WEB-BASED INFORMATION MANAGEMENT SYSTEM FOR SENIOR HIGH SCHOOL

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Abstract. To ease the daily activities of the teachers in the Senior High School, the researcher developed a Web-based Information Management System. This system provided Forms 1 and 2, and Forms 9 and 10 intended for giving services to the senior high school students from registrations to report generations of their academic performances.   To be accessible, it was designed to be linked in the service of the WORLD-WIDE WEB (WWW). Anywhere in the country, even outside, it will be accessible as long there is internet connectivity.   With this, the end users could utilize the system and could generate real-time reports.   Primary beneficiaries of the system are the students, teachers, advisers, administrators, and principals.

The developed system used Rational Unified Process (RUP) software development methodology. The information management system which was developed for almost three months was presented to the identified system's evaluators and passed scrutiny.   The evaluation tool used for the evaluation was ISO 25010 and the general rating given by the evaluators was 4.3 which means "far more than what was expected" from the system. The developed system is now ready to give reliable and speedy information and could generate real-time reports. Ultimately, it may be installed and serve its purpose.

Key Words: *Information Management System, School Forms monitoring, Enrolment System**,** Senior High School**,** Student Profiling**,** Web-Based System*

INTRODUCTION

Managing a school really needs to have a proper recording and storing of information. It is vital for a school to have systematic information management. The records of the learners are important. Its profile, classroom activities, interventions, monitoring systems, grades, and all information related to the learners must be properly recorded, stored, and reported.

The management information systems (MIS) main purpose and usage are to improve the efficiency of school office activities. School managers are aiming and preparing to have this kind of database system to improve its efficient administrative services.`

Not all schools in the country have an information management system. All Principals might be dreaming and aiming for this but only some were blessed with such. The researcher has the heart and passion to let his co-workers in basic education experience how this system will aid them. In the school where the researcher is assigned, the process of recording, storing, and generating reports of learners' vital information was all manually done. It is his heart's desire to lighten the day-to-day activities of the workplace with the use of this information management system.

The Information management system being conceptualized by the researcher is for the benefit of the learners and all individuals concerned in the recording, monitoring, saving, and generating of reports of vital information about the learners themselves. This will lighten the burden, especially for the subject teachers and advisers who hand-in-hand record activities and grades, and do all usual activities for the benefit of storing vital information. The development of the system will surely provide a systematic and user-friendly application to be used especially by the subject teachers and advisers who are directly involved in making records of all the activities being done by learners.

The head teacher or school principal even the parent and/or guardian of the learner will benefit from the project. It will be easy for them to monitor the activities and intervention systems being served for the students. With the information system, the functionality, reliability, and efficiency aspects of providing services to the end-users are assured.

The purpose of this project study was to lighten the burden of the classroom advisers and subject teachers with their concerns regarding the recording, storing, and generating reports of learners' information from the day they register in the school to avail its services until the last day of their stay in the institution. The system also provided systematic

monitoring services which were conducted by the parents or guardians, principals, and other stakeholders concerned with the academic advancement of the learners.

The project study was a web-based system with short message service (SMS) technology assistance for grades information dissemination activities from the classroom advisers to the parents or guardians. There is a database for the system and it is installed in the designated area assigned by the school principal. It is accessible to all identified users with internet connectivity: the learners, registrar, class advisers, subject teachers, principal, parents, guardian, and another concerned individuals in the education process of a child.

Specific Objectives

Specifically, the study aimed to:

1. Design and develop an information management system Senior High School with the following modules for:
   1.1. the School Registrar
       1.1.1. Enrolment System
       1.1.2. Learner's Reference Number
   1.2. the Class Adviser
       1.2.1. Student Profiling
       1.2.2. Grade Sheets from Subject Teachers
       1.2.3. School Forms monitoring
           1.2.3.1. Form 1 – School Register
           1.2.3.2. Form 2 – Daily Attendance Report of Learners
           1.2.3.3. Form 9 – Learner's Progress Report Card
           1.2.3.4. Form 10 – Permanent Record of
                       Learners
       1.2.4. Mode of Intervention
   1.3. the Principal
       1.3.1. Monitoring system
   1.4. Reports Generation
       1.4.1. Year-End Reports
           1.4.1.1. Permanent Record (Form 137)
           1.4.1.2. Report Card (Form 138)
2. Evaluate/validate the developed system using industry software quality model – the ISO 25010 evaluation tool in terms of:
    2.1 functional suitability;
    2.2 performance efficiency ;
    2.3 compatibility;
    2.4 usability;
    2.5 reliability;
    2.6 security;
    2.7 maintainability; and
    2.8 portability

Resources

These resources included all materials needed in the realization of the study. The hardware and software requirements used the development of the Infromation Management System for Senior high school.

