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DEVELOPING A DIGITAL HEALTHCARE SYSTEM FOR JORDAN CLINIC IN NABWERU KAMPALA

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**Project Proposal Submitted to the Faculty of Computing and Informatics of Makerere
University Business School in Partial Fulfillment for the Award of the Award of the
Degree of Business Computing of Makerere University**

November 2025

DECLARATION

We, the undersigned, declare that this proposal, to the best of our knowledge is our original piece of work, and has never been published or submitted for any reward in any other University or Higher Institution of Learning.

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APPROVAL

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

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SECTION ONE

1.0 INTRODUCTION

This section outlines the background of the project, the problem it addresses, the key objectives, scope and benefits of the proposed digital healthcare system.

1.1 Project Background

Over the past two decades, digital healthcare systems have transformed how medical services are delivered and managed. Traditionally, healthcare facilities relied on manual paper-based records, face-to-face consultations, and physical storage of patient files. This state often resulted in challenges such as misplaced records, delays in retrieving patient information, limited communication among healthcare workers, and slow service delivery.

The Digital healthcare systems have gradually changed on how the medical care is viewed compared to its previous state. These systems use tools, for example electronic patient records, healthcare apps on mobile phones and web-based healthcare systems on computers making healthcare faster and easier to reach. According to Bates et al.,2023; Doraiswamy et al.,2021, In rich countries the digital healthcare can stop mistakes, help care teams work together, and let people see specialists even if they are far away. Digital technologies potentially play a fundamental role in facilitating the timely availability of high-quality health information for the provision of better healthcare services thus digital health solutions should respond to client's needs. (The Uganda health information and digital health strategic/plan 20220-2025)

Uganda's healthcare system faces a challenge of data loss on patient records, long queues and limited access to healthcare most especially in rural areas. According to the ministry of health Uganda (2022) reports that public and private health facilities continue to struggle with manual appointment scheduling, leading missed appointments and poor patient records management (Ministry of Health, 2022). Bio made central 2025 the digital health in Uganda has potential to transform healthcare by enhancing, improving security of patient information and increasing cost effectiveness.

With the increasing penetration of mobile phones approximately 80% of Ugandan adults have access to mobile phones, according to the Uganda Communications Commission (UCC, 2023). Digital healthcare technologies can help individuals monitor their health data such as blood pressure and receive reminders for appointments and other health-related tasks.

Jordan Clinic is a small private healthcare facility located in Kampala. It mainly helps surrounding communities by offering healthcare services such as vaccines, general checkups and antenatal care services. It has been follow-up due to its manual paper-based system and inadequate staff. The clinic has only six nurses and a part-time doctor, and they see many patients each day. It's hard to track follow-ups, so people miss appointments and may need urgent care. The paper-based system has resulted in several problems such as loss of patient records, incomplete patient records, delay in tracking patient health history, and overwhelming administrative workload for the facility staff and these problems have affected the clinic's reputation by experiencing significant operational challenges related to patient information registration and operational efficiency and its client's trust. According to Jordan Clinic internal records (2025), the rate of patient record loss has increased to 30% over the past years, mainly due to mismanagement of paper files.

To fix these problems, this study proposed a web based digital healthcare system for Jordan Clinic. The system brings together patient signups, electronic records, and appointment scheduling and works on Android phones. Because many people use mobile phones, this setup should make work easier, minimize mistakes and reduce administrative workload helping Jordan Clinic to improve overall healthcare service delivery.

1.2 Problem Statement

Developed healthcare facilities require timely access, sharing and storage of accurate patient information through web-based healthcare systems (World Health Organization ,2023).

These systems promote coordination among health workers, reduce human errors, improve patient healthcare services and easy patient data retrieval. Unfortunately, Jordan clinic uses paper-based system for medical. (Jordan clinic 2025). Patients' health records are recorded manually in file and books. This method of data entry causes loss and misplacement of patient records, delayed data retrieval and overwhelming workload for the staff. Jordan clinic will face a challenge of loss of patient information, high risks of delayed treatment if it continues on paper-based data entry.

