Monitoring and Evaluation of Poor Performance of Pupils using a Performance Tracker
By

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Chapter One

1 Introduction

Over time pupils' performance records have been manually managed and the ones computerized operate in complete isolation. This has proved to be a big challenge to parents and teachers in monitoring and evaluating pupils' performance. The paper-based system makes it hard to trace performance patterns of a particular pupil both for academic and non-academic activities.

1.1 Background

The adoption of information technology in Uganda's primary schools is still marginal. This is so because most of these schools have not harnessed the use of information technology in records management. Most primary schools still use the paper-based systems to record the results of these pupils and also use manual calculators to compute the results and grades of each pupil. This has made the administrators work cumbersome hence failing to monitor poorly performing pupils therefore a need for a system that will record the results of pupils, alter and grade them according to their performance and also help administrators notice quickly pupils who need higher attention. This in the long run has widened the gap between pupil s who fail and those who excel. The same pattern is also noted in low performing schools and high performing schools.[5, 2]

1.2 Problem Statement

Over the years, Primary schools have used the paper-based system to manage pupils records. This requires teachers to manually capture data about pupils bio data, finance, result and behaviors into huge books which is very cumbersome. This in the long run promotes inefficiency of teachers and administrators. In addition, the paper-based system of records management delays decision making for administrators.[2]
The paper-based system also makes it hard for parents to easily track their pupils academic performance because the current system requires a parent to spare a day and go to school physically. As if that is not enough, it will take him hours to get the data needed about his/her pupil since it requires manually sorting the big files information in order to have a report. It has also limited teacher-parent relationships since parents end up disgusted by the delays.

1.3 Objectives

1.3.1 Main Objective

To develop an online primary schools pupils performance monitoring and evaluation system that works on a yearly basis.

1.3.2 Other Objectives

1. To study the current paper-based performance records management system in selected primary school and identify the requirements of the system being developed.

2. To design and implement a reliable web-based pupils performance monitoring and evaluation system.

3. To monitor the progress of pupils on a yearly basis.

1.4 Scope

The system will be a pilot project at Masaka Primary School as the case study. The system will be deployed in the school to serve the purpose;To record financial and academic data to ease pupils assessment and performance monitoring.

This information will be readily available to authorized users which are; parents, teachers and administrators. In addition, the system will capture non academic performance indicators like attendance, discipline records and extracurricular activities.

Chapter Two

2 Literature Review

This chapter aimed at reviewing existing literature about the research area. Many organizations have carried out related research and came up with findings and conclusions about this topic. Therefore, we reviewed the literature in relation to our intended system and also literature about the already existing systems being used in relation to our topic of research.
Various researchers, technicians, theories, academicians and information reviews of existing literature related to this project aided in understanding of the chapters included in this report. The literature contained in our review was extracted from textbooks, websites, research papers such as online portable document formats (PDFs) and other sources of data collection methods like observations.[4, 3]

2.1 Paper based information management system

Advantages Of paper based information systems
A paper-based document management system does have its positives, such as;

1. **Easy handling**: As paper is physical by nature and therefore tangible and visible, a person who need not have any knowledge of computers to handle and work with paper-based documents. Such documents can be stored systematically in files, folders, cabinets etc.

2. **Reproduction**: You can copy a document by using a photocopier machine.

3. **Recognized and required by law**: Paper-based document originals are recognized by law as being 'official' and can be produced as evidence in court. In fact, the law may even require you to have certain documents only in paper format for them to be considered valid.

Disadvantages Of paper based information systems

A paper-based document management system has several shortcomings, or else electronic document management might not have seen the light of day.

1. **Storage space**: As paper is by nature physical, it takes up a lot of storage space. With its limited resources, a small business may not be able to afford to rent or purchase storage space onsite or offsite.

2. **Recurring cost of supplies**: If you store most of your documents in paper form, you need to keep purchasing several packs of blank paper every month for varying needs: photocopying, printing, fax paper, writing pads, invoice books, accounting books etc. Add to it the cost of other stationery items and you begin to wonder if there is a better alternative to the paper-based system of managing documents.

3. **Limited mobility**: No doubt you can courier or fax a paper-based document, but how can it match up to email or sending it as an attachment to an instant message?

4. **Editing messy**: Editing a typed or handwritten document will leave marks on paper. Also, the only way to preserve the pre-edited copy is to make a photocopy before editing it. This process has to be repeated every time you edit or revise the document. All it does is add more copies to your paper archive and leave the original document in bad shape.

