criteria for software evaluation. The study selected five research coordinators from each course program and ten IT experts at random to evaluate the system. As per the evaluation findings, the system has demonstrated remarkable effectiveness in attaining the software quality attributes established by ISO 25010 standards. The system has been able to meet the standards for functional suitability, performance efficiency, compatibility, usability, reliability, security, maintainability, and portability, achieving an overall mean score of 4.81. In conclusion, this study successfully achieved its objectives of developing an online student thesis archiving and profiling system that meets ISO 25010 standards. This system improves the accessibility and usability of the student thesis-achieving system, benefiting both the research and development office and the University Library.

Keywords: Online Archiving, Record Management, ISO 25010.

1. INTRODUCTION

The Research and Development Office of Iloilo Science and Technology University Miagao Campus gathered and compiled all the completed students' research keeping the record for future references and related studies.

However, due to manual storing and filing, research office staff are burdened when retrieving hard-bound copies.

In the study of iPad: Integrated Paperless Document Checking and Template-based Editor for Electronic Thesis Compilation (2009) by Sicut, Ma. Gracia Corazon E., et al, the main goal of an Electronic Thesis and Dissertation (ETD) is to have a centralized repository or a digital library for graduate theses and dissertations, whereas the Checking and Template-based Editor for Electronic Thesis Compilation or iPad aims to be a portal between the author and the adviser. Through this, the involved parties can carry out a paperless thesis checking, revising, and transacting. The framework differs from the traditional way because the manuscript is written, checked, revised, and stored in the system itself. Though iPad is also an online repository like ETD, it has a template-based editor and an environment for checking which the usual ETD lacks thereof.

In other studies by The Digital Archives Supporting Document Content Inference May 2019, Evgeny Cherkashin, et al. the process of authoring documents is time-consuming creative work. With the use of technologies of Linked Open Data, document templates, and logical inference for deducing parts of documents from data of the catalogs, this paper presents an approach to creating an open software toolset and services, set on the base of other open source systems. The software possesses the capability to create information system components across diverse applications. The source data is stored and consolidated in documents and databases, which are retrieved from other data processing, recognition, and structuring

services. The document inference engines are designed to facilitate the generation of essential data and support the testing process. Additionally, they possess the capability to load both source and derived data from external services.

This study allows programmers to construct digital archives while supporting document data interference from existing documents through the development of technologies, software tools, and services.

According to the study of Saulius Ragaisis, an Electronic Archive Information System used in Public records generated by government agencies remain diverse in terms of paper documents and providing electronic services. The objective of the Electronic Archive Information System (EAIS) project is to establish a comprehensive and accessible information system that can receive and archive electronic documents. It earns access to stored documents using IT and communication means, administering NDF efficiently and providing electronic services. Documents management systems are integrated with the functionality of signed electronic documents.

The current solutions to the identified problem or the prior art are used as the references of this study and the researcher found the gap or the problem in the previous studies. The proposed study will use an online system with a database that will store and compile all the students' research.

The Archiving system is the process of maintaining and storing of student's thesis in an organized way. This helps the office to easily retrieved and view students' abstract papers. This study is beneficial to the Research and Development Office specifically for updating students' research. The office staff will encode the title of the thesis, the abstracts, authors, advisers, and the date completed. The system will then generate this information which can be searched online by entering the keywords such as course, year, name of the authors, and advisers. These outputs are to be expected in this study to enable the research office to organize students' research and ensure efficiency in eliminating unnecessary duplication.

Objectives of the study

This study aimed to develop ISAT U Miagao Campus Students Thesis Archiving and profiling system Specifically, it aimed to:

- Create an Online student thesis archiving system and profiling.
- View the list of thesis titles and abstracts.
- Sort the list of the thesis title, authors, and adviser.
- View student thesis by title, author, course, adviser, and year.
- Evaluate the systems' effectiveness based on ISO 25010 criteria

