ISLAMIC UNIVERSITY IN UGANDA

INTERNSHIP MANAGEMENT SYSTEM: A CASE OF ISLAMIC UNIVERSITY IN UGANDA

BY

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DECLARATION

To the best of our knowledge, we, the undersigned, declare that this report and project is our original work, and has never been published and/or submitted for any award in any other University or Higher Institution of Learning.

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This project proposal has been submitted with my approval as a supervisor and my signature is here appended:

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DEDICATION

All comes from the Almighty Allah, Passionate thanks for the outstanding efforts and energy you provide to we. To our parents whose efforts have seen me through to this level, may God Bless you always. Your unreserved support will be appreciated

ABSTRACT

As the world approaches a fast and rapidly improved technological era, more and more processes and programs in certain organisations are being computerized and rapid retrieval and use of necessary information is vital if an organisation is to remain competitive. Internship management system is involved in using manual methods to manage internship program thus a justification of this system package. The main objective of the research was to develop an online internship management system for easy and effective management of internship program. The specific objectives were to identify the major elements in online management systems, how they were applied in the system and a code was developed for elements in the software by using python, Django Framework, Html, Css and Java Script programing Language.

The system developed consisted of a database which stored user's data and a user friendly dialogue interface for input of data and output of desired reports. The methodology used to achieve the above mentioned objectives involved Literature survey, which involved consultation with written literature about online management systems. This involved search for data from the internet, textbooks and personal interactions about online management systems. The software design gave the architecture layout, data structure and the user interface. The present work develops an online Internship Management System to assist in management of Internship program.

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CHAPTER ONE

INTRODUCTION

1.0 Background

The increasing use of digital tools and platforms in education and the workplace has transformed the way organizations operate and how individuals learn and work. According to a study by McKinsey, "the digitization of the economy could add $1.36 trillion to the US GDP, and create significant value for organizations and individuals." (usoke, 2008) With the rise of digital technologies, many organizations have moved away from current methods of managing internships and instead turned to digital platforms to streamline their processes. As more and more activities shift online, it may be beneficial to have a digital solution for tracking and documenting internship activities.

The potential for this internship management system is to be more efficient and accurate than a paper-based solution. A digital internship management system could potentially eliminate the need for manual data entry and make it easier to track and update internship activities. In a study conducted by the National Association of Colleges and Employers (NACE), it was found that "nearly 90 percent of employers use technology to manage their internship programs."(Oates, 2022)

An internship management system could make it easier for students to keep track of their progress and reflect on their learning, and it could also provide a convenient way for students to share their experience with others. According to a study by the Economist, "experiential learning, such as internships, can have a positive impact on students' future employment prospects." (Orrel, 2004)

As internships and other forms of experiential learning become more common in college and university programs, there may be a need for more efficient ways to document and evaluate these experiences. In a study by the Association for Experiential Education, it was found that "experiential education has been shown to have a positive impact on student learning and development."

1.1 Problem Statement

One major problem with current internship process at Islamic University in Uganda is hectic and inflexible for students. For example, the process of applying for internship placement, losing of internship logbook where they may have to purchase a new one which can be expensive. On the university side, the cost of printing logbooks can be high and supervisors may find it tiresome to sign every page of a logbook. An internship Management system could potentially address these problems by providing a digital, flexible, and cost-effective alternative to traditional system.

1.2 Main Objectives

The main objective of the study is to manage all the internship activities and track information over time.

1.2.1 Specific objectives.

   i.   To identify requirements of the internship Management system.

  ii.   To design the internship Management system.

 iii.   To develop the system

 iv.   To test and evaluate the internship Management system.

  v.   To implement and deploy the system.

1.3 Research Questions:

   i.   What are the current requirements of an effective internship management system?

  ii.   What are the key design principles and considerations that should be taken into account when developing an internship management system, and how can they be effectively applied in practice?

 iii.   What are the most effective software development methodologies and tools for building an internship management system, and how can they be integrated into the development process?

iv. How can the performance and usability of an internship management system be measured and evaluated, and what metrics should be used to assess its effectiveness?

v. What are the key challenges and considerations involved in deploying an internship management system in a real-world organizational context, and how can they be effectively addressed?

1.4 Study Scope

The scope of the study was divided into three: Geographical, time scope and content/functional scope.

1.4.1 Geographical scope

The study was conducted in educational institutions particularly Islamic University in Uganda where students are given a chance to go outside classroom environment and gain practical experience in their fields of specialization. Islamic University in Uganda was chosen by the researcher to represent other areas facing a similar challenge.

The study was focus on understanding how Internship is managed in Islamic University In Uganda. Thus, the researcher was put more emphasis on collecting data from various stockholders ranging from faculty coordinators, senior lecturers, lecturers' heads of departments, and students undergoing internship exercise at the Islamic University In Uganda.

1.4.2 Time scope

The study was conducted in a period of three (3) months between April 2023 and June 2023.

1.4.3 Content/Functional Scope

The main function of the system is the allocation of supervisors to interns as well as keeping track of students' internship activities. The system must be able to allow the faculty coordinators to allocate the students to their supervisors and secured companies once it reaches the time for the internship. Additionally, the system can provide real-time supervision functionality that allows supervisors to monitor their interns' progress and provide feedback as needed.

The system can also be able to save the information and allow faculty coordinators to retrieve and view the students' secured companies, their supervisors, and their internship progression in

real-time. This functionality can ensure that the internship program runs smoothly and that the students receive the necessary guidance and support throughout their internship.

A notification module allows the faculty coordinator to inform all the students and supervisors to fill up student evaluation forms before the end of industrial training and any other information that is needed to be communicated to the internship participants. By using this module, faculty coordinators are able to broadcast any message to all the supervisors instead of informing them one by one and by mouth or phone. This function can help to speed up the process and saving time.

Before training is started, students can be informed to log in to the system to fill up their company details to allow proper allocation of supervisors to their interns.

1.5 Significance/ Justification of the Research Study

The study can add knowledge and understanding to the already existing literature so that the strategies for having well restructured and automated online systems are implemented even in other sectors of the economy.

Furthermore, the study can generate insights and information to administrators, industrial companies, and other universities to offer the best hands-on experience to students undergoing internship exercise

More still, if the system is implemented, it can lead to improved productivity, efficiency and proper timely decision making since there is improved processes and the use of computerized Internship management system with reliable Security features

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction:

This chapter presents documented evidence and ideas from other researchers' works that were relevant to the project's context. It contains reviews of copious sources where the researcher borrowed constructive ideas that are deemed ideal for the fulfillment of this research. It also focuses on summary and synthesis of work products related to this study and various areas that are relevant to the subject area. Literature Review is an extensive search of the information available on a topic which results in a list of references to books, periodicals and other materials on the topic (S. Ahmed and M. S. Hossain, 2019). Reviews included the problem area, application area, Methodological issues, information management, technologies and concepts of information management and database system development approaches.

According to (iter, 2017), internships are defined as programs engaging students in service activities primarily for the purpose of providing them with hands-on experience that enhances their learning or understanding of issues relevant to a particular area of study. A literature review is an explanation and summary of key studies relevant to a proposed project.

2.1 Challenges associated with Internship management in higher institutions of learning

One challenge associated with internship management in higher institutions of learning across the world is the difficulty in matching students with appropriate internships. This can occur due to a lack of available internships in certain industries or geographic locations, as well as a lack of communication and coordination between universities and potential internship providers(Oates, 2022) Limited monitoring and evaluation of internship programs: Many higher institutions of learning across the world do not have proper monitoring and evaluation mechanisms for their internship programs. This can lead to poor quality internships and a lack of learning opportunities for students. For instance, a study by (Oyebisi, 2016a) found that there was a lack of monitoring and evaluation of internship programs in Thailand.

Limited funding for internship programs: Many higher institutions of learning across the world struggle with funding their internship programs. This can lead to limited opportunities for students to participate in internships. For instance, a study by (Dannels, 2018) found that funding was a major challenge for internship programs in Nigeria.

Limited availability of internship opportunities: Many higher institutions of learning across the world struggle with finding enough internship opportunities for their students. This is particularly true for students studying in fields that are not as in-demand as others. For instance, a study by (Oates, 2022) found that students in the humanities and social sciences in Kenya had limited internship opportunities compared to their counterparts in science and technology fields.

Each university in Uganda and other tertiary institutions all over the world conduct a program called the Industrial Training Program for a certain time of period for its students before they can graduate with a degree, diploma or even Masters for some Universities. According to (Binti, 2006), the developments of computerized management systems are expanding over the past years and most of these systems are increasingly replacing the manual systems. For instance, there are the registration systems, clinic systems, hotel management systems that are widely used.

According to (Ogheneruemu & Tiemo, 2007) also emphasize the need to expose trainees to ICT facilities. Despite all those technological advancements, only a few universities have a full computerized system in managing the program in the whole world. And for the Ugandan case, almost none of the higher institutions have endeavored to design or acquire a fully computerized Internship management system except by (Ssempijja, 2018).

