DESIGN AND IMPLEMENTATION OF STUDENT PROJECT MANAGEMENT SYSTEM FOR NILE UNIVERSIY FACULTY OF COMPUTING

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**ABSTRACT**

*The abstract is a brief summary of the entire project report, typically ranging from 150 to 200 words. summarizes the entire project, not just mentioning the study’s purpose. Therefore, the abstract should outline the project’s major headings: the problem statement, system design and implementation, your result and its significance. A good abstract accurately reflects the content of the proposal, while at the same time being coherent, readable, and concise. Do not add any information in the abstract that is not previously discussed throughout the project. Notice this paragraph is not indented; the abstract will be the only paragraph in the entire project that is not indented. Because it highlights the entire project, it would be wise to wait and write the abstract last. This way, one merely has to reword information that was previously written.*

**TABLE OF CONTENTS**

**LIST OF TABLES**

**LIST OF FIGURES**

**CHAPTER ONE**

**INTRODUCTION**

This chapter provides an overview of the project, highlighting the background of the study, problem statement, aim and objectives, scope and limitations, and significance of the study. This chapter sets the context of the research work and establishes the need for developing a project management system for Department of Computing of Nile University.

1. **Background of the Study**

Technology has made incredible progress in the past years, particularly in the field of Education[1]. As a result of technological advancements, our world has transformed dramatically in terms of living, working, and learning. Technology has revolutionized traditional teaching and learning methods in the education sector. One such technological advancement of the twenty-first century is the internet. The internet provides access to a wide range of online resources useful for independent learning and research[1].

Student projects are documents students create after thoroughly researching a particular topic. Projects excellently demonstrate students' creativity and knowledge gained. Project writing is a major requirement for final year students, evaluating their skills and experience over their university. Therefore, students must write and complete a final year project to graduate. The project spans two semesters - first semester for writing and defending the chosen topic, and second semester for system development based on the selected topic. Students undertake research projects as part of their final year assessments to demonstrate their ability to conceptualize, organize, and solve problems. Graduating students should master research skills and approaches for solving societal issues. A research study can be described as the process of discovering new knowledge[2]. New knowledge can be generated, or existing knowledge creatively applied to develop new concepts, methodologies, and understandings[2]. A.V. Afanasev et al. define research as the careful and detailed study of a specific problem, concern, or issue [2].

Project management involves applying knowledge, skills, and tools to project activities to meet specific project goals. Key components are project initiation, planning, execution, monitoring, control, and closing. Before committing to a project, a feasibility study should be undertaken to establish well-defined goals and expected benefits. Tools for project management include Gantt charts, project network diagrams, and critical path analysis.

The Student Project Management System is software specifically designed to simplify and enhance project management for both students and supervisors.

* 1. **Statement of the Problem**

The idea for the Student Project Management System arose from experiences in the school library. Going through multiple projects to find the specific one was a tedious task. An online system archiving and enabling search across all projects would make the process more efficient. Furthermore, supervisors could use such a system to remotely monitor and manage students, rather than students having to locate supervisors around campus.

* 1. **Significance of the Study**

The implementation of this project will greatly assist faculty in managing student project. It will provide a platform where students can readily obtain supervisor feedback, without having to physically their supervisors. Students will also have access to prior works and projects posted on the platform, enabling them to learn from and build on previous efforts, Overall, the system will boost faculty coordination and oversight of student research and project work.

* 1. **Aim and Objectives**

The aim and objectives of this project is to create a web application for the Faculty of Computing that allows project supervisors to effectively monitor the progress of students while also giving students access, to a project repository.

Objectives:

1. To create a web application for Nile University of Nigeria's Faculty of Computing.
2. To help with easy supervision of students by supervisors.
3. To test and evaluate the system.
   1. **Scope and Limitation of the Study**

The scope of this project is to develop a web application that can be used by both students and lecturers at Nile University of Nigeria's Faculty of Computing. In addition to browsing past student projects and download them, the lecturer will be able to monitor students' projects using the proposed system.

Limitations: The system will rely on internet connection. It will be limited to Nile University of Nigeria the Faculty of Computing and the system will only contain the documents of the projects code will not be included.

* 1. **Organization of the Study**

The project is organized as follows:

1. Chapter One Introduction: Explain the significance of student project management system and the reasons why a university would implement one. Talk about the study’s goals and the project’s goals and scope.
2. Chapter Two Literature Review: Conduct a thorough review of the academic and research literature on student project management system, including their, design, implementation, and security measures. Draw insightful conclusions about the strengths and areas of that need improvement and summarize the major findings.
3. Chapter Three System Analysis and Design: Create a comprehensive design for the online voting system, including the database design, user interface, and architecture. During the design phase, keep important factors like scalability, security, and user-friendliness in mind.
   1. **Definition of Operational Terms**
4. Student: A person that is currently studying at a university or any place of higher education.
5. Project: A research in which a student analyses information to be used for educational purposes.
6. Project Management: It is the applying of processes, methods, and skills to achieve specific project objectives.
7. Supervisor: It is someone that oversees a project of its inception to completion.
8. Web application: It is an application software that is accessed through a web browser.
9. Repository: It is a data structure that stores metadata for a set of files.
10. Research: It is the organizing and analysis of data to increase understanding of a topic

**CHAPTER TWO**

LITERATURE REVIEW

This chapter provides a review of existing literature related to the management of student projects. The review encompasses research on the challenges faced in capstone projects, prior work on digital systems for managing such projects, key features and functionalities that have been implemented, development methodologies utilized, and overall outcomes or assessments.