5. **Collaboration difficult**: If your firm's departmental heads in different corners of the office want to collaborate on a paper document, an assistant will first have to make copies of the document and distribute them. Then each head will have to make notes. To be able to see each others notes, they will need to gather anyway for a meeting before they finalize the action plan. Compare this with an electronic document management system where you can simply share the document (grant access to it) with your departmental heads; each of them can add their notes and save the document. The document can then be seen by all with everyone's notes on it. A face-to-face meeting is not required, thereby saving the time of your busy senior executives.

6. **Vulnerable to damage**: As paper is exposed to wear and tear through frequent handling, exposure to adverse weather conditions etc., a document management system that is purely paper-based is

not a stable one. In the event of a disaster, you could lose your documents as they may not be backed up. Documents that are not in digital form cannot be backed up online.

2.1.1 ICT adoption in Education in Uganda

Farell (2007), by the year 2003 only 106 of Uganda's primary schools were connected to the internet. In addition two major NGOs were involved in ICTs for schools. Many schools have computers as a result of initiatives of NGOs and international donor but a few are connected to the internet especially those in rural areas. The Ministry of Education and Sports has become much more proactive over the last two years as a result of the recent policy emphasis on ICT. For example, in its Review for 2005-2006,[5] the ministry achieved the following:

Over 300 teachers have been trained, three generators and 300 computers have been provided to NEPAD e-schools, Software and upgrades for 6,000 desktop computers already in schools have been procured, preferential rate agreements with Uganda Telecom for voice and data connectivity have been secured, Work has started on introducing ICT into the teaching and learning process in primary and secondary schools.Ministry

2.1.2 Database Management System

According to Christopher J, a database management system (DBMS) is a collection of programs that enables you to store, modify, and extract information from a database. There are many different types of database management systems, ranging from small systems that run on personal computers to huge systems that run on mainframes.[3]

Factors to consider while choosing a Database Management System

1. **Reliability**; As an integral part of an IT landscape, an RDBMS must be reliable. Reliability refers to the ease of securing and safeguarding data so that critical applications can proceed with normal operations. In some cases, reliability is fostered through techniques that protect data on a single server; in other cases, by replicating data onto multiple servers. Regardless of the specific server topography, an RDBMS must encompass multiple overlapping tactics to encourage reliability, and thus become a trustworthy foundation for all data usage scenarios.

2. **Adaptability**; Since there are now so many diverse workloads, enterprises must frequently support traditional online transaction process-

ing (OLTP) on the same hardware that supports business intelligence operations. The exact blend of these responsibilities is extremely variable, since it is difficult to forecast the precise trajectory of any enterprise's information management needs. Therefore, an RDBMS must be able to adapt to rapidly changing assignments without imposing costly hardware upgrades or new purchases.

3. **Predictability**; IT organizations are routinely held accountable to strict service-level agreements (SLA) by customers, internal line-of-business leaders, and, in some cases, regulatory agencies. For IT to meet these rigorous SLAs, each piece of the underlying infrastructure must be capable of achieving its own robust SLA. For an RDBMS to deliver predictable service levels, it must deploy quickly without the need for overhead, such as complicated installation procedures or extensive training; support vacillating workloads by time of day and year; and easily scale when confronted with expanding demand based on number of users, data volumes, and transactional load.

4. **Manageability**; When selecting an RDBMS, many organizations do not factor in the long-term total cost of ownership, which can lead to unfortunate surprises and unnecessary extra expenditures. These added financial burdens detract from IT's capacity to deliver innovative solutions that support the business. After accounting for different software licensing models and their related costs, staffing expenditures are highly variable across major RDBMS platforms. To help keep administrative personnel costs low, IT executives should look for an RDBMS that involves streamlined installation, automated tuning and error correction, intuitive tooling, and minimal training requirements.

2.1.3   Web based information systems

According to Wikipedia, Web-based information displays many benefits of multimedia technology. Using today's fast broadband connections, it is possible to stream sophisticated content to a computer anywhere in the world. This is an advantage for many people as the information can be received and read wherever and whenever it is convenient for them, which can be a crucial factor for a busy executive. A significant amount of interactive multimedia content is now delivered via the internet.[1]
Web information system, or web-based information system, is an information system that uses Internet web technologies to deliver information and

services, to users or other information systems/applications. It is a software system whose main purpose is to publish and maintain data by using hypertext-based principles.