A few research have been conducted on the industrial training program management system notwithstanding the numerous advantages of internship training to the human resource capital of an economy. Nevertheless, little or no effort has been taken to improve Internship management in Uganda and in many parts of the developing world even with the technological advancements in many sectors of the economy. Also, (Orrel, 2004) and (Patrick et al., 2008), emphasize that, instead of building and applying skills through workplace practice, employers are seeking graduates with a range of technical and generic skills that minimize additional on-the-job training by employers.

2.2 Solutions to the challenges

Implementation of computerized management systems: Universities and other institutions should invest in developing or acquiring computerized systems to manage the industrial training program. This can not only streamline the process but also provide students with exposure to ICT facilities, as recommended in Oyebisi (2016b). Such systems have already been widely implemented in other sectors, as noted in (Ahmed and Hossain, 2019).

Institutions could collaborate to develop a shared computerized management system for the industrial training program. This would be particularly beneficial for smaller institutions that may not have the resources to develop their own system.

Integration of soft skills training: Employers are seeking graduates with a range of technical and generic skills, as emphasized in(Ismail et al., 2011) and (S. S. Sari and S. Akkurt, 2019) Therefore, institutions could integrate soft skills training into the industrial training program to better prepare students for the workforce.

Greater involvement of employers: Employers could be more involved in the industrial training program, providing students with opportunities to gain practical skills in a real-world environment. This would not only benefit the students but also help to bridge the gap between the skills that employers seek and the skills that graduates possess.

2.3 Internship programs at higher institutions of learning.

According to (Musoke, 2008) stresses the fact that changes in demand needs skilled and innovative well-trained librarians who can meet the need of users. According to (Sheldon, 2005), the Contemporary debate focuses on employability skills, which expresses a view that graduates must come to workplaces ready to hit the ground running in order to better face increased competition in the graduate employment market.

2.3.1 Benefits of internships to students.

I. Opportunity to solidify knowledge learned in the classroom: Internships allow students to put their academic knowledge into practice. This reinforces their learning and helps them remember what they have learned. It also helps them identify areas where they need further improvement or learning.

- Develop an awareness of personal values: Internships can help students develop a deeper understanding of their personal values and how they align with the values of the organization they are interning with. This can help them make informed decisions about their future career paths and the kind of work they want to do.

III. Enhance understanding of personal characteristics (e.g., strengths or weaknesses): Internships provide students with the opportunity to gain a better understanding of their own strengths and weaknesses. By working in a professional environment, they can identify areas where they excel and areas where they need to improve. This can help them make better decisions about their career paths and how they can continue to develop their skills.

IV. Opportunity for career exploration: Internships can provide students with the opportunity to explore different career paths and gain insight into the kind of work they want to do. By working in a professional environment, they can gain a better understanding of what it takes to succeed in different fields and industries. This can help them make informed decisions about their future career paths.

V. Increase market ability based on job-related skill development: By participating in internships, students gain practical, hands-on experience in their chosen field of study. This allows them to develop job-related skills that employers are looking for and make them more attractive to potential employers. This can include anything from technical skills such as programming or data analysis, to softer skills such as communication and teamwork.

VI. Increase perceived employability: Employers are more likely to hire candidates who have completed internships because they have demonstrated an ability to apply their knowledge in real-world settings. By completing an internship, students can demonstrate that they have the necessary skills and experience to succeed in the workforce. This can increase their perceived employability and make them more competitive in the job market.

VII. Completing an internship can provide students with valuable networking opportunities, allowing them to make connections with professionals in their chosen field. These connections can lead to job offers or job leads following graduation, expediting their entry into the workforce.

VIII.   Higher job satisfaction: By participating in internships, students can gain a better understanding of what type of work they enjoy and what type of work they don't. This can help them make more informed career choices and find jobs that are a good fit for their interests and skills. As a result, they may experience higher job satisfaction throughout their career.

2.3.2 Benefits of internships to institutions

I.   Internships provide students with hands-on experience in their field of study, which can help them develop practical skills and gain valuable insight into their chosen profession. This experience can make them better-prepared candidates for future employment, which can benefit the institution that they attend. Additionally, internships can help institutions attract high-achieving students who are looking for opportunities to gain real-world experience.

II.   Increase communication with businesses in the community: By offering internships, institutions can forge closer relationships with businesses in their local community. This can lead to increased collaboration and partnerships, which can benefit both the institution and the local business community. It can also provide opportunities for networking and professional development for both students and faculty.

III.   Allow opportunities for curriculum content evaluation and program improvement: Internships can provide valuable feedback to institutions about the effectiveness of their curriculum and program offerings. By working closely with businesses in their field of study, students can provide insight into what skills and knowledge are most valuable in the workplace. Institutions can use this feedback to improve their curriculum and ensure that their programs are meeting the needs of employers and students alike.

IV.   Develop a distinguished reputation: By offering high-quality internships, institutions can develop a reputation as a leader in their field of study. This can attract top employers and students, and help to enhance the institution's overall brand and reputation. Additionally, institutions that are known for offering valuable internship opportunities may be more likely to attract funding and other resources to support their programs.

2.3.3 Benefits of internships for employers

I. Opportunity to select high-quality students upon graduation: Employers can use internships as a way to identify and develop high-potential students for future employment opportunities. By selecting interns who demonstrate strong skills and work ethic, employers can build a pipeline of talented employees for the future.

II. Obtain students with current theoretical knowledge of the workforce: Interns can bring fresh ideas and perspectives to the workplace, as they have been trained in the latest theoretical and practical knowledge in their field of study. This can help employers stay up-to-date with current trends and best practices in their industry.

III. Development and maintenance of a positive reputation: Employers that offer high-quality internship opportunities can develop a positive reputation among students, faculty, and the wider community. This can help attract top talent, enhance the company's brand, and improve employee morale.

IV. Enhance morale among colleagues: Internships can provide opportunities for older employees to mentor and share their knowledge and experience with younger colleagues. This can help to build stronger relationships within the workplace and enhance overall morale.

V. Access to the perspectives of a younger population: Interns can provide employers with valuable insight into the perspectives and preferences of a younger generation, including their use of social media and technology. This can help companies stay relevant and adapt to the changing needs and expectations of their customers.

2.3.4 Advantages of Internship systems in higher institutions of learning

I. Internships play a crucial role in preparing students for their future careers by providing them with valuable practical experience. In addition to learning job-specific knowledge and skills, interns also acquire employer workplace skills such as communication, teamwork, and time management. Internships can act as a stepping stone for graduates, making the transition from academic life to the workplace more seamless. By giving students the opportunity to put theory into practice, internships can

help them understand and appreciate the relevance of classroom learning to real-world scenarios. The practical skills and knowledge gained through internships can be invaluable for future career success and can even accelerate job performance.

II.   Moreover, internships also serve as a means for educational institutions to evaluate the effectiveness of their academic programs. By providing feedback from employers, internships can help institutions improve their curriculum and better prepare students for the job market. This allows institutions to tailor their programs to the changing needs of the workforce, ensuring that students are equipped with the necessary skills and knowledge for success in their chosen fields. Furthermore, internships can also contribute to the accreditation of educational institutions, highlighting the quality of their programs and their commitment to producing highly skilled graduates. Overall, internships benefit not only students but also educational institutions, employers, and the workforce as a whole.

2.3.5 Disadvantages of Internship systems in higher institutions of learning.

I.   Limited access to opportunities: Depending on the industry or location, internship opportunities may be limited, particularly for students who are attending institutions in rural or remote areas. This can create a disadvantage for students who are unable to access the same level and quality of internship opportunities as their peers attending institutions in larger cities or more developed regions.

II.   Unpaid internships: Some internships may be unpaid, which can create a financial burden for students who are already paying for tuition and other college expenses. Unpaid internships can also create issues around equity and access, as students from lower-income backgrounds may be unable to afford to take an unpaid internship, while their more affluent peers are able to gain valuable work experience without financial hardship.

III.   Lack of regulation and oversight: In some cases, there may be limited regulation or oversight of internship programs, which can create issues around quality and safety. Interns may be asked to perform tasks that are outside of their skill level or comfort zone, or they may be exposed to unsafe working conditions. Additionally, without proper regulation, there may be little accountability for employers who mistreat or exploit their interns.

IV.   Limited integration with academic programs: In some cases, internships may not be fully integrated with academic programs, which can create a disjointed experience for students. If internships are not closely tied to the academic curriculum, students may not be able to apply the skills and knowledge they have gained in the classroom to their internship work, and vice versa. This can limit the overall impact of internships on student learning and development.

2.4 Information Management Concepts

According to the Carnegie Mellon School and its followers, information management, i.e., the organization's ability to process information is at the core of organizational and managerial competencies (Bailey, 2023). Consequently, strategies for organization design and technologies must be aiming at improved information processing capability. Therefore, to clearly understand the role of information management in organizations, understanding of the underlying technologies, methods and approaches used in achieving the purpose of this job is of paramount importance. The proposed system involves some of these technologies and concepts. Such technologies and concepts include: Databases, Database Systems, Database management systems, Database system development approaches.