1. **General Information**

Student Project Management Systems come in different forms. There are systems that archive students' final year projects for other students to view. Another allows supervisors and students to communicate and make correction to their project [3]. The proposed platform will allow students to upload, edit, delete, view, and manage their projects and the project supervisors can view students project and make correction to it.

* 1. **Related Works**

According to A.V. Afanasev and Natalia Gorlushkina (2023)[1], they propose a system that allows for management of student’s project in the information technology (IT) sphere allowing coordination, monitoring, and evaluation of student contributions. The system allows for the coordination of actions between students of different courses and groups fostering a collaborative learning environment. It tracks the progress of work and evaluate the progress of work and evaluate each contribution of the student.

Yahya L (2023)[2] describes the development of a web-based system that automate the management of final year projects. The goal was to automate the management and allocation of final year student projects in the Department of Mathematics at Gombe State University in Nigeria. The system allows students to submit project topics. The coordinator then verifies topics against past projects to prevent duplication before allocating topics. Supervisors can also view allocated topics and students. The system was developed using PHP, MySQL, JavaScript, HTML and CSS. Waterfall model was the methodology used for developing the system.

In 2017, Soyemi J and Isinkaye F [3] developed a web-based system to detect duplication in final year student projects. It was developed for the department of Computer Science at The Federal Polytechnic in Ilaro, Nigeria. The aim was to reduce instances where students copy projects from previous years without doing original work. The system allows supervisors to upload and access previous student projects to check for duplication. The system was developed using HTML, JavaScript, CSS, PHP, and MySQL.

According to Nwangwu E and Asuquo G (2022)[4]. They developed a computerized project management system to improve student research and final year projects at public universities in Awka Ibom State, Nigeria. The goal was to transform the manual approach to managing student project which has various drawbacks. The study used a research and development design with four phases: needs assessment, system development, validation, and trial testing. The system was developed using Agile software development model.

In 2018, Malik S et al[5] developed a web-based system called “GPOrganize” to help manage and archive final year projects (FYP) for students in the Faculty of Computing and Information Technology, Rabigh at King Abdulaziz University. The GPOrganize system was aimed to facilitate supervisor communication, provide access to previous projects, give guidance/templates to students, and manage schedule. Open-source technology like XAMPP was used to create a prototype system. Interfaces were created for functions like creating student groups, assigning projects, uploading reports, communication tools etc.

In 2021, V. Vijayakumar[6] developed a software called “ProTrack”. It combines project management and student management systems, providing an industrial workspace for students to work on innovative projects and allowing teachers to support and supervise their teams.

Imed Romdhani et al proposed an integrated online supervision system for final year and dissertation projects in 2011[7]. It was achieved by conducting surveys on undergraduate students and academic staff at Edinburgh Napier University to collect feedback on current supervision practices and ideas/requirements for proposed online system. The survey feedback was used to identify key features to implement in an initial prototype of the online Student Project Performance Management System.

Chikwendu et al in 2021[8] proposed web-based student project management system for final year students at Akanu Ibiam Federal Polyechnic Unwana. The aim was to provide a system to mitigate challenges like poor quality project, duplication, prolonged research writing, and late submissions that exist with current manual processes. The system automates activities like project topic listing/selection, approvals, writing guidelines, students/supervisors communication, assessments, and report submission/management. It uses technologies like Java, Apache Tomcat, and MySQL to eliminate duplication by automatically rejecting already done projects, and ensure timely, quality project completion.

Bhatt, Rahul et al proposed a system in 2008[9]. The system was a Student Project System software to help students manage their college projects. The system has separate student and mentor modules for students to create/edit projects and mentors to access assigned projects. Key features of the system are user login, project creation/editing/deletion, assigning tasks to group members. The system was developed using HTML, CSS, MySQL, and Ruby on Rails.

* 1. **Summary of the Review**

Table 2.1 below gives a summary of some of the literatures reviewed related to design and implementation of a Student Project Management System.

