DAR ES SALAAM INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER STUDIES

BACHELOR OF COMPUTER ENGINEERING

NTA-LEVEL 8

PROJECT TITLE	**:**	**VENUE FINDER ASSISTANCE SYSTEM**
PROJECT TYPE	**:**	**CASE STUDY**
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ACADEMIC YEAR	**:**	**2022/2023**
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JAN, 2023

CERTIFICATION

As the candidate's supervisor, I have approved this project proposal for submission.

Supervisor's name: MR. ALFRED KAJIRUNGA

Signature …….

Date …….

DECLARATION

I, MICHAEL EMMANUEL SWEYA, declare to the best of my knowledge that the project presented here, as a partial fulfillment of a Bachelor Degree in Computer Engineering, is my original work and has not been copied from anywhere or presented elsewhere except where explicitly indicated otherwise as all sources of knowledge have been acknowledged.

CANDIDATE NAME	**SIGNATURE**	**DATE**
MICHAEL E. SWEYA	_____	_____

SUPERVISOR NAME	**SIGNATURE**	**DATE**
Mr. ALFRED KAJIRUNGA	_____	_____

ABSTRACT

Finding appropriate venues for rescheduled exams during examination periods has been a significant challenge for Dar-es-salaam Institute of Technology (DIT). When exams are rescheduled, it becomes difficult to identify venues that meet the specific needs of students and staff due to the scarcity of available venues, poor timetabling and limited resources. As a result, exams are often conducted in venues that are not suitable for the class size, leading to a poor learning environment and discomfort for students. The process of finding and allocating venues is also time-consuming, confusing, and stressful for students and staff.

To address this challenge, this study proposes the development of a venue finder assistance system. The system will provide an efficient and effective solution for finding and allocating venues that meet the specific needs of students and staff during examination periods, particularly when exams are rescheduled. The system will consist of several subsystems, including user management, scheduling timetable, venue recommendation, and notifications for easy and efficient venue allocation and availability information for venues to assist timetable coordinator in decision making.

During implementation, i will use scrum methodology in the development of the project to accomplish the tasks. I will use questionnaire method for data collection, intended for problem justification about the existing system. Students, Staff(s) and timetable coordinator(s) will constitute the sample space in this case.

The implementation of this venue finder assistance system will greatly improve the process of finding and allocating venues for exams and other events at Dar-es-salaam Institute of Technology (DIT). The system will provide a comfortable and suitable learning environment for students during examination periods, and provide a smooth and efficient process for finding and allocating venues for exams. Overall, the venue finder assistance system will greatly improve the experience for students and staff at Dar-es-salaam Institute of Technology (DIT) during examination periods.

ACKNOWLEDGEMENT

Firstly, i would like to thank Almighty God for granting me good health and the ability to write this project proposal. Special thanks to my supervisor Mr. Alfred Kajirunga for his efforts and time he invested in this project to make sure this proposal is well prepared despite of his busy schedule. During preparation of this proposal, he provided technical support and advices on how to make this project better and it wouldn't have been easy without him.

Special thanks to Madam Happiness Alexander, for being understanding especially when it came to changing the overall idea of the project during preparation of this proposal, it wouldn't have been easy without her.

Special thanks to my family especially my mother, fellow students, and teachers from all academic departments for support when we pitched this project proposal's idea to them and provided different additional ideas to make this project better than and provide support towards its completion.

I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals. I would like to extend our sincere thanks to all of them.

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LIST OF SYMBOLS

SYMBOL	MEANING
	System
	Flow of an information

LIST OF ABBREVIATION

DIT	Dar-es-salaam Institute of Technology
PHP	Hyper Preprocessor
MYSQL	My Sequential Query Language
SDLC	System Development Life Cycle

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OVERVIEW

Universities and institutes often struggle with finding suitable venues for exams and classes during examination periods. This problem usually challenging institutes with a high number of students and limited resources like Dar-es-salaam Institute of Technology (DIT). When exams are rescheduled or classes having many students, it can be difficult to find available venues that meet the needs of students and staff. This can lead to overcrowding and a poor learning environment.

This problem is not unique to a specific university or institute. According to "Exploring Location and Ranking for Academic Venue Recommendation" (2018), "Scheduling and allocating examination venues can be a complex task for universities." Additionally, "Venue Recommendation: Submitting Your Paper with Style" (2015) states that "Allocating small venues to classes with many students can lead to overcrowding and a poor learning environment."