2.5 Examples of existing Internship Management Systems

2.5.1 Simplicity: Simplicity is a comprehensive internship management system that helps organizations manage their internship programs from start to finish. It offers tools for recruiting and selecting interns, managing their schedules and assignments, and tracking their progress throughout the program (Symplicity, 2023).

2.5.2 Intern Shala: Intern Shala is a leading internship management platform in India. It offers a range of services for both students and employers, including internships, online training programs, and campus recruitment solutions. its features include internship listings, virtual internships, certifications (Internshala, 2023).

2.5.3 Intern Bridge: Intern Bridge is an internship management system designed to help employers streamline their internship programs. It offers tools for recruiting interns, managing their assignments, and tracking their progress throughout the program. It also offers resources for

training and evaluating interns to ensure a successful experience for both the intern and the employer (Intern Bridge, 2020).

2.6 Proposed System

The Internship Management System is a comprehensive system that will be designed to simplify the management of the internship experience. With features such as getting a placement letter, assigning a university supervisor, making a report, real-time supervision, uploading daily activities in the form of pictures, text, or videos, and keeping track of all activities, the system ensures a seamless experience for users.

The system streamlines the entire internship process, providing a one-stop platform to manage all aspects of the internship, from start to finish. With real-time supervision and daily activity uploads, the system enables both students and supervisors to stay updated and track progress effectively. Overall, the Internship Management System is an efficient and user-friendly tool that makes managing internships easy

2.6.1 Comparing the functionalities of internship management systems.

Features/Functionalities	Simplicity	Intern Shala	Intern Bridge	Proposed System
User friendly	Yes	Yes	Yes	Yes
Analytics and reporting functionalities	Yes	Yes	Yes	Yes
Security measures eg User authentication, Encryption	Yes	Yes	Yes	Yes
Real time supervision	No	No	No	Yes
Performance Tracking	No	yes	yes	yes

Conclusion

Simplicity, Intern Shala, Intern Bridge, and a Proposed System. All four systems are user-friendly and have analytics and reporting functionalities, as well as security measures such as user authentication and encryption. However, only the Proposed System offers real-time supervision

and performance tracking, while the other systems do not. Therefore, if real-time supervision and performance tracking are important features for an internship management system, the Proposed System may be the best option.

3.0 Introduction

This chapter addresses the research approach which was followed during the study; it also provides descriptive information on the methods that was encountered during the research process. It further addresses the methods, procedures, tools and techniques the researchers used to archive the project objectives as presented in the content presented herein.

3.1 Research Design

The research was mainly follow a qualitative research approach. The study was aim at finding out the facts about the challenges associated with Internship management systems in higher institutions of learning particularly Islamic University in Uganda. The researcher intends to explore the existence of Internship management challenges in order to come up with an appropriate solution. This Exploratory research was facilitate the researcher to determine the best research design and data collection method during the research process. A qualitative technique was adopted to observe the phenomenon and this is what qualitative research is all about and this justifies the use of a qualitative research approach (Schwartz et al., 2015).

📒 Methods of the research

3.2.1 Design science research method.

Design science research is a set of analytical techniques and perspectives for performing research in Information Systems (IS) and Information Technology (IT). Since this study involved coming up with innovative artifacts to improve and understand the behavior of aspects of information systems, the researcher can get involved in a rigorous process to design artifacts to solve observed problems, to make research contributions, to evaluate the designs, and to communicate the results to appropriate audiences. Such artifacts may include constructs, models, methods, and instantiations. They also included social innovations or new properties of technical, social, and informational resources.

3.2.2 Qualitative research approach

According to (Cohen et al., 2017) is defined as 'the collection of extensive data on many variables over an extended period of time, in a naturalistic setting, in order to gain insights not possible using other types of research'. people, cases, phenomena, social situations and processes in their natural settings in order to reveal in descriptive terms the meanings that people attach to their experiences of the world. It should be noted that qualitative research is not based on a single methodology and does not belong to a single discipline (Patricia Leavy, 2017).

According to (Patricia Leavy, 2017), it draws on philosophical ideas in phenomenology, symbolic interactionism, hermeneutics and other traditions   to support the attention on "quality" rather than "quantity". Therefore, since the study is aiming at using a number of methodologies and it is not to deal with large quantities of data which requires mathematical and statistical analysis, a quality research approach is found suitable for this kind of research and it is what the researcher adopted for the study.

3.2.3 Study population

The population of the study was obtained from students doing internship, lecturers which can be used to carry out the supervision, administrators like faculty coordinators, faculty deans and external supervisors who are at the heart of handling internship activity.

3.2.4 Sample size

The sample size expected to be totaling to 28 respondents   which will include 2 faculty deans, 2 faculty coordinators, 2 ICT technician 20 students and 2 supervisors.

3.3 Faculty Dean and the faculty coordinators

The Dean of the Faculty along with the faculty coordinators can present a comprehensive introduction to the internship management system, encompassing its framework, regulations, and goals , explaining its purpose and function. They will highlight how the system streamlines the internship process, from identifying opportunities to tracking student progress and evaluating outcomes. The faculty coordinators will discuss how the system integrates with academic programs, engages employers, and supports student success. They can also address any specific concerns or questions that may arise during the interview process.

3.3.1 ICT Technicians

ICT Technicians can highlight their technical expertise and experience with various hardware and software systems. They can explain how they approach troubleshooting and problem-solving in their work, providing specific examples. The technicians can also discuss their communication and teamwork skills, as well as their knowledge of industry trends and updates. They can address any specific concerns or questions that may arise during the interview process.

3.3.2 Students

Students can likely discuss their academic background and interests, as well as their previous experience in internships or related fields. They may also highlight their skills and abilities, including their communication, critical thinking, and problem-solving skills. Additionally, students may explain how they see the internship fitting into their future career goals and what they hope to gain from the experience. They can address any specific concerns or questions that arise during the interview process.

3.3.3 Supervisors.

 supervisors can likely provide an overview of the internship program and the expectations for the interns. They may discuss the specific goals and objectives of the program, as well as the skills and experiences that are required for the position. Additionally, supervisors may highlight the types of projects and tasks that the intern was working on, as well as the support and resources that was available to them. They can also address any specific concerns or questions that may arise during the interview process.

3.3.4 Table 1: sample size

Population	Respondents
Faculty deans	2
Faculty coordinators	2
ICT Technicians	2
Students	20
Supervisors	2
Total	28

3.4 Sampling technique

The technique that was used in this study is random sampling technique because it eradicates favoritism or bias thus the selection based on equal parameters so as to get ideas from students who belong to different faculties and faculty coordinators plus deans of faculties. According to (Yin, 2016), Random sampling is perhaps the most well-known of all sampling strategies. The faculty deans was chosen because of their informed positions.

3.4.1 System study and investigation

This involves a critical study of the new management systems in Islamic University in Uganda. This chapter introduces the methodology and techniques that was used in acquiring and analyzing information and to achieve the objectives of the project. It therefore includes the methods, technique, design tools, approaches and procedures which was adopted to collect and analyze information.

3.4.2 Questionnaire

A questionnaire is a data collection instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents (Zikmund, 2010). They can measure both qualitative and quantitative data, though more appropriate for quantitative data collection. The researcher can use questionnaires since they are a good tool for the protection of the privacy of the participants and the validity of data and information depends on the honesty of the respondent.

3.4.3 Interviews

According to (Lewis, 2015), remarks "Collecting credible data is a tough task, and it is worth remembering that one method of data collection is not inherently better than another.

Interviewing is a way to collect data as well as to gain knowledge from individuals. (Alshenqeeti, 2014) regarded interviews as "an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and emphasizes the social situatedness of research data. Interviews, or question and answer sessions with one or more people, are an excellent way to learn in-depth information from a person for your primary research project.

Interviews was selected to complement qualitative data to gain a more comprehensive understanding of the internship management system.

According to (Cohen et al., 2017), explain "the interview is not simply concerned with collecting data about life: it is part of life itself, its human embeddedness, is inescapable."

3.4.3.1 Types of Interviews

There are many types of interviews, which include:

3.4.3.2 Structured interviews: According to (Dannels, 2018), structured interview entails the administration of an interview schedule by an interviewer. The aim is for all interviewees to be given exactly the same context of questioning. According to (Schwartz et al., 2015), the strength of structured interviews is "Prompting was included with the questions and if a question is inappropriate, data on why no response was made and can be recorded." Furthermore, non-verbal cues, such as facial expressions, gestures can be recorded.

3.4.3.3 Semi-structured interviews:

semi-structured interviews are non-standardized and are frequently used in the qualitative analysis which is in line with this kind of research. In this type of interview, Questions can be asked and some may be questions that have not been anticipated in the beginning of the interview. Note taking or tape-recording documents the interview. This type of interview gives the researcher opportunities to probe for views and opinions of the interviewee. Probing is a way for the interview to explore new paths which were not initially considered (Amin, 2005).

