

**BASAY NATIONAL HIGH SCHOOL  
ONLINE REGISTRATION SYSTEM**

**JEANALYN G. ESTRELLADO**

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## **DISCLAIMER**

**This project is submitted to the Faculty of Information and Communication Studies in partial fulfillment of the requirements for the degree Master in Information Systems at the University of the Philippines – Open University, Los Baños, Laguna. It is the product of my own work except where indicated in the text. The project report or any portion thereof including the source code or any section may be freely copied and distributed provided that the source is acknowledged.**

**ACCEPTANCE SHEET**

This project entitled “BASAY NATIONAL HIGH SCHOOL ONLINE REGISTRATION SYSTEM” submitted to the Faculty in Information and Communication Studies, University of the Philippines – Open University, Los Baños, Laguna in partial fulfillment of the requirements for the degree Master of Information Systems is hereby accepted.

RIA MAE H. BORROMEO, M.SC.

Member, Guidance Committee

\_\_\_\_\_  
Date Signed

ROBERTO B. FIGUEROA JR., M.SC.

Member, Guidance Committee

June 3, 2015

Date Signed

CONCEPCION KHAN, Ph.D.

Program Chair

\_\_\_\_\_  
Date Signed

MELINDA BANDALARIA, Phd.

Dean

13 Aug 2015

Date Signed

## **ACKNOWLEDGEMENT**

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I acknowledge and thank my school administrator, district supervisor and school division superintendent for allowing me to pursue graduate studies and implement my project in school.

Above all, I thank God for the guidance and wisdom throughout the years of my studies in my beloved UPOU institution.

## **Abstract**

This project research is about the Online Registration System of Basay National High School. The current system problem includes excessive paper consumption, multiple entries of forms, filing difficulties, and handwritten data entry errors. This system was proposed in order to automate the enrollment, organize the students' file automatically and print the ID and students' records directly. Thus, it could save time and effort, as well as increase productivity.

The recipient of this project is Basay National High School formerly Basay Municipal High School in 1971, established by the local government headed by its town officials and in coordination with the Department of Education, Culture and Sports (DECS) administrators of the Division of Negros Oriental. The school enrollment is approximately more than 700 students for the last three years.

The system is accessible via the internet. The principal, registrar and the teacher-adviser can access the system anywhere provided that there is an internet connection. The editing and adding of data is only limited to the teacher-adviser. The data is printable according to the format needed. The format includes school ID, report card, form 137, good moral and diploma. The program used is XHTML 1.0 Transitional, PHP 5.4.35, CSS, Apache for the webhost and Joomla 3.3.6 for the content management (Kempkens, 214).

For the system development process and design studies, the Information Systems Strategic Planning (ISSP) of Strategic Information Systems Development (SISD) course in MIS was used (Khan, 2003). The project assessment scheme involved preliminary tool for strategic planning like the SWOT Analysis. The output of this assessment process is concerned about the relevance, feasibility and sustainability of the project. Basay National High School Online Enrollment System study and project is sponsored by PCAFPD (Peace Corps Alumni Foundation for Philippine Development).

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## **I. Introduction**

### **A. Statement of the Problem**

The project will address following problems in the current enrolment system of Basay National High School:

- a. Paper consumption
- b. Multiple entries of forms
- c. Filing difficulties
- d. Handwritten data entry errors

### **B. Background and Objectives of the Project**

The objectives of the project are to:

- a. Automate the filing and organizing of student files
- b. Improve the manual system of collecting data
- c. Enhance the speed of student ID cards and other document processing

### **C. Significance and Scope of the Project**

Created an Online Registration System for Basay National High School that could benefit the school head, registrar, teachers and the students.

#### **Requirements**

The principal, registrar and the teacher-advisers must have the ability to use and maintain their online accounts. The user should be computer literate prior to using the system.

#### **Constraints**

The project constraints is the time allotment to finish the final program, expensive project requirements and the inability of the school to pay for the domain and webhost and to provide additional servers in the near future.

**Limitations**

The Online Registration System is operational on its first release with a single server and a one year subscription of domain name and webhost. Years beyond will be subject for another system requirements.

**Deliverables**

The product deliverable in this project is an Online Registration System for Basay National High School that could benefit both the teachers and students.

## Milestones

The project proposal started on September 7, 2013 and was approved for deployment on December 15, 2014. The timeline is shown in Table 1.

**Table 1. Milestone of the Entire Project**

<b>Date</b>	<b>No. of days</b>	<b>Activity</b>	<b>Description</b>
Sept 7 to Oct 7, 2013	30	Approval and Data Gathering; Completion of System Requirements	Final Proposal and SRS are approved prior to system design and development.
Oct 8 to Oct 31, 2013	23	Layout/Revision of the Project Plan	Encoding and Printing for Proofreading
Nov 1 to Jan 1, 2014	60	Coding/ Troubleshooting	System development is on-going prior to integration testing.
Sept 1 to Nov 19, 2014	68	Coding/ Troubleshooting (extended)	System development is on-going prior to integration testing.
Nov 20 to 28, 2014	9	Integration Testing	Testing of the Online Registration System
Nov 29 to Dec 8, 2014	10	Revision/Final Submission	Submission of the final result of the project
Dec 9 to Dec 15, 2014	7	Approval for Deployment	After the approval, the project is now ready for deployment for the online registration of Basay National High School SY 2015-2016.

## **System Features**

The system can be accessed by the Principal, Registrar and the Teacher-Advisers. The students can also create their accounts but with limited access. Username and password is needed to log-in. There are three types of accounts for the system: administrator (Principal/ICT Coordinator), assistant administrator (Registrar/Statistician) and registered user (Teacher-Adviser). The administrator has full access and overall administrative rights. On the other hand, the assistant administrator has the right to create accounts for every teacher-adviser, check and approve their submitted files for record. The teacher-advisers are considered registered users. Their username and password are provided by the administrator respectively. They can edit the entries and update the data after they signed up. They can also print hard copies among the list of forms available on the site.

## **D. Documentation of Existence and Seriousness of the Problem**

### **Current system**

The current system used is traditional and manual. There is no technology used in the registration system other than manual transcribing.

### **Problem/s identified with the traditional enrollment system**

The problems identified in the current system are excessive paper consumption, multiple entries of forms, filing difficulties, and handwritten data entry errors. These problems caused the slow processing and excessive efforts for the completion of the tasks.

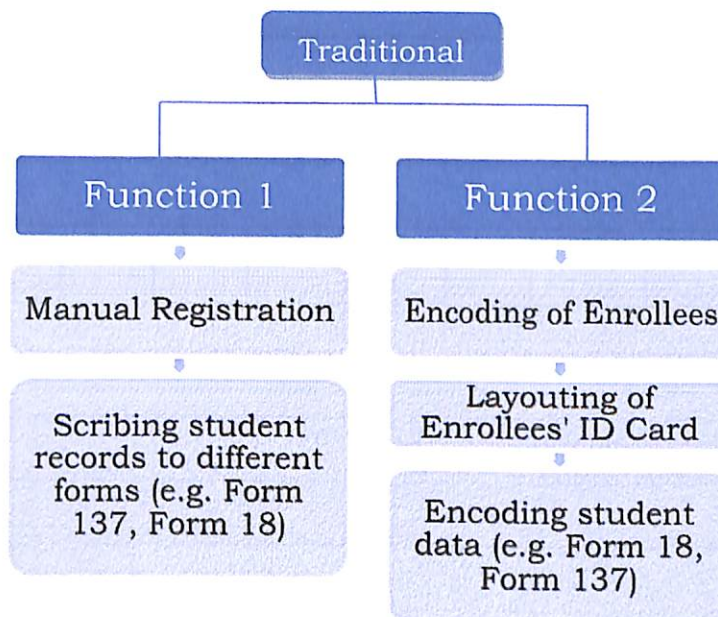
### **Process models of existing systems contributing to the problem**

The process model is shown in Figure 1 as a Process Decomposition Diagram for detailed information on the existing process model used.

## Enrollment data

The Enrollment shown in Table 2 for the last three years proves that the Traditional System used truly caused the problems stated above.

Figure 1. Modeling Process of the Traditional Enrollment System



**Table 2. Basay National High School Enrollment for the Last Three Years**

<b>Year Level</b>	<b>SY 2010 - 2011</b>			<b>SY 2011 - 2012</b>			<b>SY 2012 – 2013</b>		
	<b>M</b>	<b>F</b>	<b>T</b>	<b>M</b>	<b>F</b>	<b>T</b>	<b>M</b>	<b>F</b>	<b>T</b>
<b>First Year</b>	98	111	209	94	108	202	136	99	235
<b>Second Year</b>	77	114	191	78	103	181	84	97	181
<b>Third Year</b>	66	90	156	63	104	167	80	102	182
<b>Fourth Year</b>	70	75	145	61	91	152	63	106	169
<b>TOTAL</b>	311	390	701	296	406	702	363	404	767

## **II. Review of Existing Alternatives**

The Teacher-Advisers gather data from the students through writing the forms. When errors are encountered, the teacher may use tape or fluid eraser and if it causes so much mess, the form will be discarded and replaced with a new one. In making reports and other documents, each teacher encodes the data to their laptop and prints it.

Resources for addressing their problem are personal laptops and external drives for backups. The office is also providing the forms whenever the teachers need it.

The current best practices are tedious for the teachers for they will have to fill up many forms with the same data. It takes time for them to encode multiple entries on different forms. So much time and effort are to be spent in this practices. Thus, it has to be considered in addressing the needs of the current practices. Each day, teachers are burdened with subject loads, counseling students, tending the parks, checking the test papers, making lesson plans, doing classroom improvement and even do extra school works at home. These are only some of the reasons that drain teachers energy and the needed documents and school reports worn them out. Eventually, these factors affect teaching performance. Whenever they need information about other students they handled but not their advisory, they can directly access the online data right away without having to go to the next building. Online working eases these scenarios. Automating the processing of school documents, access to students data, networking with other teachers and direct internet access address these concerns.