1.3 Research Goal

This project aims at developing a web-based healthcare system for Jordan clinic to improve its medical healthcare service delivery.

1.3.1 Research Objectives

- I. To study and analyses the current patient information management system used by

Jordan clinic.

- II. To design and develop a digital healthcare system for Jordan clinic.
- III. To test and approve the functionality, performance and availability of the developed web-based healthcare system for Jordan clinic.

1.3.2 Project scope summary

a) Key deliverables

- I. User Management Module. Role-based access control for staff, patients, and administrators to ensure data security and appropriate permissions, compliance with health privacy standards.
- II. Patient Registration and Management Module. Functionality for quick patient intake, profile updates, and search capabilities for medical history.
- III. Appointment Scheduling and Booking Module. Integration with calendar tools for secure online or in-app bookings, with generation of confirmations and reminders.
- IV. Reporting and Analytics Module. Generation of reports on patient visits, treatment outcomes, resource utilization, and demographic trends.

b) Key Activities:

These activities include the gathering and analysis of requirements by acquiring input from clinic staff and patients, which is necessary for the system to meet the needs of the users. Next comes the design of the system architecture, the database schema, and a user-friendly interface suitable for mobile devices. After that, it gives way to the development phase where the platform is built using appropriate programming languages and frameworks and keeping in mind Android compatibility. Once developed, the system is put under testing and quality assurance to find and correct bugs with a view to ensuring reliability, accuracy, and the safety of users.

1.4 Significance of the project

This is a very important project because, upon implementation, it improves the accuracy,

security, and access to patient information through the use of a digital healthcare platform compared to the existing paper-based systems in Jordan Clinic.

- a) The system will minimize record loss, reduce waiting time, and enhance follow-up care through its ability to support organized electronic records with appointment scheduling.
- b) It decreases the administrative workload on the limited staff of Jordan Clinic, which shifts their focus to caring more for the patients.
- c) In addition, this project contributes to the national efforts of Uganda toward digital health transformation in line with the digital health strategies of the Ministry of Health.
- d) The end result will be an upgrade in service provision at Jordan Clinic by increasing confidence among the patients, which will again enhance good clinical decisions.

Problem-Solving Impact

- I. Streamlined Patient Care. The digital platform will cut wait times by automating registration, consolidating records, and reducing the need for manual file searches.
- II. Enhanced Operational Efficiency. Real-time access to patient data will reduce errors like medication mix ups, minimizing risks and improving clinic workflow.
- III. Improved Health Outcomes for Communities. Analytics tools will help track chronic conditions and vaccination rates, enabling proactive care and better resource allocation.

Benefits for the Healthcare Sector

Cost Reduction

Automation will lower operational costs for small clinics replacing paper-based processes with digital tracking and notifications.

1.5 Project Assumptions

To ensure the successful execution of our digital healthcare system project for Jordan Clinic, the following assumptions have been made:

The team assumes that the platform will comply with all relevant healthcare regulations in Uganda, and that legal requirements for patient data handling will remain stable during development.

It is assumed that the platform will be developed with standard security protocols, e.g., encryption and authentication, and that users will trust the system to handle sensitive health and personal information securely.

It is assumed that users, including patients and staff, will be able to access the platform on common Android devices without significant performance or compatibility issues. The project assumes that clinic staff and patients will be willing to adopt and provide feedback on the new system.

It is assumed that the platform will be scalable, allowing for future expansions like telemedicine features or multilingual support.

The team assumes that all development stages, such as design, implementation, testing, and deployment, will be completed as scheduled without major delays.