To address this problem, many universities have implemented systems such as "Venue Finder Assistance System" to manage scheduling and allocating examination venues. This system can provide an efficient and transparent solution for finding and allocating venues that meet the needs of students and staff during examination periods. According to "Academic Venue Recommendation Based on Refined Cross Domain" (2019), " system can assist universities or institutes in managing scheduling and allocating examination venues."

In summary, finding suitable venues for exams and classes during examination periods is a common problem faced by DIT. Rescheduling exams and allocating small venues to classes with many students can lead to difficulties in finding available venues that meet the needs of students and staff. A "Venue Finder Assistance System" can provide an efficient solution for finding and allocating venues during examination periods and improve the management of resources.

1.2 PROBLEM STATEMENT

At Dar-es-salaam Institute of Technology (DIT), we are facing significant difficulties in finding appropriate venues for rescheduled exams during examination periods. The problem is that when exams are rescheduled, it becomes hard to identify venues that meet the specific needs of students and staff due to the scarcity of available venues, poor timetabling and limited resources. This result, exams being conducted in venues that are not suitable for the class size, causing a poor learning environment and discomfort for students. Additionally, the process of finding and allocating venues is time-consuming, confusing, and stressful for students and staff. We need an efficient and effective solution to overcome these challenges and provide comfortable and suitable venues for students during examination periods, particularly when exams are rescheduled, taking into consideration the scarcity of venues and poor timetabling.

1.3 OBJECTIVE

The objective of this project is divided into two main kinds, Main and Specific objective.

1.3.1 MAIN OBJECTIVES

To develop and implement venue finder assistance system.

1.3.2 SPECIFIC OBJECTIVES

i. To develop user management sub system.
ii. To develop subsystem for scheduling timetable.
iii. To develop venue recommendation subsystem.
iv. To develop comment and notification sub system.

1.4 SIGNIFICANCE OF THE PROJECT

i. Better learning environment: By ensuring that classes are held in venues that are appropriate for the class size and curriculum.
ii. Improved class scheduling: A venue finder assistance web system can help timetable coordinator to ensure that classes are scheduled in venues that have the appropriate capacity to accommodate the number of students in the class.
iii. Increased safety: a venue finder assistance web system can help reduce safety concerns such as overcrowding and limited access to emergency exits.
iv. Reduced confusion for students: students can easily find the location of their classes and avoid confusion and frustration caused by last-minute location changes through the notification system.

1.5 SCOPE OF THE PROJECT

The scope of the project will involve the development of a web based system that addresses the challenge of finding appropriate venues for rescheduled exams during examination periods and class session.by using user management system that ensure proper authentication and authorization, timetable system with capability of making changes when any needs required , venue recommendation system that allow user to input data for example number of students of particular class and system refer to the database and suggest what classroom is suitable to them based on their capacity also will have the notification system for let the class member all being notified when any changes occurs that involve him or her or them.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter describes the features, operation and limitation of the existing systems. It shows technology approach undertaken by different designers of the existing systems with limitation of existing system in relation to the proposed system. However, this part provides the necessary knowledge and information which help during design of the project.

2.2 EXISTING SYSTEM

The current system at DIT for rescheduling examination venues is manual and time-consuming. It involves the student and instructor inspecting which venues would be able to accommodate the number of students in a particular class without having to follow the previously scheduled timetable. However, this process can lead to overcrowding and a poor learning environment, as stated in the book "Venue Recommendation: Submitting Your Paper with Style" (2015). The author suggests that a more efficient and effective way of allocating venues would be through the use of a recommendation system that takes into account the number of students, the capacity of the venue, and other relevant factors. This would ensure that classes are held in venues that are appropriately sized and equipped for the number of students, leading to a better learning experience for all.

Figure 1: Existing system block diagram

2.2.1 LIMITATION OF THE EXISTING SYSTEM

1. Time-consuming process: The current system at DIT for rescheduling examination venues involves the student and instructor inspecting which venues would be able to accommodate the number of students in a particular class without having to follow the previously scheduled timetable. This process can be time-consuming, as it requires manual inspection of all available venues, which may not be efficient or effective.
2. Poor Learning Environment: According to "Venue Recommendation: Submitting Your Paper with Style" (2015), allocating small venues to classes with many students can lead to overcrowding and a poor learning environment. This can negatively impact the students' ability to focus and learn during the exam.
3. Inadequate Planning: The current system also does not provide any adequate planning for rescheduling examination venues, which can lead to last-minute changes and confusion for students and instructors. This can cause delays, confusion and can negatively impact the examination process.

