**DAR ES SALAAM INSTITUTE OF TECHNOLOGY.**

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**PROJECT TITTLE: DIT PERTIMERS MANAGEMENT SYSTEM.**

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**DECLARATION.**

I **ASIA HABIB DOLA** declare to the best of my knowledge that the project presented here as a partial fulfillment of Bachelor Degree of Computer Engineering, is my own work and has not been copied anywhere or presented elsewhere.

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**ABSTRACT.**

For every university, there are per-timers who are employed for a short period of time. They make a contract with a university and they are registered as per time teacher or lecture. The aim of this project is to review the current of the per timer that is done manually for all of the contract and to develop web based and mobile system for per time teacher. Through this system should be able to organize module distribution, attendance, payment calculation, and generation of report.

**ACKNOWLEDGEMENT.**

First and for most, I would carefully like to take this valuable opportunity to thank Almighty God , the creator of this world and all within it, for giving me health, strength and wisdom during the whole time of working of this project.

I also respect and thank my supervisor Mr. Justus M Selestine for supervising my project. I will always value his tireless effort and moral support he gave me.

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**LIST OF ABBREVIATION.**

ADE Advanced Diploma Engineering.

DIT Dar es Salaam Institute of Technology.

DTC Dar es Salaam Technical Collage.

FTC Full Technician Certificate.

NACTE National Council for Technical Education.

NTA National Technical Award.

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**CHAPTER ONE.**

1. **INTRODUCTION.**

Per timer teacher are those teachers or lectures who are not permanently employed to the institute they are employed for short period of time.

Per-timer are employed to teach a prescribe number of hours each week.They are employed for one semester or one year depending on the contract and they paid a regular salary during hours spent for lecture.Teachers are typically paid by the course load versus hourly.

The qualification is necessary to become a part-timer depend on the type of teaching you want to do.

The institute makes an announcement for per timer during an academic year of the study through the institute website and all contracts for per timer is done to the Head of department as well as time table coordinator who generate the modular distribution and their corresponding hours. Also after completion of the contract they are paid during the hours of the module they spent for a lecture due to their weekly report of their works that are done manually and stored to the spread sheet document.

 **1.1 BACKGROUND INFORMATION.**

The Dar es Salaam Institute of Technology (DIT) is located in the Dar es Salaam city center, at the junction of Morogoro Road and Bibi Titi Mohamed Street. Historically, DIT was established in 1997 by the Act of Parliament, “the DIT Act No.6 of 1997” to replace the Dar es Salaam Technical College, which had a long history of technical training in Tanzania. This history dates back to 1957 when its predecessor; the Dar es Salaam Technical Institute was established with the main task of providing vocational training in the country. The Institute later expanded its scope to offer technical secondary school courses and training for Technical Assistants before it was upgraded in 1962 to become the Dar es Salaam Technical College (DTC); the first formal technical training institution in the country.

DIT is a fully accredited institution by the National Council for Technical Education (NACTE). It offers a wide range of full-time, part-time and professional engineering qualifications and courses. The Institute has replaced the FTC and ADE programs with Ordinary Diploma and Bachelor of Engineering programs respectively (i.e. National Technical Awards (NTA) Level 4-8) in line with the NACTE competence based modular training system.

Currently, the Institute is undergoing both administrative and academic transformations to match with its new structure, roles and functions. The expectations and aspirations of Tanzanian towards DIT are very high as expressed in the National Technical Education and Training Policy of 1996, National Higher Education Policy of 1999 and Tanzania Development Vision 2025 of 1999. The ultimate goal is to transform DIT to a world-class Centre of excellence in Engineering, Applied Sciences and Entrepreneurship.

**1.4 PROBLEM STATEMENT.**

The DIT community use excel spreadsheet or data sheet to keep a record of the per-timer teacher.

There is no centralized system to store information.

Also there is no system that can be used to generate all activities of the per-timer teacher like

* Attendance.
* Payment calculation.
* Generating a report.
* Module distribution.

The is not secure and it consumes more time for all activities to be completed and takes more time for the payment calculation due to manual process or system.

We aimed to solve these problems by developing a system for per timer information that can solve all above problems and manages all activities.

Through this system, users are able to interact with the system and view their respective duties that are flexible and all information is stored into the database.

**1.3 OBJECTIVES.**

This project has some objective to be implemented. Those objectives are categorized into two: main objective and specific objectives.

**1.3.1 MAIN OBJECTIVES.**

The main objective is to develop web based system and mobile system for per-timer teacher.