Conceptual Framework

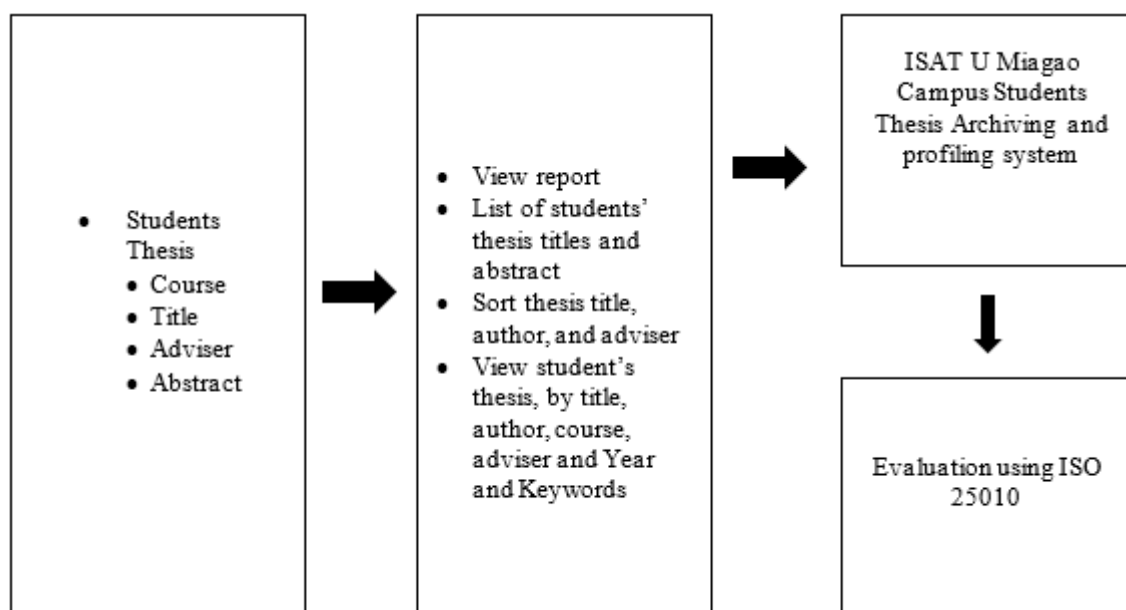


Figure 1

The conceptual framework proposes the development of a system for archiving and profiling students' theses at the ISAT U Miagao Campus. The system has three main components: input, process, and output.

The input component includes information about the students' theses, such as the thesis title, course, adviser, abstract, and author. This information is entered into the system by the office staff.

The process component involves a series of steps that the system performs to organize and present the students' theses in a useful way. The system can generate a report that lists all of the students' thesis titles and abstracts, sort the thesis title, author, and adviser, and enable users to view the student's thesis by title, author, course, adviser, year, and keywords.

Finally, the output component is the actual system itself, which serves as a centralized repository of all students' theses at ISAT U Miagao Campus. Users can access this system to search for and view theses, as well as to get information about the courses, advisers, and years in which they were completed. The system will be evaluated using ISO 25010 for software quality.

Overall, the conceptual framework proposes a system that could be very beneficial for students, faculty, and researchers at the ISAT U Miagao Campus, as it would make it easier to access and utilize the valuable research produced by students.

2. METHODOLOGY

The study employed the Prototyping Model, a software development approach that facilitates the creation of a preliminary version of a final system or software. This model enables iterative testing, refinement, and adjustment of the prototype until a satisfactory solution is achieved. The strength of this model lies in its ability to adapt to changes in project requirements, as changes can be frequently made throughout the development process. Martin (2021) highlights that the Prototyping Model is an iterative and collaborative process involving both the developer and the client in a continuous trial-and-error cycle.

Prototyping Model Phases

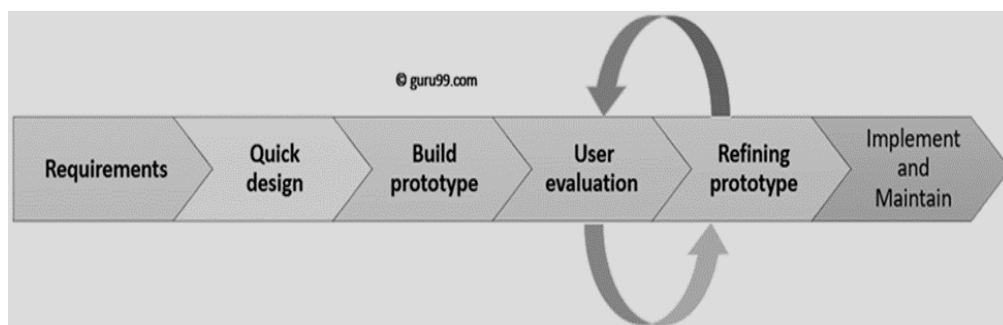


Figure 2. Prototyping Model, Martin (2021) shows the six SDLC phases of the Prototyping Model which are as follows:

In Martin's (2021) depiction of the Prototyping Model, presented in Figure 2, the six phases of the Software Development Life Cycle (SDLC) that are involved in the Prototyping Model are showcased. These phases are as follows:

Step 1: Analysis of Requirements

To commence the development of a prototyping model, the initial stage involves conducting a thorough analysis of the requirements. This phase is focused on defining the necessary requirements of the system, and it typically involves conducting interviews with users to identify their expectations.