Table 1 Hardware Requirements

Required Hardware	Hardware Specification
Processor	AMD Ryzen Thread ripper 1950X
Hard disk drive	100 Gigabytes
Memory	4 Gigabytes
Internet band width	2 Mbps

Table 1 reflects the hardware requirements needed in the development of the proposed system.

Table 2 - Software Requirements

Particulars	Recommended Specification
Operating System	Windows 8
Server-Side Scripting	Programmers Notepad 2
	PHP
Web Server	XAMPP 1.7.3

Database	MySQL

Table 2 displays the software requirement of the proposed system to provide a description for best service of the proposed system.

Inception

In this phase, the Researcher made a dialogue with the end-user. She observed the processes in the accounting department about how the property, plants and equipment are being processed for inventory. Then, after some exchanges of ideas, the researcher stated her idea on how to convert the manual processes into a software. The end-user visualized what would be the output of the proposed system. They were positive that it could really helped them in the operations, and could help them generate reports especially during end of fiscal year that they needed accurate reports for submissions. Thus, the researcher determines if the project is worth pursuing and what resources will be needed.

Elaboration

In this phase, the project's architecture were further evaluated. Illustrations and diagrams were presented and discussed below:
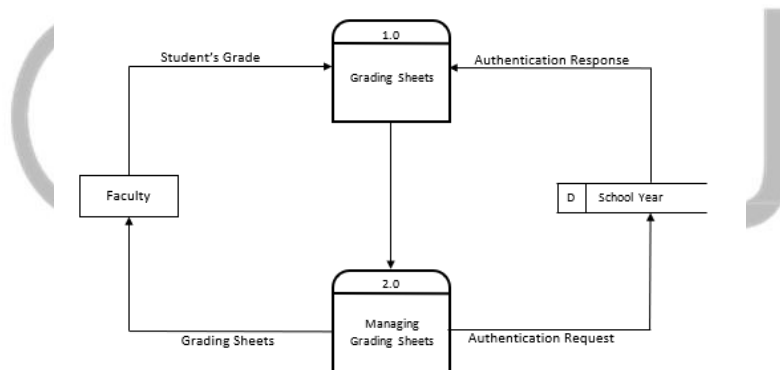

Figure 1- Faculty Module's Data Flow Diagram

Figure 1 showed the Faculty Module's data flow diagram. It is one of the vital modules in the system which processes the student's grades.
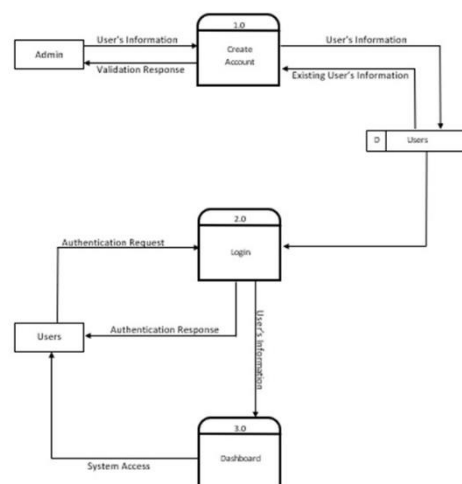
Figure 2- Admin Module's Data Flow Diagram