2.3 PROPOSED SYSTEM

The proposed system aims to improve the current process for rescheduling examination venues at Dar-es-salaam Institute of Technology (DIT) by providing a more efficient and transparent solution. The system will have several key components, including a user management sub-system, a scheduling timetable sub-system, a venue recommendation sub-system, and a comment and notification sub-system.

The user management component of the system will be responsible for creating and maintaining user profiles for both students and staff, ensuring secure access to the system. As stated in "Student Information Management System" (2019), this sub-system plays a crucial role in providing users with secure access to the system and ensuring the integrity of user information.

The scheduling timetable sub-system is a crucial component of the "Venue Finder Assistance System." It will be used to schedule exams and classes, providing an information on the availability of venues and reducing the time and resources required to coordinate between different departments also to make changes on timetable like delete, shift session to another vacant room. According to "Design and Implementation of a Web-Based Timetable System for Higher Education Institutions" (2020), " scheduling system can improve the efficiency and transparency

of the scheduling process, reducing conflicts and double bookings and providing real-time information on the availability of resources." The scheduling timetable sub-system in the "Venue Finder Assistance System" will play a critical role in streamlining the scheduling process and making it more efficient and user-friendly.

The "Venue Finder Assistance System" will include a venue recommendation sub-system that will provide recommendations for venues based on the number of students, capacity, and other factors. This will help to ensure that classes are held in suitable venues that meet the specific needs of students and staff. According to "Venue Recommendation: Submitting Your Paper with Style" (2015), "A venue recommendation sub-system can provide recommendations for venues based on the number of students, capacity, and other factors, helping to ensure that classes are held in suitable venues that meet the specific needs of students and staff." This will allow the system to select the most suitable venues for each class and exam, ensuring that students have a comfortable and effective learning environment.

The "Comment and Notification Sub-system" will be an important feature of the "Venue Finder Assistance System." It will allow users to provide feedback and comments on the venues and receive notifications about any changes or updates to the schedule. This will help improve the transparency and communication between different users. This feature will be beneficial for users to share their experiences and opinions about the venues and make suggestions for improvements. According to "Notifications and Awareness: A Field Study of Alert Usage and Preferences" (2011), "Providing feedback and notifications can help improve the transparency and communication between different users." Additionally, "Analysis of Notification Methods with Respect to Mobile System Characteristics" (2016) states that, "Notification systems can provide real-time updates and alerts, which can improve the user experience and increase the efficiency of the system."