SECTION TWO

LITERATURE REVIEW

2.1 Introduction

The global healthcare landscape is undergoing a profound transformation, driven by the integration of digital technologies aimed at enhancing efficiency, accessibility and quality of care. Digital health consists a broad range of technologies, including electronic medical records (EMRs), telemedicine, and health information systems (World Health Organization, 2021). In low-resource settings like Uganda, the adoption of such technologies is not merely a matter of convenience but a critical strategy for overcoming systemic challenges such as fragmented patient data, chronic shortages of healthcare workers, and inefficient supply chains. Thus, the study will examine the existing body of knowledge relevant to the core objectives of developing a digital healthcare system for Jordan Clinic in Nabweru, Kampala. It will explore the evidence supporting the digitization of patient records, the implementation of automated scheduling and tracking systems and the digital management of inventory and staff files, contextualizing these initiatives within Uganda's national health strategy and global best practices.

2.2 Global Perspectives on Digital Healthcare Systems

Globally, there have been changes in delivering medical services from paper medical records to electronic health records (EHR), tele healthcare, and mobile health application systems. Nations such as America, Britain, and South Korea have developed modern digital platforms to provide instant access to data, automated appointment systems, telehealth services, and clinical decisions supported by artificial intelligence (WHO, 2020).

According to Doraiswamy et al. (2021), Bates et al. (2023), digital solutions have decreased human errors, facilitated inter-provider communications, increased treatment success rates, and allowed patients to seek services from specialists even in faraway areas. The success stories worldwide have shown the ability of digital solutions to provide better patient results and improve operations in medical setups.

Nevertheless, despite these advantages, challenges such as data security issues, cost of implementation, and digital literacy continue to be faced by global communities worldwide, particularly in developing regions. All these form critical considerations towards

understanding modifications to digital systems for less developed areas such as Uganda.

2.3 Regional (East African) Adoption of Digital Health Technologies

Despite these efforts, East African countries have seen advancements in integrating digital tools in response to challenges in the health sector. Systems such as Babyl from Rwanda, mPusha from Kenya, and Tanzanian electronic logistics management systems have improved patient consultations and medication delivery systems.

Studies have shown that digital health systems in East Africa have helped to minimize errors involving medication, improve follow-up of patients suffering from chronic ailments, and improve monitoring of diseases (Mutebi & Tumwine, 2022). Examples such as these success stories indicate how small health clinics like Jordan Clinic can be impacted by digital systems adapted to their size.

2.4 Digital Transformation in Uganda's Healthcare Sector

Paper files and handwritten registers dominate most healthcare facilities, often leading to long queues, misplacement of patients' records, and a lot of workloads for administrative staff. According to Hon Dr. Elizabeth Mgamb speaker from World Health Organization (2023) noted that all these challenges can be solved through digital health enhancing data management, telemedicine, easy communication and informed decision making etc. Simple Electronic Health Record, for instance, have helped medical staff to record patient data. However (Bokolo 2021) notes reality checks like unreliable internet, limited devices, and stretched resources has slowed the pace of digital adoption.

2.5 What Users Need from Digital Healthcare Systems

Digital healthcare systems have played a fundamental role in addressing user needs of patients and staff, such as reducing the administrative workload. Users require a system that is simple to learn, affordable, reliable and is able to promote health and patient wellbeing. Meeting these human needs like speed, trust and ease is just as important as the technical design (World Health Organization, 2020). The Uganda health sector is faced by a lot of health inequality with the possibility that the elderly, disabled persons or those unfamiliar with technology may struggle to access digital healthcare services.

Therefore, according to (World Health Organization, Global strategy on digital health ,2020-

2025) users require a system that will provide health equity approaches and accessibility especially for specific population groups e.g. People with disabilities promote inclusivity.

2.6 Learning from Other Digital Health Platforms in Uganda

Uganda has piloted several electronic medical record systems, such as Uganda Electronic Medical Records, mainly in larger government facilities (Minister of Health Uganda, 2022). These initiatives prove that digital systems can work, but they are often too resource-intensive and costly for smaller community clinics. Jordan Clinic requires a lightweight, web based system that fits its operational scale and budget.