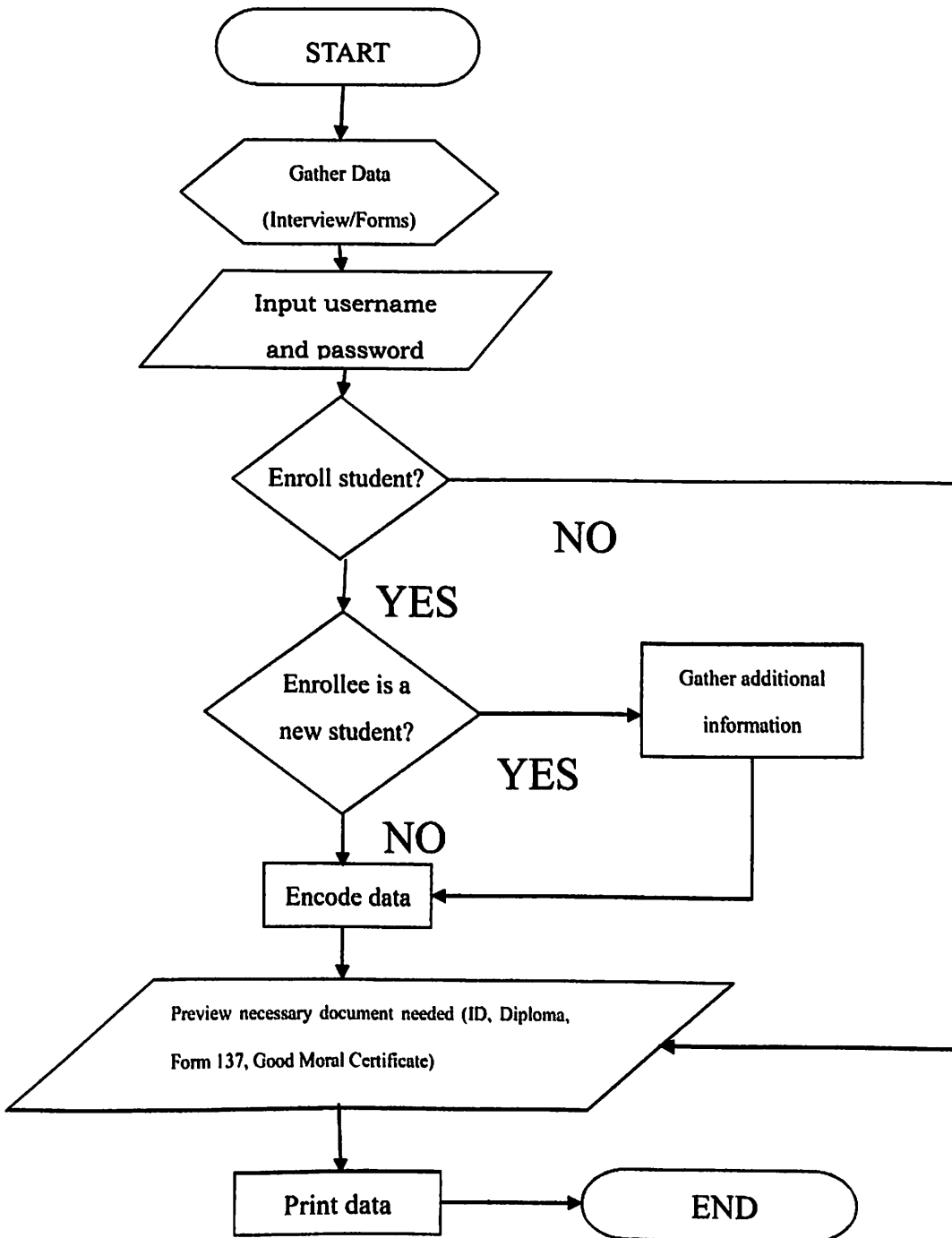
### **III. Methodology**

#### **A. Theoretical Framework**

The project is an operational-level type of Information System where the system supports the routine student record-keeping activities and transactions of the school. The Teacher-Adviser will enroll the new students. They will be interviewed and will fill out the forms. Students' data will be kept on record. On the second year of the system's implementation, the same process will be done to new enrollees while the continuing students have no need to fill out long forms because they have existing data online. The system flowchart which is the actual system flow during enrollment by the Teacher-Adviser is shown in Figure 2.

The system proposed is appropriate to the teachers since they are all computer literate. The Department of Education always conducts an ICT Literacy Program during summer vacations and semestral breaks to develop teachers' competence on computer technology. Hence, the school is willing to adopt the proposed project.

Figure 2. System Flow of the Project



## **B. Rationale for the framework**

Since the establishment of the school, the student population is continuously increasing. The school will soon open senior high school and the paper works will be more demanding. As a summary, the proposed project will:

- a. automate the filing and organizing of student files;
- b. improve the manual system of collecting data;
- c. enhance the speed of student ID cards and other document processing.

## **C. Methods**

The technologies to be used are divided into two: hardware and software. For the hardware, these are:

- a. digital/web camera;
- b. laminating machine
- c. printers (ID and other documents)
- e. Intel® Pentium® Processor G2030 (3M Cache, 3.00 GHz)

The hardware will not work without the software. Since the project is more on web application, these are the appropriate software:

- a. web browser (Internet Explorer, Mozilla Firefox, Google Chrome);
- b. web host (www.ifastnet.com);
- c. XAMPP v3.2.1 Cross-platform (Linux, Windows, Solaris, Mac OS X) which is a free and open source web server solution stack package: MySQL – databases software, PHP, CSS and HTML (web programming languages);
- d. FileZilla FTP Server 0.9.41 (software for uploading to the webhost).

## **D. System Requirements Specification**

### **Introduction**

This is an introduction to the System Requirements Specification for Basay National High School Online Registration System.

### **Purpose of This Document**

The proposal is about the Online Registration System of Basay National High School. The current system's problem includes excessive paper consumption, multiple entries of forms, filing difficulties, and handwritten data entry errors. This system was proposed in order to automate the enrollment, organize the students' file automatically and print the ID and students' records directly. Thus, it could save time and effort, as well as increase productivity.

### **Goals of the Project**

The objectives of the project are to:

- a. Automate the filing and organizing of student files
- b. Improve the manual system of collecting data
- c. Enhance the speed of student ID cards and other document processing

### **System Scope**

The scope of the project is only limited as school-based program. Further studies is preferred because it will be used in the entire Department of Education.

### **Client, Customer and Other Stakeholders**

The target audiences includes:

The Client – Clients are the parents, students and the teacher.

The Customer – Students and teachers will be benefited by this project.

Other Stakeholders – This includes the parents, teachers and the project sponsors.

### **Users of the Product**

The users of the product should follow the protocol in using it in order to attain the desired functionality.

### **Assumptions and Other Relevant Facts**

The following are the assumptions and relevant facts about the system:

- The web program needs regular updating and timely backup.
- Security and safety of the hardware and school accounts should be strictly imposed.
- Additional computer unit that will stand only as a database server is needed in the near future.
- This web program will be implemented using a paid webhost (ifasnet.com) and a domain ([www.orsbasaynhs.net](http://www.orsbasaynhs.net)). This is a one-year subscription and the school is responsible for its renewal for the following year.

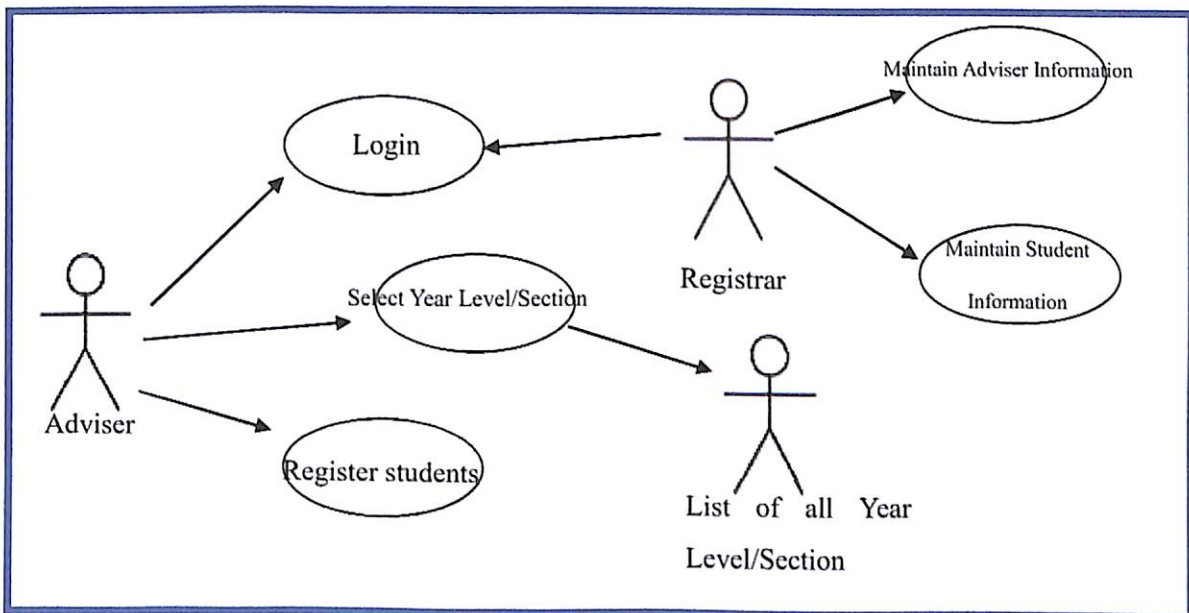
### **Functional Requirements**

The online enrollment system of Basay National High School is a user-friendly system wherein any computer-literate individual will be able to use it even without supervision. However, at the first stage of the system, advisers are only allowed to access the system so as to protect the student files. This section describes what the system must do (Behavioral Requirements), the data manipulated by its functions (Data Requirements), and the user interaction with the system (User Interface Requirements).

## Behavioral Requirements

Behavioral requirements describe the system functions. A Use-Case Diagram of the Unified Modeling Language (UML) model (Bell, 2013) is shown below in Figure 3 for a graphical representation of this requirement.

Figure 3. Use-Case Diagram



## Data Requirements

This section illustrates and explains about the data requirements of the project. See Table 3 for details.

Table 3. Data Requirements

Data	Sources	Destination/Storage	Output	Remarks
Student Records	Student (Interview and Supporting Documents)	Database Server	Student Profile Sheet	ID, Certification, Diploma is also applicable as output

## **Integration Requirements**

An integration requirement is about the necessary protocols/data that will help integrate the system with other application systems. Refer to Table 4 and to User Interface Requirements section for more details.

## **User Interface Requirements**

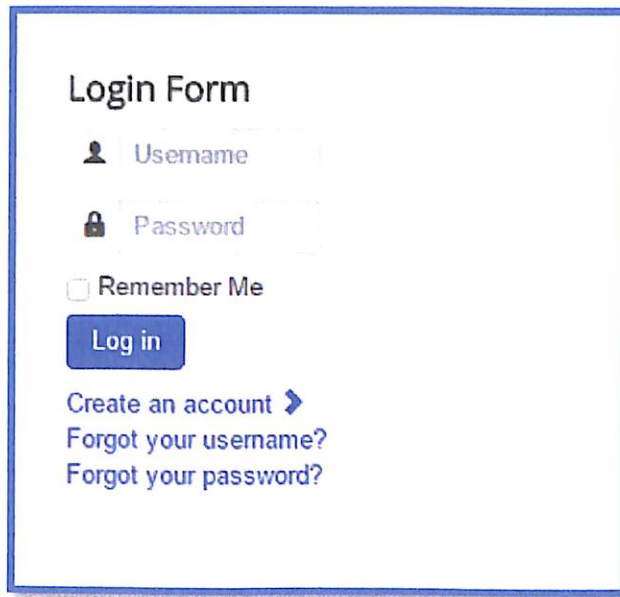
These are the User Interface Requirements:

- The input field accepts text and numeric data entry according to data type (numbers, text).
- Printable version is available upon using the system.
- The login field is only available for users who are authorized by the registrar.
- The system is functional when using a web browser.

## *Screen Layout Requirements*

The screen layout is simple, user-friendly, and standard. Color combination and screen design standards should also be a benefit to color-blind users. Log-in page is shown in Figure 4.