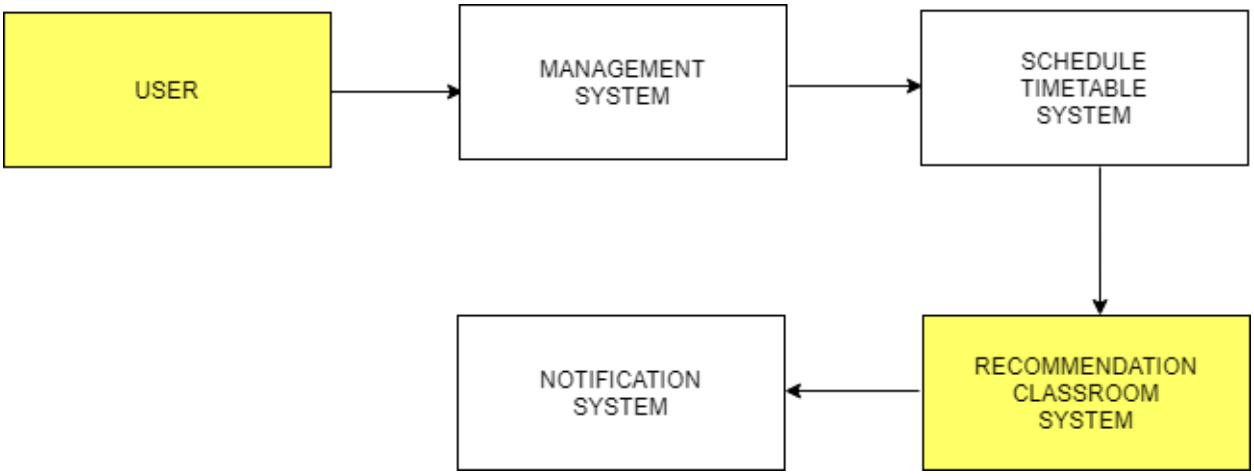

Figure 2: Proposed system block diagram

2.3.1 ADVANTAGES OF PROPOSED SYSTEM

1. Recommendations for venues based on the number of students, capacity, and other factors, improving the learning environment for students.
2. Comment and notification system that allows users to provide feedback and comments on the venues and receive notifications about any changes or updates to the schedule.
3. Handle rescheduling exams and classes timetable.
4. Reduce the workload for staff.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter involves the exploration of methods used to guide the development of the project. This involves the collection of data and data analysis from system end users, as to conduct research related to project specific objectives. There are many different systems development methodologies, and they vary in terms of the progression that is followed through the phases of the SDLC. For project objectives to be achieved, I will use agile methodology.

3.2 AGILE METHODOLOGY

Agile methodology emphasizes a flexible and iterative approach to software development, where the analysis, design, and implementation phases are performed concurrently and continuously throughout the project lifecycle. As a developer, i will work closely with the users to gather feedback and regularly releases working versions of the software for evaluation and testing. This approach will allow me for quick adaptation to changing requirements and continuous improvement of the proposed system.

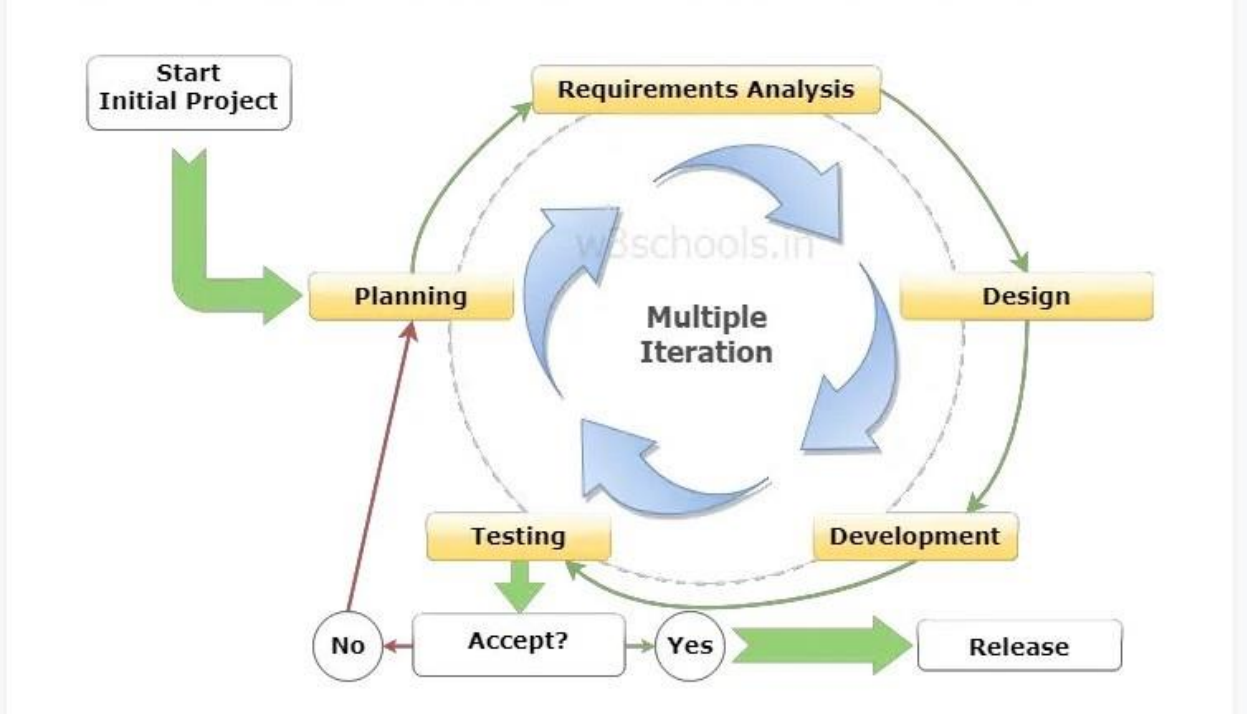

Figure 3: Agile methodology diagram

3.2.1 ADVANTAGES OF AGILE METHODOLOGY

4 Flexibility: Agile methodology allows for changes and adjustments to be made throughout the development process, making it easy to adapt to changing requirements and customer needs.