Evidence from Uganda and East African countries such as Rwanda, Tanzania, Kenya, and Burundi shows that digital systems can make a real difference. For example, Rwanda's digital health platform Babyl has expanded remote consultations, Tanzania uses electronic logistics systems to improve medicine supply tracking, and Kenya's mPusha has improved maternal health communication. According to the Uganda Health Information and Digital Health Strategic Plan (2024–2025), digital health technologies facilitate timely access to high-quality health information, which improves healthcare delivery. Benefits include reducing medication errors, saving time, and improving chronic disease management (Mutebi & Tumwine, 2022). In Uganda, web-based systems have strengthened maternal health follow-ups, supported HIV treatment, and aided disease monitoring (Kiberu et al., 2021). For a clinic like Jordan, these benefits could result in fewer lost files, smoother consultations, and patients who feel more cared for.

2.7 Designing with Context in Mind

The best digital tools are those that fit the lives of their users. The methodology for designing digital tools focuses on developing systems that prioritize simplicity, accessibility, usability and align with daily routines of patients and staff. In Uganda, that means designing a system methodology that focuses on essential modules such as patient registration, appointment scheduling and for digital tools optimized for mobile phones considering the large use of mobile devices in Uganda. According to (Bokolo 2021) noted that starting small and building around the daily routines of staff and patients, digital systems can support healthcare rather than complicate it.

2.8 Barriers to Web based Digital Health Systems and How to Overcome Them

Digital healthcare adoption in Uganda faces several barriers. Unstable electricity can disrupt system availability, which can be mitigated by using backup power sources such as generators or solar energy (Bokolo, 2021). Poor internet connectivity in peri-urban areas limits access to online systems; this can be addressed by designing offline-capable or low-bandwidth platforms (World Health Organization, 2020). High start-up costs may discourage small clinics from adopting digital systems; phased implementation or mobile-first lightweight systems can reduce initial investment. Limited digital skills among staff hinder effective use of technology, which can be addressed through targeted training programs and continuous capacity-building initiatives. Finally, data privacy and security risks require systems with built-in encryption, secure login protocols, and clear policies to maintain patient trust (Acheng, Ministry of Health, 2024–2025).

2.9 Conclusion

Research shows that when done right, digital healthcare systems can transform the way health care is delivered in Uganda. For Jordan Clinic, adopting such a system could mean faster patient registration, secure records, patients who feel supported, enhanced interaction between the providers and patients. At the end of the day digital healthcare system isn't just technology but it aims at bringing back equality in healthcare services and strengthening trust in society.

SECTION THREE

RESEARCH METHODS

3.0 Introduction

This section highlights the research methods, research design, target population and Sample, sampling technique, project development process, requirements elicitation methods, project constraints and ethical considerations.

3.1 Research Design

The project team will undertake a design science approach. The team will attempt to build a digital health care system through identifying the health care requirements and defining a solution to the existing problems. (Bates, D. W., & et al. (2023).The research team will design logical models of electronic health records, then develop a working prototype of healthcare system that will improve management in the clinic.

Illustration of DSR Process;

From: Development of a digital healthcare system for Jordan Clinic using a design science research method

	3.Design and Development	c) To design a Digital Healthcare Management Research System (for Objective to be addressed)	UML diagrams, Agile development, Prototyping (HTML, CSS, JavaScript, php)	System architecture diagrams, Functional prototype
	DSR Stage	Research Objective to be addressed	Proposed Methods	Expected Results
	1.Problem Identification	a) To analyze the current health care system management and healthcare setting.	Observation, Surveys, BEDs, Data with staff and patients, Usability studies	A report highlighting feedback report, Bug fixes, Improved user interface and the existing system.
	4. Demonstration	d) To implement the system in the healthcare setting.	Workshops, error adoption rate, expert consultations, Supervisor review.	Recommendations for measurable objectives (for example reduce patient waiting times by 20%).
	5. Evaluation	e) To assess system performance	KPIs (for example adoption rate, error reduction),	Validation report, Recommendations for measurable objectives (for example reduce patient waiting times by 20%).
	2.Definition of Objectives	b) To define clear objectives for improving healthcare delivery.	Conference presentations, Journal publication, Training sessions.	Approved project report, Peer-reviewed publication
	6. Communication	f) To share findings and deploy the system.		

