**A STUDENT PERFORMANCE TRACK PORTAL**

**CASE STUDY: LUZIRA SECONDARY SCHOOL**

**BY**

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**A RESEARCH PROPOSAL SUBMITTED TO THE DEPARTMENT OF COMPUTER SCIENCE, FACULTY OF SCIENCE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DIPLOMA IN COMPUTER SCIENCE**

**CHAPTER ONE**

* 1. **Introduction**

This chapter of the project proposal states the problem with the current system and details out the background of computers and goes a little deeper into the process of tracking students’ performance in secondary schools.

A student portal is an online gateway where students can log into a school website to access important program information.

Student performance portals will contain the academics history of students however in addition subjects offered by students, termly students’ reports, timetables, exam schedules, class and levels.

This chapter presents the background to the study, the statement of the problem, the objectives of the study, research questions, scope of the study and the significance

* 1. **Background to the study.**

The use of computers in this day and age is becoming more essential in delivering services to different individuals and organizations. It is difficult or unimaginable to live a life without use of computers and other computing gadgets. Academic institutions have not been left behind. Each and every day at least there is information being exchanged across a network by the help of IT infrastructure. A lot of activities are also done online by both students and staff of different academic institutions. Some of these activities include; designing of timetables, setting of exams and accessing education materials to mention but a few.

Over the years, Luzira secondary school as one of academic institutions has not been spared by this technological shift. The school has seen an enormous growth and development in the area of computer services hence forming an entire department known as ICT department in order to manage their IT infrastructure.

However, this development towards IT services has not yet been realized throughout the school. This became increasingly evident this year (2020) when the world was hit by a global pandemic known as COVID-19 which left a lot of devastation both locally and internationally. Institutions that had better arrangement were able to shift from arranging studies in classes to online but other institutions such as Luzira Secondary School were left helpless as they were forced to temporary close down for a period of about seven months. This negatively affected many students and learners as their academic journey was postponed and not all parents and students could successfully track students’ academic performances for the secondary school life period of student. And not all students have been successfully delivering their termly report cards to their parents or guardians and others usually forge their results in order to present good marks to their parents.

It is against this background that I would like to propose a system that will allow Luzira Secondary School Administration to update students’ portals at the comfort that both students and parents or guardians receive the same termly results of their students from the Student Performance Track Portal App on their mobile phones and sent over the internet to a secure server where registered student and parents can access and see performance of students wherever they are. All they need is a device that has an internet connection and credentials for a particular student in school. The system will be called “STUDENT PERFORMANCE TRACK PARTAL APP”.

Since Luzira Secondary School was established, there has never been an application system in place and students have to receive their termly examination results prints on paper in order to present them to their parents. This has always been a challenge were a student has poor results and would not want to present it to the parents and these reports are easier to forge and reprint. A student has no deadline for handing in the report card to the parent since there is no communication between the parent and the Luzira Secondary School Administration

It is not a cliché that examinations are the essentials considered for students’ accomplishments and things learnt and understood by students during lectures. Exams are used by the lecturers. Exams are used by the lecturers and other professors to assess a learner’s understanding of a particular course unit in a given semester.

The current system being used to hand in termly reports at Luzira Secondary School is where students have to appear physically and receive their termly reports from their respective class teachers. This consumes a lot of time sometimes there is a problem of limited rooms for students, for example classes with more students are always at a disadvantage and students may have to come back another days for their termly report cards, this contributes to time wastage.

Many researchers have approved that the online system is highly advantageous and fast while conveying such information to large numbers of students, grading the students. It also makes it easy for the administration to minimize errors in awarding grades.

* 1. **Problem statement.**

The problem in the current system is that students have been able to forge their academic results manually and the manual procedures used for releasing and handing over students results every term is a time consuming process for administration, students and parents.

* 1. **Objectives.**

The following are the research objectives

* + 1. **Main Objectives.**

The main objective is to design and implement an online web-based students’ performance track portal for secondary school that will manage the student results termly.

* + 1. **Specific Objectives.**

1. To conduct a study and analysis on the existing manual system at luzira secondary school
2. To design a Students’ Performance Track Portal App at luzira secondary school for better results management.
3. To develop and implement a Students’ Performance Track Portal App at Luzira Secondary School.
4. To test, and validate the developed solution.
   1. **Research Questions.**

A research question is an answerable inquiry into a specific concern or issue. It is the initial step in a research project. The ‘initial step’ means after you have an idea of what you want to study, the research question is the first active step in the research project.

