GEREHU SEKOLAH SISTEM AKADEMIK MONITORING

GEREHU SECONDARY SCHOOL STUDENT ACADEMIC MONITORING SYSTEM

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ABSTRACT: Gerehu Secondary school is located in the capital city of Papua New Guinea, Port Moresby. It is one of the few Secondary school with a huge number of students enrolling every year. In most cases, students are subjected to absences due to some personal reasons which resulted in poor academic performance because attendance is very important in every student in which a single absent is a big difference in a school. We still go by the traditional way of informing parents and produce report cards that in some case take up time and parents can't meet up.

In order to facilitate and simplify these actions one of the major tool is to have automated school management system in place for Gerehu Secondary School. The Web-based Student Monitoring System (SMS) of Gerehu Secondary School proposed by researcher is basically to monitor student absenteeism and behavior of the student in the school. This system is a web-based system build on the platform of object-oriented and using the unified modeling language (UML).

The expectation of this system is to allow stakeholders such as; administration, parents and school community to view online the attendance report of the prospective student using Web-browser to enable them to make a most informed decision.

Keywords: School Management System, Web-Based Student Monitoring System, Traditional/Manual System.

1.1.Background

Information technology (IT) has opened a new era of information for today's organization (it might be business, non-profit, educational, research etc.) and has enabled it to gather and communicate information and thus function in a more effective way. On the other hand, decision-making capability of the computers has changed the pattern of authority and responsibility within the organization.

With development of such inventions like the internet, the popularity with educational technology is growing every day. Nowadays, it is one of the most preferred methods of learning. Traditional lessons have been supplemented by virtual ones. Online classes include transferring files, chat rooms and even board of progress to follow the students' success. Another benefit is that students can maintain a flexible schedule that is

convenient for them (anytime, anywhere learning). It helps to combine distance education and work. “Paul Smith, (23 oct 2013), great benefits of technology in education” [online] 2015, available: http://edtechreview.in/news/705-benefits-of-technology-in-education.

Education is central to development. It is one of the most powerful instruments for reducing poverty and inequality and lays a foundation for sustained economic growth. With this aim Papua New Guinea (PNG) government has given special emphasis to educational sector and school improvement activities such as continuous professional’s development for teachers, training and upgrading teachers and capacitating schools with manpower and materials are among the major actions which have been taken in both primary and secondary schools. In order to facilitate and simplify these actions one of the major tool is to have automated school management system.

Automation is the utilization of technology to replace human with a machine that can perform more quickly and more continuously. Therefore, Gerehu Secondary School Academic is yet not equip with such Information Technology system implemented in the school which to monitor the number of students present and absent during schooling hours. Some students usually get themselves absent due to they feel like the lesion in class is boring, plain laziness to attend class and some students get caught in peer pressure or peer group related to abscond classes. This all lead to a poor academic performance when seating in exam time. The way to inform the parents is still a traditional way by calling up the parents and letting them know the number of absenteeism and the grading and rank their children/child is in class. Due to number of students, it takes a long process for and sometimes parents aren’t able to make it on time due to some reason such as work, etc. For that, the parents are not informed of the number of absenteeism their child has come to and the manual system of the school does not cater for the parents to view attendance of their children online to take disciplinary measures, dose not facilitate registering student and parent as a parents of a student enabling parents to have access to the automated system to view his/her children attendance report and does not facilitate someone who is responsible for recording attendance and do not allocate student classes and subjects.

For that the researcher here by propose Student Academic Monitoring System. The design and development consists of several panels. The administration panel which facilitates the managing students and managing classes and a teacher panel which facilitates

the recording of absentees of a student. A parent panel facilitates the parents to view his/her child report (status or attendance) online.

1.2.Problem Identification and Formulation.

The Identification and formulation is as follow;

1.2.1. Identifying the Problem

The problems can be clearly identified as:

1. Do not facilitate register student and parent as a parent of a student by the Administration offline.
2. Do not facilitate attendance record keeping by the home room teacher.
3. Do not sufficiently produce the required attendance reports to allow parents to view attendance of the students to help them participate in disciplinary measures and decision making.
4. Do not facilitate allocation of class for the student.