2.1.4 Review of other Existing systems

1. **Uconnect**
   SchoolNet Uganda was started 1997 as a program jointly supported by World Links for Development (WorLD) currently World Links Organization , World Bank Institute – ICT for Education Program, SchoolNet Uganda was the first in the elaborate World Links Organization's ICT for Education program in the developing world. SchoolNet Uganda is an iEARN (International Education and Research Network) centre. As an iEARN centre, SchoolNet Uganda is a voting member of the iEARN network's International Assembly. SchoolNet Uganda works with Uganda education institutions in setting up Information Communication Technology (ICT) facilities and developing technical and pedagogical capacity necessary to use ICT to enhance teaching and learning.
   SchoolNet Uganda's mission is to support the introduction of Information Communication Technology (ICT) in schools and to build the schools' and teachers' pedagogical capacity to optimally use the ICT resources in the schools and the Internet to enhance the teaching and learning process as a means of increasing access, quality and relevancy of education.
   The overall purpose of SchoolNet Uganda is to plan, support and build capacity for the use of ICTs in education in Uganda as a strategy of improving learning achievements and teacher performance in the classroom. The organization targets to make ICTs one of the main institutionalized tools in the classroom instruction process, knowledge acquisition and sharing.

2.1.5 Comparisons of Existing system with proposed system

Area	Existing system 1	Existing system 2	Proposed system
Digital Study Content Delivery	Yes	Yes	No
Parents Dialogue/Interactions	No	No	Yes
Performance Analysis and Tracking	No	No	Yes
Cost of Implementation	High	High	Low

Chapter Three

3 Methodology

The scope of our study involved techniques and approaches that were employed in data collection and analysis, logical and physical design, implementation, testing and validation of the application.
We applied techniques such as questionnaires, interviews and document reviews to determine the requirements of pupils performance monitoring and evaluation system. Through using this data, we learnt more about the current operations and limitations of the existing system.

3.1 Requirements Elicitation Techniques

Requirements collection or gathering was the task of communicating with customers and users to determine what their requirements were.

3.1.1 Interviews

Interviews were held where we interviewed the different stakeholders. These expressed the problems they faced with the current system and what they thought was the ideal solution to improve the current system. We decide to take up interviews because there was no significant time delay between question and answer and the interviewer and interviewee directly reacted on what the other said or did.
The advantages of using interviews include:

- They were useful to obtain detailed information about personal feelings, perceptions and opinions.

- They allowed more detailed questions to be asked.

- They achieved a high response rate.

- Respondents' own words were recorded.

- Ambiguities were clarified and incomplete answers were followed up.

- Interviewees were not influenced by others in the group.

3.1.2   Review of Existing Literature

This involved reading from the existing documents about how the paper based system was managed. We engaged in finding and reading extensively published materials and documentation concerning the problems users faced with the current system.

3.2   Requirement Analysis Methods

The data that was gathered during data collection was systematically edited, analyzed and compared so as to remove any inconsistencies, in order to render it useful about users' expectations of the system.

3.3   System Design Techniques

3.4   System Implementation tools/Frameworks

The system was implemented with the use of HTML a markup language that helped in marking up the individual features on components of the application. More still, Java script was identified to give the client side that good looking interface while handling form processing checks and controls so as to have validated data.
PHP a server side script handled the data transfer from client side, did the connection to the database and managed the client-server communication.

3.4.1   System Database Modeling Tools

In this system, the database was important because it housed relevant information concerning pupils information. We agreed to the use MySQL, an open source database management system because it could handle a large range of data types and it would be used in conjunction with PHP a server side scripting language to manage connection between individual application programs that were connected to the database because PHP is open source and it has broad parameters in handling different variables and data types. Data modeling techniques such as entity relationship diagrams (ERDs) and binary relationships were used for analyzing the relationships between entities.

3.5 System Testing and Validation

System testing and validation was conducted to ensure that the system functioned as required and also to verify that the system met the requirements as got from the requirement analysis studies that were conducted. A number of tests were conducted as mentioned below.

3.5.1 Unit Testing

Known as component testing, this was used to test and verify the functionality of specific components say pages, usually at the function level and also to assure that the building blocks or components the system used worked independently of each other.

3.5.2 Integration Testing

This was used to test the functionality of the integrated components to ensure effective dependence among the different units.

3.5.3 System Testing

This checked the overall functionality of the integrated system and ensured that it worked correctly.

3.5.4 Usability Testing

This was conducted to check whether the users interfaces were easy to use, understand and colors used were user friendly.

Chapter Four

4 System, Analysis And Design

This involved the exhaustive study of the current system in order to identify its weakness and arrive to the objective of this project which was to develop an Online Pupils Performance Monitoring and Evaluation system.

4.1 System Study

4.1.1 Description of the existing system

The current pupils performance tracking system at Masaka Primary School is manual. The system requires the teachers/administrators to keep pupils performance records in big books. This process promotes inefficiency in service delivery of teachers and administrators. Teachers cannot easily track performance of individual pupils and give special attention since there is lack of centralized data to enable them connect the performance patterns of the pupils.