Stage 1: Problem Identification/Motivation. The research team will conduct investigation on the challenges on the current appointment methods at Jordan Clinic. This stage will involve one time observation of the appointment process, workflow and the data collection of patients. The team will also observe issues of schedule conflicts. This will be done through interacting with the patients and staff to obtain the challenges faced by them. The engagement will be conducted with the staff (1 receptionist, 1 doctor), and sample patients (4 patients). This interaction will provide current challenges, expectations and their needs. The team will obtain added information on the clinic through their appointment records. This will provide us with a wide range of views on the problems faced by the stakeholders, hence providing the required tools to be used in the system.

Stage 2: Definition of objectives. In this stage, the team will identify and state the objectives of the project. Three major objectives have been identified in this project, and these include reviewing previous literature reviews based on related facilities, identifying the requirements for developing a digital healthcare system for Jordan Clinic.

Stage 3. Design and development. The team will follow an agile development methodology allowing for iterative creation and feedback. The use of Unified Modeling Language for detailing design for example use case diagrams, class diagrams, sequence diagrams. Relational database models to define the entities, attributes and relationships. The system will be developed using modern technologies, for example the frontend will use HTML5, CSS3, JavaScript and bootstrap framework responsive, mobile-friendly web application. The Backend will use php with Laravel framework chosen for its robustness, elegance and built-in features for authentication, routing and security. Database will be implemented using MySQL for reliable and structured data storage.

Stage 4. Demonstration. The prototype will be tested in a controlled environment within Jordan Clinic to ensure scalability, reliability, and usability. Controlled beta testing will involve uploading the prototype online and training a small group of three users (one patient, one doctor, and one nurse) to use the system. Scenario-based testing will simulate real-world tasks such as patient registration, appointment scheduling, and management of financial documents. Security testing will protect against common threats, including SQL injections, and any identified errors or bugs will be addressed promptly to ensure system stability and safety.

Stage 5. Evaluation. This stage will address whether the research objectives meet with the development of the digital healthcare system. Quantitative metrics will collect data and compare pre-implementation baselines like average waiting time, time taken to retrieve data and number of reported incidents of lost patient data. Formal User Acceptance testing, the clinic will use a refined system to complete a predefined set of tests to accept the solution. Supervisor evaluation, all the documentations and evaluation data will be presented to the project supervisors to demonstrate the system's capability.

Stage 6. Communication. This last stage involves documenting and presenting the project to the stakeholders. The team will organize a more informed report on each faculty guidelines covering development, challenges and solutions. The team will present the project the panel. The team will collaborate with the supervisor to publish a research document on digital healthcare systems in developing countries. The final report will be submitted to the supervisor for final approval.

3.2 Project Organization (Client)

The client for this project is Jordan clinic, a healthcare facility serving a semi urban population. The project owners are the administrators and management of Jordan clinic. The primary users of the proposed digital healthcare system are the clinic staff who will interact with the system on a daily basis, and these users include doctors and nurses who will use the system to access patient electronic records, the administrative staff such as receptionists and record officers will manage patient registration and scheduling appointments and managing bills. The total population of the direct stakeholders at Jordan clinic is 23 staff members. (8 doctors, 13 nurses) Given its relatively small population, the project will engage with the entire group to ensure continues workflow during the requirements elicitation and testing phases.