**Figure 4. Log in Page**



The image shows a login form titled "Login Form". It contains the following elements:

- A "Username" input field with a person icon on the left.
- A "Password" input field with a lock icon on the left.
- A "Remember Me" checkbox.
- A blue "Log in" button.
- A link "Create an account" with a right-pointing arrow.
- A link "Forgot your username?".
- A link "Forgot your password?".

### *Reporting Requirements*

Table 4 contains the report type and their respective description. It also includes the frequency and the stakeholders.

**Table 4. Reporting Requirements**

<b>Report Type</b>	<b>Report Name</b>	<b>Description</b>	<b>Stakeholder Audience</b>	<b>Frequency</b>
Financial	Budget Report	This includes the expenses incurred during the making and test period of the project.	DepEd BasayNHS/ PCAFPD	Monthly
Operational	Timeline Report	Complete details of the timeline of activities	DepEd BasayNHS/ PCAFPD	Monthly
Executive	Executive Summary	Summary of the weaknesses/strengths of the project. Brief solution to the problems encountered during the whole operation. May contain graphs for graphical representation of the whole process.	DepEd BasayNHS/ PCAFPD	Monthly

### **Non-Functional Requirements**

This requirements consist of all properties that a system must have. The non-functional requirements categories are: Usability, Performance, Security, Legal and Operational Requirements (“System Requirements Specification,” 2013).

## **Usability Requirements**

### *Ease-of-use Requirements*

The web program is user-friendly and easy to access even with a new computer user. It does not require any skills in programming as long as the user knows basic computer operation.

### *Documentation Requirements*

Links about the web program's proper usage is also embedded on every page for easy access of any users who might need thorough understanding about the program.

### *Safety Requirements*

Documentation with regards to the safe use of the program will be clearly explained to the users. Online safety requirements will also be included on the links of the web program.

## **Performance Requirements**

### *Availability Requirements*

The system is only available and accessible in the campus during the testing period and will be available for the public after it is approved by the Chair. Availability of access is limited to the authorized user by the registrar.

### *Responsiveness Requirements*

The system is responsive via the internet during the test and released period.

### *Reliability Requirements*

The reliability of the program can be measured in metric such as AVAIL and MTTF (Mean Time to Failure). AVAIL is the percentage of time that the system is available to the user but taking out any planned downtime for maintenance. MTTF is the average number of hours that the system runs for before something breaks. This

tends to be a measure for hardware such as a server. For instance, if a hard disk fails on average after 100 hours, then its MTTF figure is 100 hours (Teach-ict.com, n.d.).

#### *Capacity Requirements*

The required capacity of the system, including CPU, memory, disk space, and network bandwidth will be documented daily every after use of the system.

#### *Scalability Requirements*

The web program is capable to continue its operation even after increased usage overtime. A reserved server is one of the factors to increase the scalability of the program.

#### *Disaster Recovery & Business Continuity Requirements*

Sky drive and local drive backups are two important factors in the event of web program failure. Business continuity management (encompassing Information Technology (IT) disaster recovery) includes risk management, emergency response management, and incident management.

### **Security Requirements**

#### *User Security Requirements*

The user log-in is controlled by the registrar. No one can access the student profile unless authorized by the registrar. The registrar, school head, and the administrator must authenticate the username and a password.

#### *Data Security Requirements*

Data is secured as it will be stored both in the local drive and the skydrive. Whenever an internet connection fails, either one of them can serve as backup.

## **Legal Requirements**

### *Notification Requirements*

Legal disclaimer of the project that can be found in the proposal is one of the notification requirements. Copyright will also be embedded at the bottom part of every page.

### *Privacy Requirements*

The registrar and any other user have no right to disclose in public any personal data collected from the students.

## **Operational Requirements**

### *Hardware Requirements*

The hardware requirements are needed before the actual usage of the system. These include:

#### *Minimum System Requirements*

- 32 or 64-bit processor (Dual Core i3-i7 is recommended)
- At least 2 GB RAM
- 20GB or more of free hard drive space on the bootable disk
- Network interface card
- NVIDIA 3D accelerated video card (recommended)

### *Software Requirements*

This requirement enlist the necessary the software needed for the system development (“Software Requirements Specification,” n.d). These are the appropriate software requirements:

- web browser (Internet Explorer, Mozilla Firefox, Google Chrome);
- web host ([www.ifastnet.com](http://www.ifastnet.com));

- XAMPP v3.2.1 Cross-platform (Linux, Windows, Solaris, Mac OS X) which is a free and open source web server solution stack package: MySQL – databases software, PHP, CSS and HTML (web programming languages);
- FileZilla FTP Server 0.9.41 (software for uploading to the webhost).

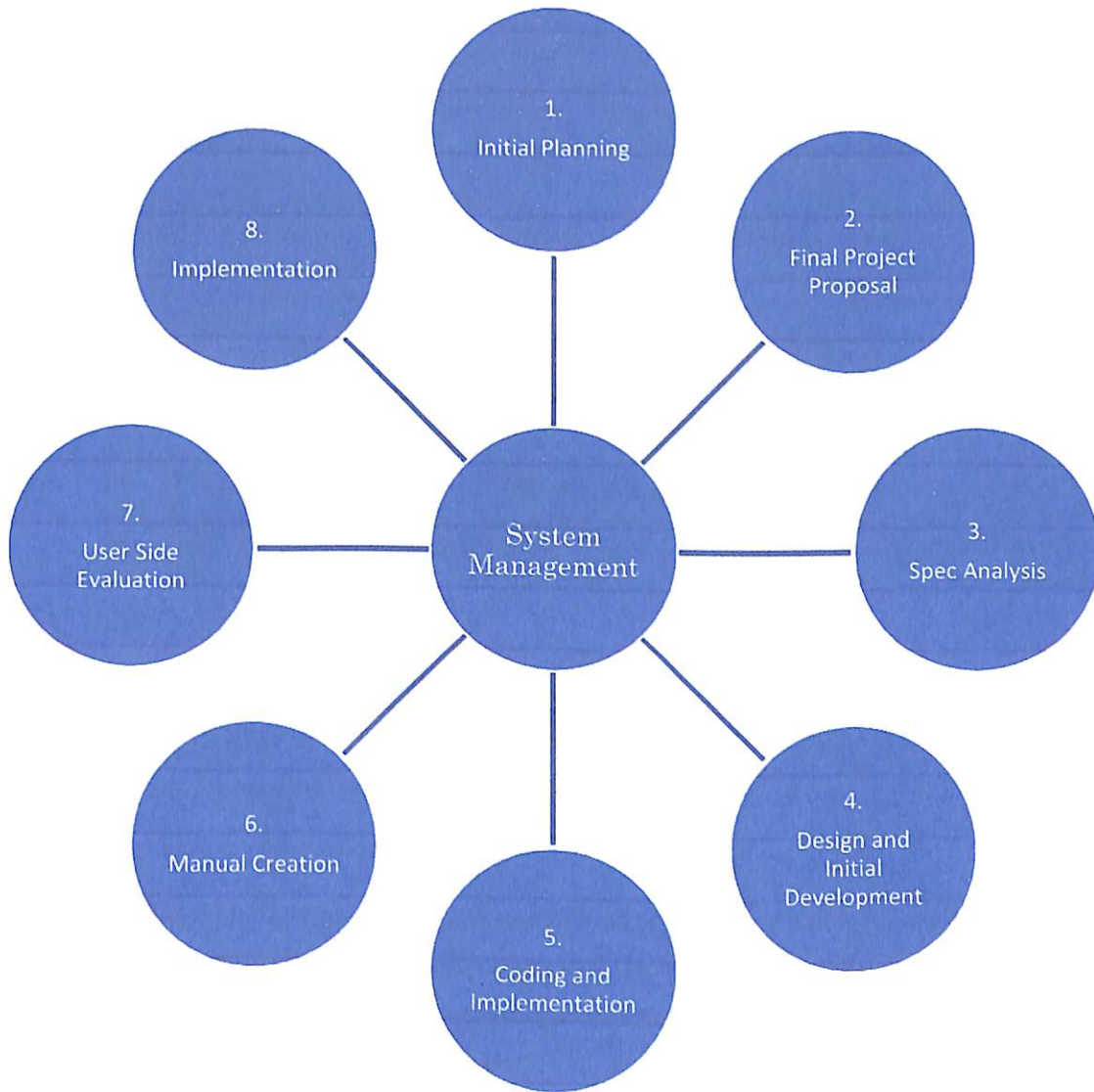
#### *Network Requirements*

The communication standards required for this system are HTTP and FTP. A 500kps bandwidth is required but a higher bandwidth is recommended.

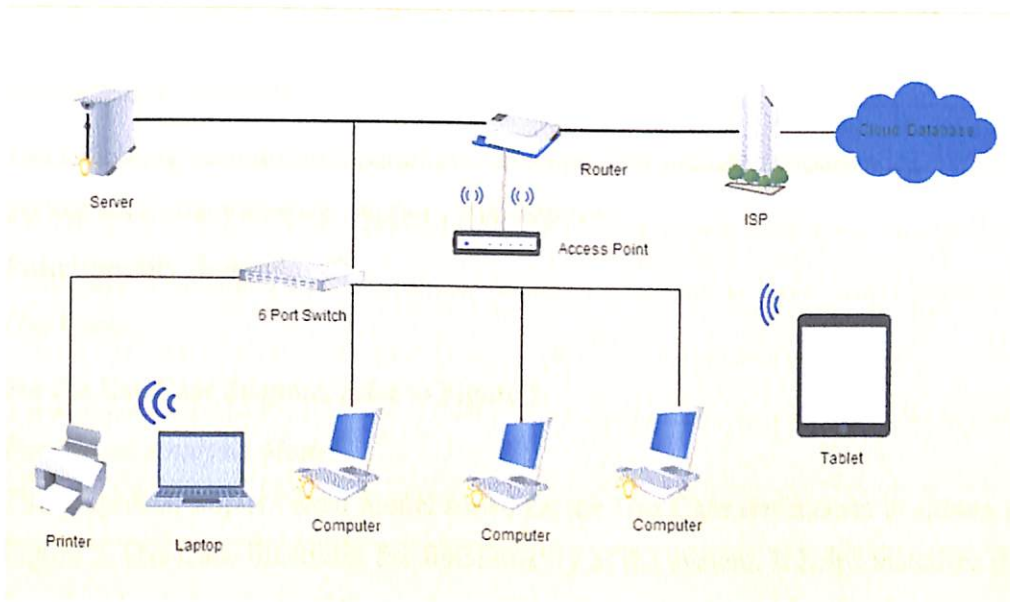
#### *Architectural Requirements*

In Figure 5, illustration of the System Management Cycle which illustrates the process of the system from the initial planning to the implementation phase is shown. The System Architecture which shows the structure of the enrollment system is shown in Figure 6.

**Figure 5. System Management Cycle**



**Figure 6. System Architecture**



### *Data Management Requirements*

Database is not secure without encryption. For instance, the XAMPP server, it can be secured by setting a password (kiwik.net, n.d.). XAMPP contains MySQL, PHP, and Perl (“Apache friends,” n.d.; “XAMPP,” n.d.)