1.2.2. Problem Formulation.

According to the above stated problems, formulation of problems can be listed as:

1. How to analyze the system of Gerehu Secondary School in Student monitoring and compiling school report.
2. How to Design the system that will help solve problems that occur with the current system.
3. How to Evaluate and Test the system at Gerehu Secondary School so that it performs well for the students and parents/guardians likings.
4. How to Implement the System in Gerehu Secondary school so that it is a full system package in Gerehu Secondary School.

1.3. Research Objective.

The research objectives are described as follows;

1.3.1. Purpose.

The main aim for this research is to design and develop a reliable monitoring system producing report online for parents and guardians of students in Gerehu Secondary School

Academic which may boost the academic performance of the students plus parents can monitor their child every movement.

1.3.2. Objective.

The purpose of this study is as follows:

1. A system that will register student and a parent as a parent of a student and keeping record of student's attendance in Gerehu Secondary School.
2. A system that has a web browser feature that will replicate the inputted data in stand-alone system and solves the problem that occur in Gerehu Secondary School.
3. A system that will allow parents to view status of the students to help them participate in disciplinary measures and decision making and meets the requirement in academic performance in Gerehu Secondary School.
4. A web-based system that will print result and boost the academic performance of students and parents likings**.**

1.4. Research Implications.

It is expected that the research will be useful by the following parties:

1.4.1. Practical Uses.

This research has limited users practically.

1. Administration

Administration is a person who is responsible for register a student, a staff and as a parent of a student and can manage classes of a student.

2. Teacher

A Teacher is a teacher assigned by the school director to each class of students to follow the students closely. He/she has the responsibility of recording attendance of student and submitting.

3. Parent

A parent is a person who is registered as a parent of a student by the admin after registering his/her children and responsible to follow the student in close contact with the school. He/she can view the attendance of the student in school online.

4. **Staff**

   Staff are registered from the Administration to facilitate student and Parents requirements and stores data obtained from the teacher.

1.4.2. Education System.

In the education system, this research can be of great help in the following areas:

1. Displacing of the manual school system with automated system can improve the quality of education and learning progress of students.

2. The implementation of a fast, easy and systematic way of managing student/staff profiling, registration processes, generating transcript, report, timetable and attendance record keeping can greatly influence a school's progress in a more positive way and this may contribute towards meeting the general objectives and goals of the education system.

1.4.3. Academic Purpose.

Other researchers may use this as a reference to improve and design a more effective system or related to this system and can be referenced to any other researches done later on.

1.5. Limitation of Research.

The limitations or restrictions involved in this Academic Monitoring scope; Attendance and Marks, are as follows:

1.5.1. Limited Users.

1. **Administration**

Provide a simple and fast access to verify that the student is eligible for registration; manage classes and giving principals better tools to make their best, most informed decisions.

2. **Staff**

Provides a easy access to teacher registration, manage class data and imports file from excel for database records.

3. **Teacher**

Provide an easy access to record attendance in each school day. A home room teacher must log in as the home room teacher to record attendance.

4. **Parent**

Provide fast and easy access to view the attendance of a student online. A parent must be recorded in a system as a parent of the student in order to view their children attendance report in school online.

1.5.2. Online.

It is an online school system so that clients and users can access through the use of internet.

THEORETICAL

2.1.Understanding Information

Information is simply a data that is (1) accurate and timely, (2) specific and organized for a purpose, (3) presented within a context that gives it meaning and relevance, and (4) can lead to an increase in understanding and decrease in uncertainty.

Information is valuable because it can affect behavior, a decision, or an outcome. For example, if a manager is told his/her company’s net profit decreased in the past month, he/she may use this information as reason to cut financial spending for the next month. A piece of information is considered valueless if, after receiving it, things remain unchanged.

[1] As Machlup (1983, 642) has noted, the original meaning of the word "information" derives from the Latin, *informare*, which means "to put into form." "Informing" therefore carries the sense of "imparting learning or instruction" or more generally conveys the sense "to tell (one) of something." Thus, "information" refers to the action of informing or to that which is told. These meanings of the term are carried along with it wherever it occurs and

are the basis of our commonsense notions of "information." [2] As Webster (1995, 26-7) points out, the semantic definition of information conveys that "information is meaningful, it has a subject, it is intelligence or instruction about something or someone."