4.1.2 Strengths of the Existing system

- The existing system is a source of employment since it requires more manual labor to manage the pupils records than the proposed system.

- The current system is not affected by malware, hacking, power surge and their accompanying effects.

4.1.3 Weaknesses of the Existing system

- Pupils performance records cannot easily be accessed from anywhere at any time by either teachers or parents.

- The current system lacks a consolidated data store thus making searching for pupils performance records difficult.

4.2 System Analysis

The data collected was analyzed to determine user and functional requirements, software and hardware requirements that guided the design and implementation of the proposed system.

4.2.1 User Requirements

It was very important to get users of the system fully involved such that the problem of change of management did not arise. The stake holders, who used the system therefore, were approached during the study and were asked what they expected of the proposed system and the following findings, were made;

- A user friendly system that was easy to learn and use.

- The system which improved on the efficiency of teachers.

- A secure system where rights of administrators were clearly defined.

- A consistent system that clearly navigates through the system.

- The system that allowed pupils records searching based on different parameters.

4.2.2 Functional Requirements

These capture the intended behavior of the system. This behavior may be expressed as services, tasks or functions the system was required to perform. Therefore the proposed system was able to:

- The system allowed entries for pupils data.

- The system could access and retrieve pupils records.

- The system could allow authenticated login and navigation.

- The system allowed users search for records.

4.2.3 Non-functional Requirements

Non-functional requirements are requirements which specify criteria that can be used to judge the operation of a system, rather than specific behaviors. This was contrasted with functional requirements that specify specific

behavior or functions. Systems can exhibit software quality attributes such as accuracy, performance, cost, security and modifiability plus usability. Non-functional requirements help to achieve the functional requirements of a system. Thus the proposed system does the following;

- The system implements read only technologies to users who are not administrators.

- The system is easy to use, that is users do not have to make multiple navigations before they get what they needed from the system.

- The system has a maximum throughput and minimum response time.

- The system is be able to submit to the database and present to user interface.

- There is access restriction to the database.

- The system has fast and easy access.

- The system can provide security to the database by use of passwords.

4.3   System Requirements

The system requires compatibility such that it is able to run and perform its required tasks properly as required by the users on the available software requirements. The following were the software requirements that were proposed for the better running of the system.

Software Requirements

Component	Requirement
Operating system	Windows 8
Webserver	Appache, webserver, PHP 5.0, MySQL
Security	Antivirus, password login accessibility, backup software
DBMS	Wamp, MySQL server
Browser	Mozilla Firefox (preferably)

Hardware Requirements

Component	Requirement
CPU	Dual core 1.8GHZ Minimum
Storage	500GB of HDD
Monitor	High Definition Monitor(good resolution)
Memory	2GB RAM

4.4 System Architecture

The architecture shows the components of the Online Pupils Performance
Monitoring and Evaluation web application.
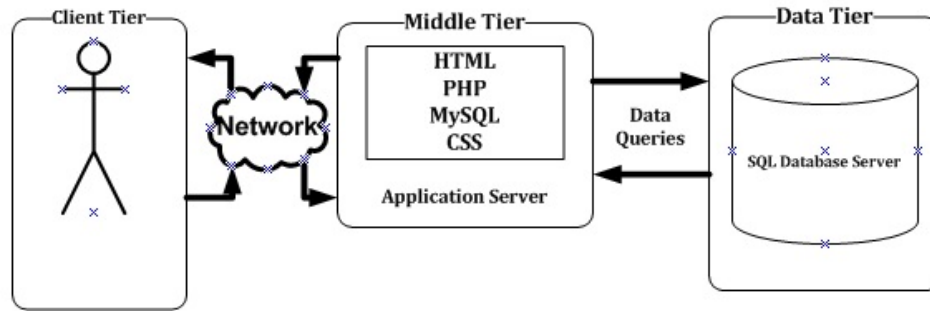
Figure 1: Data flow Diagram for the system.

4.4.1 Process Modeling

In process modeling, a context diagram and a data flow diagram are used to show the flow of information in the system. The context diagram shows the overall system and how it interacts with the external entities while the DFD shows the major processes in the system. These diagrams help to give graphical representation of the system's components, processes and the interfaces between them.

Symbol	Description
Data Flow	This symbol represents the flow of data from one process to another, from process to an external entity and from or to different data stores.
Process	The symbol represents the transformation of input data flows to output data flow diagrams. Incoming data flows are processed or transformed into outgoing data flows.
Data Store	This is either a temporary or permanent data repository where information is stored and can be retrieved.
Entity	The symbol represents the users of the system.

Figure 2: Key symbols used in the data flow diagrams.