Figure 2 displayed the Admin Module's data flow diagram.   This module is important due when it comes to authenticating or validating information.
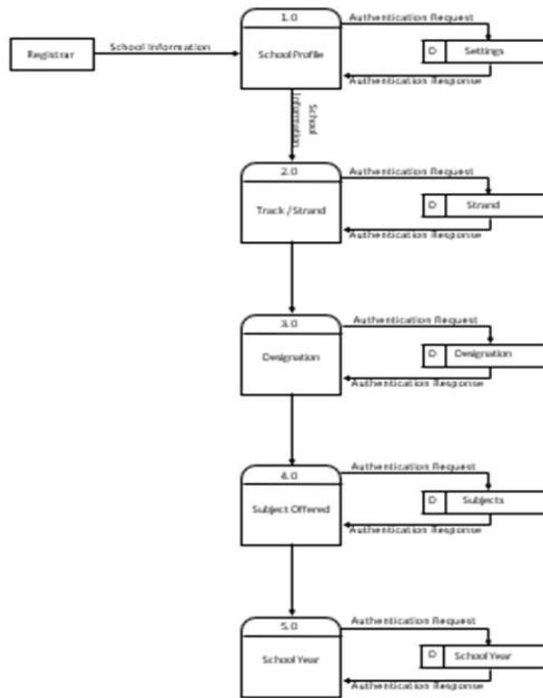
Figure 3- Registrar Module's Data Flow Diagram

Figure 3 exhibited the data flow in the Registrar's Module. All transactions made in this module are presented in this figure.
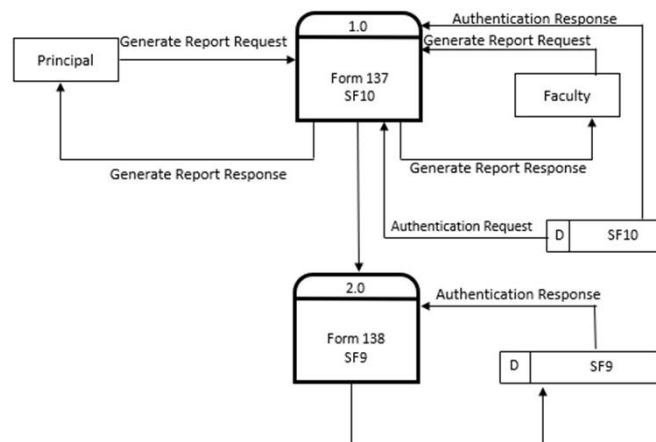
Figure 4 - Principal Module's Data Flow Diagram

Figure 4 showed the data flow in the Principal's Module. The main transactions being presented in the diagram were the generations of forms 137 and 138 of the students.
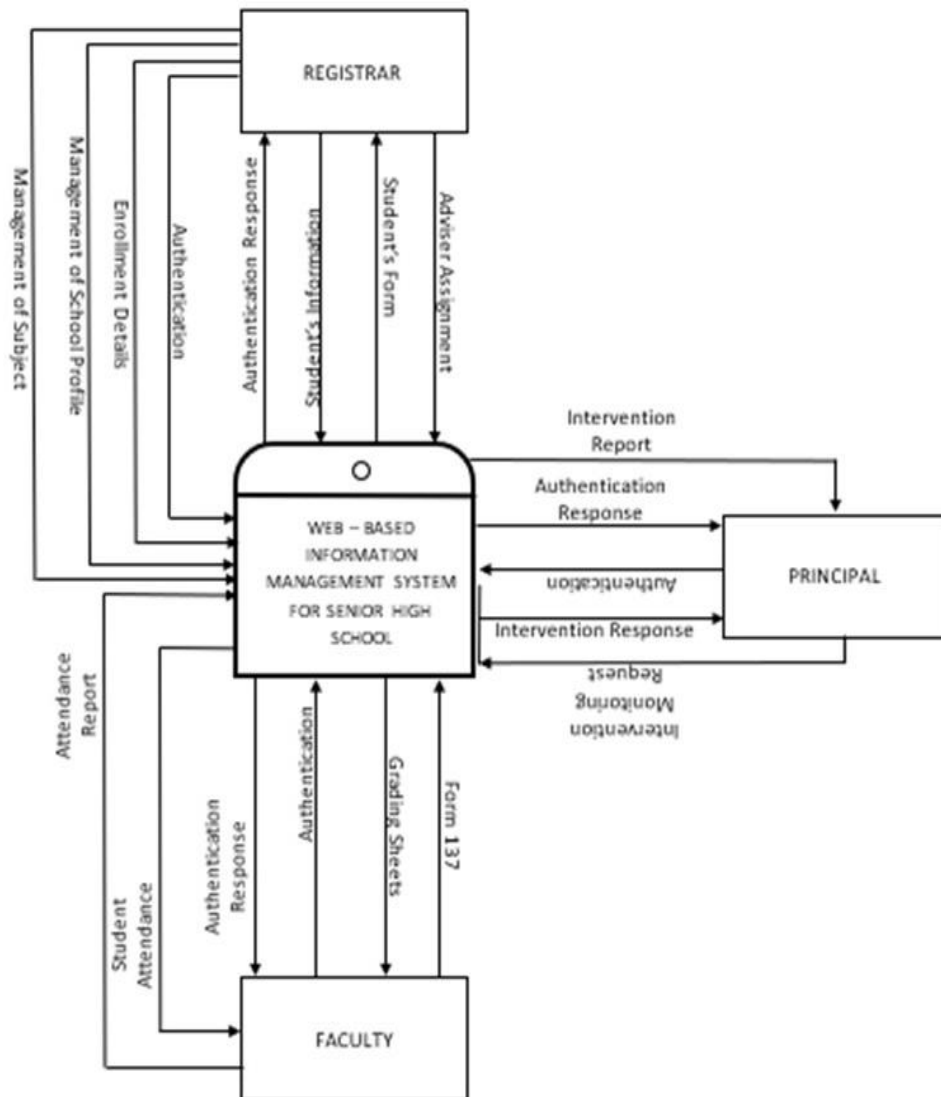
Figure 5- The Web-Based Information Management System for Senior High School