**1.3.2 SPECIFIC OBJECTIVES.**

* To develop a system for registering users.
* To develop a subsystem for modular distribution.
* To develop a subsystem for attendance.
* To develop a subsystem for payment calculation.
* To develop a subsystem to generate a report.
* To develop a subsystem to store information.

**1.4 SIGNIFICANCE OF THE PROJECT.**

* Help user to access information at the same time from the same location.
* Update to any given set of data is immediately received by every end-user.
* It is easier to change data because is kept in the same location.
* Help the end user easier to use due to the simplicity of having that system.
* Printing information in excel can be greatly reduced as output can be automated and printable to pdf other can be forwarded to other users.

**CHAPTER TWO.**

**2.0 LITERATURE REVIEW**

This chapter describes existing system, weakness of existing system, block diagram of existing system and the proposed system, advantages of proposed system and block diagram of proposed system.

**2.1 EXISTING SYSTEM.**

The existing system for per-timer teachers is done manually and they keep record into the excel data sheet to generate information.

**2.1.1 WEAKNESS OF EXISTING SYSTEM.**

* Lack of security of the information.
* Time consuming and costly to produce reports.
* Few copies available.
* The current system is unreliable.

**2.1.2 BLOCK DIAGRAM.**

PER TIMER

TIME TABLE COORDINATOR.

HEAD OF DEPARTMENT.

ACCOUNTANT.

Fig 2.1.2 Block diagram of existing system.

 **2.2 PROPOSED SYSTEM.**

The proposed system is a web based system and mobile system that enables users to make the interaction to the system.

**2.2.1 ADVANTAGES OF PROPOSED SYSTEM.**

* The system is more secured.
* The system is more efficiently.
* It utilizes minimal processing/computing power.
* It greatly reduces the time needed to generate near-optimal per timer information.
* It provides an easy means for data entry and revision through an in-built interface.
* It increases productivity.
* It almost eliminates paperwork.
* It simplifies the information process

**2.2.2 BLOCK DIAGRAM OF PROPOSED SYSTEM.**



Fig2.2.2 Block diagram of proposed system.

**CHAPTER THREE.**

**3.0 METHODOLOGY.**

Methodology is a systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with branch knowledge. Basically, methodology deals with strategies on how to accomplish a project.

**3.1 TYPES OF METHODOLOGY.**

The following are some of the methodologies used in software developments.

**3.1.1 WATERFALL METHODOLOGY.**

The waterfall model is a linear sequential flow in which progress is seen as flowing steady downloads through the phase of software implementation. This means that any phase in the development process begins only if the previous phase is complete.

**3.1.2 SPIRAL METHODOLOGY.**

It combining element of both design and prototyping-in-stage in an effort to combine advantages of top-down and bottom-up concepts. This model of development combines the features of the prototyping model and waterfall model.

**3.1.3 AGILE METHODOLOGY.**

It is based on iterative and incremental development, where requirements and solutions evolved through collaboration between cross-functional teams.

**3.1.4 PROTOTYPING METHODOLOGY.**

The prototyping model is a systems development method(SDM) in which a prototype (an early approximation of a final system or product ) is built, tested, and then revised as necessary until an acceptable prototype is finally achieved from which the complete system or product can now be developed**.**

**3.2 WHY PROTOTYPING**

In this project, Prototype Methodology is used in to develop the project up to the final stage due to the following reasons.

1. Users who are going to use the system are located near so it is easy to reach them anytime if they are needed for any input to the project.
2. Errors can be detected much earlier.
3. Sometime users cannot identify what he/she wants at requirement but will identify them when he/she see the working prototype.
4. The user become of the aware of how to use the system early so it will reduce the training period.
5. Since the system will need high interaction with end-users so as at the end to deliver the usable product.

**3.3 PROTOTYPE METHODOLOGY**

Prototyping based methodology is oriented in developing a working model of the product and correcting it according to user suggestions before releasing the final product. The analysis design and implementation phases are done repeatedly until the system is complete. The following is the block diagram of prototype methodology.

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Fig3.3 Prototyping diagram.

**3.3.1 PHASES OF PROTOTYPE METHODOLOGY.**

This section describes what is done in each phase and which tool is used in the corresponding phase.

**3.3.1.1 PLANNING:**

The purpose of this phase is to perform a preliminary investigation to evaluate an IT-related business opportunity or problem. The preliminary investigation or planning phase is very critical since it affects the entire development process. The better planning phase it ensures better and less complex system development process. Planning phase helps to anticipate costs and benefits of a new system.

