ARDHI UNIVERSITY

SCHOOL OF EARTH SCIENCES, REAL ESTATES, BUSINESS STUDIES AND INFORMATICS (SERBI)

DEPARTMENT OF COMPUTER SYSTEMS AND MATHEMATICS (CSM)

TITTLE: DESIGNING AND IMPLEMENTATION OF PROJECT AND DISSERTATION MANAGEMENT SYSTEM.

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1.0 INTRODUCTION

1.1 General Introduction

Efficient management of academic projects and dissertations is essential in higher education, enabling students to progress in an organized manner through their academic experiences. At Ardhi University, the lack of an integrated system to oversee academic projects has led to considerable issues. These issues include delays in supervisor assignments, challenges in monitoring project advancements, obstacles in arranging consultations, and inadequate communication of dissertation-related updates. As a result, both students and faculty are burdened with administrative tasks that hinder academic effectiveness.

Prior research has pointed to similar challenges in dissertation and academic project management. For instance, s. However, many existing systems, like the ones described by Ivanović, concentrate mainly on the storage and retrieval of completed dissertations, overlooking earlier academic projects and multi-year oversight. Moreover, frameworks such as PADDIES (Project Administration and Dissertation Delivery Innovations and Education Support) address certain facets of project management but fall short in providing comprehensive support for multi-year functionality

(Pike & Towey, 2022)

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The focus of this project is to develop a unified Project and Dissertation Management System that can handle academic projects throughout all years of study. Unlike current solutions that mainly focus on final-year dissertations, this system will also support projects from Year 1, Year 2, and following years, ensuring a comprehensive approach to managing academic projects. By automating processes, improving communication, and centralizing project oversight, this system will tackle the significant gaps found in existing solutions, creating a scalable model that could be applied in other educational institutions.

1.2 Statement of the Problem

The administration of academic projects and dissertations at Ardhi University is hindered by inefficiencies and a lack of centralized coordination. Tasks such as supervisor assignments, project progress monitoring, and consultation scheduling are currently managed manually, resulting in

delays, miscommunication, and an uneven workload distribution among faculty members. In addition, project-related announcements regarding deadlines, evaluation standards, and feedback are frequently shared inconsistently, leaving students without clear direction during pivotal moments of their academic projects. These obstacles obstruct the smooth execution of academic projects and dissertations, adversely affecting academic success and the overall efficiency of the institution.

While other organizations have created systems for dissertation management, these tools often focus solely on final-year dissertations and overlook the preceding phases of academic project management. For example, solutions like that of Ivanović et al. concentrate exclusively on the storage and access of documents, whereas frameworks like PADDIES prioritize administrative tasks yet lack capabilities for managing academic projects across different academic years. As a result, there exists a significant gap in systems that offer comprehensive oversight of academic projects and dissertations throughout a student's academic journey.

This project is designed to bridge this knowledge gap by creating a Project and Dissertation Management System tailored to facilitate the management of academic projects from Year 1 to the final year. The system will streamline supervisor assignments, enhance progress tracking, provide scheduling functionalities for consultations, and centralize the dissemination of announcements. By addressing this gap, the proposed system not only aims to improve academic project management at Ardhi University but also aspires to serve as a model for thorough academic project administration within higher education institutions.

1.3 Objectives

1.3.1 General Objective

The general objective of this study is to develop a project and dissertation management system for Ardhi University.

1.3.2 Specific Objectives

The following are specific objectives:

i. To identify and gather the requirements for project and dissertation management system

ii. To design a project and dissertation management system

iii. To implement the project and dissertation management system

iv. To test and validate the project and dissertation management system

1.4 Research Questions

In this study, the following research questions will be answered:

i. What are the requirement for project and dissertation management system?
ii. How to design project and dissertation management system?
iii. How to implement the requirement for project and dissertation management system?
iv. How to test and validate the project and dissertation management system?

Each of these research questions directly aligns with the objectives of the proposed project, focusing on filling the identified gaps and enhancing academic project management.

1.5 Significance of the Study

i. This research is of great importance as it tackles a significant gap in the management of academic projects and dissertations at universities, specifically at Ardhi University. By creating a comprehensive Project and Dissertation Management System, this study will enhance the existing knowledge within academic and administrative frameworks by presenting a unified method for managing projects over various academic years. In contrast to current solutions that primarily address final-year dissertations, this system guarantees continuity and coherence throughout a student's educational experience.
ii. The suggested system will have a beneficial effect on the university's academic framework by automating essential processes such as supervisor assignment, consultation scheduling, tracking progress, and disseminating announcements. This will increase transparency, reduce administrative workloads, and boost overall efficiency, ultimately helping both students and faculty.
iii. Additionally, this research shows how important it is to manage academic projects well, both for students and universities. When projects are organized and managed effectively, students can complete high-quality work that helps them develop the skills they need for their future careers. The system used in this research can be adapted to different

universities, helping to improve academic project management in higher education. By doing so, it sets a new standard for how universities can support students in producing great work. This could also inspire other industries to improve their own project management methods.