3.2.1 Sampling design/sampling techniques

The sum of stakeholders are approximately 23 staff members, including doctors, nurses and administrative staff ensure representative participation in requirements elicitation and usability testing, Purposive sampling will be used to select doctors and nurses because these stakeholders have direct professional experience with patient management. Purposive sampling is chosen for the following reasons such as cost efficiency that targets urban users where internet connectivity supports testing, relevance through focusing on stakeholders

directly interacting with the system ensuring feedback aligns with the project's objectives. For patients, simple random sampling shall be utilized. This will ensure that each patient has an equal opportunity to be selected, which will reduce bias and heighten the representativeness of patients' feedback. Random sampling is appropriate for patients because their perspectives vary greatly with respect to age, frequency of visits, and needs for services, and randomness ensures a fair distribution of views.

3.3 Sources of Project Data

The project will collect and base both primary and secondary data to ensure understanding of the challenges and to inform the system design and development. The primary data will be collected directly from Jordan clinic and viewing patient appointment schedules and financial ledgers. This will enable us to gain an insight into specific operational inefficiencies. Direct observation will be made through observing clinic operations to obtain the process, timing activities such as file retravels, appointment schedules.

Secondary data will be used to provide context to the project within the academic literature such as peer reviewed journals, industry reports, for example publications from organizations like World Health Organization documentation for example manuals and designed guidelines from proposed technology stacks.

The project team will study the current system carefully and in detail. This will enable the researchers to come up with a new system to enable Jordan clinic to improve on their healthcare services. The researchers will use observation, interactions mind mapping and focused group decisions to collect the requirements for designing and developing the digital healthcare system.

3.4 System Analysis and Design Approaches

The project will adopt an object-oriented analysis and design (OOD) approach most especially using the unified modeling language (UML). This approach is selected because a digital healthcare management system is a complex system with interacting entities, for example patients, doctors and appointments. This design also allows modeling of real-world entities and their relationships effectively leading to a design that is modular reusable and easier to maintain. The development of the project will use this methodology because it allows for the development of the system to be done in iteratively and incremental approach

instead of building the entire system at once. This facilitates early feedback from the clinic's staff, ensuring that the final product is closely aligned with their requirements and reducing the risk of significant deviation from user needs.

3.4.1 Requirement Elicitation Techniques

The project team will conduct an in-depth study of the existing processes used for managing patient information and appointments records. Both primary and participatory data collection techniques will be applied to ensure the system meets user needs. The team will use observation, Interviews, Focus Group Discussions (FGDs), Mind Mapping, Problem Tree Analysis to collect requirements for designing and developing the required information system.

3.4.2 Design Techniques

To implement the system effectively, the project will apply design techniques that align with its objectives of the health care system, enhancing visibility, and automating bookings appointments while ensuring a user-friendly system.

System Architecture Design

A system architecture diagram will be developed to give a high-level overview of the interaction of the different system components. This diagram will show the structure of the web-based healthcare system, including users, modules, the web application, and the database. This supports clearer planning, efficiency in the integration of systems, and better understanding of how data is flowing among the components.