5 Continuous improvement: Agile methodology encourages continuous improvement and iteration, leading to a higher quality end product.

6 Collaboration: Agile methodology promotes collaboration and communication between all stakeholders, including developers, customers and users.

7 Faster delivery: Agile methodology allows for shorter development cycles and faster delivery of working software.

8 Focus on customer value: Agile methodology prioritizes delivering value to the customer and focuses on meeting their needs throughout the development process.

The following are the steps of agile methodology method of system development life cycle (SDLC):

SDLC Stage	Module to perform	Descriptions (include technique and tools)
planning	Define project objectives and scope.	Based on my study, I have defined specific objectives and I will identify the requirements for the project using techniques such as brainstorming and user questionnaires. Tools such as project management software I will be used to document and organize project information such as Microsoft word.
Analysis	Conduct system analysis	I was analyzed the current system and identify areas for improvement including user management subsystem, scheduling timetable subsystem, venue recommendation subsystem and notification subsystem as my module in my project.
design	Develop detailed system design	I will create detailed specifications for the new system, including user

		interface design and database design. Use techniques such as object-oriented design and software design patterns. Tools such as wireframing and mockup software can be used to create visual representations of the design.
Implementation	Develop system components	I will use programming languages such as PHP or Python for backend tasks, Bootstrap for frontend tasks and MySQL for database to develop the various components of the system. Such component includes user management subsystem, scheduling timetable subsystem, venue recommendation subsystem and comment and notification subsystem.
Testing	test system components	I will test the system as a whole. Use techniques such as system testing to ensure the system is working properly and meets all requirements.

deployment	Deploy system	Once the system has been tested and is working properly, it would be presented first to my supervisor Mr. Alfred Kajirunga and then to the panel which is mandated to asses my work for an award of bachelor of Engineering in Computer Engineering.

Table 1: SDLC stages

3.3 DATA COLLECTION

This is the process of gathering the information which would facilitate the accomplishment of the project and the data is collected from various sources using different methods including questionnaires, interviews, observation, and existing records.

The data collection is collected from different sources which are used to justify the existence of the problem, compare the similar project, and show the best alternative solution acting as a guide towards development of venue finder assistance system.

The methods to be used in data collection are interview and questionnaire methods.

3.4 QUESTIONNAIRE

Questionnaire is a set of written questions for obtaining information from individuals. Questionnaires often are used when there is a large number of people from whom information and opinions are needed. Here, the questionnaire is sent to respondents who are expected to read and understand the questions and write down their opinions. The respondents of the questions will be Students, Staff and timetable coordinator(s).

I will use the questionnaire method to gather information and opinions from students, staff, and timetable coordinators at DIT. This information will help me to identify the challenges and limitations of the current system, as well as to gain insights into the needs and preferences of the users. The questionnaire that i will design, will be user-friendly and easy to understand. The responses will be analyzed and used to the development of the venue finder assistance system, which will aim to improve the efficiency and effectiveness of the scheduling process.

3.5 AREA OF STUDY

The area of study is Dar es Salaam Institute of Technology (DIT). The area of study for the data collection for venue finder assistance system project is at DIT because it has been identified as an institute that currently faces challenges in efficiently allocating examination venues for its students and staff. This includes issues such as overcrowding in small venues and the time-consuming process of manually rescheduling examination venues. By focusing on DIT as the case study, the project aims to address these specific challenges and improve the overall examination venue allocation process for the university.

3.6 POPULATION AND SAMPLE SIZE

Population which will be considered during data collection will be Students, Staffs, and timetable coordinator(s). This is because they are key people who are mostly involved in venue finding. By using Yamane formula, the following below table show the respondent, population and their respective sample size. With the margin error of 0.05.

The choice of margin error (e) in the sample size calculation is important because it determines the level of precision desired in the results. A lower margin error value, such as 0.01, indicates a higher level of precision and a larger sample size is required. However, a higher margin error value, such as 0.1, indicates a lower level of precision and a smaller sample size is required. In this project, I have used a margin error of 0.05, this is because it represents a balance between precision and sample size. This value is considered to be a standard level of precision in sample size calculations and is commonly used in research studies. Additionally, using a margin error of 0.05 ensures that the sample size is not too large, which could be costly and time-consuming to collect data from. So, to avoid cost and time-consuming during data collection, I will use below sample population and sample size.