3.4.3.4 Unstructured interviews: This type of interview is non-directed and is a flexible method. It is more casual than the aforementioned interviews.

3.4.3.5 non-directive interview: In non-directive interviews there is no preset topic to pursue. Questions are usually not pre-planned. The interviewer listens and does not take the lead. The interviewer follows what the interviewee has to say. The interviewee leads the conversation.

The researcher therefore, used interviews and questionnaires as a research instrument and as a means to collect data since they are one way to collect data and to gain knowledge from individuals.

3.4.4 Document review

Existing records often provide insights into a setting and/or group of people that cannot be observed or noted in another way. This information can be found in document form. (Patricia Leavy, 2017), defined a document as "any written or recorded material" not prepared for the purposes of the evaluation or at the request of the inquirer. Documents can be divided into two major categories: public records and personal documents (Patricia Leavy, 2017).

Public records are materials created and kept for the purpose of "at testing to an event or providing an accounting". (Patricia Leavy, 2017), Public records was collected from

outside (external) or within (internal) the setting in which the evaluation is taking place. Examples of external records are the census and vital statistics reports, county office records, newspaper archives, and local business records that can assist an Exhibit. Therefore, all these data collection method will be adopted by the researcher since they can provide data that is qualitative.

3.4.5 Observation

According to (Patricia Leavy, 2017) define observation as "the systematic description of events, behaviors, and artifacts in the social setting chosen for study". Observations enable the researcher to describe existing situations using the five senses, providing a "written photograph" of the situation under study (Totawar & Prasad, 2016). (Yin, 2016) describe participant observation as the primary method used by anthropologists doing fieldwork. According to (Amin, 2005), Observations involve more than just "hanging out." Planned and self-aware observers use observation systematically.

In the context of the internship management system, observation can be used to gather information about how the system is being used in the real world, how interns and employers interact with the system, and how the system affects the overall internship experience.

3.5 Validity and Reliability

A research instrument is said to be valid and reliable if it actually measures what it is supposed to measure (Amin, 2005). The instruments was given to the faculty coordinators and interns to provide technical guidance and constructive criticism and the researcher can revise them according to the given advice. The researcher was able to control the validity and reliability by avoiding biases during the interviews and record the findings accurately. The researcher can conduct a pre- test to find out whether the instruments were bringing out what they are designed for with minimal interference.

The language that was used at the level of the respondents and clear enough to help respondents give a straight answer.

3.6 Data Analysis

The researcher can use qualitative methods to
analyze data.

Collected data from the interviews was analyzed to generate the requirements using simple data
analysis tool like content analysis

3.6.1 System designs

It refers to the art of defining the architecture, components, modules, interfaces, and data for the
system to fulfill the project main objective. The main goal of the design phase is to find the best
possible design, within the limitations imposed by the requirement and the physical as well as
social environment in which the system can operates.

3.6.2 Logical Design

The logical design of a system pertains to an abstract representation of how data flows, in and
out of the system.

The logical design of the system describes the abstract presentation of how data flows, inputs
and outputs of the system; this was conducted by modeling which involves theoretical and
graphical representation of an actual system design. The physical design relates to the actual input
and output processes of the system. This is laid down in terms of how data into a system, how it
flows, how it is processed and how it is displayed as an output.

The system was designed by using entity relationship diagram,
dataflow.

3.6.3 Physical Design

The physical design relates to the actual input and output processes of the system. The physical
design describes how data was input into the system, how it is verified, how it is processed and
stored and how it is manipulated to be displayed on the screen as output.

3.7 System Testing

System testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error.

A good test is one that has a probability of finding an as yet undercover error The purpose of testing is to identify and correct bugs in the developed system In the code testing the logic of the developed system is tested.

For this, every module of the program is executed to find an error.

To perform specification test, the examination of the specifications stating what the program should do and how it should perform under various conditions.

Unit testing focuses first on the modules in the proposed system to locate errors. This enables to detect errors in the coding and logic that are contained within that module alone. Those resulting from the interaction between modules are initially avoided. In unit testing step each module has to be checked separately.

System testing does not test the software as a whole, but rather than integration of each module in the system. One has to find areas where modules have been designed with different specifications of data lengths, type and data element name.

Testing and validation are the most important steps after the implementation of the developed system. The system testing is performed to ensure that there are no errors in the implemented system.

3.8 System Implementation

The system was implemented using structured query language MySQL as the DBMS was used because it is fast, can handle large volumes of data, easy to learn, is open source and goes well with Visual Studio Code.

In implementation of this system the following software was used:

   a) python
   b) Django Framework
   c) Html , Css

d) Java Script

3.9 Ethical considerations

The primary ethical imperative for the researcher is this: "Tell the Truth". This can instruct the researcher to refrain from fabricating data, or from deliberately structuring a research study so that demand characteristics or social pressure can produce the results that the researcher wants for some personal or political reason. It helped the researcher interpret the data objectively, and report all results accurately, whether were good or bad (from the perspective of the researcher).

During the research, the researcher can considerably reflect on educational professional ethics as follows:

i.   The questionnaires was the same to all respondents in order to avoid suspicion and victimization of respondents.
ii.   The researcher can have to ensure confidentiality to his informants over the information gathered, so as not to harm any respondent. The filled questionnaires was taken away as soon as they are finished.

CHAPTER FOUR

RESEARCH FINDINGS AND SYSTEM ANALYSIS

4.0 Introduction

This chapter presents the findings and analysis of the internship management system developed for the Islamic University in Uganda (IUIU). The system is a web-based solution with a centralized database designed to streamline the internship process and improve the quality of internships offered to students.

The study begins with an overview of the user's problems and requirements for the development of the system. The requirements were translated into preliminary and detailed designs, and decisions were made to address how the system would meet functional and non-functional requirements.

The study also collected data from IUIU internship participants and analyzed the observed typical internship management system of IUIU. The findings indicate that the new system offers benefits such as streamlining the application and evaluation process, providing students with clear expectations and goals, and fostering a positive internship culture.

The design aspects of the new system are presented, emphasizing the functional features of the system as a high-level guide. The study also outlines the development and testing of the new internship management system to ensure that it meets the needs of users and is free from errors.

4.1 Background of Islamic University in Uganda

Islamic University in Uganda Kampala campus being the case study is a branch of IUIU main campus, located In Mbale. Kampala Campus was started in 2001, and it's at Kibuli hill, approximately 3.5 Kilometres (2.2mi) south-east of the central business district of Kampala, the capital and largest city of Uganda. IUIU-KC. The campus has an internal human resource department which ensures that employees perform as expected, through training.

The objective of training according to the staff training policy is to ensure that through their career, employees receive training approximate to their needs at any given time.

4.2 Description of the study respondents

The study was conducted at Islamic University in Uganda particularly in the department of IT. The findings were guided by the selected instruments for this study, that is, interviews, observation, document reviews and questionnaires.

At iuiu students of various courses are required to complete 6 weeks of internship training during the recession period of the second year second semester before they complete their degree.

Qualitative methods were employed for data collection throughout 2022-2023 academic year and various aspects were observed as can be seen bellow.

Internship management system was assessed from three perspectives: students, the university and placement organizations. During data collection, 18 questionnaires were administered to 18 students of which 17 were returned with their sub samples as indicated below;

Student participants: The research was conducted with (all) 18 students, of whom 3 had completed industrial training and 15 were about to join industrial training at the time of the study.

(2) Organization participants: The research was conducted at iuiu particularly in the faculty of science. within iuiu there are departments with deans and faculty coordinators who are in charge of internship management. 2 faculty coordinators where included.

(3) University Internship Supervisors: the different faculties use some of their lecturers to supervise the students on internship. These supervisors take responsibility of traveling to the various places physically to evaluate the students at their placement organizations and at the end forward their assessments to the faculty coordinators.

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4.3 System Requirement

The data collected were then transformed into system requirements and the features ware refined logical data flow diagram to best capture the functional requirements of the system.

4.3.1 Functional Requirements

4.3.1.1 Students Application Module

The system will allow students to apply for internship by registering their details.

It will allow students register details of their placement organization.

It will allow students to view their supervisor's details particularly the internal supervisors for proper coordination.

It will allow student to view announcements posted by the faculty coordinators.

4.3.1.2 Allocation Module

The system will allow faculty coordinators to allocate students supervisors and to their secured internship organizations.

It will allow faculty coordinators to view, update and delete the supervisors as a need may require.

4.3.1.3 Announcement Modules

The system will allow faculty coordinators to send announcements and notifications to the interns and supervisors.

Report

It will allow faculty coordinators to view and print different types of reports.

4.3.2 Non-Functional Requirements

4.3.2.1 Security Module

The system will be able to identify authorized users to login to the system.

It will be able to differentiate the authorized level of users.

It will encrypt users' passwords to enhance security.