4.5 System Design

This section describes the structure of the whole system, including process and data modeling. It also contains a detailed structure of the system's database plus the conceptual and logical designs. It also presents major algorithms that illustrate the functional requirements stated above. It illustrates the design of the database (back end) used to store system data.

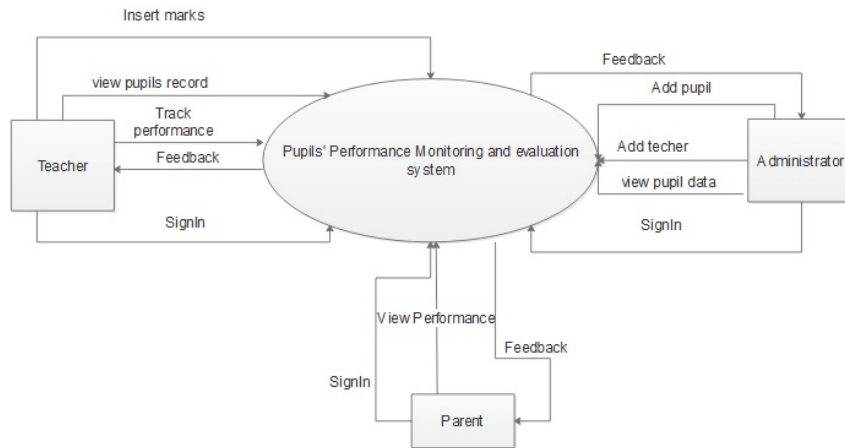### 4.5.1 a) Context Diagram for the Proposed System

Figure 3: Data flow Diagram for the system.

4.5.2 b) Level 1 Data Flow Diagram for the Proposed System

This helped in designing the concept of how the system communicated with the different users in the simple business context.
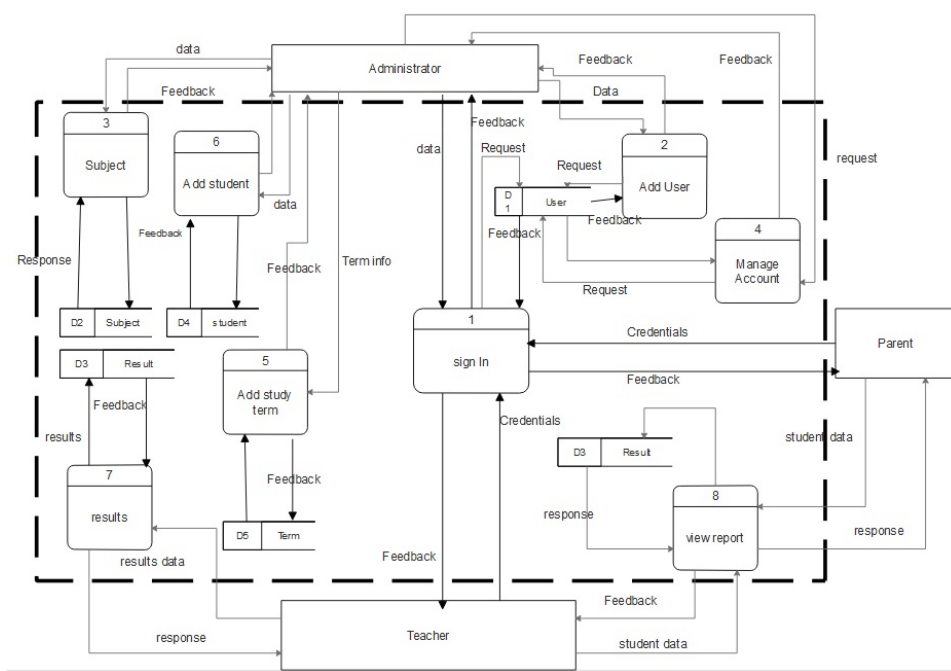
Figure 4: Data flow Diagram for the system.

4.5.3   c) Process Description

Process Name	Description
Sign in	The user name and password are entered into the login form
Add User	To add a new user (parent or teacher)
Add Subject	For adding various subjects offered by the school
Manage account	For managing user account.
Add study term	This process is for adding academic study term
Add pupil	For registering new pupils.
Add Results	For adding pupil results for various assessments done.
View report	Enables teachers and parents view performance report for a particular pupil.

4.5.4   d) Data store description

Data store name	Description
User	This is a data store that keeps information about all users.
Subject	This is a data store having information about subjects offered by the school.
Pupil	This is a data store that keeps the records of pupils.
Term	This is the data store for information about academic periods.
Results	This is a data store keeping information about pupils' results.