RESPONDENT	SAMPLE POPULATION	SAMPLE SIZE
Student	100	80
Staff	20	19
Timetable coordinator	2	2

Table 2: Sample space and size

3.7 ADVANTAGES OF QUESTIONNAIRE

i. It uses less time and money to collect data for research.
ii. Make it easier to collect data from many people in large geographical areas.
iii. It is an easier way to get information because it does not require the respondent to be
iv. physically present.
v. Easier to perform analysis and valuation of data collected.
vi. It offers anonymity for respondents, hence making them be more comfortable
vii. expressing themselves.

3.8 TOOLS AND TECHNOLOGIES

TOOLS	DESCRIPTIONS
Bootstrap	For development of front-end interface
MySQL	For database creation.
PHP or Python	For development of back-end functionalities
Adobe XD	For development of prototype and UI/UX design
XAMPP	For local server environment

Table 3:Tools and technologies

CHAPTER FOUR

4.1 CONCLUSION

In conclusion, the venue finder assistance system will be an innovative solution that addresses the problem of finding suitable venues for exams and classes at Dar-es-salaam Institute Of technology (DIT). The system is aimed to help the staff, students, and timetable coordinator to easily schedule and manage the timetable, and to recommend suitable venues for exams and classes based on the number of students and the capacity of the venue. The system also includes a user management sub system, a comment and notification sub system, and other features that improve the overall experience and efficiency of managing exams and classes. The development of this system is expected to improve the overall experience of students, staff and timetable coordinator, and to make the process of managing exams and classes more efficient and organized.

4.2 PROJECT COST ESTIMATION

SN	ITEM	QUALITY	COST(Tshs)
01	Printing and Binding	-	100,000
02	Transport	-	50,000
03	Internet	25GB	50,000
04	Other costs	-	70,000
TOTAL COST			270,000

Table 4: Project cost estimation

4.3 ESTIMATION TIMELINE

ACTIVITY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
Title search										
Title defending										
Literature review										
Data collection										
Data analysis										
System design										
Implementation										
Verification										
Report writing										

Table 5.timeline

REFERENCE

1. https://www.researchgate.net/publication/323925356_Exploring_Location_and_Ranking_for_Academic_Venue_Recommendation
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APPENDICES

Appendix A

DAR ES SALAAM INSTITUTE OF TECHNOLOGY

PROJECT DATA COLLECTION (QUESTIONNAIRE)

PROJECT NAME: VENUE FINDER ASSISTANCE SYSTEM

SN	QUESTION	ANSWERS
01	Have you ever been in a class or examination that was held in a venue that was too small for the number of students?	a) No b) Yes
02	Have you ever been in an examination that was rescheduled?	a) No b) Yes
03	How often do you find it difficult to find a suitable venue for exams?	a) Never b) Sometimes c) Always
04	How often do you find that the venues allocated for your exams are not accessible for students with disabilities?	a) Never b) Often
05	How often do you receive notifications or comments about changes to your exam schedule?	a) Always b) Sometimes

Appendix B

DAR ES SALAAM INSTITUTE OF TECHNOLOGY

PROJECT DATA COLLECTION (QUESTIONNAIRE)

PROJECT NAME: VENUE FINDER ASSISTANCE SYSTEM

SN	QUESTION	ANSWERS
01	How often do you find it difficult to find a suitable venue for exams?	a) Never b) Sometimes c) Always
02	How often do you think an institute should consider student capacity when choosing venues?	a) Never b) Sometimes c) Rarely d) Always
04	How often do you find that the venues allocated for your exams are not suitable for the number of students taking the exam?	a) Never b) Always
05	Have you ever had to reschedule an exam due to a venue not being available?	a) No b) Yes

Appendix C

DAR ES SALAAM INSTITUTE OF TECHNOLOGY

PROJECT DATA COLLECTION (QUESTIONNAIRE)

PROJECT NAME: VENUE FINDER ASSISTANCE SYSTEM

SN	QUESTION	ANSWERS
01	How often do you think exams should be rescheduled?	a) Never b) Sometimes c) Always
02	How often do you think the institute should consider student capacity when choosing venues?	a) Never b) Sometimes c) Rarely d) Always
03	How easy is it for you to schedule exams with the current scheduling timetable system?	a) Very easy b) Not easy