### *Production Support Requirements*

This requirements refer to the checking and observing the system during the implementation. Hardware and software failure during the implementation period is properly recorded. System management tools, audit logging, error reporting, and status reporting are the features in this requirement (“System Requirements Specification,” 2013).

### *Software Licensing Requirements*

The software that will be used are both freeware and licensed. For the content management system, Joomla is used. Joomla is an open source platform web software. It is popular for its ease-of-use and extensibility (Kempkens, 2014). The web browser and the plugins used are freeware. Webhost and domain name are paid

and subscribed for one year and both will expire on November 2015. The operating system of the server which is Windows 8.1 SL is licensed by the proponent.

### **Operational Concepts**

The following sections are operational concepts that include functionality, performance, maintenance, support, and disposal.

#### **Functionality (behavioral)**

##### *Use Cases*

For the Use Case diagram, refer to Figure 3.

##### *Functional Analysis Model*

The graphical, object-based model based on the Use Case definitions is shown in Figure 3. Use Case illustrates the functionality of the system. It helps visualize the functional requirements of the system.

### **Requirement Constraints & Dependencies**

Constraints in Business Rules are of two types:

#### **Design Constraints**

- These are pre-existing design decisions that mandate how the final system must look, or the technology that it must use. It is shown in Table 5.

#### **Project Constraints**

- These are constraints that cover things like budget (see Appendix B), schedule, deadlines, etc. It is shown in Table 6.

**Table 5. Design Constraint**

<b>ID</b>	<b>Constraint</b>
C.1.1	Low quality Personal Computer
C.1.2	Permanent Server

**Table 6. Project Constraint**

<b>ID</b>	<b>Constraint</b>
C.2.1	Cost of the Personal Computer that could met the System Requirements
C.2.2	Cost of the webhost
C.2.3	Sustainability of the Stakeholders
C.2.3	Sustainability of internet provider

### **Reference Material**

The reference material section consists of a table to consolidate all reference description, filename, version, and location. See Table 7.

**Table 7. Reference Materials**

<b>Description</b>	<b>Filename and Version</b>	<b>Location</b>
Requirements Trace Document	1. Software Requirements 2. System Requirements 3. Reliability Requirements	<a href="http://en.wikipedia.org/wiki/Software_requirements_specification">http://en.wikipedia.org/wiki/Software_requirements_specification</a> <a href="http://www.doit.state.nm.us/docs/project_oversight/proj_mgmt_templates/DoIT_SystemRequirementsSpecificationTemplate.doc">http://www.doit.state.nm.us/docs/project_oversight/proj_mgmt_templates/DoIT_SystemRequirementsSpecificationTemplate.doc</a> <a href="http://www.teach-ict.com/gcse_computing/ocr/211_hardware_software/reliability/miniweb/index.htm">http://www.teach-ict.com/gcse_computing/ocr/211_hardware_software/reliability/miniweb/index.htm</a>
Use Cases (Business Requirements Document)	Modeling Technique	IS272 Strategic Planning

**Table 7. (continued)**

<b>Description</b>	<b>Filename and Version</b>	<b>Location</b>
Modeling Technique	Unified Modeling Technique	<a href="http://www.ibm.com/developerworks/rational/library/769.html">http://www.ibm.com/developerworks/rational/library/769.html</a>

### **Acronyms and Glossary**

XAMPP - Cross-platform (Linux, Windows, Solaris, Mac OS X)

HTTP – HyperText Markup Language

FTP – File Transfer Protocol

UML - Unified Modeling Language

MySQL - is a relational database management system (RDBMS) based on Structured Query Language (SQL)

PHP – Hypertext Preprocessor

Joomla - content management system, open source and a freeware

## **IV. Results and Discussions**

### **A. Concept**

This system was proposed in order to automate the enrollment, organize the students' file automatically and print the ID and students' records directly. Identification cards of students will be issued upon enrollment. The Teacher-Adviser can update information anywhere within the internet zone. Systematic flow of the enrollment process and data management will be observed (Figure 2).

### **B. Methods**

#### **Design studies**

The system has simple design and feature. This only includes the enrollment, printing of ID, issuance of Good Moral Certificate and Diploma.

#### **1. Review of existing systems**

Basay National High School is using the traditional system during enrollment. As stated in Chapter I, there are numerous problems in using the existing system like excessive paper consumption, multiple entries of forms, filing difficulties, and handwritten data entry errors.

#### **2. Literature review**

There are several online registration systems globally with different forms and features. According to UHI (University of the Highlands and Islands) in Scotland, it has been estimated that online enrollment takes approximately five minutes ("Online enrollment," n.d.). The system is fast and more convenient. There will be no multiple entries of data and redundancy of the enrollment process. When a student enroll in year one, the data will be stored in the database. In the succeeding year, the same data will be used. Correct entries can be consistently used and errors can be minimized. This will also expedite the enrolment process and will help the

management address promptly the needs of the students. This will reduce waiting time during enrollment and released of ID cards.

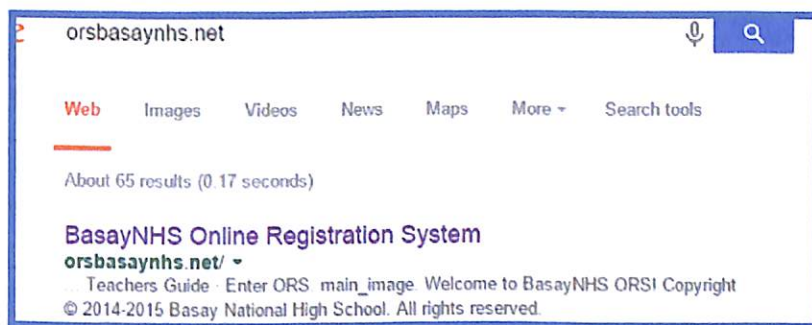
### 3. Assessment of existing alternatives

The assessment of existing alternatives is already discussed in Chapter II. Traditional system is slow and more erroneous than the online system.

### 4. Production of prototypes

The prototype was created after the completion of the web program and is ready for upload. The system is available online and can be searched using Google search engine (Figure 7). Evidences during the production is shown in Appendix E.

**Figure 7. The Search Result of the School Online Registration System**



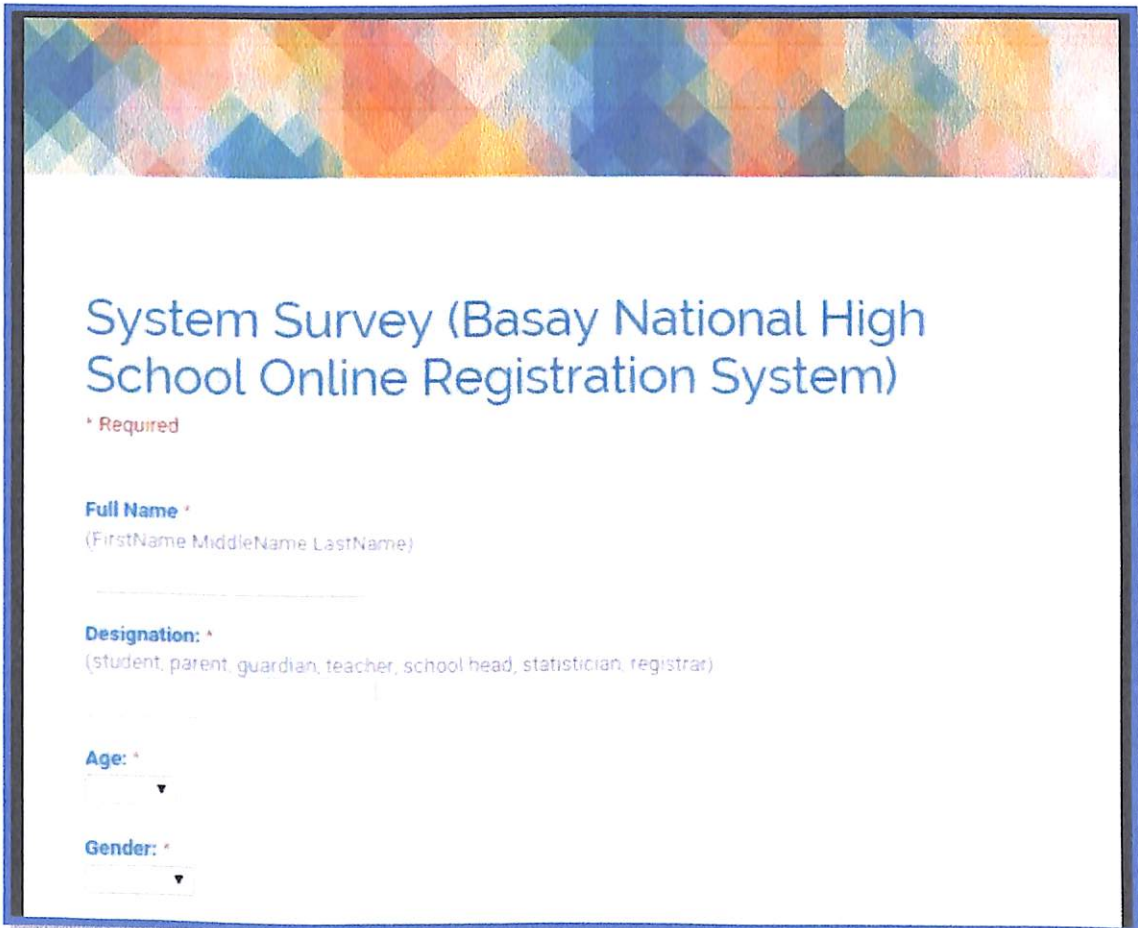
### 5. Tryouts of prototypes with users

The members of the prototype testing were the school administrator, teachers and the ICT students of Basay National High School. They were scheduled to use the ICT Laboratory of the school. Prototype testing took an hour to find out bugs of the web program. A regular prototype test session was also practiced to enhance the functionality of the web program.

## 6. Development of assessment instruments

According to Silicon Valley Product Group, finding test subjects is very important in prototype testing (“Prototype Testing,” n.d.). A regular prototype test session was recommended. The instruments include a computer, an internet and a survey form after the prototype test. The [survey form](#) using the five point rating scale was created using Google form shown in Figure 8.

**Figure 8. Online Survey Form**



The image shows a screenshot of a Google Form titled "System Survey (Basay National High School Online Registration System)". The form has a decorative header with a colorful geometric pattern. Below the title, there is a red asterisk indicating that the following fields are required. The fields are:

- Full Name \*** (FirstName MiddleName LastName)
- Designation: \*** (student, parent, guardian, teacher, school head, statistician, registrar)
- Age: \*** (dropdown menu)
- Gender: \*** (dropdown menu)

## **7. Analysis of assessment data**

The first principle is to ensure that the process of project plan analysis is aligned with the overall project schedule. In the Gantt Chart, WBS (Work Breakdown Structure) can be seen (Appendix A). The guidelines for data collection was clearly set. The data gathered was assessed clearly. Tracking the data input is very important as well. The loading time is important after the data has been entered.