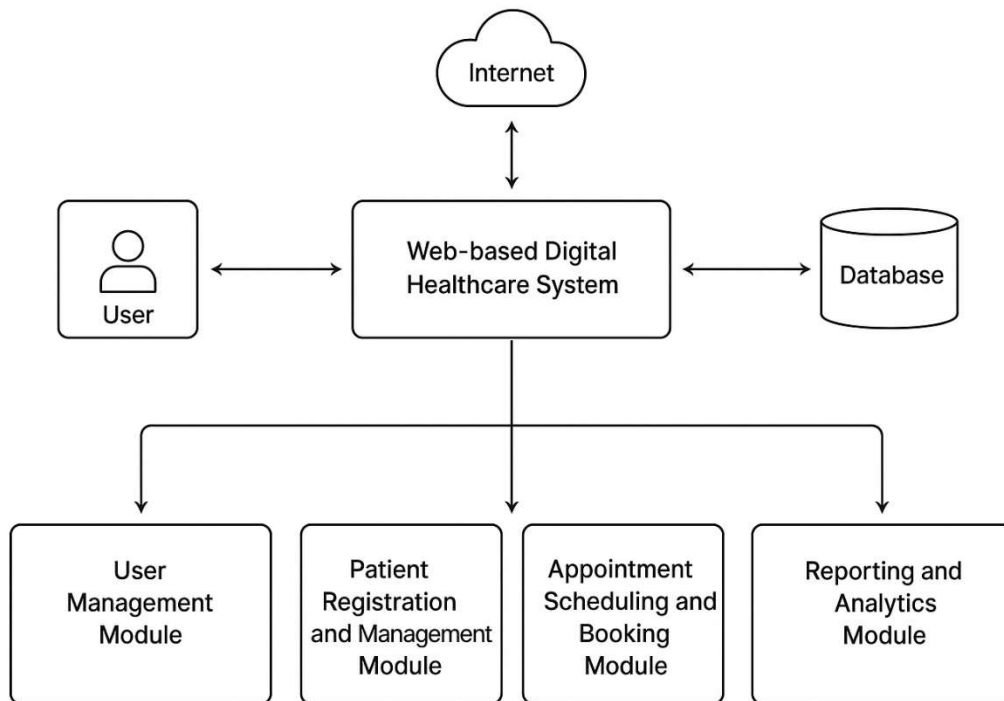


Figure 3. 1: Shows System Architecture

Use Case Diagrams; used to model interactions between users (patients, doctor, nurses and administration) and the system, capturing functional requirements and supporting modular design

Entity-Relationship (ER) Diagrams; this is done to design the SQL database scheme, showing relationships among entities such as patients and booking. This ensures scalable and dynamic data management.

Prototypes; developing early working models of the platform, starting with core modules such as user authentication and booking with using Php. Prototypes will be designed to validate usability and objectives hence minimizing time wastage.

3.5 Anticipated Project Constraints

The project is likely to face three key constraints, along with proposed solutions to mitigate their impact, ensuring that it remains on track and achieves its intended objectives. The following constraints are identified and a solution to curb them.

- a) The Project may be hindered by inability to get literature and data about the topic of study. The team plans to use online sources to gather as much information about the study area as possible.
- b) The Project may be affected by inability to get the latest software programs to design the system. The team plans to source for the most appropriate open-source software that can be used to solve the Problem.
- c) The team may not have enough programming or technical skills to develop the artifact. The team plans to enroll on online courses to improve their programming skills in order to design a High-Quality software.
- d) The team expects some degree of user resistance if the system is taken up by the firm. The team, however, will solve this by doing enough User Acceptance Training and Testing of the System before installation.

3.6 Ethical Considerations

The ethical considerations for the project and the strategies the team will implement to manage ethical usage of the system and adhere to research ethics during the development process are as follows;

a) User Privacy and Data Security

Since the platform will handle sensitive personal and health data, the system will include robust security measures, such as HTTPS encryption, secure authentication, and restricted data access, to ensure patient confidentiality and safe data management (Mehraeen & et al., 2023).

a) Informed Consent and Transparency

All participants in surveys and usability testing will be fully informed about the project's purpose, how their data will be used, and their right to withdraw. This will be communicated through simple consent forms to address varying levels of digital literacy (Bates, D. W., & et al., 2023).

3.7 Disclosure Statement

The team at some point used AI such as ChatGPT. This will assist only in code. Therefore, we

declare to the best of our knowledge that there is not any conflict of interest while conducting the research proposal. The team will use HTML to come up with the user interfere (UI).