2.0 LITERATURE REVIEW

The administration of academic projects and dissertations remains a prevalent difficulty in higher education institutions, leading to the creation of various systems aimed at addressing particular issues. Current systems mainly concentrate on final-year dissertations, overlooking the wider range of academic projects that occur in earlier academic years. This literature review examines key contributions to the area, identifying gaps and potential areas for enhancement.

Ivanović (2013) developed a web-based system for managing PhD dissertations at the University of Novi Sad. Their solution enhances the visibility and accessibility of dissertations by utilizing Web 2.0 technologies and standardized metadata formats like MARC 21 and Dublin Core. Although effective in terms of storing and retrieving dissertations, the system lacks features for managing long-term academic projects, tracking progress, or scheduling consultations. This shortcoming limits its use to completed dissertations, creating gaps in the comprehensive management of the academic project lifecycle.

Ivanović, (2013) created e-Project web application to streamline the submission and retrieval of academic projects at the Technological Institute of Kavala in Greece. The system facilitates role-based access for students, professors, and administrators to upload, edit, and search for projects. Even though the application enhances access to academic documents, its focus remains confined to storage and retrieval. Important processes such as consultations between supervisors and students, progress monitoring, and announcements are not included, indicating potential for improvement in comprehensive academic project management.

The University Dissertation Management System (UDMS) (Turyatemba, 2010) was established to tackle ongoing challenges at Makerere University, where numerous graduate students struggle tto complete their dissertations within the anticipated timeframe. This system introduced features that monitor interactions between students and supervisors, fostering accountability and transparency throughout the dissertation journey. However, its focus is limited to postgraduate programs and

does not address the management of multi-year academic projects or the needs of undergraduate research.

Pike & Towey (2022) offers tools for supervising individual and team projects during the final year for undergraduate Computer Science students. By automating functions like project catalog creation, pairing students with supervisors, and tracking progress, PADDIES improves operational efficiency. Nevertheless, its application is confined to final-year projects and does not encompass earlier academic projects or wider lifecycle management spanning multiple academic years.

Fragidis (2008)Developed the e-project system which is an online tool designed to manage the submission, storage, and retrieval of academic projects and dissertations using open-source technologies such as MySQL and TCL, this system offers role-based access for students, faculty, and administrators. Students are able to upload and search for projects, professors can modify and delete entries, while administrators oversee the entire database. Although the system enhances the storage and access of projects, its focus remains solely on final-year projects and lacks functions like tracking projects over multiple years, assigning supervisors, and monitoring progress. Furthermore, it works separately from other academic processes, like feedback systems or scheduling consultations.

The University Lecturers Consultation Booking System developed by (Mussa S., 2023) examined in a prior dissertation, automates the arrangement of meetings between students and faculty. It enables students to request and book consultation slots according to the availability of the lecturer, thereby improving communication and minimizing scheduling conflicts. While this system effectively manages the consultation process, it does not pertain to overseeing academic projects or dissertations. This limitation underscores a significant gap in combining consultation scheduling with more extensive project management features.

(Long et al., 2023) identifies six major challenges impacting dissertation quality, such as a lack of innovation, inadequate research skills, and insufficient academic rigor. This study recommends that universities implement continuous quality assurance systems, including self-assessment methods, supervisor evaluation protocols, and extensive training programs. However, its suggestions primarily focus on quality control for professional degrees, offering limited relevance to undergraduate project management or academic workflows involving multiple years.

Lastly, the Dissertation Repository and IPT Assessment System at Ardhi University (Hermes G., 2023) serves as a storage solution for academic reports and automates the evaluation of dissertations and Industrial Practical Training (IPT). While it guarantees secure storage and facilitates grading, it does not include features such as supervisor assignment, multi-year project tracking, or real-time collaboration, thereby restricting its application to a specific phase of academic project management.

2.1 Identified Gaps

Existing systems primarily focus on specific aspects of academic project management, such as storage, assessment, or final-year dissertation workflows. None of the reviewed systems provide a comprehensive solution that spans the entire academic lifecycle from Year 1 to the final year. Features such as supervisor allocation, progress tracking, consultation scheduling, and centralized announcement management are often absent or implemented in a limited capacity.

The proposed Project and Dissertation Management System seeks to address these gaps by offering a unified platform to manage academic projects across all years. By automating key workflows and integrating multi-year management features, the system will provide a holistic solution that enhances academic efficiency and collaboration for both students and faculty.

2.2 Summary of literature review

The table below provide the list of literature which have gone through in mapping this study with other authors in the field that help to identify the gap. The table indicates the name of the author (as a citation), published year and list of technologies used.