2.2. Understanding System

[3] According to Information System (CS507) stated a system is a group of elements that are integrated with the common purpose of achieving an objective. Organization having common goal for the achievement are functionally interactive units. All systems have inputs, outputs, and feedback, and maintain a basic level of equilibrium. For example, in the human body the heart function to support the circulatory system, which is vital to the survival of the entire body.

2.3.Understanding Information Systems

[4] According to (MIS 2011/2012 Lecture 3) stated information system has been defined in terms of two perspectives: one relating to its function; the other relating to its structure. From a functional perspective; an information system is a technologically implemented medium for the purpose of recording, storing, and disseminating linguistic expressions as well as for the supporting of inference making. From a structural perspective; an information system consist of a collection of people, processes, data, models, technology and partly formalized language, forming a cohesive structure which serves some organizational purpose or function.

An information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision making and control in an organization. In addition to supporting decision making, coordination and control of information systems may also help managers and workers analyze problems, visualize complex subjects and create new products.

2.4. Students Academic Monitoring System

Individual Schools and Department have System in place to monitor during academic year. Unauthorized absences are reported to Student Administration and recorded as appropriate. Where students are absent without authorization, to the point that is not possible to continue, Student Administration will write to the student stating they will be deemed to have

withdrawn from the school and their student record will be amended to show that they have withdrawn.

OBJECT AND METHODS

3.1 Research Object

The research object or focus is Gerehu Secondary School Academic which is located in the capital city of Papua New Guinea, Port Moresby. It is one of the 24 Secondary School that is located in the Capital city of Papua New Guinea, Port Moresby. The research is focused of student attendance monitoring system. [1] https://en.wikipedia.org/wiki/List_of_schools_in_Port_Moresby

3.1.1 Brief History of Gerehu Secondary School

Gerehu Secondary school is located in the capital city of Papua New Guinea, Port Moresby. The school established in 1982. It is one of the 24 Secondary school in Port Moresby. Gerehu Secondary SchoolAcademic is one of the biggest schools located North West of Port Moresby, Papua New Guinea. The school is run by the by the government. The school is a day school and caters for over 1000 students. The school has Upper Secondary (Grade 11 - 12) and Lower Secondary (9 - 10).

Upper Secondary

Students in Upper Secondary study the following subjects;

English, Mathematics A, Mathematics B, Physics, Chemistry, Biology, History, Economics, Accounting, Business Studies, Geography, Physical Education

Lower Secondary

Students in Lower Secondary School study the following subjects;

English, Mathematics, Science, Social Science, Commerce, Home Economics, Business Studies, Religion, Arts, Personal Development.

3.1.2 Mission and Vision of Gerehu Secondary School

Mission

The mission of Gerehu Secondary School is to do a Student Attendance Monitory system and produce great academic excellence.

Vision

The vision of Gerehu Secondary School is to make all student bodies with great academic performance.

3.1.3 Organizational Structure of Gerehu Secondary School

Figure below shows the organizational structure of Gerehu Secondary School.

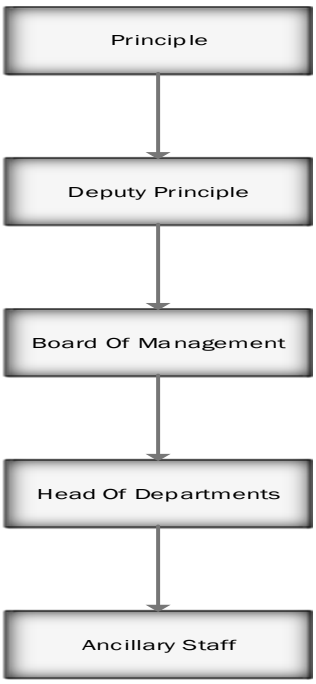


Figure 3.1 Organisational Structure of Gerehu Secondary Academic

3.2 Research Methods

Research methods is a broad term. While methods of data collection and data analysis represent the core of research methods, you have to address a range of additional elements within the scope of your research.