4.5.5   e) Description for External entities

External entity name	Description
Teacher	This entity is able to view and manage pupils' results.
Administrator	Manages system settings and other users
Parent	Views pupils' performance report

4.6 Data Modeling

This is done by identifying the data requirements, entities and their associated attributes making up the application, modeling of the relationships between the entities and concludes with an enhanced entity relationship diagram for the application.

4.7 Entity Relationship Diagrams for the Proposed System

These are used to identify the data to be captured, stored and retrieved in order to support the activities performed. The diagrams are used to show the relationships between the entities involved in the system together with their attributes and indicate the number of occurrences an entity can exist for a single occurrence of the related entity.
Entity Relationship diagrams (ERDs) illustrate the logical structure of databases. Entity relationship diagrams are used because they are relatively simple, user friendly and can provide a unified view of data, which is independent of any data model.
The table below shows the various entities, their attributes with the respective description.

Entities	Attributes
Administrator	$\text{User}_name(pk), full_name, address, contact, email, img_path, password, user_type$
Term	id(pk), name, status
Subject	id(pk), sCode, sName
Results	rID(pk), sID, sCode, $\text{assess}_type, marks, remarks, term$
Pupil	sID(pk), pName, class, stream, status, parent, DOB, gender
Parent	$\text{User}_name(pk), full_name, address, contact, email, img_path, password, user_type$
Teacher	$\text{User}_name(pk), full_name, address, contact, email, img_path, password, user_type$
Assessment	id(pk), name, weight
Activity	Id(pk), aCode, aName
User	$\text{User}_name(pk), full_name, address, contact, email, img_path, password$

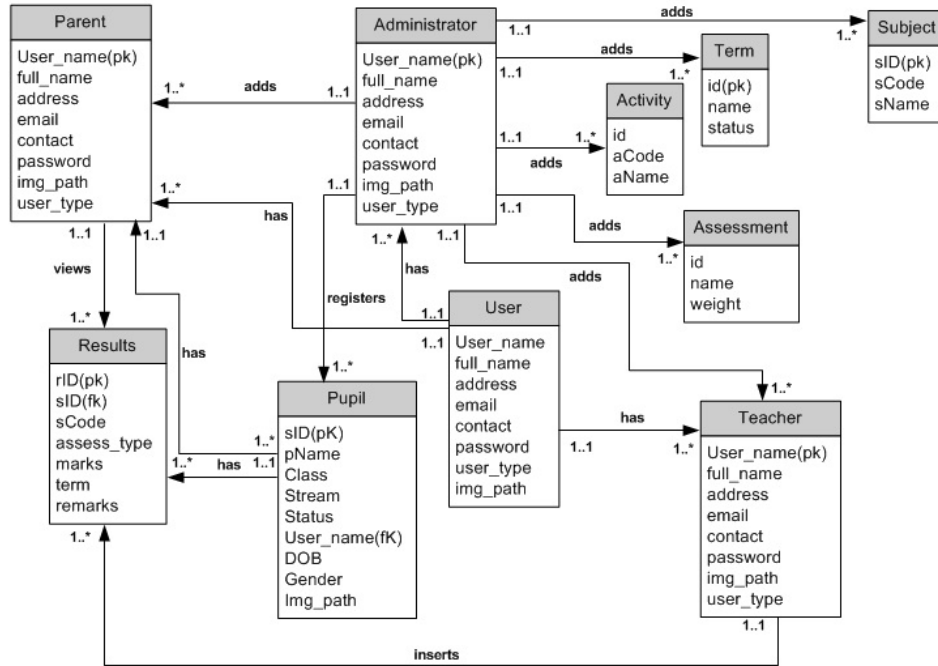## 4.8 The Entity Relationship Diagram of the Proposed System

Figure 5: The Entity relationship diagram.

Chapter Five

5   System Implementation, Testing and Validation

5.1   System Implementation

Technologies that were used in the implementation include HTML, PHP, MYSQL, and CSS. These technologies helped us in enhancing the proper functionality and as well as user friendly interfaces and the database.

5.1.1   Implementation tools

PHP
PHP is an open source server side scripting language that was used extensively for web. It was used because it has unlimited capabilities with good customization features that is to say it allows for advanced programming and it is easy to integrate with web pages. It is also platform independent, it is also offers a lot many levels of security to prevent errors and malicious attacks.

MYSQL
This is a client/server system that consists of a multi threaded SQL server that supports different client programs and libraries, administrative tools and a wide range of application programming interfaces (APIs). MYSQL was used to implement the database since it was a free multi platform database management system. It was easy to use and could integrate one or more databases. It provided fast performance and access to data and ensured that only authorized personnel accessed the data.