4.3.2.2 Efficiency

Introductory letters will be ready for printing so longer as a student registers in the system.
Internship activities will be ready to be viewed or printed after evaluation form and survey   form is
collected from student and the organization.
Notification is will always be ready to update users.

4.3.2.3 Reliability

Up-to-date information will be provided to users.

Users will do decision-making effectively and produce valuable reports.

Challenges and Weaknesses

During the undertaking of this research, several challenges and weaknesses were encountered in the process
of studying the current system, designing and implementing the internship management system among which
the most pressing included;

The researcher had underestimated the complexity of the whole study especially the system implementation
part thinking it would take a short time to be done but it ended up taking a longer time and delaying the whole
research completion.

Secondly, the researcher faced a challenge of the university schedule which didn't favor the supervisor to be
on ground because the university was in test week period, end of quarter 2 exams and so many times it was
not possible to meet supervisors. This also greatly caused delays in delivering the project on time.

Functional decomposition of the Internship Management System

dd, Timothy A. (2002), defines Functional Decomposition as a process of taking a complex process and breaking it down into its smaller, simpler parts. The internship management system is broken down into the most decomposed pieces of subsystems in order to have manageable parts that are easy to code/ engineer and later be composed into a greater whole internship management system.
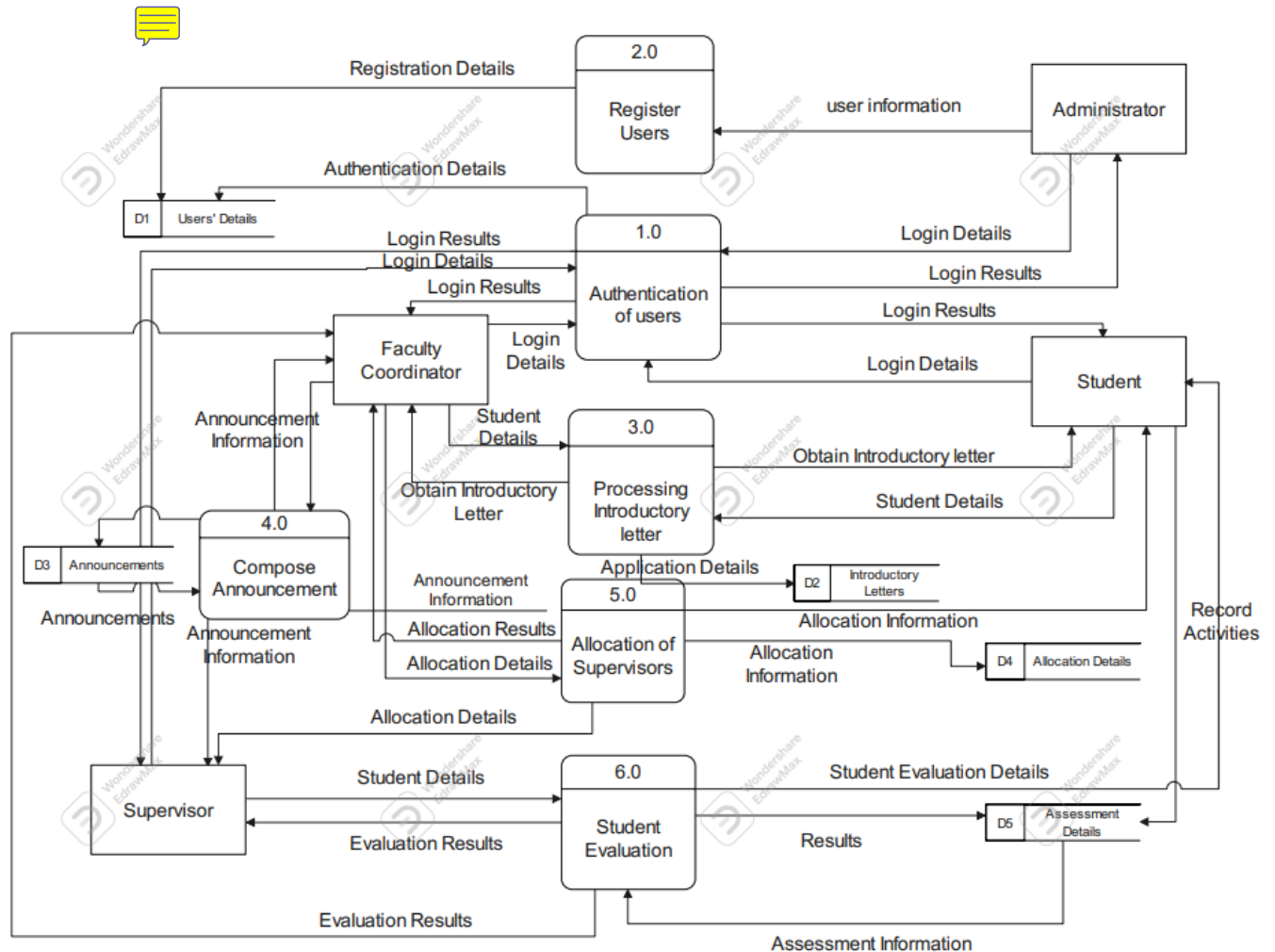
Figure1: Mapping ERD

4.6 Entity relationship diagram

An entity relationship (E-R) diagram is used to visualize the system and represent the user requirements. This is used to represent entities and how they relate to one another. The ER diagram below shows the relationships between the entities and attributes of the Internship management System
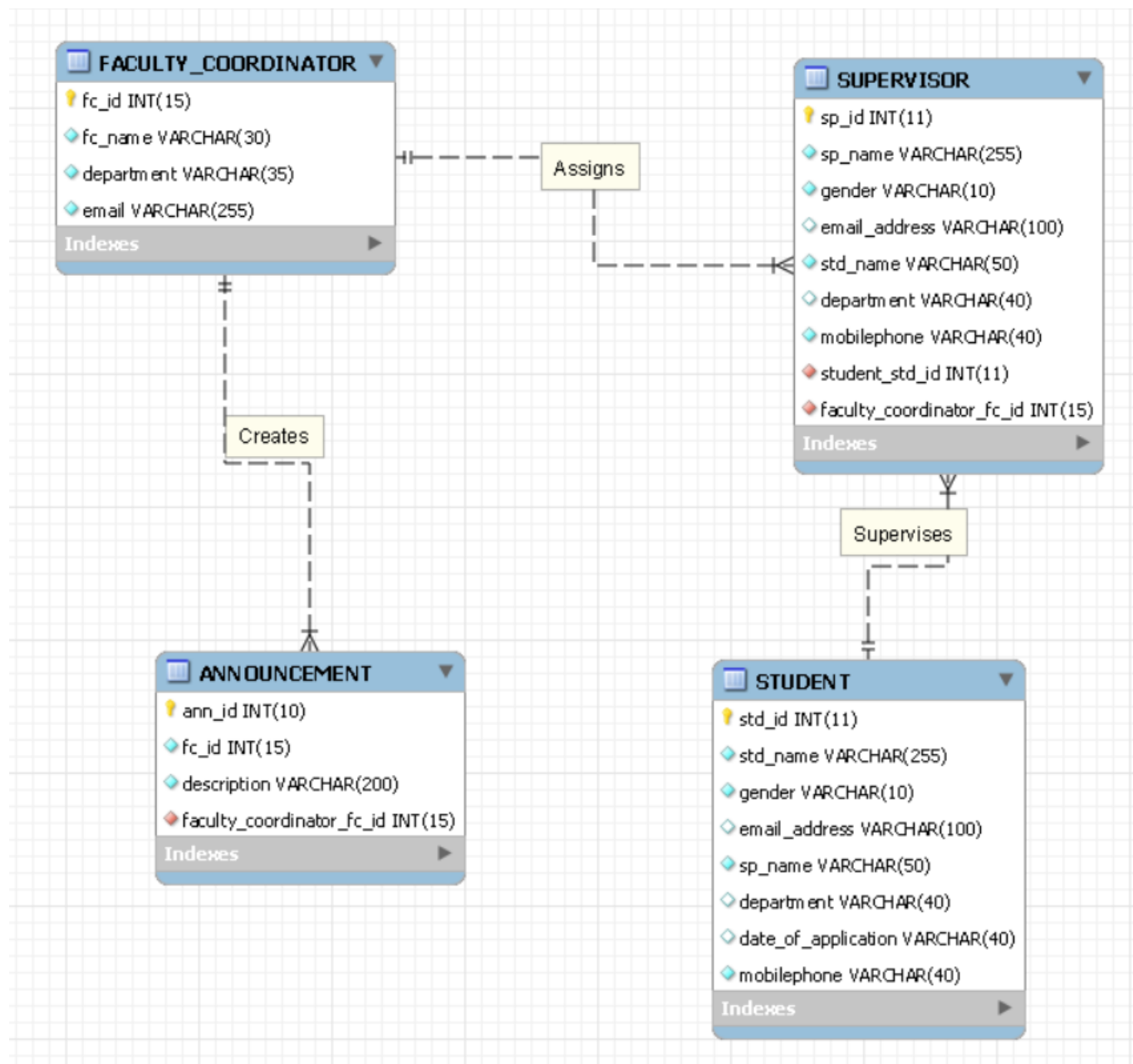
Figure2: **Entity relationship diagram**

4.7 System Architectural Design

The system architecture design describes the environment in which the system will operate. This section focuses on the architectural framework with the minimum software and hardware specifications for the effective functioning of the system.