## **8. Revision of prototype**

Revision of prototype was done every after the prototype testing. Revision was made on December 2014 and the final is on February 2015. Proper record-keeping was assured during the testing of prototype.

## **9. User testing and project assessment**

The identified problem has been successfully addressed based on comments, research and revisions until the objectives were met. On the first test, the web program had errors on creating an account. It takes time for the back-end to authenticate the user. But it was resolved after revision. The website opens in 0.17 seconds depending on the speed of the internet. The users commented on its format of the enrollment slip to be formatted equivalent to the school's form.

## **Evidences Collected**

The evidences collected during the project progress and testing includes approval of the principal to implement the project, photographs during testing/coding, and the SWOT Analysis (Appendix E).

## **Methods of Inquiry**

The method to be used is the Contextual Design wherein it includes Contextual Inquiry, Interpretation, Data Consolidation, Visioning, Storyboarding, User Environment Design, and Prototyping steps. Prototyping is applicable in this project wherein the user test the prototype design. It also includes the UCD or user-centered design process wherein the user has given much attention prior to the final

design. The essential elements in UCD includes visibility, accessibility, legibility and language (“Contextual Design,” n.d.).

### Users and Outcomes

The users and the survey respondents of the prototype testing were selected randomly by age, by gender and by designation. Random sampling was used in collecting data. The results vary depending on the user (male or female, student or teacher), the level of computer literacy and the speed of the internet connection. There were 26 respondents of which 5 are teachers and 21 are students at the age group of 14 to 45 years old. Table 8 shows the target participants.

**Table 8. Target Participants**

<b>Participant</b>	<b>School Population SY 2014-2015 (A)</b>	<b>Target Respondents (B)</b>	<b>Percentage (B/A*100)</b>	<b>Total Responses (C)</b>	<b>Percentage (C/B*100)</b>
Student	762	20	2.6%	21	105%
Teacher	34	10	29.4%	5	50%
Total	796	30	3.7%	26	86.7%

The target participants were 30 in order to come up with an accurate results. In the student group, 105% or more than the target finished the survey while in the teacher group, it has 50%. Overall, 26 out of 30 target participants finished the survey which is 86.7% of the target respondents.

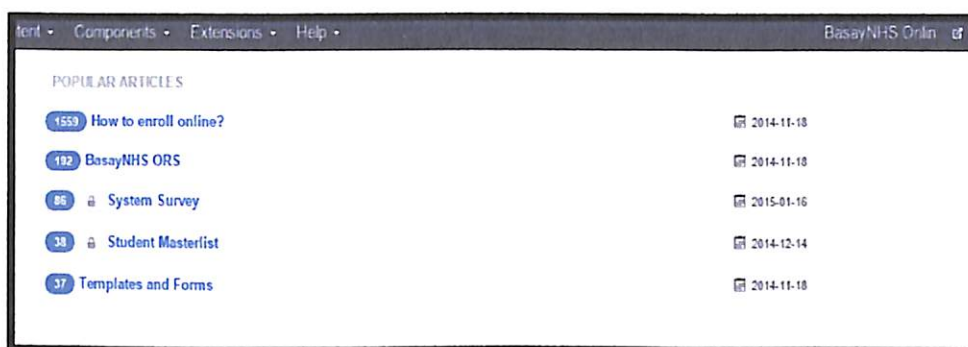
**Table 9. Online Survey Result (Quantitative and Qualitative Data)**

No	Item	Five-Point Rating Scale									
		1		2		3		4		5	
		R	%	R	%	R	%	R	%	R	%
1	How easy was it to use the system? <i>(Not at all easy-Extremely easy)</i>	1	3.8	1	3.8	11	42.3	4	15.4	9	34.6
2	How user-friendly is the system's interface <i>(Not at all-Extremely)</i>	0	0	0	0	8	30.8	9	34.6	9	34.6
3	How often does the system freeze or crash? <i>(Extremely often-Not all often)</i>	0	0	0	0	4	15.4	7	26.9	15	57.7
4	How successful is the system in performing its intended task? <i>(Not at all-Extremely successful)</i>	0	0	0	0	6	23.1	10	38.5	10	38.5
5	How useful is the included documentation for the system? <i>(Not at all-Extremely useful)</i>	0	0	0	0	6	23.1	7	26.9	13	50
6	How helpful is the user support for the system? <i>(Not at all-Extremely helpful)</i>	0	0	0	0	6	23.1	7	26.9	13	50
7	Was the system implementation reasonable? <i>(Slightly-Extremely Reasonable)</i>	0	0	0	0	3	11.5	8	30.8	16	61.5
8	How can we improve the system?	1 Respondent suggested for fast internet connection, enough computers and IT facilities for the enrollment system.									
9	Overall, are you satisfied with the Online Registration System, dissatisfied with it, or neither satisfied nor dissatisfied with it? <i>(Not at all-Extremely satisfied)</i>	0	0	0	0	4	15.4	1	3.8	21	80.8
10	How likely is it that you would recommend the system to a friend or colleague? <i>(Not at all-Highly recommended)</i>	0	0	0	0	3	11.5	2	7.7	21	80.8

## Analysis and Interpretation of Findings

The number of visitors on the website from November 18, 2014 is shown in Figure 9. This figure shows the popular articles of the system.

**Figure 9. The Back-End View of the System which Shows the Popular Articles**



There is a total of 1,559 visitors in the article “How to enroll online”, 192 for the online registration system and 86 for the system survey. System survey sampling size target was 30 respondents only for accuracy of the result. Time constraint of the students and the teachers to create google account in order to access the survey form is also a factor in choosing the sampling size.

The summary of the findings after the survey is shown in Table 10. The first column shows the item category while the next columns show the “disagree “ and “agree “ number of rates.

**Table 10. Summary of Survey Result**

<b>Category</b>	<b>Rate</b>			
	<b>Disagree</b>	<b>%</b>	<b>Agree</b>	<b>%</b>
Easiness	2	7.69%	24	92.30%
User-friendly	0	0%	26	100%
Reliability	0	0%	26	100%
Functionality	0	0%	26	100%
Usefulness	0	0%	26	100%
Reasonable	0	0%	26	100%
Satisfaction	0	0%	26	100%
Recommendation	0	0%	26	100%
Average		0.85%		99.14%

For the easiness of the system, it has a rate of 7.69% and is 0.85% average for the overall category. The respondents' age group is 14-45. Two students at age 14 found it not so easy for the first time they used the system. The average rate of the positive feedback is 99.14%.

## **V. Conclusion and Recommendation**

### **A. Conclusion**

The aim of the project is very promising for the teachers and the students. As 21<sup>st</sup> century teachers and learners, adopting new technology is evident in this competitive world. Traditional collection of data decreased productivity while computer-aided collection and automation increased production. The project was proposed because of the current system problem in the school. Excessive paper consumption, multiple entries of forms, filing difficulties, and handwritten data entry errors were the problems encountered. After relevant studies and research, it is efficient to automate the enrollment, computerized the students' file and print the ID and students' records directly. The prototype has been tested, revised and updated. Base on the findings of the prototype test, the system is efficient to use. It will be implemented on May 2015 enrollment for the School Year 2015-2016.

### **B. Recommendation**

The teachers and the students should adopt the online registration system for accessibility, reliability and efficiency of student data collection. The system is highly recommended to automate the filing and organizing of student files, improve the manual system of collecting data and enhance the speed of student ID cards and other document processing.

## VI. References

- Apache friends. (n.d.) XAMPP. Retrieved 12 October, 2014 from <http://www.apachefriends.org/en/xampp.html>
- Bell, D. (2013). UML Basics: An Introduction to the Unified Modeling Language. Ibm.com. Retrieved 13 October, 2013 from <http://www.ibm.com/developerworks/rational/library/769.html>
- Contextual Design. (n.d.) In *Wikipedia*. Retrieved 12 October, 2014 from [http://en.wikipedia.org/wiki/Contextual\\_design](http://en.wikipedia.org/wiki/Contextual_design)
- Kempkens, A. (2014). *What is Joomla?* Joomla.org. Retrieved 14 November, 2014 from <http://www.joomla.org/about-joomla.html>
- Kiwik.net. (n.d.). *Joomla! Backup, move, restore a website using AkeebaBackup*. Retrieved 27 November, 2014 from <http://kiwik.net/en/joomla/3/the-book-for-everyone/backup,-move,-restore-a-joomla-website>
- Khan, C. L. (2003). Strategic Information Systems Development. University of the Philippines Open University
- Online enrollment. (n.d.). University of the Highlands and Islands. Retrieved 12 October, 2014 from <http://www.uhi.ac.uk/en/students/support/student-records/online-enrolment>
- Principles of Project Plan Analysis. (n.d.). Retrieved 12 October, 2014 from <http://blog.bootstraptoday.com/2012/07/09/principles-of-project-plan-analysis/>
- Prototype Testing. (n.d.). Silicon Valley Product Group. Retrieved 12 October, 2014 from <http://www.svpg.com/prototype-testing/>
- Software Requirements Specification. (n.d.) In *Wikipedia*. Retrieved 13 October, 2013 from [http://en.wikipedia.org/wiki/Software\\_requirements\\_specification](http://en.wikipedia.org/wiki/Software_requirements_specification)

System Requirements Specification. (2007). *New Mexico Department of Information Technology*. Retrieved 13 October, 2013 from [http://www.doit.state.nm.us/docs/project\\_oversight/proj\\_mgmt\\_templates/DoIT\\_SystemRequirementsSpecificationTemplate.doc](http://www.doit.state.nm.us/docs/project_oversight/proj_mgmt_templates/DoIT_SystemRequirementsSpecificationTemplate.doc)

Teach-ict.com. (n.d.). *Teach-ICT OCR GCSE Computing - computer system reliability*. Retrieved 14 October, 2013, from [http://www.teach-ict.com/gcse\\_computing/ocr/211\\_hardware\\_software/reliability/miniweb/index.htm](http://www.teach-ict.com/gcse_computing/ocr/211_hardware_software/reliability/miniweb/index.htm)

XAMPP. (n.d.). In *Wikipedia*. Retrieved 10 October, 2014, from <http://en.wikipedia.org/wiki/XAMPP>

## VII. Appendices

### A. Deliverables and Milestones

The Gantt Chart of the Final Project proposal and deployment is shown below.

Activities	Sept 7 to Oct 7, 2013	Oct 8 to Oct 31, 2013	Nov 1 to Jan 1, 2014	Sept 1 to Nov 19, 2014	Nov 20 to 28, 2014	Nov 29 to Dec 8, 2014	Dec 9 to Dec 15, 2014
Approval and Data Gathering; Completion of System Requirements							
Layout/Revision of the Project Plan							
Coding/Troubleshooting							
Coding/Troubleshooting (extended)							
Integration Testing							
Revision/Final Submission							
Approval for Deployment							

### B. Budget

Particulars	Amount
Internet Connection Fee (900.00x5months)	4,500.00
Intel® Pentium® Processor G2030 (3M Cache, 3.00 GHz)	19,000.00
Web Camera	600.00
Printing	500.00
Binding (200x7)	1,400.00
Webhost and domain name (\$48.99xPhP45.00)	2,204.55
Total	30,904.55

### **C. Qualifications**




The courses that were taken in the previous months have contributed knowledge in the pursuit of this project design. The Web Development course is a big help in planning this project, it enhances skills and experiences in the field of web development.