HTML
HTML is a markup language that was used in the development of interfaces and input forms. It was used because it is flexible since it is supported by many browsers and it is easy to use.

CSS
CSS was used to separate content from design in order to make the design work simpler. CSS has the ability to reduce development time of the project while producing good work.

5.1.2 Screen Shots

The information that is managed by the system is captured on different screens at different stages. This section shows these screen shots and how they are used to capture then information managed by the system.

a)The Login Page

The login screen gives access to the administrators to login into the system. It gives the username and password for purposes of security.
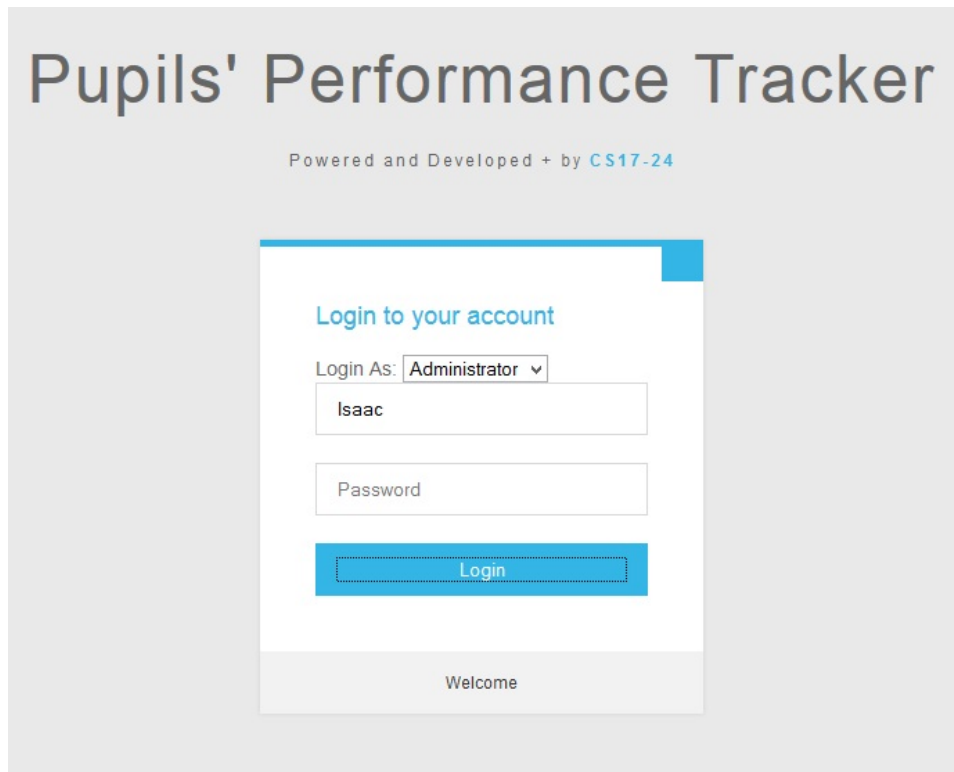

Figure 6: The Administrator Login screen illustration.

b)Add user (Administrator)

Figure 7: Add user interface.

c) Parent page view

Figure 8: Parent user Interface.

d) View report(Parent)

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PUPIL'S NAME: Nagawa Lynet   **ID NO:** ST1889   **TERM:** Term-I/2017   **CLASS:** P1

SUBJECT:	FULL MARKS	MARKS GAINED	AGGR	REMARKS	INITIALS
ENGLISH:	100	84	D1	Very good	
SCIENCE:	100	61	C4	Please aim	
SST:	100	74	C3	Fair	
MATH:	100	54	C6	More effor	
TOTAL:	400	273			

CLASS TEACHER REPORT:...
CLASS TEACHER REMARKS:...
NEXT TERM STARTS: ....*Read circular*...

	0-34	35-39	40-49	50-54	55-59	60-69	70-74	75-79	80-100
Grading:	F9	P8	P7	C6	C5	C4	C3	D2	D1

Figure 9: Report View.

e) Teacher Home Page

Figure 10: Teacher User Interface.

f) Insert results (Teacher)

Figure 11: Interface for inserting results.

g) View Report (Teacher)

Figure 12: Interface for viewing reports.

5.2 Testing

Testing of the system was done using various testing methods that is unit testing, integration testing and in-house testing. System testing as a whole aimed at enhancing the system functionality and produces an error free system.

5.2.1 In-house Testing

We tested the system to confirm whether different functionalities matched the specified requirements. For instance the system was tested to verify whether users could login into the system with ease and view the information they are supposed to view, perform tasks depending on the privileges the users have on the system. The system was also tested to find out whether it is capturing valid data types as coded in the database.