4.8 System architecture
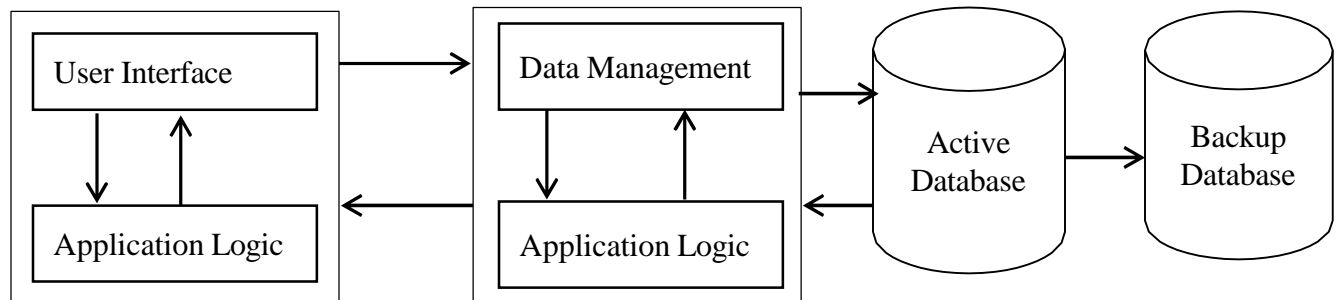
interface is the client that sends queries and requires some resource.

Figure3: system architecture

The server is the data manager which responds to the queries by providing the resources. Client-server technology provides the means for distributing work across machines and coordinating the results. The backup database is used for archiving the database and data ware housing for the historical data.

Level 1 the user interface through which users interact with the system

Level 2 handle HTTP-request and give the response after the request is processed by web server.
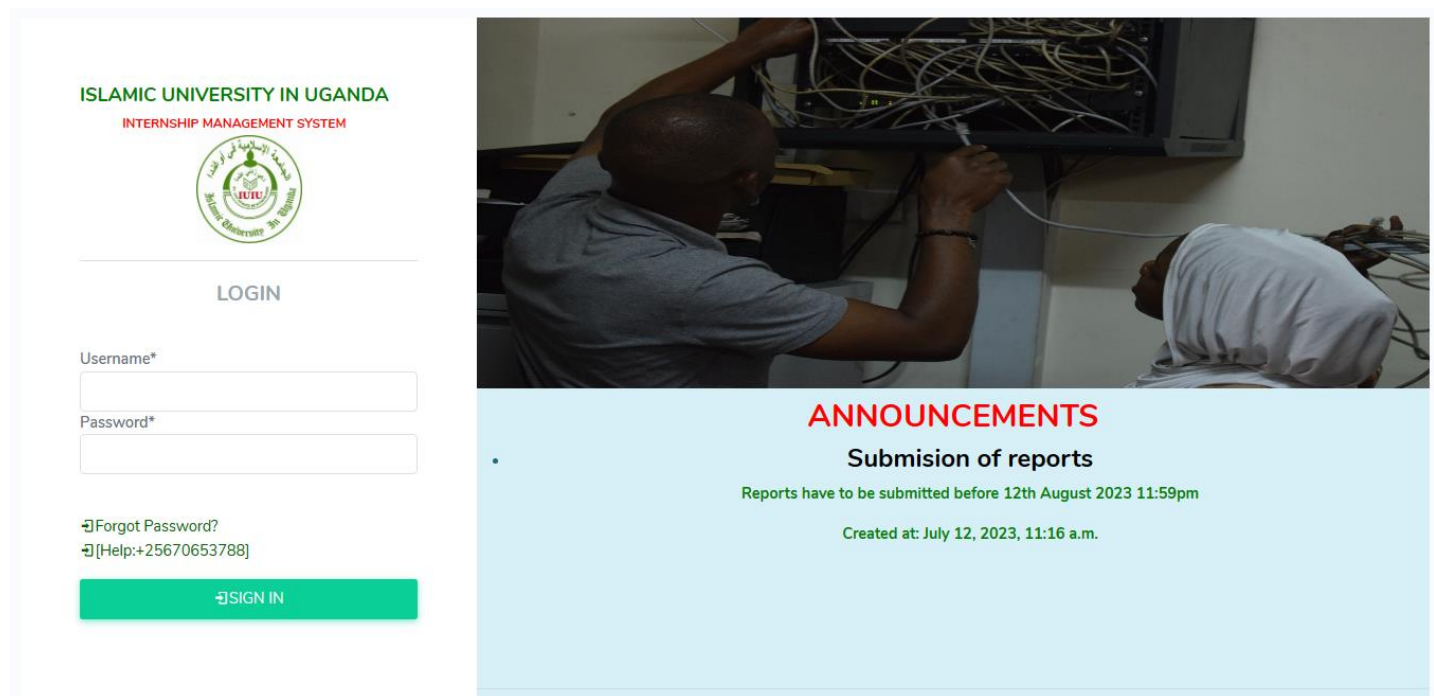
Level 3 handle database, directory, mail server, and SNMP (Simple Network Management Protocol) and For the Front end tool, python programming language was used for developing the code. The motivation for choosing this language was the need for a platform independent language that could be used to create software to be embedded in various consumer electronic device.

Django is a web framework that is commonly used as a backend tool to build web applications. It provides a range of features for managing databases, including relational database management systems, such as PostgreSQL and MySQL. Django is known for its reliability, data integrity, scalability, and high level of security for the stored information, making it a popular choice among developers.

Django is a free, open-source software that is easy to use, fast, and can accommodate large amounts of data. Its powerful and intuitive ORM (Object-Relational Mapping) system allows developers to work with databases without having to write complex SQL queries.

4.9.1 System Login Page

The main introduction page of the system
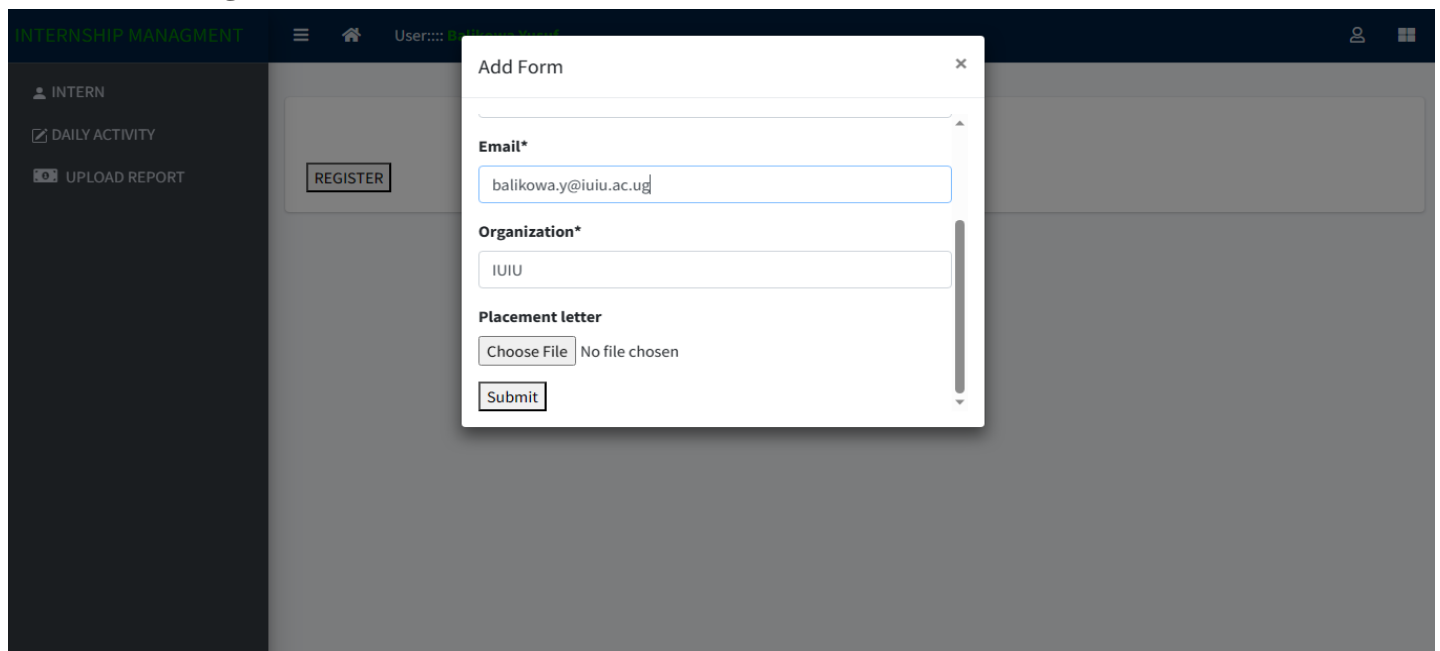
Figure4: Login page of the system