The proponent is a graduate of Bachelor of Technological Education major in Computer Technology from Negros Oriental State University-Main Campus I, Dumaguete City and currently pursuing Master of Information Systems at the University of the Philippines-Open University, Los Baños, Laguna. The proponent is a Computer Hardware Servicing-NC II holder and currently teaching Information and Communications Technology (Computer Hardware Servicing and Programming) at Basay National High School, Basay, Negros Oriental. Undergraduate and graduate education of the proponent is sponsored by Peace Corps Alumni Foundation for Philippine Development.

### **D. Resources**

The resources of this proposed project includes the school of where the project will be implemented, PCAFPD for the fund, mentors and course mates in UPOU and the internet.

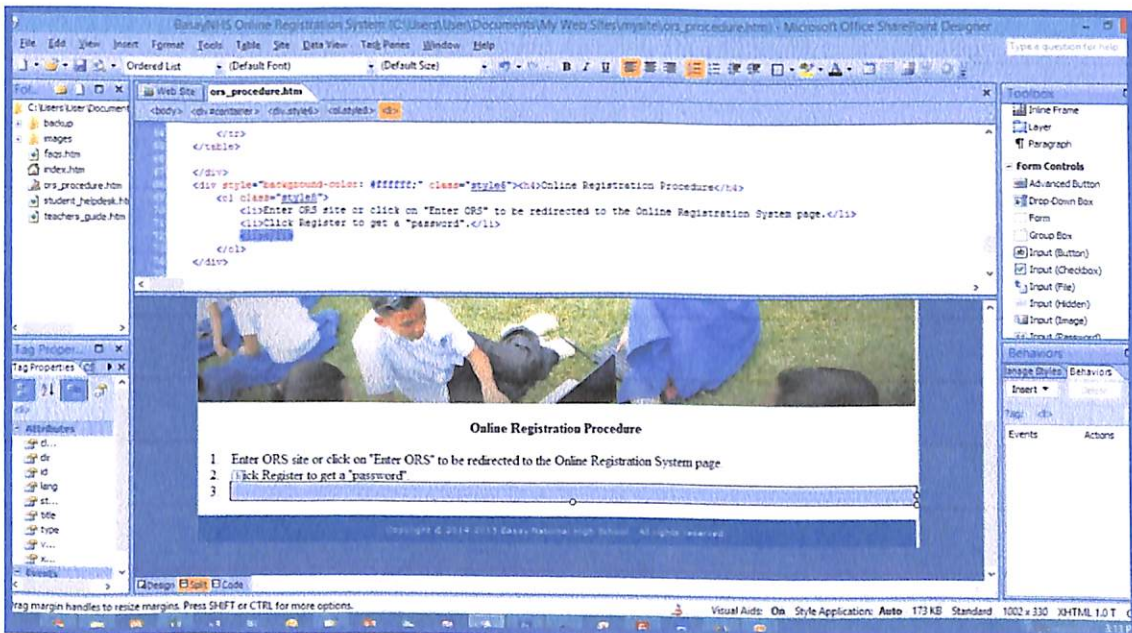
**E. Evidences collected during the progress and testing of the protocol**

			Republic of the Philippines Region VII, Central Visayas <b>SCHOOLS DIVISION OF NEGROS ORIENTAL</b> www.depednegor.net
<b>BASAY NATIONAL HIGH SCHOOL</b> <i>Daro, Nagbo-alao, Basay, Negros Oriental</i>			
<b>APPROVAL FOR IMPLEMENTING ONLINE REGISTRATION SYSTEM OF BASAY NATIONAL HIGH SCHOOL</b>			
<p>This project entitled "Basay National High School Online Registration System" submitted to the Faculty in Information and Communication Studies, University of the Philippines – Open University, Los Baños, Laguna in partial fulfillment of the requirements for the degree Master of Information Systems is hereby approved to be implemented.</p>			
<b>[SIGNED]</b> Name of School Head & Signature			
September 7, 2018			

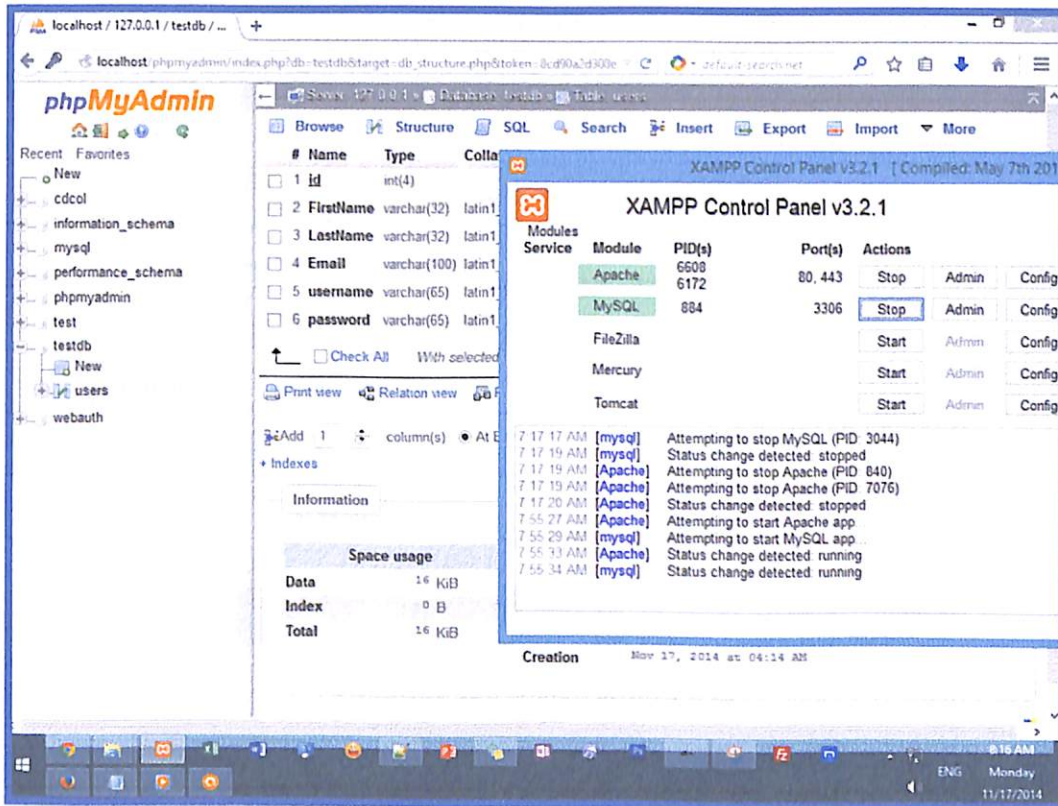
**Approval sheet of the school head.**



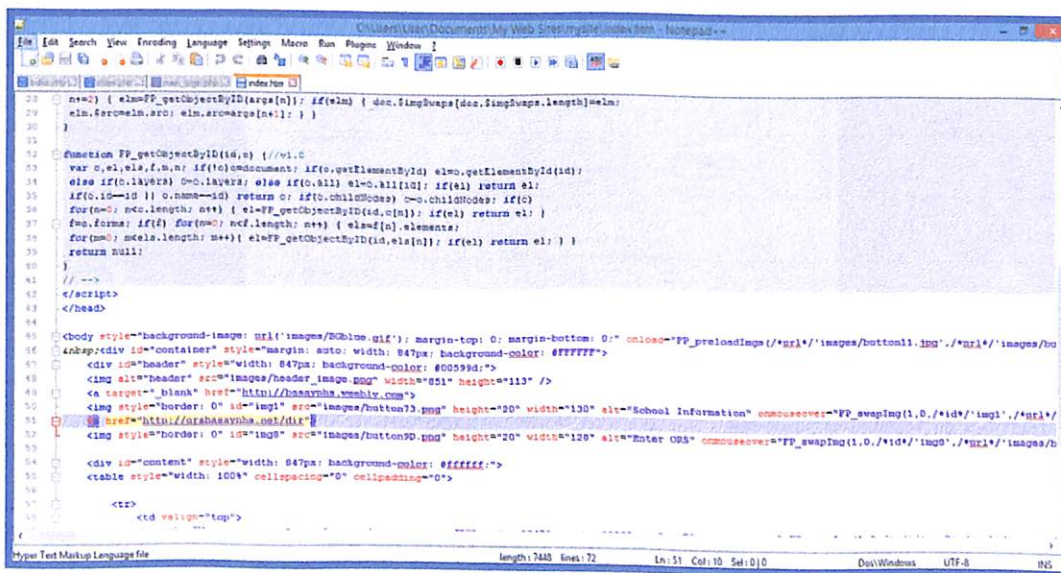
**School Head and the Registrar at the Office**