* + 1. **General Research Question.**

How can the student’s Performance Track System

Will the proposed system be of value to the school?

* + 1. **Specific Research Question.**

In this research study, there are a number of questions which will enable me to achieve the set objectives.

They include the following.

1. What is the current system at luzira secondary school?
2. What are the challenges being faced with the current system in school?
3. What are the suggestions to the current system in schools?
4. What are the possible solutions to overcome the challenges of the current system in schools?
   1. **Scope.**
      1. **Content Scope.**

This study focuses on creation of students’ performance track portal at luzira secondary school. The independent variables will be how results will be released and received by both students and parents and the dependent variable will be successful implementation of the project. The new system in this study will be developed using tools such as Java, iOS

* + 1. **Geographical Scope**

This study is going to be carried out at Luzira secondary school located in Nakawa sub-county, Kampala district.

* + 1. **Time Scope**

The study is to take a period of 5 months from February, 2022 to June, 2022. And this period is when the students’ performance track portal will be implemented in luzira secondary school despite the existing number of gaps in students’ performance track portal implementation.

* 1. **Significance**

The findings of this study may be of major significance to a number of stakeholders, including, hospital management, policy makers and planners, future researches and the researcher.

**School administration:** the school administration is likely to use the findings of this study to improve their administration and support strategies for the students’ performance track portal project

**Planners and Policy makers:** Ministry of Education and sports and other schools are likely to benefit from the findings of the study in the study will explore the bottlenecks and knowledge gaps experienced during the implementation of the students’ performance track portal project within the education sector and suggest strategies for making the system even better. This knowledge may help the functionaries in devising better strategies for students’ performance track portal.

**Future Researchers:** Future researchers will use this study as a source of students’ performance track system and to be motivated by the same study to undertake further research on the students’ performance track portal system subject area.

**Researcher:** The study will lead to the award of diploma in computer science at Kyambogo University

* 1. **Chapter summary**

Conclusively, this chapter reviews at the background of the problems of current students’ performance system in schools focusing on Luzira Secondary School as the Case study. I have discussed the problem statement, objectives of the study, general and specific research questions. The significance of the study and the scope of the project were also discussed in the chapter. The next chapter provides an overview of the literature on factors the successful implementation of Student Performance Track System

**CHAPTER TWO: LITERATURE REVIEW**

**2.0. Introduction**

In this chapter we review the related literatures of Students Performance Track systems which include; qualities of good Students Performance Track systems, implementation of the Students Performance Track systems, IS and IT Success and Failure in the Students’ Performance Track system, challenges to implementation of the Students Performance Track system.

**2.1. Student Performance Track Portal**

**2.1.1.**

**2.1.5. Limitations to implementations of student performance track system.**

With the demand for more efficient services in health institutions most of the schools are finding it necessary to implement new systems which brings with them the challenges which must be dealt with or will limit the student performance track system implementation. This means that requirements of the student performance track system will also change and utilize the power of the ongoing needs of the organization.

Lack of the top management support: most projects fails due to the disagreements among the senior management of the school. According to Turbit (2005) project implementation needs top management involvement to ensure that the right combination of education and IT is done to resolve any conflicts that might arise.

Poor skills sets among users: burke et al. (2001) found out that poor skills set among school management system users is a hindrance to project implementation. In adequate skilled staff in a school leaves them grappling with the system challenges during and after implementation. When a school is moving from old technology the skills of its staff need to be upgraded too.

According to Turbit (2005). ICT is an area that keeps on changing and therefore staff needs to upgrade their skills with respect to the new software that comes into use so as to be in tandem with the changing environment.

**2.2. Current student performance track systems**

Most of the student and administrative information that flow throughout the secondary school education system is still recorded on paper. School currently use a manual system for the management and maintenance of students’ performance information. The current system requires numerous paper forms, with data stores spread throughout the school management infrastructure. Often information is incomplete or does not follow management standards. Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information ii lost. Multiple copies of the same information exist in the school and may lead to inconsistencies in data in various data stores.