3.2.1 Research Design

A research design is the plan of a research study. The design of a study defines the study type (descriptive, correlational, semi-experimental, experimental, review, meta-analytic) and

sub-type (e.g., descriptive-longitudinal case study), research question, hypotheses, independent and dependent variables, experimental design, and, if applicable, data collection methods and a statistical analysis plan. Research design is the framework that has been created to seek answers to research questions.

Research design can be divided into two groups: exploratory and conclusive. Exploratory research, according to its name merely aims to explore specific aspects of the research area and does not aim to provide final and conclusive answers to research questions. In exploratory research the researcher may even change the direction of the study to a certain extent, however not fundamentally, according to new evidences gained during the research process.

3.2.2 Data Types and collection Methods

Data Types and Collections Methods that are used can be described as the following:

3.2.2.1 Primary Data Source

Data collection refers to the gathering of set of observations about variables and it is the starting point of research methods. Basically, there are two types of data which are: primary data and secondary data. Primary data is received from first hand sources such as: direct observation, interview, survey, and questionnaire etc. Secondary data is the data that have been collected and recorded by someone else and readily available from other sources. Here, we will only discuss the sources of primary data collection. The methods which are used for primary data collection are described below:

1. **The Observational Method**

This is a method of primary data collection in which researcher collect data based on their personal observation. In this manner, the researcher examined the problems faced in Gerehu Secondary School Academic.

2. **Personal Interview Method**

This is a method of primary data collection in which questionnaire is used as a data collection tool. Here, the researcher interview School staff, student and the parent of the student of Gerehu Secondary School Academic through social net works in which the valid data has been collected.

3. **Telephone Interview Method**

This is one of the most significant primary data colection methods. The significant features of the telephone interview are: selecting telephone numbers, call timing, call outcomes and call report. Telephone interview is known as dominant and cost-effective method because of the following reasons:

Higher chance to reach the respondents at any place (geography).

Saving travel time and cost.

Low overal interview conducting time of sample as compared to other methods.

Higher changes of random selection of units among the population having telephone connections.

3.2.2.2 Secondary Data Source

Secondary data is the data that have been collected and recorded by someone else and readily available from other sources etc. . In this research, the researcher collected data from previous research, web information, and historical data and information about Gerehu Secondary School.

3.2.3 Method and System Development Approach

For this it clearly explains about the systems approach, the development of systems, methods of analysis and design analysis tools. Following is the description of the approach and system development.

3.2.3.1 System Approach Methods

The method the researcher used in system approach is the Object-Oriented Systems Approach and is visualized with UML (Unified Modeling Language) diagrams such as Use Case Diagrams, Activity Diagrams, Sequence Diagrams, Class Diagrams, Collaboration Diagrams, Component Diagrams, and Deployment Diagrams.

There are two types of system approach methods used to carry out studies or research namely; Structured Approach method and Object Oriented Method which was mention briefly on the previous chapter. However, the system approach method used in this study is the object oriented approach. The object orient approach focuses on objects rather than actions, and data rather than logic. For this study, the object orient approach was chosen because objects are easier for people to understand, data and processes are not artificially separated, and codes can be reused more easily.

3.2.3.2 System Development Method

The system development method used in this research is the Prototype Model. The Software Prototyping refers to building software application prototype which displays the functionality of the product underdevelopment but may not actually hold the exact logic of the original software. Software prototyping is becoming very popular as a software development model, as it enables to understand the customer requirements at an early stage of development. It helps get valuable feedbacks from the customer and helps software designers and developers understand about what exactly is expected from the product development.

According to Sona Malhotra (International Journal of Advance in Information Technology), ” Instead of freezing the requirements before a design or coding can proceed, a throwaway prototype is built to understand the requirements. This prototype is developed based on the currently known requirements. Prototyping is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements. A prototype is a toy implementation of a system; usually exhibiting limited functional capabilities, low reliability, and inefficient performance.”