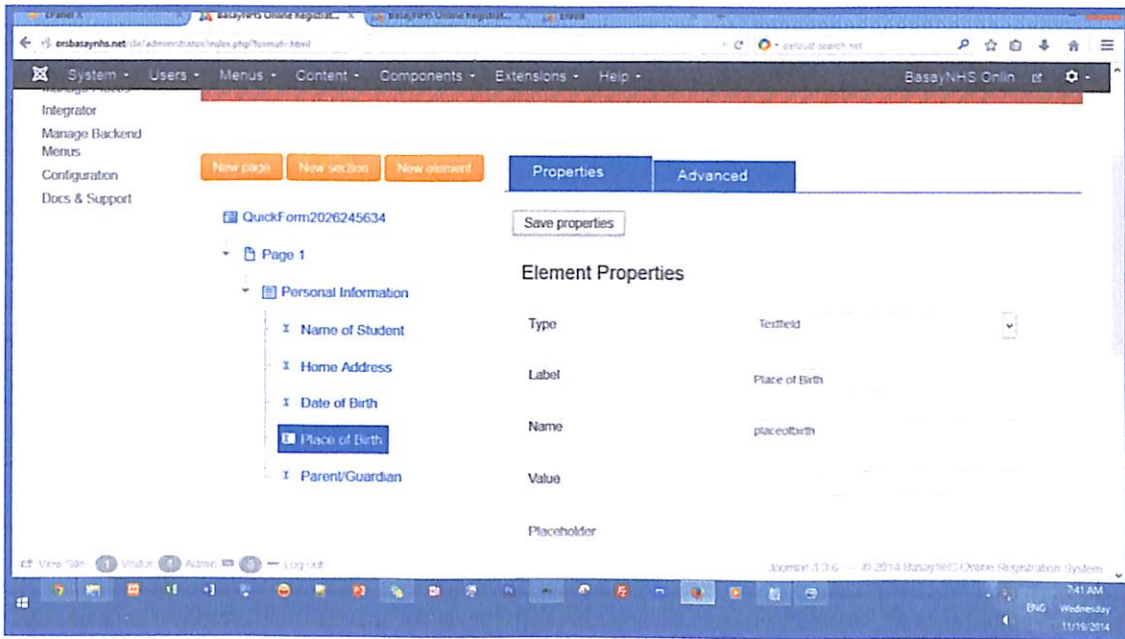
**Coding the pages (HTML)**



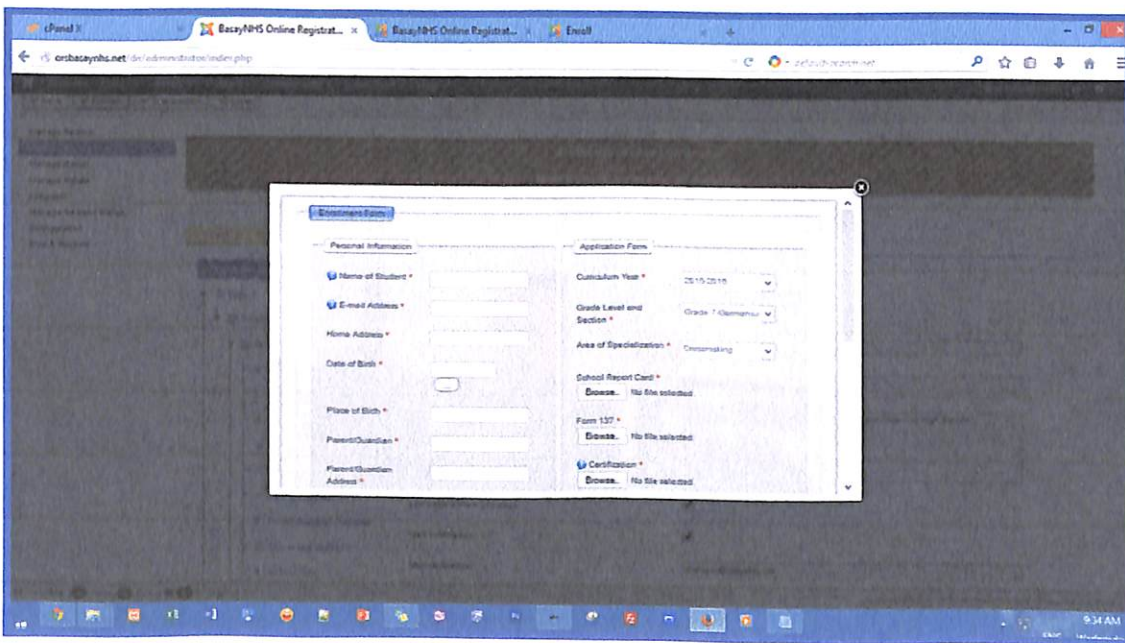
## Testing the database using XAMPP Cpanel



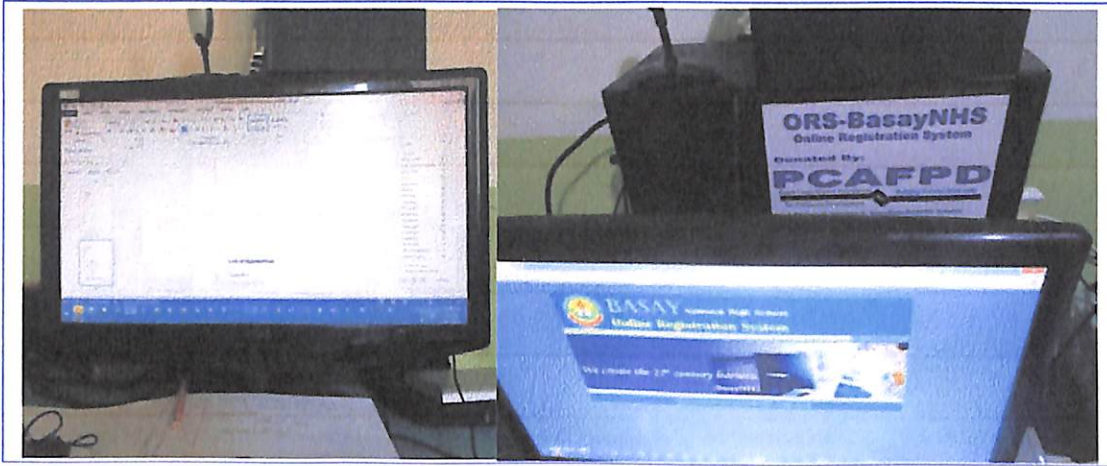
## Coding using the Notepad++ editor



**Creating the registration form**



**Enrollment form is ready to use**



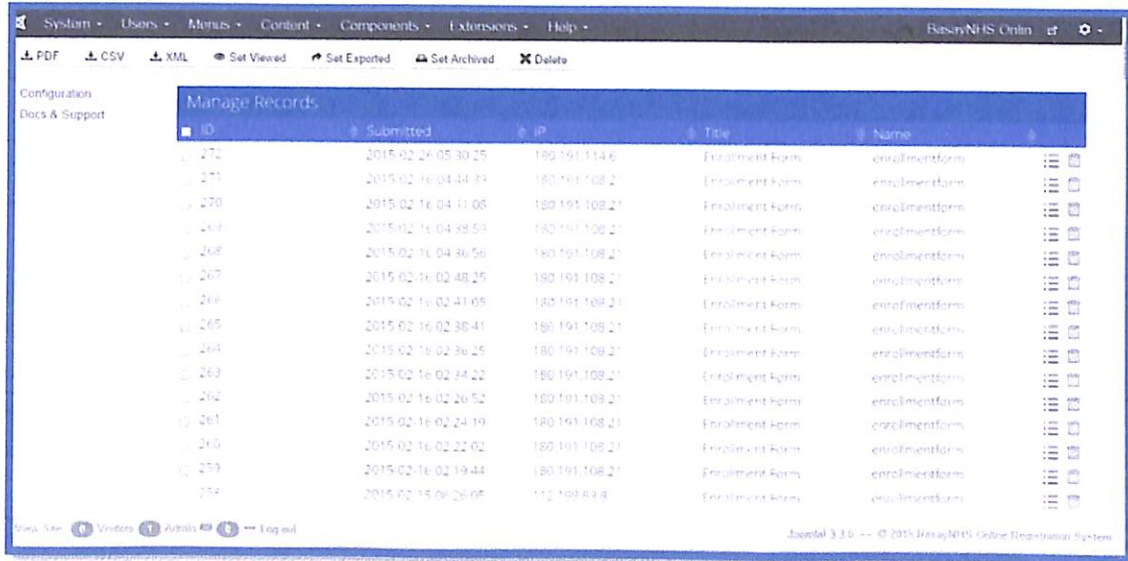
**The Manuscript (left) and the ORS Desktop PC server (right) sponsored by  
PCAFPD**



**The testing period of the project design**



**Selected batch 1 and 2 mentor-teachers who used the online enrollment system during the Early Enrollment period from February to March 2015**



**The administrator account showing the enrollment form with 272 students recorded**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>Monthly budget for computer maintenance</li> <li>Monthly budget for internet connection</li> <li>Enough MOOE fund</li> <li>Computer literate students and teachers</li> </ul>	<ul style="list-style-type: none"> <li>Non-availability of a 24-hour uninterruptible power supply for the server</li> <li>Non-availability of back-up ICT administrator</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>Dilapidated students records for encoding</li> <li>ID card demand</li> <li>Manual enrollment</li> <li>Slow processing of student records for released</li> </ul>	<ul style="list-style-type: none"> <li>Unexpected brownouts during enrollment</li> </ul>

**SWOT Analysis**

## **F. Complete program listing**

The program code includes HTML, CSS, and PHP. Below are the links for the program list:

1. Index page-<http://www.orsbasaynhs.net/>
2. School Information-<http://basaynhs.weebly.com/>
3. ORS Procedure-[http://www.orsbasaynhs.net/ors\\_procedure.htm](http://www.orsbasaynhs.net/ors_procedure.htm)
4. Frequently Asked Questions-<http://www.orsbasaynhs.net/faqs.htm>
5. Student Helpdesk-[http://www.orsbasaynhs.net/student\\_helpdesk.htm](http://www.orsbasaynhs.net/student_helpdesk.htm)
6. Teachers Guide-[http://www.orsbasaynhs.net/teachers\\_guide.htm](http://www.orsbasaynhs.net/teachers_guide.htm)
7. ORS page - <http://orsbasaynhs.net/dir/>
8. Survey Form - <http://goo.gl/forms/1FykcvXO2N>

## **G. Technical reference**

### **Final system specifications**

- **Hardware**

- a. digital/web camera;
- b. laminating machine
- c. Intel® Pentium® Processor G2030 Desktop PC;
- d. printer (ID and other documents).

- **Operating System**

The program can be viewed and used in any operating system. Windows, Linux and Mac OS. It is a web-based program so browser matters the most. Windows 8 is being used as of the making of the project and for the future local server.

- **Programming Language**

The programming language used are PHP and Java for the back-end. For the front-end, HTML (web) and JavaScript (script) are used.

- **Server applications used**

The web server application used in the webhost (ifastnet.com) is Apache. In local server, the software used is XAMPP v3.2.1, a package of Apache and MySQL for the database. The website is using Joomla for the content management system.

Below is the system specifications of Joomla. FileZilla FTP Server 0.9.41 is used for uploading to the webhost.

Setting	Value
<b>PHP Built On</b>	Linux sv75.ifastnet.com 2.6.32-531.23.3.lve1.2.65.el6.x86_64 #1 SMP Tue Aug 19 10:37:27 EDT 2014 x86_64
<b>Database Version</b>	5.5.40-cll
<b>Database Collation</b>	latin1_swedish_ci
<b>PHP Version</b>	5.4.35
<b>Web Server</b>	Apache
<b>WebServer to PHP Interface</b>	cgi-fcgi
<b>Joomla! Version</b>	Joomla! 3.3.6 Stable [ Ember ] 01-October-2014 02:00 GMT
<b>Joomla! Platform Version</b>	Joomla Platform 13.1.0 Stable [ Curiosity ] 24-Apr-2013 00:00 GMT
<b>User Agent</b>	Mozilla/5.0 (Windows NT 6.3; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/39.0.2171.71 Safari/537.36

### **Maintenance plan for the software system**

Maintenance plan for the website includes daily database backups and weekly file system backups. The webhost offers the backup process for the database. The backup can be downloaded and store in the local drives on the server and can be used when the website is down. The following routine should be followed for effective service of the system:

1. Daily database backup
2. Weekly file system backup
3. Weekly updates to plugins
4. Daily update of security releases
5. Daily scan for malware and site cleaning
6. Daily malware scan and cleaning of site

## **H. User Manual**

User Manual is composed of user documentation and user manual components.