**2.4. Databases**

A database is defined as a collection of related information. Normally a database is made of tables as the primary storage units, which remain conceptual to the user. Internally a database interacts with memory and disk blocks among other things. Access to data is normally provided by a database management system consisting of an integrated set of computer software that allows users to interact with one or more databases and provide access to all of the data contained in the database (Wikipedia, 2019)

**2.4.1. Components of a database management system**

Users:

These are the people who use the database management system. They include database administrators, application programmers or software developers, and end users.

Hardware:

This refers to computers, hard disks, input/output channels for data, and any other physical component involved before any data is successfully stored into memory.

Software:

This is the main component as it is the program which controls everything.

Data:

This is the resource for which database management system was designed. The motive behind the creation of database management system was to store and utilize data.

**2.4.2. Advantages of using databases.**

The following are some of the advantages of using databases.

1. Controlling data redundancy
2. Elimination of consistency
3. Integrity can be improved
4. Standards can be enforced
5. Security can be improved

**2.4.3. Disadvantages of using databases.**

1. Database complexity
2. Substantial hardware and software can be costly
3. Damage to database effects virtually all application programs
4. Initial train required.

**2.8. Implementation of student performance track portals.**

The implementation stage is the longest phrase on the project and the most labor intensive. It involves a number of activities that include;

Firstly, the management approval to implement the new system; before the implementation stage is started, management approval is important since managers control resources including staff needed to implement the system. Managers can hinder the successful implementation of an information system if they feel that the process does not involve them. It is therefore important that they are involved at every stage of the system development.

Secondly, hardware and software acquisition; this involves procurement and installation of hardware and software needed to implement the system. The procurement is done through invitation of bids and selecting the suppliers with the highest points. In some cases, benchmark is done on previous projects the supplier has undertaken.

Thirdly, system testing, this is done to ensure that the new system has no minimal errors before a roll out. A system has to be tested to ensure that it meets the user requirements. Any errors identified are debugged (corrected). Testing should involve the system users as their inputs is vital to the testing process and system.

Fourthly, use of agents of change; these represent influential and other leaders in the organization who have capability to easily influence members of the staff on issues relating to a new system. They are identified and trained to spearhead the implement of new system. They are usually influential people with high integrity.

Finally, selecting and training the users; users of the new system must be conversant with the system in order to reduce errors and increase productivity and acceptance. Training can be conducted through practical demos, lectures and video presentation. User manuals and system documentation are also very important in training.

**CHAPTER THREE: RESEARCH METHODOLOGY**

**3.0. Introduction.**

This chapter discusses methods that will be used in data collection, system analysis, design, implementation and testing.

**3.1. Research design.**

**3.2. Population sample.**

The population under study is 50 comprising of the luzira secondary school staff members, students and the parents.

**Table 1: A table showing the sample size determination.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Target Population** | **Sample Size** | **Sampling Techniques** |
| Staff members | 07 | 05 | Purposive |
| Parents | 08 | 06 | Purposive |
| Students | 20 | 16 | Simple Random |
| **Total** | **35** | **27** |  |

**3.2.1 Sampling strategy**

Random sampling is a sampling technique in which the probability of getting any particular sample may be calculated (Ragin, 2007). The advantage of random sampling is its lower cost compared to non-random sampling. Simple random sampling was adopted in sampling students within Luzira Secondary School. According to Creswell (2009), Simple Random Sampling ensures that every member has an equal chance of being recruited into the sample. A sample frame was constructed and then the members were randomly sampled. The study adopted purposive sampling techniques to sample staff members and parents at luzira secondary school. According to Bill (2011) purposive sampling enables a researcher to choose participants of his own interest based on education and experience.

**3.2.2. Sample size determination**

The study is based on a sample size of 27 that was drawn from a population of 35. The size is estimated or determined using the Krejcie and Morgan (1970).

**3.2.3 Sources of Data**

The researchers used both primary and secondary data. Primary data about the existing paper based voting system was obtained from the university documents, interviews with members of staff and questionnaires with students. Secondary data was used from online journals, text books, articles and other literature available about e-voting systems. (Joseph et al 2019)

**3.3. Data collection**

Data collection is the systematic approach to gathering and measuring information from a variety of sources to get a complete and accurate picture of an area of interest. Data collection enables a person or organization to answer relevant questions, evaluate outcomes and make predictions about future probabilities and trends. Accurate data collection is essential to maintaining the integrity of research, making informed business decisions and ensuring quality assurance.