Before accessing the system, you must have an account that the faculty coordinator created for you

4.9.2 Student registration Form

Figure5: Student registration Form

After filling in all required information, click on submit in order the data to be captured in the database of this system

4.9.3 Record Daily Activity

After logging in the system, the student can record the daily activity

Figure6: Record Daily Activity Form

4.9.4 Uploading Internship report.

The student can upload the report and his university supervisor can access it from his interface.
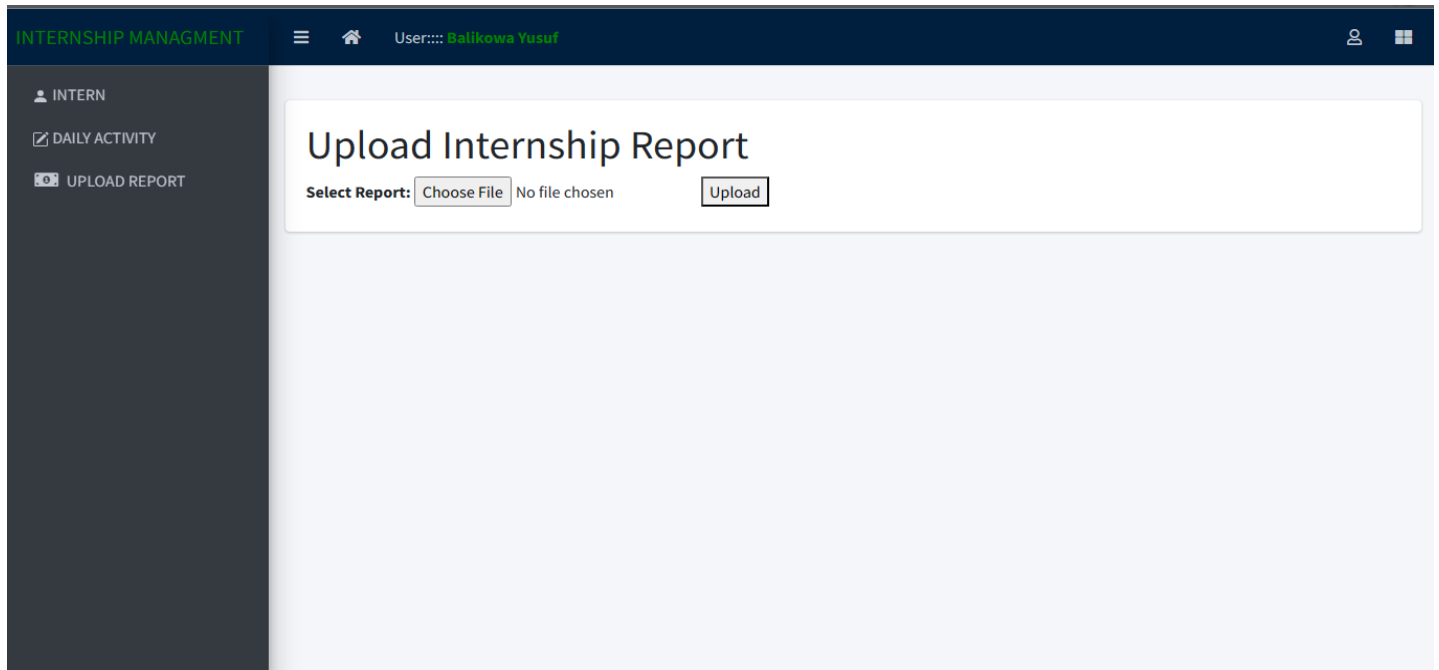
Figure 4 Showing uploading internship report

4.9.5 University Supervisor Notifications
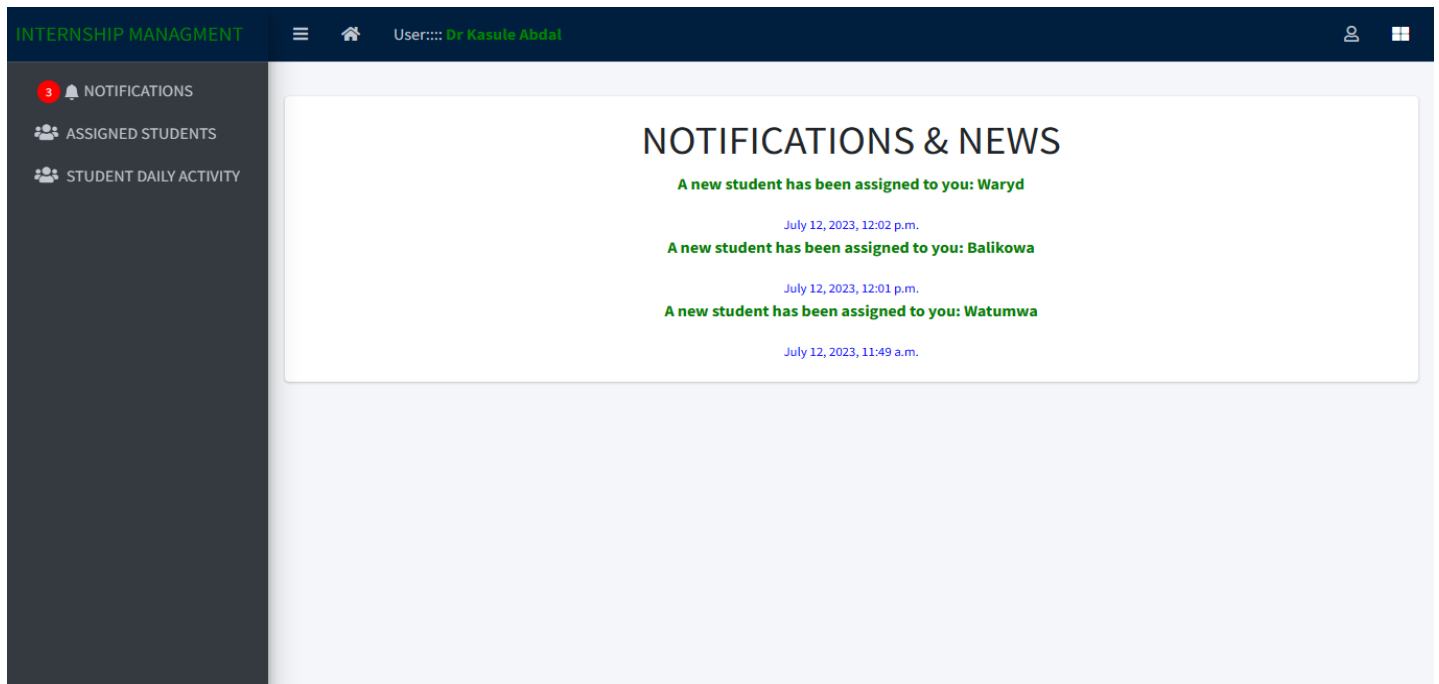
Figure 7 Showing notifications.

4.9.6 View Students to supervise

After the faculty coordinator has assigned each university supervisor a student, he is in position to view the list of students assigned to him.
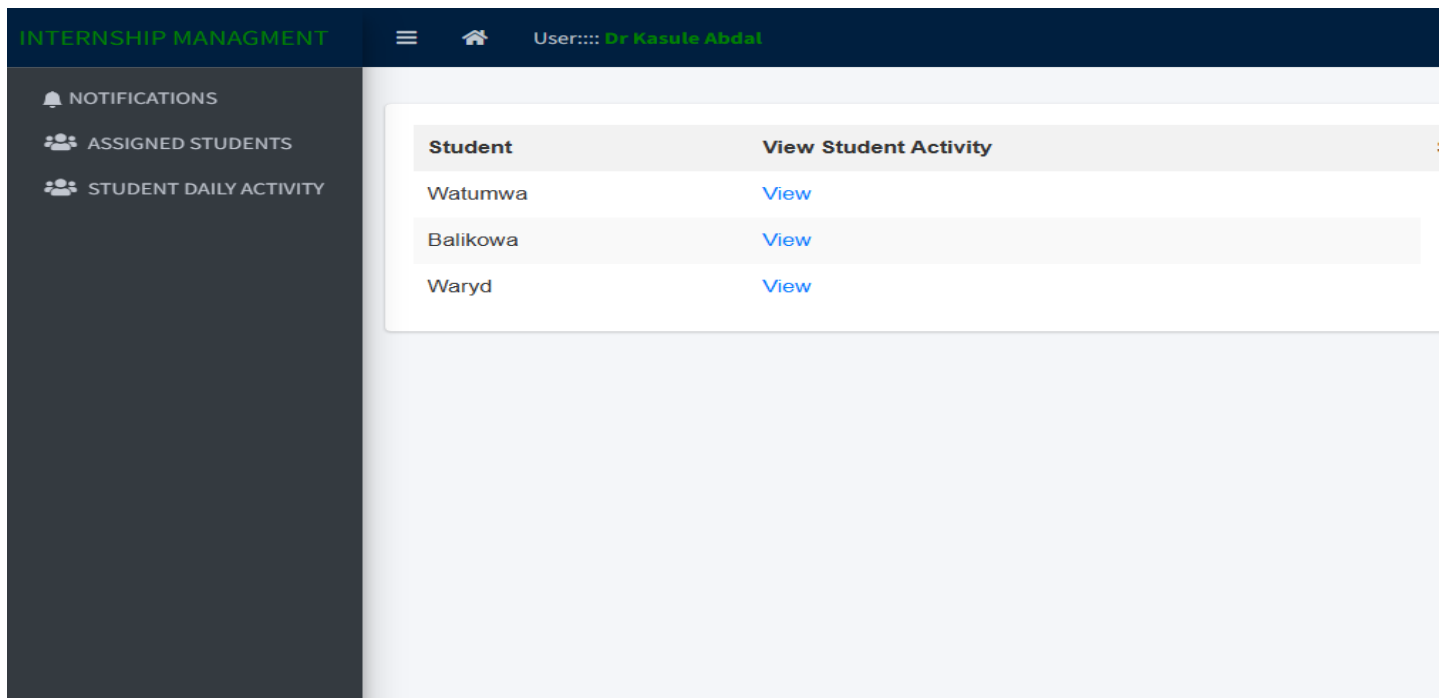
Figure 8 Showing assigned students.