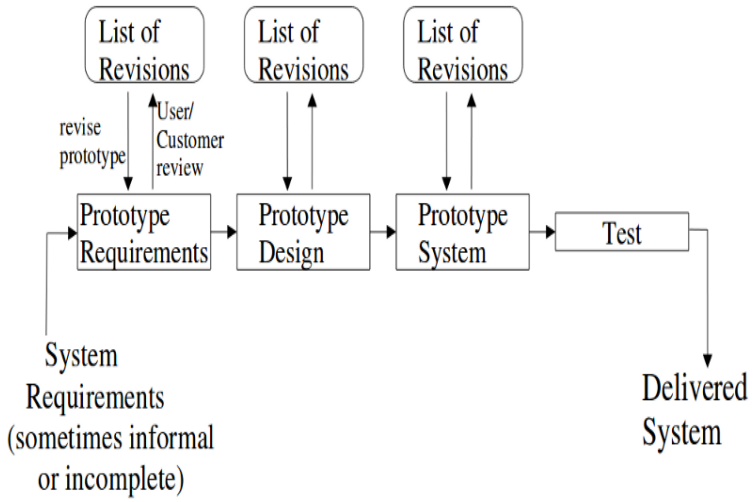


Figure 3.2 Prototype Model (Source:Learnwithkamal.press.com)

Following is the approach taken to design Gerehu Secodary School Student Academic Mmonitoring System's software prototype:

1. **Prototype Requirements:** This step involves understanding the very basics system requirements of Aiyura National High School system especially in terms of user interface. The more intericate details of the internal design and external aspects like performance and security were ignored at this stage.

2. **Prototype Desing:** The Prototype Design specifies the kind of objects to create using a prototypical instance. Prototypes of new products are often built prior to full production, but in this example, the prototype is passive and does not participate in copying itself. The mitotic division of a cell - resulting in two identical cells - is an example of a prototype that plays an active role in copying itself and thus, demonstrates the Prototype pattern. When a cell splits, two cells of identical genotvpe result. In other words, the cell clones itself.

3. **Prototype Syste:** In the System Development Life Cycle (SDLC) prototyping model, a basic version of a system is built, tested and tha reworked as necessary until an acceptable prototype is finally achieved from which the complete system or product can now be developed.

4. **Prototype Test:** Prototype Testing is conducted with the intent of finding defects before the website goes live. Online Prototype Testing allows seamlessly to collect quantitative, qualitative, and behavioural data while evaluating the user experience.

3.2.3.3 Analysis and Design Tool

With a systems approach that is object-oriented, the researcher used is a modeling language called the Unified Modeling Language (UML). According to IBM (ibm.com website), UML is a visual language for specifying, constructing, and documenting the artifacts of systems. Here the developing system is visualized by the following UML diagrams:

1. **Use case Diagram**

Use case diagrams are a set of use cases. They represent actors and their relationships, represent the use case view of a system, and or represent a particular functionality of a system. They are also used to describe the relationships among the functionalities and their internal/external controllers. These controllers are known as actors.

2. Activity Diagram

An activity diagram describes dynamic aspects of a system. It is basically a flow chart to represent the flow from one activity to another activity. The activity can be described as an operation of the system.

3. Sequence Diagram

Sequence diagram is an interaction diagram that shows how processes operate with one another. It is constructing of a message sequence chart. A sequence diagram shows object interactions arranged in time sequence.

4. Class Diagram

Class diagrams are the most common diagrams used in UML. They are consists of classes, interfaces, associations and collaboration. Technically, class diagrams represent the object oriented view of a system which is static in nature. Active class is used in a class diagram to represent the concurrency of the system. It is generally used for development purpose. This is the most widely used diagram at the time of system construction.

5. Object Diagram

Object diagrams can be described as an instance of class diagram. These diagrams are more close to real life scenarios where we implement a system. They are a set of objects and their relationships is just like class diagrams and also represent the static view of the system. The

usage of object diagrams is similar to class diagrams but they are used to build prototype of a system from practical perspective.

6. Deployment Diagram

Deployment diagrams are a set of nodes and their relationships. These nodes are physical entities where the components are deployed. Deployment diagrams are used for visualizing deployment view of a system. This is generally used by the deployment team.