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APPENDICES

I. : Proposed Project Budget

Table 1: Project Budget Breakdown

Item and Activity	Description	Quantity	Unit Cost (UGX)	Total Cost (UGX)
A. Hardware Resources				
Laptop/Computer	Working station owned by the team	3	0	0
B. Software & Development Tools				
Code Editor	VS Code / Sublime Text (Free)	3	0	0
Design Tools	HTML Codex	0	0	0
Database	MySQL open source	1	0	0
Version Control	GitHub Free Account	1	0	0
C. Hosting & Domain				
Domain Registration	Byte host (free domain)	1	0	0
D. Communication & APIs				
Email Service	SendGrid / Mailgun free tier	1 account	0	0
Internet Data	Team internet bundles for development	Monthly for 3 months	50000	150,000
E. Data Collection & Research				
Printing	Questionnaires,	10 copies	300	3,000
Transport	Transport to clinic for research	5 trips	8000	40,000
F. Documentation				
Proposal Printing	Draft and final copies	6 copies	10000	60,000
Proposal Binding	Proposal binding	6 copies	10000	60,000

Item and Activity	Description	Quantity	Unit Cost (UGX)	Total Cost (UGX)
Report Printing	Final project report printing	6 copies	10,000	60,000
Report Binding	Final report binding	6 copies	10,000	60,000
G. Capacity Building				
Online Courses	Coursera on software development			120,000
Reference Books	Basic of Laravel framework practical guide	1 book		
H. Testing & Quality Assurance				
User Testing	Training for testing users	5 users	0	0
TOTAL PROJECT BUDGET				Shs.553,000

II. : Data Collection Tools

a) Participant Consent Form

Title of Study: Developing a Digital Healthcare System for Jordan Clinic, Nabweru, Kampala

Researcher: [Your Name]

Institution: [Your University]

Contact: [Email / Phone]

Purpose of the Study:

You are invited to participate in a study aimed at testing and improving a digital healthcare system for Jordan Clinic. The study will help improve patient record management, appointment scheduling, and overall service delivery.

Procedures:

If you agree to participate, you will be asked to use the digital healthcare system prototype in tasks such as patient registration, appointment scheduling, and accessing health records. Training will be provided, and support will be given during testing.

Voluntary Participation:

Participation is entirely voluntary. You may withdraw at any time without any penalty or impact on your healthcare services.

Risks and Benefits:

There are minimal risks associated with participation. Benefits include contributing to the improvement of healthcare services and gaining experience with digital healthcare tools.

Confidentiality:

All information collected will be kept confidential and used only for research purposes. Your identity will not be disclosed in any reports or publications.

Consent:

By signing below, you agree to participate in this study voluntarily, and you understand the purpose, procedures, risks, and benefits of the research.

Name of Participant Signature.....
Date.....

b) Interview Questions for Jordan Clinic Staff and Patients

Purpose: These questions aim to gather insights from clinic staff and patients to guide the development of the digital healthcare system.

Section 1: Staff (Doctors, Nurses, Administrative Staff)

1. Can you describe the current process for patient registration and record-keeping?
2. What challenges do you face with the current paper-based system?
3. How do you track patient appointments and follow-ups?
4. Are there any common errors or issues you encounter in managing patient data?
5. What features would you consider most important in a digital healthcare system?
6. How comfortable are you with using mobile or computer-based systems for healthcare tasks?
7. What security or confidentiality concerns do you have regarding patient information?
8. How do you think a digital system could improve your daily workflow?

Section 2: Patients

1. How do you usually book appointments at Jordan Clinic?
2. Have you ever experienced delays or errors in your patient records?

3. What difficulties do you face in accessing your health information?
4. How comfortable are you using mobile phones or computers to access health services?
5. What features would make a digital healthcare system easier for you to use?
6. Are there any concerns you have about privacy or security when using a digital system?
7. How would a digital system improve your experience at the clinic?

III. : Schedules of Activities/Gantt Chart

Table 2:Project Work Plan

ACTIVITIES	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
IDENTIFY PROBLEM								
DEFINE OBJECTIVES								
DESIGN AND DEVELOPMENT								
DEMONISTRATION								
EVALUATION								
COMMUNICATION								