4.9.7 Faculty Coordinator.

The faculty coordinator is the over-all controller of the whole system.
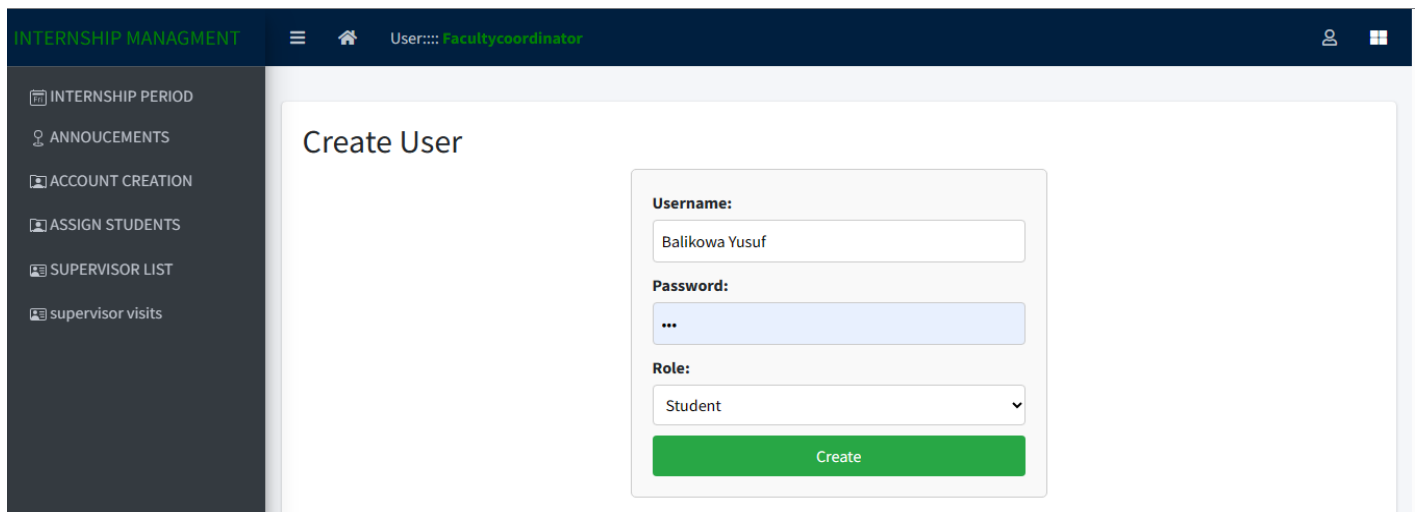
Figure 9 Creating Accounts

4.9.8 Database

It can only be viewed by the Faculty coordinator and he can edit, delete and update the data

Figure 10. Database Interface

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This research's main aim was to study and understand how internship is managed at Islamic University in Uganda and establish its associated challenges for an improved internship management system, analyze the functional and non-functional requirements of the new internship management system which resulted into logical designs and prototypes of an improved Internships management system in order to ensure that it meets the functional and non-functional requirements as well as to test whether it is free from errors. This set off with the study and analysis of the current systems followed by the establishment of user and system requirements that aided in specifying the functional and non-functional requirements that were used to design models from which the prototype for a new solution was implemented. This chapter therefore discusses the study's conclusions, recommendations and future plans after the implementation of the solution.

5.1 Research Report Summary

~~The study report presents the aim of the study, objectives, and methods used to achieve the objectives. The report then concludes discussing the challenges and successes of the study.~~ The study's focus was at improving internship management through designing and implementing a web-based internship management system. For this to be achieved, objects were set to guide the flow of the study and help understand and analysis the current system being used at the study's case study institution; Islamic University in Uganda. The study was conducted in view of business processes and technologies to establish weaknesses in relation to the institution's goals and review methodologies to come up with the best approach and methods for executing the project.

The study reviewed literature on related works to determine the gaps in the current internship management system and establish the need to bridge the gaps and give a solution to improve internship management. This was carried forward by evaluating the business processes on the information supply side through use of data collection techniques and tools .

The finding of the study revealed that the current system does not allow Faculty coordinators to serve students in a timely manner because, it is still manual and time consuming, The internship registration process, monitoring and evaluation plus supervisor allocation are too manual, students record their daily activities on papers. This stressing process slowly led to the poor reporting culture of students and supervisors in different departments of Islamic University in Uganda which affects the performance of various departments. In an attempt to solve these problems, the current internship management was analyzed based on the business processes of the University and the user requirements collected during the study.

After the analysis of the system, it was designed and the solution implemented basing on the project objectives and requirements prior determined.

5.2 General Conclusion of the Study

The Study of current practices of how internship is done at Islamic University in Uganda established that the old internship system was handling each aspect of internship independent of the other. By providing a common platform for integration of all the internship management aspects within the new system, the University can now utilize the system to access all information on the students' internship at a central point.

The analysis of the research finding and system requirements for developing an information system to improve internship management at Islamic University in Uganda revealed a need for a system that would provide a central storage space for all the data collected on the internship activity and reduction on the time taken by the University staff to produce periodic reports. As an answer to the requirements analyzed, a system prototype was designed and implemented. This greatly cut back on the time taken to work on internship information.

Despite delays in implementation of the internship management system, the Islamic University in Uganda staff and students were excited to have a system that eased their work of managing internship data, generating reports and improving the overall management of internship.

5.3 Recommendations

Recommendations are cautions the administrators of the system should do to keep the system functional and well maintained to achieve the main objective of the system.

i. The system should be further developed by adding other functionalities of the off line

The university Faculty coordinators should take some measures of security such as changing the password to make sure that the person accessing the new system are only the authorized ones.

ii. The system should be further developed by adding other functionalities of the internship daily operations like managing companies with internship placements can post them on the system to allow students to apply for them.

All the Islamic University in Uganda staff and students should be trained on how to correctly use the new system so that it will be understandable to all the staff and students.

A systems administrator should be involved to manage and keep the system running effectively. This administrator should be very well knowledgeable about the databases, information systems and programming.

A backup system should be put in place and used regularly so as to help recover the information for reference in case of system failure. This can be in form of external hard disks.

5.4 Further Work on the System

Due to the limited time and other challenges in which this project was to be accomplished, the researcher was un-able to have an adequate number of trial results by the users. Plans to carry out more trails should be put in place by the Islamic University in Uganda stakeholders to gain more acceptances and if it is positively received, then fully launch the system once the necessary infrastructure is in place. The designed system is for improving internship management at Islamic University in Uganda and the reviewed literature showed that there are other systems designed to manage students activities and other school based information systems but the area of internships had not been thought of at Islamic University in Uganda and Uganda as a whole even in Africa. The implemented prototype runs on ordinary web browsers and networked computers, and mobile devices with web browsers, further work can be done to improve the prototype to implement a mobile application that can be used and compatible with the new technologies of mobile devices like mobile phones and notepad computers.

5.5 Conclusion

Timely and better quality services extended to users is an all organizations' dream in Uganda especially in this error of technology; therefore an improvement in the management of internship system would guarantee every person timely access and almost self-service of user needs pertaining internship at Islamic University in Uganda. The development of the internship management information system obviously improves the process of internship management through timely access to student's data like the log books, supervisor details and how they are progressing with their students on internship. The study has not only produced a system prototype of internship management systems but has also proved the new system to be an efficient way of enhancing performance of students and improve supervisor roles compared to the former system.

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