Figure 5 displayed the whole picture of the data flow in the Web-Based Information Management System for Senior High School.

Table 1
The Summary of the System Evaluation

Quality Characteristics		Student (10)	Subject Teacher (10)	Class Adviser (10)	Principal (10)	IT Experts (10)	Adjectival Description
1.0	Functional Suitability	4.5	4.5	4.5	4.5	4.5	More than what is expected
2.0	Efficiency	4.5	4.3	4.2	4.4	4	More than what is expected
3.0	Compatibility	3.9	3.8	3.8	3.8	3.9	More than what is expected
4.0	Usability	5	5	5	5	5	More than what is expected
5.0	Reliability	4.5	4.2	4.1	4.2	4.1	More than what is expected
6.0	Security	4.5	4.2	4.4	4.1	4	More than what is expected
7.0	Maintainability	4	4	4	4	4	More than what is expected
8.0	Portability	4	4	4	4	4	More than what is expected
	Mean	4.36	4.25	4.25	4.25	4.18	More than what is expected
Overall Mean		4.26					More than what is expected

Table 1 displays the results of the System Evaluation conducted by the official Evaluators. It shows the average weighted mean of 4.26 that the expectations of the end users were met.

Transition

In this last stage of the project development, final adjustments or updates are made based on feedback from the evaluators. The Researcher see to it that the developed system passed the evaluation activities conducted. Suggestions and recommendations were done in this phase before the installation and turn-over of the system to the beneficiaries is made.

Summary of Findings

The following findings were obtained from the study:

1. Evaluation was made in the entire system and found to be all working smoothly. All the forms from one (1) to ten (10) were all operational and beneficial to the end users. It is a great ease to the workloads of all persons concerned thinking of the complexity of the project. All forms were ready from one (1) to ten (10).
2. The software quality model were utilized to come up with functional and quality standard system. Students, teachers, advisers, principals, and school office staff who were identified to be one of the beneficiaries, were satisfied by because of the result of the evaluation. They gave 4.3 as an overall rating of the developed system.

Conclusions

Based on the findings of this study the following conclusions are formulated:

1. With the general average rating of 4.3, the developed system is ready to be utilized in the basic education operations, specifically in the high school department. Utilization of the developed system will certainly be a great support to secondary education yearly operations in monitoring student's academic performance.
2. All characteristics of a standard software quality model was earned by the developed system by passing the evaluation and come up with an average rating of 4.3 which means the system is "far more than what is expected" to become.

Recommendations

Based on the conclusions, the following recommendation are hereby offered:

1. The developed system may be utilized by the beneficiaries. Students, subject teachers, advisers, principal and office staff will find a "smart buddy" as they welcome the new developed system in their daily endeavour.
2. Quality service will be expected from the system once fully operational. If be deployed and installed end-users will benefit much from it.
3. The searcher may offer time for equipping the beneficiaries to become familiar with the system for efficient utilization.