3.2.4 Black Box Testing

Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance. It typically comprises most if not all higher level testing, but can also dominate unit testing as well.

Black Box Testing - Steps

Here are the generic steps followed to carry out any type of Black Box Testing.

1. Initially requirements and specifications of the system are examined.
2. Tester chooses valid inputs (positive test scenario) to check whether SUT processes them correctly . Also some invalid inputs (negative test scenario) are chosen to verify that the SUT is able to detect them.
3. Tester determines expected outputs for all those inputs.
4. Software tester constructs test cases with the selected inputs.
5. The test cases are executed.
6. Software tester compares the actual outputs with the expected outputs.
7. Defects if any are fixed and re-tested

RESULT AND DISCUSSIONS

4.1. System Design

Systems design is the process of defining the architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. Systems design could be seen as the application of systems theory to product development. There is some overlap with the disciplines of systems analysis, systems architecture and systems engineering.

4.1.1 System Design Objectives

1. The application of the web-based Gerehu Secondary School Student Academic Monitoring System that can facilitate register student and a parent as a parent of a student and teacher and also staff.

2. The web-based system that can produce monitoring report of student in less time involving less manpower accurately and efficiently.

3. The new system that could facilitate monitoring record keeping by teacher to staff adequately.

4. The web-based system that will facilitate parent to view their children's attendance and grades report online.

4.1.2 Proposed System Overview

The proposed system for Gerehu Secondary School student monitoring system is particulary a web-based system that uses the concept of client-server, in which the client uses a browser while PHP and MySql are used as the server. The clients can access these applications through using the internet.

4.4. Testing

In this research, the tests that were performed on the system mainly based on functionally testing. The method used in this testing is Black Box Testing which focuses on the functionality of the system.

4.4.1. Testing plan

The system test plan that will be tested is *BlackBox* testing method which is presented in the following tables below.

Here are the results of the testing of Applications of Gerehu Secondary School Student Academic Monitoring System -Web-Based.

Tabel 4.6 Admin Page Testing Plan

No	The Component Tested	Submenu	Test Item Scenario	Testing Result
1	Display Admin Login Page		Displays the login form to the user Admin	Black Box
2	Manage Student	Add New Student	Displays Add New page	Black Box
			to Add New Student Displaying form	Black Box
		Edit student	Displays Edit Student Form	Black Box
		Delete Student	Displays Result Delete Student	Black Box
3	Manage Staff	Add New staff	Displays Add New page	Black Box
			to Add New Staff Form Display	Black Box

		Edit staff	Display Edit staff Form	Black Box
		Delete Class	Displays Result Delete Class	Black Box
4	Manage Teacher	Add New Teacher	Displays Add New page	Black Box
			to Add New Teacher Form Display	Black Box
		Edit S Teacher	Display Edit Teacher Form	Black Box
		Delete Teacher	Displays Result Delete Teacher	Black Box

5	Manage Parent	Add New Parent	Displays Add New page	Black Box
			to Add New Parent Form Display	Black Box
		Edit S Parent	Display Edit Parent Form	Black Box
		Delete Parent	Displays Result Delete Parent	Black Box

Table 4.7 Teacher Testing Plan Page

No	The Component Tested	Submenu	Test Item Scenario	Testing Results

1	Display Staff Login Page		Displays the login form to the user Staff	Black Box
2	Record Attendance and Scores Menu and Records Parents	Add New Attendance page	Shows Student and PArent Page	Black Box
			Shows form to Record Attendance	Black Box
		View Attendance New Page	Shows View Attendance Page	Black Box
			Displays the attendance report Page	Black Box
		Edit attendance	Display Edit Attendance Form	Black Box
		Delete Attendance	Displays Result Delete Subject Attendance	Black Box

Table 4.7 Teacher Testing Plan Page

No	The Component Tested	Submenu	Test Item Scenario	Testing Results
1	Display Teacher Login Page		Displays the login form to the user Home Room Teacher	Black Box
2	Record Attendance Menu	Add New Attendance page	Shows Student Page	Black Box
			Shows form to Record Attendance	Black Box
		View Attendance New Page	Shows View Attendance Page	Black Box
			Displays the attendance report	Black Box