**3.3.1.2 ANALYSIS:**

This involves critical analysis and evaluation of information obtained through interview and Questionnaire. The analysis phase answers the questions “who will use the system”, “what the system will do”, and “where and when it will be used”

**3.3.1.3 DESIGN:**

Design phase deals with creating physical models that satisfy all the requirements documented for the system. Also the designing phase decide how the system will operate, in terms of the hardware, software, network infrastructure include the user interface, forms, and reports that will be used.

In designing process, it comprises the following steps;

1. Development of design strategy.

It decides whether the system will be developed or buying an existing software package.

1. Development of the basic architecture design for the system.

It describes the hardware, software, and network infrastructure that will be used.

1. Development of database and file specifications.

These define exactly what data will be stored and where they will be stored.

1. The analysis team develops the program design.

It defines the programs that need to be written and exactly what each program will do.

**3.3.1.4 IMPLEMENTATION.**

Implementation involves the implementing and evaluating the system.

There are three phases in this stage;

1. System construction.

The system construction is built and tested to ensure it performs and designed.

1. The system is installed: Installation is the process by which the old system is turned off and the new one is turned on.
2. Establishment of support plan for the system.

This plan usually deals with the way for identifying major and minor changes needed for the system.

**3.3.2 ADVANTAGES OF PROTOTYPING METHODOLOGY.**

* This ensures a greater level of customer satisfaction and comfort.
* New requirements can be easily accommodated as there is scope for refinement.
* Missing functionalities can be easily figured out.
* Errors can be detected much earlier thereby saving a lot of effort and cost, besides enhancing the quality of the software.
* The developed prototype can be reused by the developer for more complicated projects in the future.
* Flexibility in design.

**3.3.3 DIS ADVANTAGES OF SYSTEM PROTOTYPING.**

1. Leads to implementing and then repairing way of building systems hence takes longer to develop.
2. Practically, this methodology may increase the complexity of the system as scope of the system may expand beyond original plans.
3. Incomplete application may cause application not to be used as the full system was designed.
4. Incomplete or inadequate problem analysis can arise.

**CHAPTER FOUR.**

1. **DATA COLLECTION.**

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.

The following methods of data collection will be used:

1. Questionnaire.
2. Interview.

**4.1 QUESTIONNAIRE:**

A series of questions designed to elicit/ draw specific information about an area of study or interest. Questionnaire is a quantitative kind of data collection.

Is a research instrument consisting of a series of questions or other types of prompts for the purpose of gathering information from respondents.

**4.1.1 ADVANTAGES OF QUESTIONNAIRE.**

* They are cheap.
* They do not require as much effort from the questioner as other methods.
* Often have standardized answers that make it simple to compile data.
* Can provide information about participants’ internal meanings and ways of thinking
* Useful or exploration as well as confirmation.
* Open-ended items can provide detailed information in respondents’ own words.

**4.1.2 DIADAVANTAGES OF QUESTIONNAIRE.**

* People filling out questionnaires may not recall important information and may lack self-awareness.
* Data analysis can be time consuming for open-ended items.
* Usually must be kept short, hence it may lack important questions.

**4.1.3 QUESTIONNAIRE SAMPLE QUESTION.**

* Is there any need to have another system for per-timer

 YES……………. NO…………………..

* Is your existing system for part-timer information is secured?

 YES………… NO………….

* Do you get any challenges on the existing system you use?

 YES…………. NO………………

* Do you want to changes on the existing system for par-timer?

 YES…………. NO……………

* Do you think the proposed system will solve the problems?

 YES………… NO……………

 **4.2 INTERVIEW.**

An interview is a conversation where questions are asked and answers are given. Also an Interview is the conversion between two or more people where questions are asked by interviewer to elicit facts or statement from interviewee.

**4.2.1 ADVANTAGES OF INTERVIEW.**

i. Accurate screening

ii. Capture verbal and non-verbal ques.

iii. Keep focus

iv. Capture emotions and behaviors

 **4.2.2 DISADVANTAGES OF INTERVIEW.**

i. Cost.

ii. Quality of data by interviewer.

iii. Manual data entry.

iv. Limit sample size**.**

**CHAPTER FIVE.**

**5.0 CONCLUSION.**

This report demonstrates completion of the project one for the year 2018/2019. The report contains introduction, literature review, and Methodology and data collection. In this report it has been demonstrate that the new proposed system has some functionality which is eliminate the problems of the current system.

**5.1 RECOMMENDATION.**

The system with its functionality should be used in order to avoid most of lost which might happen when the current system is still used in implementation of the per timer management system.