We after carrying out all tests confirmed that the system was performing as per the defined user requirements. The users tested for authentication by logging into the system with wrong username and password, the login attempt was unsuccessful, the system returned an error message and access was denied as shown in the figure below.
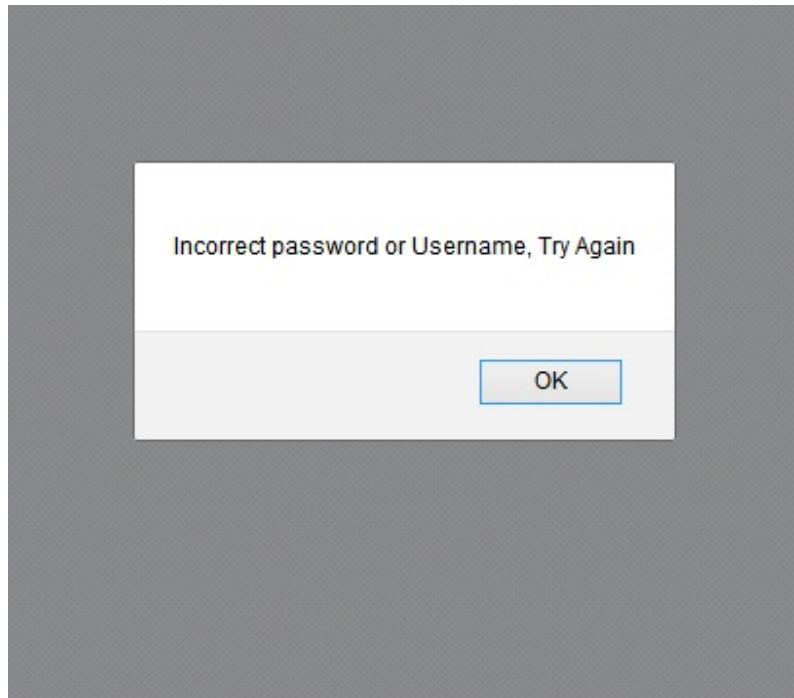
Figure 13: Screenshot for system testing.

5.3   Validation

Validation was done to make sure that the system met the needed require-
ments and operation in the intended manner according to its users. When
the project team conducted interviews, about ninety percent of the users
said the system is user friendly, efficient and faster.

Chapter Six

6 Project Discussion, Conclusions and Recommendations

This chapter summarizes the achievements of the project, limitations encountered, conclusions as well as the recommendation thereafter.

6.1 Discussion

The main objective of this project was to design an online pupils performance, the existing system was studied and analyzed, by comparing the strong and weak points of the system. Stakeholders were interviewed, documents reviewed and observation techniques were employed. Existing literature was also analyzed.

6.1.1 Achievements

After all the user requirements, then the implementation was done using PHP scripting language embedded in HTML for the user interfaces and MYSQL for database design. The new system is therefore able to do the following as stated below:

  i. Authenticate users with access control facility to prevent unauthorized users from accessing the data.

 ii. Validate entries by prompting the user whenever a wrong command is entered to avoid unnecessary errors that can distort information.

iii. Update the database whenever changes are made.

 iv. Retrieve information from the database as quickly as possible as one searches on the screen.

  v. Reports are generated quickly and correctly.

 vi. The system is user friendly hence little difficulty is expected in running the system.

vii The system can allow future adjustments to cater for future demands.

viii The project will serve as a knowledge base to other researchers and interested parties.

6.1.2 Limitations

During the study the we encountered a number of problems which to some extent seemed to stand in the way of success of the study. These among others include:

i. Insufficient funds to fund the whole project in terms of data collection, buying the required software and hardware on which the project was to run, printing the proposal document, report, research plus other needed materials

ii. Meeting the concerned people to give us the information we needed was really difficulty because most of them looked at the information we needed as sensitive so they were usually hesitant to give to us

iii. Time constraints: the time allocated to the study looked not friendly given that the same time involved the class work where there are a lot of course works, tests, attending lectures and exams for the researchers to handle the same time.

iv. Acquiring of information for the literature review about the study was quite difficult. Getting written literature was tiresome and sometimes it required us to use the internet which was also quite expensive for us.

6.1.3 Conclusion

In conclusion the system has been an interesting project to work on. We learnt to apply the course units that we learnt within the duration of our course like Database design and management, Interface design using Microsoft Visual and others.
The database will enable the update, retrieval, deletion, and generation of reports accordingly. The complete and appropriate implementation of the system will yield significant advantages to the stakeholders concerned.
The system has been tested and it meets our objective that we set at the beginning. We would like to extend our appreciation to all parties that have contributed to our successful completion of this project.

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