Table 2.1 Summary of literature review

s/n	**Author's name & year**	**Technologies used**								
		Wi Fi	**GSM**	**Dht22**	**TCL**	**MySQL**	**HTML**	**Java script**	**Unix solaries**	**SUN Fire Server**
1.	(Lidija Ivanović , Dragan Ivanović , Dušan Surla, Zora Konjović, 2013)	x	x	x	x	√	√	√	x	x
2.	(Turyatemba Silian, 2010)	√	√	√	x	√	√	√	√	√
3.	(Haiyang Long, 2023)	√	x	√		√	√	√	x	x
4.	(Matthew Pike and Dave Towey, 2022)	√	√	x	x	√	√	√	x	x
5.	(Fragidis L, Michailidis A., 2008)	x	x	x	√	√	√	√	√	√
6	(Mussa,Shemsa A, 2023)	x	x	x	√	√	√	√	x	√
7	(Hermes, Gido Mapendo, 2023)	x	x	x	√	√	√	√	x	√
8.	Our research	√	X	X	X	√	√	√	√	√

3.0 METHODOLOGY

Agile methodology will be used in this study, because it will be easy iterative with the developers can test the functionalities of the system while it is in development in order to get feedbacks and to identify the areas of improvements before it completely developed. The following are methodologies to be used in this project and dissertation management system

Table 3.2 Methodology

SN	Specific Objective	Methodology	Tool	Deliverable
1.	To gather user requirements for project and dissertation management system	Questionnaire Interview Observation	Google forms Face-to-face(oral) Observe	System Requirement specification (SRS)
2.	To design project and dissertation management system	Object Oriented Analysis and Design (OOAD)	Star UML, draw.io	System design document (SDD)
3.	To implement the project and dissertation management system	Dynamic System Development Methodology (DSDM)	Language: Javascript, HTML, Python, CSS and SQL as a query language	Project and dissertation management system
4.	To test and validate the project and	Unit testing, integration testing, System testing and	Test-complete Software fitNesse	Testing for project and dissertation management system

	dissertation management system	Acceptance testing (Beta test)	software for testing all prog	

4.0 SCHEDULLE OF ACTIVITIES

A Gantt chart for this project will show a timeline of tasks, including research, system design, development, testing, and documentation. It helps track progress by breaking the project into smaller phases, assigning deadlines, and ensuring all activities are completed on time. Each task will have a start and end date, making it easy to monitor the workflow and identify any delays.

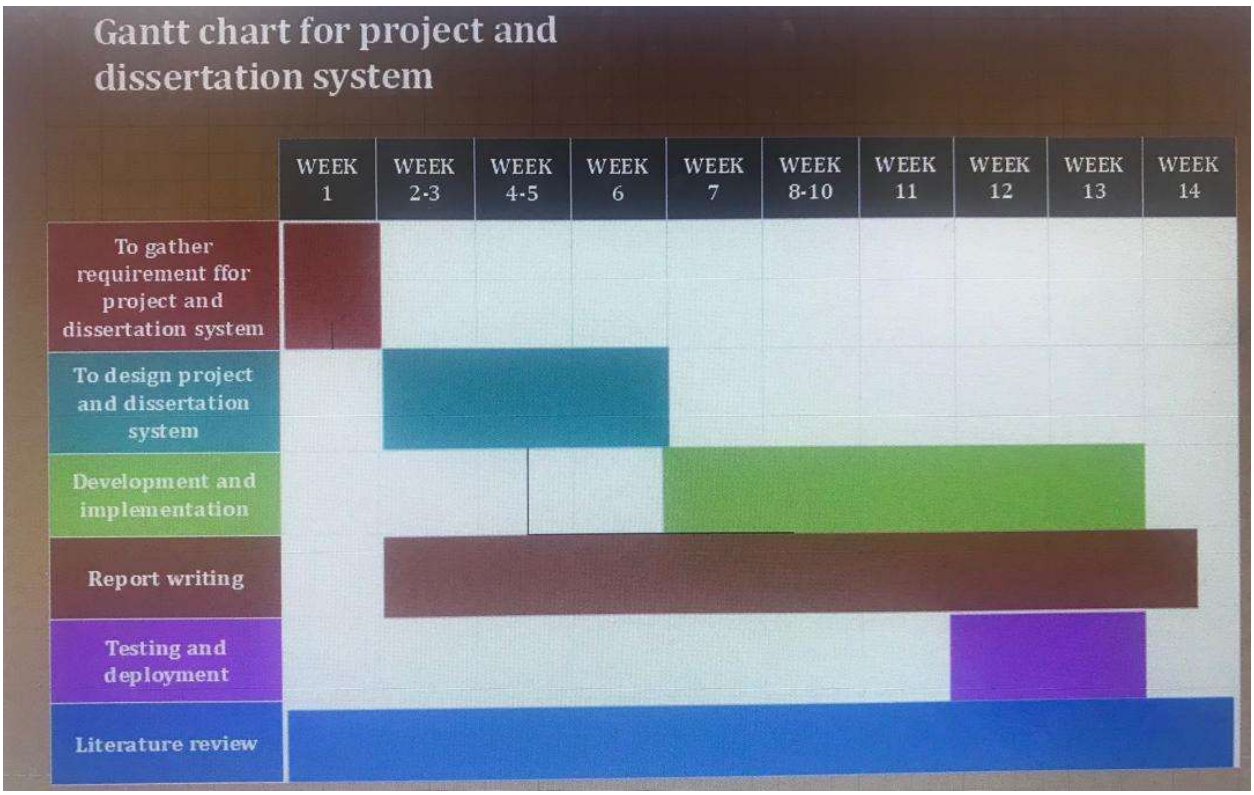

Figure 4.1 Gant chart for project and dissertation management system

Reference

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