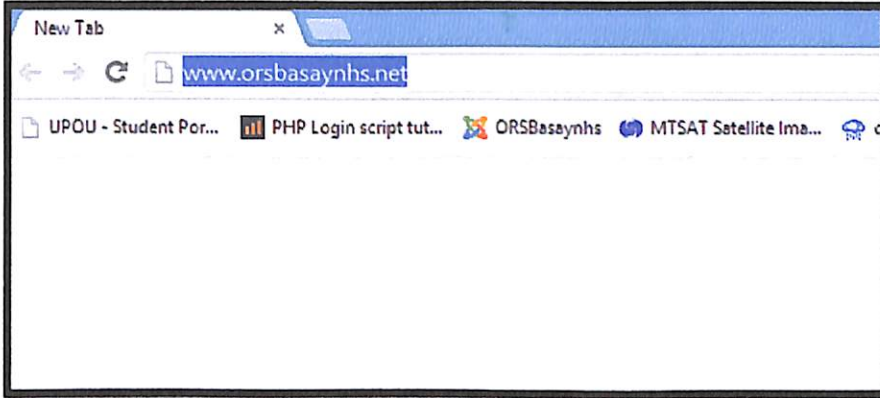
### **User Documentation**

The user should have basic computer operation skill. Knowledge about starting the web browser is required. Internet connection is required.

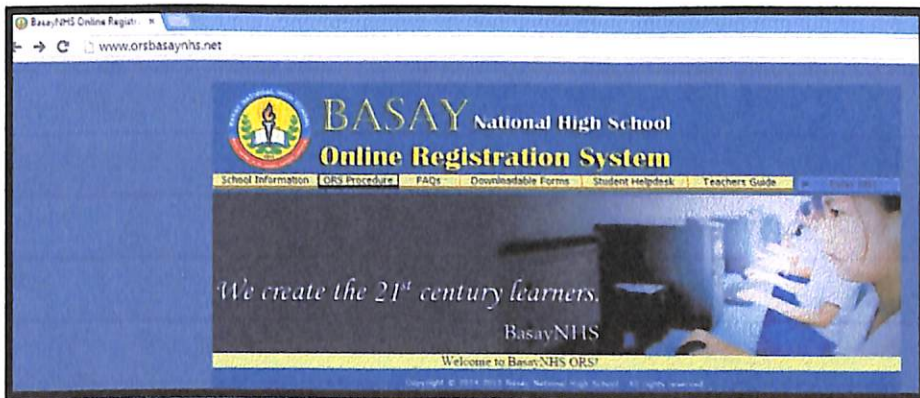
### **User Manual Components**

Opening the site:

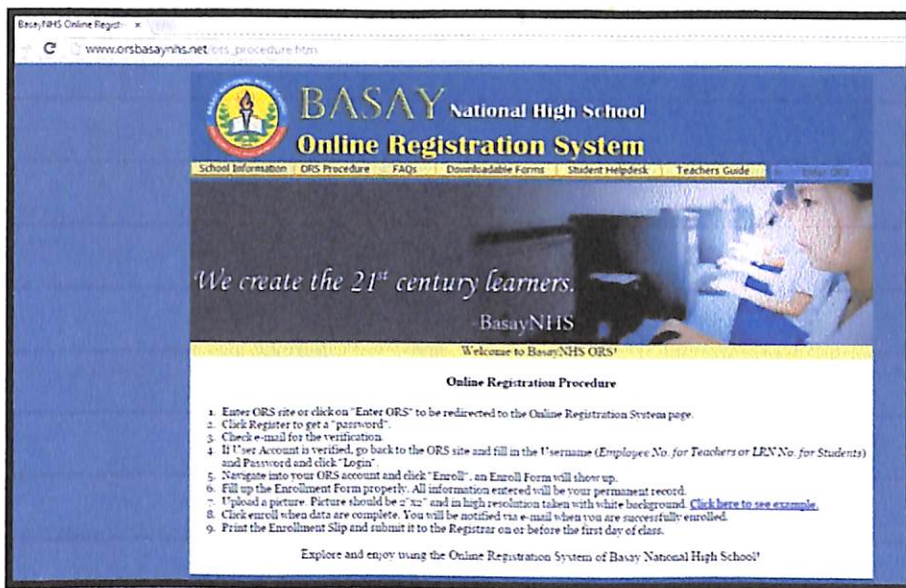
- a. Choose a desired browser (Mozilla and Chrome is preferred).
- b. On the address bar, type [www.orsbasaynhs.net](http://www.orsbasaynhs.net) and press enter.



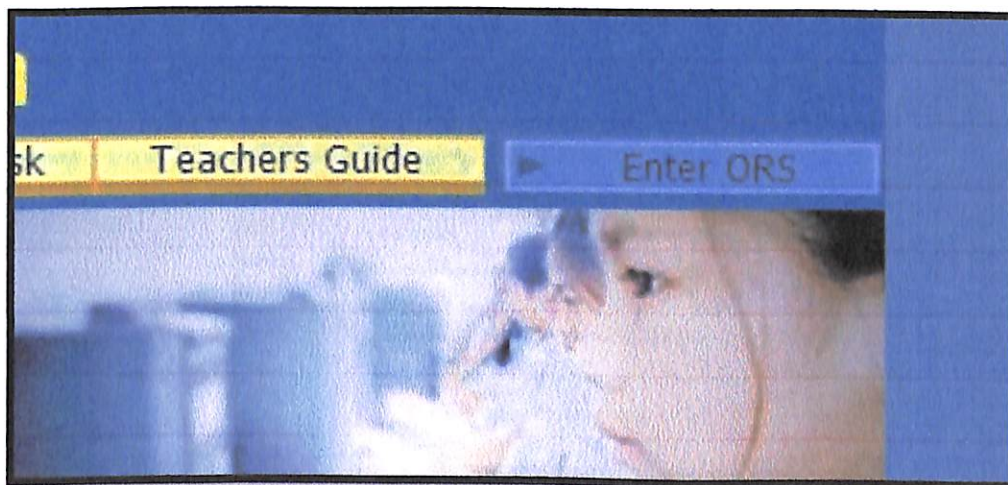
c. Click on the buttons for the specific guidelines.



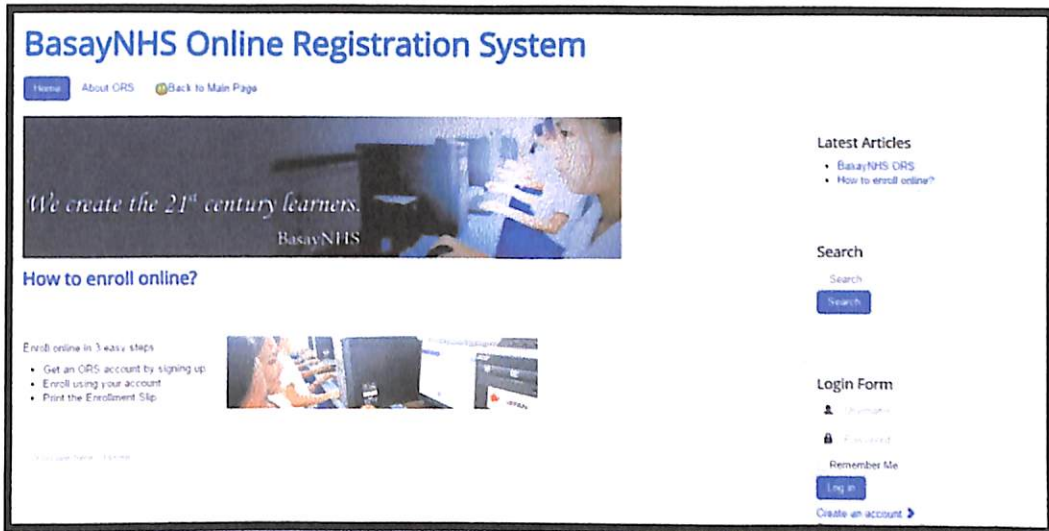
d. For the online registration guide, click ORS Procedure.



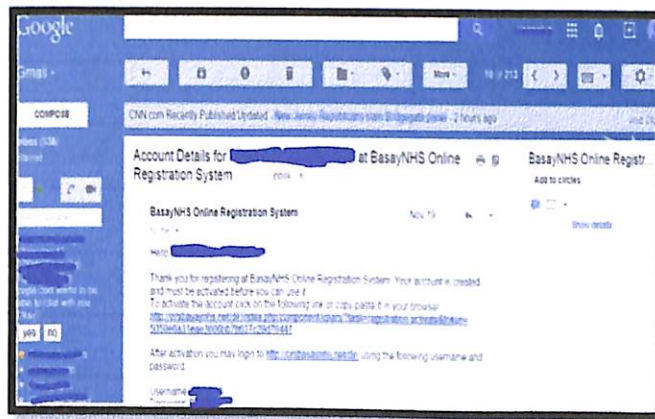
e. Click Enter ORS to register as a new user.



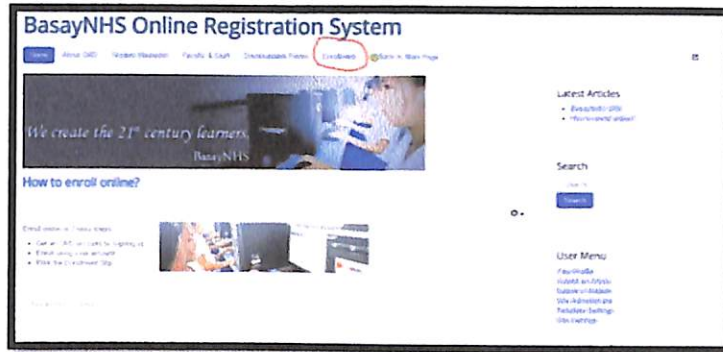
f. Register to have an ORS account by clicking Create an account.



- g. After registration, the user registration email should be checked for confirmation. The user can now log in with the user account and password.

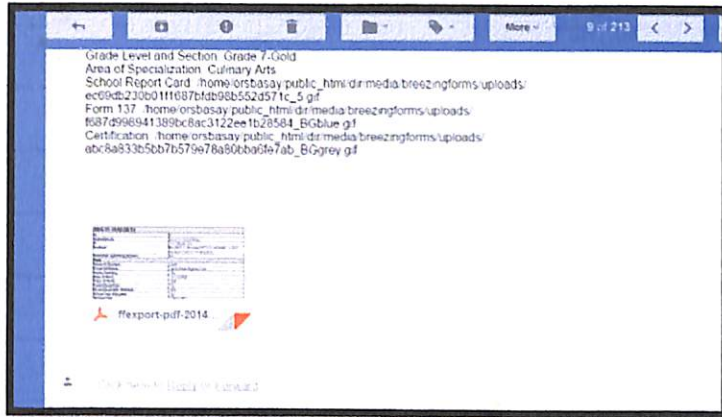


- h. The user interface is different from the default page. The clickable buttons are different when the user is not logged in. To register a student, click on enrollment. The user account is shown on the next page.



i. Fill up the registration form and submit.

j. Check the e-mail, download and print the enrollment slip. A copy of the data submitted is sent to the user's e-mail address for print. A copy also is sent to the administrator, registrar and the principal.



- k. The administrator account has a different interface in both front-end and back-end compared with the other users. The administrator has the privilege to edit the front-end, approve and delete accounts. There is a restriction of some data if the user is not signing in.

### I. Revision History

Date	Author	Remarks
September 7, 2013	Jeanalyn Estrellado	Original Version
November 28, 2014	Jeanalyn Estrellado	Revision
April 27, 2015	Jeanalyn Estrellado	Revision