In the context of the present study, the researcher interviewed members of the Committee on Discipline's Office to gain insights into their process for managing and monitoring student violations categorized by course and gender.

Step 2: Quick Design

In this phase, the researcher crafted an activity diagram and a flow chart of the system. Nonetheless, it is important to note that these visual representations only offer a comprehensive view of the system, without delving into specific details.

Step 3: Generating a Prototype

In this phase, the programmer generated a prototype based on the data gathered and constructed an operating system that aligned with the requirements of the office. This involved software development, design, and testing of the implemented algorithm. Meanwhile, the researcher scrutinized the process and flow of record archiving management within this phase.

Step 4: User Evaluation

At this stage, the proposed system underwent an initial assessment by the client. This step was crucial in identifying the strengths and weaknesses of the working model. Valuable feedback and suggestions were collected from the customer and relayed to the developer for further refinement.

Moreover, the ISO 25010 software evaluation criteria were employed to evaluate the system during this phase. To achieve this, a Likert Scale Rating was administered to ten (10) IT Experts and five (5) End Users from the Office of the Committee on Discipline, who provided their professional assessment of the system's performance.

Step 5: Refining Prototype

Subsequent to its development using the final prototype, the final system underwent extensive testing before its deployment to the Office of Committee on Discipline. During this phase, routine maintenance of the database server was conducted, ensuring its optimal functionality. To prevent errors and bugs, the system was subject to monthly inspections.

Step 6: Implementation and Maintenance

After being developed based on the final prototype, the final system was thoroughly tested and deployed to the Office of Research and Development.

The online database server's routine maintenance was completed during this phase. The system was checked on a monthly basis to avoid errors and bugs.

3. RESULT AND DISCUSSION

In adapting the ISO 25010 criteria for a software evaluation, Ten IT Experts and Five research coordinators of every course program were identified to evaluate the system using the Likert Scale Rating.

Likert Scale Rating

Scale	Description
4.50 – 5.00	Very Effective
3.50 – 4.49	Effective
2.50 – 3.49	Moderately Effective
1.50 – 2.49	In effective
1.0 – 1.49	Very Ineffective

IT Expert

Variables	N	Sd	Mean	Description
Functional Suitability	10	0	5	very effective
Performance Efficiency	10	0	5	very effective
Compatibility	10	0.24	4.85	very effective
Usability	10	0.16	4.9	very effective
Reliability	10	0.13	4.88	very effective
Security	10	0.48	4.7	very effective
Maintainability	10	0.1	4.97	very effective
Portability	10	0.28	4.87	very effective
Over All Result	10	0.12	4.9	very effective

Research Coordinator per program

Variables	N	Sd	Mean	Description
Functional Suitability	5	0.45	4.8	very effective
Performance Efficiency	5	0.45	4.8	very effective
Compatibility	5	0.22	4.9	very effective
Usability	5	0.22	4.9	very effective
Reliability	5	0.45	4.8	very effective
Security	5	0.45	4.8	very effective
Maintainability	5	0.37	4.83	very effective
Portability	5	0.47	4.67	very effective
Over All Result	5	0.35	4.81	very effective

4. CONCLUSION

Based on the results presented, the following conclusions were drafted:

This study has successfully developed a student thesis archiving system that satisfies the specified requirements and objectives. The system effectively sorts the list of thesis titles, authors, and advisers and allows users to view student theses by various categories, including title, author, course, adviser, and year. The overall effectiveness of the system was evaluated through a survey of potential end-users and Information and Communication Technology experts. The results indicate that the system performs very well in all the qualities assessed, demonstrating its suitability for the intended purpose. Overall, the findings of this study suggest that the developed system can serve as an efficient tool for managing student theses, thereby improving the research capabilities and academic performance of students. Further improvements to the system could be made based on end-user feedback to enhance its functionality and usability.

5. RECOMMENDATIONS

Based on the preceding findings and conclusions, the following series of actions are recommended:

- The system must be presented in the Library and Research Office for the students' reference.
- For the intended benefits to materialize, the ISAT U Office of Research and Development must carry out the complete implementation of the system.
- The future researcher may consider conducting a similar study and also expanding the scope of the system.

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