**3.3.1. Questionnaire method**

This method is used to get the required data from both the students and lecturers.

A questionnaire is a research instrument consisting of a series of question and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case. The researchers use questionnaire surveys because it is practical, large amounts of information can be collected, questionnaires data can easily be quantified, it is also a cheap way of collecting data, a large group of respondents is covered within a short time, it also allows in- depth research, to gain firsthand information and more experience over a short period of time (Kothari, 2004). The questionnaire is used to get the required data from both the students and lecturers.

Its advantages and disadvantages include the following;

**Advantages**

1. It can be completed anonymously.
2. It is inexpensive to administer.
3. It makes it easy to compare and to analyze information.
4. The method can administer to many people.
5. Can be adapted into many forms that is to say, online, paper, verbal.

**Disadvantages**

1. It may not get careful feedback
2. Question wording may bias respondent’s answers.
3. It is impersonal because a respondent’s attitude is not taken into consideration.
4. It does not always get the full story
5. Adapting existing surveys takes time

**3.3.2. Interview method**

This method will be fully used to understand someone impressions and experiences, or learn more about answers to questionnaires. The common way of collecting qualitative data was by conducting interviews because it enabled the researchers to acquire loads of insightful primary data in a very short time. It was also possible in this technique to ask follow-up questions if the answers from the respondents would not be enough (Bryman, 2002). The interview method refers to the method of data collection through verbal interaction, face-to-face and by telephone (Sekaran, 2000; Amin, 2005).

Its advantages and disadvantages include the following;

**Advantages**

The advantages of interview method include the following

1. It can be used to get full range and depth of information
2. It develops relationship with stakeholders.
3. The method is flexible.

**Disadvantages**

The disadvantages of interview method include the following

1. It takes a lot of time.
2. It can be hard to analyze or compare information.
3. It can be costly to implement.
4. The interviewer can bias the responses.

**3.4. System design methods**

The analysis of the requirements acquired in the requirements identification phase has led to the development of the web based system for tracking students’ performance in luzira secondary school. The Database system was developed using MYSQL and the programming frame work of the system is done using HTML5, CSS3, PHP5, and JavaScript. There is removal of redundancies by normalization of the data in order to get the right material to be entered into the tables to be used for the system. There is conceptual database design by having the Entity Relational Diagram and the Entity Relations. There is also the Logical design where entities, attributes, data lengths were made to remove the redundancies in the system and duplicates. This will led to physical database design where MySQL with PHP script is used to design the system that enables get the graphical user interfaces to be used by the system as it is free software. The system design objectives include: Usability, performance, reliability, software architecture and package.

**3.4. Analysis Tools**

**3.5. Design Tools**

**3.6. Languages**

PHP5, HTML5, CSS3 JAVA SCRIPT, MySQL, XAMPP integrates the web interface and the systems database is to used in the implementation of a Student Performance Track Portal

**3.7. Testing and Validation**

Data quality control techniques ensure that data collected is valid and reliable; the instruments are first tested to ensure validity and reliability.

**3.7.1. System Testing**

The goal of system testing is to detect for bugs as well as inefficiencies that may cause a system not to satisfy all its requirements before it is delivered, installed and make operation. Testing is done in order to discover if there is any inherent logical error, eventually the whole system was tested for efficiency and reliability. After testing the whole system was affirmed reliable and it can be put online for all users.

**3.7.2. System Validation**

Validity refers to the truthfulness of findings or the extent to which the instrument is relevant in measuring what it is supposed to measure (Earl-Babbie, 2013). The validity of the instrument quantitatively will be established using the Content Validity Index (CVI). This will involve the expert scoring of the relevance of the questions in the instrument in relation to the study variables.

**3.8. Chapter Summary.**

In this chapter, I have discussed about research design where a descriptive cross-sectional survey design will be adopted for the proposed study, population sample and design, sampling strategy where Probability sampling , or random sampling or random sampling were selected, sample size determination , data collection methods, system design and modeling, system implementation, testing and validation and data collection instrments.