			Page	
		Edit attendance	Display Edit Attendance Form	Black Box
		Delete Attendance	Displays Result Delete Subject Attendance	Black Box

Tabel 4.8 Parent Testing Plan Page

NO	The Component Tested	Submenu	Test Item Scenario	Testing Results
1	Display Parent Login Page		Displays the login form to the user Student	Black Box
2	Parent Menu	View attendance Report	Display Attendance Report	Black Box
			Display result attendance Report	Black Box
			Display the Print Button to Print Result	Black Box

4.4.2. Cases and Test Results

Here are case to test the software that has been designed using the method which is based on the blackbox testing plans tables above.

Tabel 4.9 Cases and Test Results for Admin section

No	Menu	Test Cases	Test Item Scenario	Expected Results	Testing Results

1	Admin	Display user Login	Choosing a login form to the user	When opening the application, the login form will be displayed to the user	[**X**] Accepted [ ] Denied
2	Administrative Menu	Display Manage Student	Selecting a Form to add Student	When choosing Add, the form will displayed to add student	[**X**] Accepted [ ] Denied
		Display Manage Class	Choosing a form to add Classes for student	When selecting the Add option, a form will be shown to add class	[**X**] Accepted [ ] Denied
		Display Manage Subject Teacher	Select a form to add Subject Teacher	When selecting the option Add, a form will be displayed to add subject teacher.	[**X**] Accepted [ ] Denied
		Display Attendance	Select a form to view attendance	When selecting the option View, a form will be displayed to attendance.	[**X**] Accepted [ ] Denied

Tabel 4.10 Cases and Test Results for Teacher section

No	Menu	Test Cases	Test Item Scenario	Expected Results	Testing Results
1	Home Room Teacher	Display user Login	Choosing a login form to the user	When opening the application, a user login form will be shown	[**X**] Accepted [ ] Denied
2	Teacher Menu	Display Add Attendance	Selecting a form to add attendance	When selecting the option Add, the add attendance form displayed to add	[**X**] Accepted [ ] Denied

				attendance	
		Display View Attendance	Selecting View to view attendance of a student	When choosing School Year, Teacher, Class and Subject, a form will be displayed to view attendance and Marks	[**X**] Accepted [ ] Denied

Tabel 4.11 Cases and Test Results for Parent section

No	Menu	Test Cases	Test Item Scenario	Expected Results	Testing Results
1	Parent	Display user Login	Choosing a login form to the user	When opening the application, a user login form will be shown	[**X**] Accepted [ ] Denied
2	Parent Menu	Display view Attendance	Selecting a form to view attendance	When choosing School Year, Teacher, Class and Subject, a form will be displayed to view attendance	[**X**] Accepted [ ] Denied

4.4.3. Conclusion of Testing Results

Based on the test results with sample test cases above, it can be concluded that this software is free of syntax errors and can functionally produce the results as expected by the different users.

CONCLUSION & SUGGESTIONS

5.1. Conclusions

The conclusion of this research titled “Gerehu Secondary School Student Academic Monitoring System" is as follows:

1. The application can manage student and parent, teacher and staff (register someone as a student of a school and parent as a parent of a student) offline, manage classes of student, facilitate record keeping of student’s attendance daily and can allow parents to view attendance and marks of their student’s online if the parent is recorded by the system as a parent of the student.

2. This application can enables an effective record keeping of student attendance in a well-organized manner.

3. This application will facilitate parents to view the attendance of their children online whenever they wish to in order to keep track of their children attendance in school. This may allow parents to apply some disciplinary measures and well informed decision to make regarding their children.

5.2. Suggesstions

This Student Academic Monitoring system still needs to be improved and may have many short-comings. Therefore, it can be reviewed and re-developed further to add more features or functions to the current application. Here are some suggestions of features or functions that can be added to this application:

1. Online registration for both student and parent will be added to enable student and parent to register online.

2. The application can be improved to add generate transcript, class timetable, report card and add latest notice of the school.

3. The application can be improved to facilitate parent, teacher, staff and administration to communicate via online.

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