Table 2.1: Summary of the Review

|  |  |  |  |
| --- | --- | --- | --- |
| Title of Paper/Year | Methodology | Summary of Result | Limitation |
| Web-based Archive Management and Student Guidance for Final Year Project [5]  / 2018 | The method used to make this system was prototyping. The software tool used was an open-source technology called XAMPP. | This project was able to create an interface that allows students to be added to the group. It also allows for project supervisors to send messages to the students. | This system did not make monitoring of students by supervisors possible |
| Final Year Supervision Management System as a Tool for  Monitoring Computer Science Projects[10] / 2011 | The web-based system was developed using PHP, Dreamweaver CS3 for user interface, and MySQL for the database system. | A prototype was developed which can create modules for the student and a lecturer profile for the supervisor. These are used to make appointments. | This system does not archive student project. |
| International Conference on Multimedia Communications: Mediacom[11] /  2010 | An iterative approach was taking in developing this system | This system was able to allow students to login and get guides from their project supervisor. It has modules for user registration and login, documentation upload and download and progress report generation | This system does not archive projects. |
| Development of Computerized Students' Project Management System (CSPMS) for Enhancing Students' Research in Public Universities in Akwa Ibom State[12] / 2020 | Agile methodology was used in creating this system. A questionnaire was also used for data collection. Java script, XAMPP, HTML, and CSS were the tools used for developing the system. | The system was validated by ICT experts and evaluated the system and approved its functional elements. Successful registration of students' records, functional login, easy and fast downloading and uploading of projects, simple and flexible change of user records, and error-free approval of projects. | This system does not  allow archiving of student’s project |
| Final Year Student Project Allocation and Managing System [13] / 2020 | The system was developed using Hypertext Preprocessor (PHP) programming language, ASP.NET for the graphical user interface and MySQL for database. | The developer of this system was able to create a system where supervisors can accept or reject topics from students. Additionally, students can submit projects, view projects, request changes to project topics, and schedule meetings with supervisors. | The system did not allow students to chat with their supervisors on the system |
| Student Project Management System [14]/ 2021 | HTML5 and CSS were used to develop the design for the system. JavaScript and jQuery were used for client-side scripting. PHP and MySQL were used for the back-end | The system developed had key features like student registration, login authentication, group formation and communication through email alerts for project-related notifications. | The system does not allow archiving for other students to viewing. |
| Students Final Year Project Management System / 2021 | Visualbasic.net and Microsoft Access were used to create this system. Visualbasic.net allows developers to target windows, web, and mobile devices. Microsoft access was used for the database. | The result of the developed system is registration of students, uploading completed students project and downloading existing student project. | The system does not allow project supervisors to communicate with each other. |
| Final Year Students’ Projects Allocation and Management  System [15]/ 2023 | Waterfall model was used in creating this system. HTML, PHP, CSS, MySQL, and WAMP server. | The project aimed to automate project topic allocation and verification replacing the manual method | The system does not make possible communication between students and supervisors |

**CHAPTER THREE**

SYSTEM ANALYSIS AND DESIGN

*This chapter will talk about the System Analysis and Design for the proposed topic. The issues with the current system will be addressed in the design of the system. The chapter will also discuss the system architecture and user interface design of the proposed system.*

1. **System Analysis**

System analysis is the detailed examination and study of a current system architecture, with the goal of identifying opportunities for improvement. It involves investigating how an existing system functions in terms of its component elements and interactions, to determine requirements and guide changes for enhancing overall performance through a new or upgraded system.

* + 1. **Analysis of the Existing System**

Student Project management is currently done manually in Nile University of Nigeria. Hard copies of projects are received, sorted, and processed by each department in the university and then stored in the library.

It is necessary for students to search around the university for their supervisors, and sometimes their supervisors will not be available on campus.

* + 1. **Limitation of the Existing System**

1. Projects are not always available in the library.
2. It is time consuming to look through multiple projects.
3. The library is not always open.
4. Inefficient office space management

3.1.3 **Justification for the New System**

1. Projects can be easily accessed as it will be on the web.
2. Supervisors can easily supervise their students.
3. It is easy to operate and maintain.
4. The danger of losing projects is lessened.
   * 1. **Description of the New System**

The proposed system will have three main users: students, supervisors, and the admin. The admin is the user that has full access to the site. They will be able to upload projects onto the repository. The admin will also register new students and supervisors. Overall, all system monitoring will be done by the admin. The students will be able to login and view projects uploaded by the admin. Students can search for specific projects in the repository. They will also be able to view their supervisors’ comments. Supervisors will be able to login and manage assigned students, and review student project submissions. Supervisors can also provide feedback to students and track their progress. The system will be accessible through web browsers. All projects will be stored in a central database for easy search and retrieval.

* 1. **Design of the Proposed System**

A web application for archiving and viewing student’s project. Supervisors can also monitor their students. The proposed system will be developed using HTML, CSS, JavaScript, Node.js, and MySQL.

* + 1. **Data Model**
    2. **Functional Requirement**
    3. **System Architecture**
    4. **Workflow of Use Cases**

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