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Online SPAMAST graduate tracer study in multiple platform

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Abstract

The project was developed with intuitive interface and factual information. The system provided data for the employability of the graduates. The system was implemented as Web-Based design. The system manipulated data from graduates' personal information, educational background, trainings for advanced studies and employment data. Data were generated by employment status that supported appropriate graph by employment category, agency category, year and course. The whole development provided tools and techniques including multiple platform approach with the support of web hosting, bootstrap as CSS-Based design, and PHP that embed HTML and XAMP. Graphical user interface, system functionalities and software environments performed effectively. The study concluded that using Online SPAMAST Graduate Tracer Study in Multiple Platform was less hassle than using the manual process of collecting data and providing employability results of the graduates. Based from the testing phase, the system was given a commutative mean of 4.56 which favored a positive response from fifty (50) respondents. Moreover, the project indicates high return hence promotes successful browsing and convenience. Generally, the project was successful and ready for utilization especially in SPAMAST Digos Campus.

Keywords: Multiple platform, bootstrap, employability status, functionality, usability, efficiency

1. Introduction

Universities were conducting data gathering in tracing graduates. The data was used in a variety of needs. The media were needed for the purpose of communicating with the graduates. Although, it was concluded to accumulate information of the alumni using various media, but it was necessary to choose more effective alternative media for support in collecting data of graduates^[6]. Measuring the success of higher education of ever institutions was based from the employability of the graduates, considering the important component of providing quality education to the community. In employment world, it includes skills, competences and characteristics that were needed for the qualification to be employed and remain employed. Meanwhile, Adopting and utilizing assurance mechanism either locally or internationally by the Education Institutions (HEIs) must reflect on the quality of ever graduates where in the performance of an institution measured to prove that employability really exists^[1]. Employability of the graduates has a big impact in determining the effectiveness of an academic institution. One of the effective aspects was to ensure that the graduates were equipped with the knowledge, skills and values that will work in their respective field^[2]. In most current software development practices, one of the major targets of every programmer in their applications was the multiple platform technique. The main purpose of multiplatform approach was to develop an applications or web based projects that accessible across hardware environments. Initially, the tools and techniques were necessary to create single source code applications that compatible across different platforms. The said technique was needed in the whole development to support graphical user interfaces, event-driven operating systems, resource management, drawing graphics, displaying images and rendering fonts. One of the benefits was the ability to run the same software on multiple platforms and to be able to move resources across them^[3]. The development of Online SPAMAST- Graduate Tracer Study in Multiple Platform imposes advancement in acquiring an efficient scope of an organized, easy and fast access of information of the Graduates. All your data was centralized and accessible over the web from any computer and other gadgets at any time. The proposed study helped the SPAMAST-Digos Campus in delineating results of the employability status of the graduates as a requirement of Commission on Higher Education (CHED).

2. Objectives

The objectives of the study focused on its seven aspects, namely: The development of page that adopts multiple browser platform access of SPAMAST- Graduates information, development of page that provides tracer questionnaire for manipulation, development of page that has security feature for the users, development of page that has logs file for the important events, development of page that generates reports of employment status through appropriate graph by employment category, agency category, year and course, performance of the system in terms of Desktop Display, Phone Display, Tablet Display, level of effectiveness of the Online SPAMAST Graduate Tracer Study in Multiple Platform.

3. Review related literature

3.1. Graduate study ministry of education and employment: According to [4] the role of Education was very important in training graduates for a wide range of skills that were needed for success in life in general and in a particular employment. The survey was intended as a one-time cross-sectional tracer study done one to two years after completion of studies. The data collected contained factual information about the graduates as well as their personal perceptions and assessments. There was a need for regular graduate surveys to allow for monitoring over time, especially with regard to graduates' transition into their labor market outcomes.

3.2. Clustering analysis for empowering skills in graduate employability model with multiple platform

According to [6] Tracer Study applied multiplatform portal and web mining techniques to capture and process data in order to optimize graduates and with due regard to data security. Multiplatform implemented in the form of support graduates of data networking facilities built in two platforms: web and android so ensuring media access for graduates. While Web services technology was used to integrate data tracer that provide distinct information even from different technologies thought XML messages operations that accessed in the network. Clustering web mining was a technique of grouping data into clusters based on certain parameters to generate objects in the same cluster has a high degree of similarity, or objects in different clusters have high dissimilarity. This study helps to find Alumni with their skills. The system design is built based on our previous work, but with several improvements. This was

described as a road map toward a master's research portal integration tracer-based multiplatform system and web mining.

4. Methodology

4.1. Development of the systems

For the development of Online SPAMAST Graduate Tracer Study in Multiple Platform, the researcher used the Modified Waterfall model to test the effectiveness of the project. The requirement analysis was for the gathering of information and analyzing the study in order to decide what methods applied to solve the given problem. On the other hand, the design phase was for developing and designing the website and creating the database design. For the implementation phase, checking and coding of functions needed. Further, for the testing phase, was to assess the performance of the particular objectives in terms of functionality, usability and efficiency. Finally, for the Maintenance phase the software was maintained timely by updating the code according to the changes considering the graphical user interface, system functionalities, and software environment.

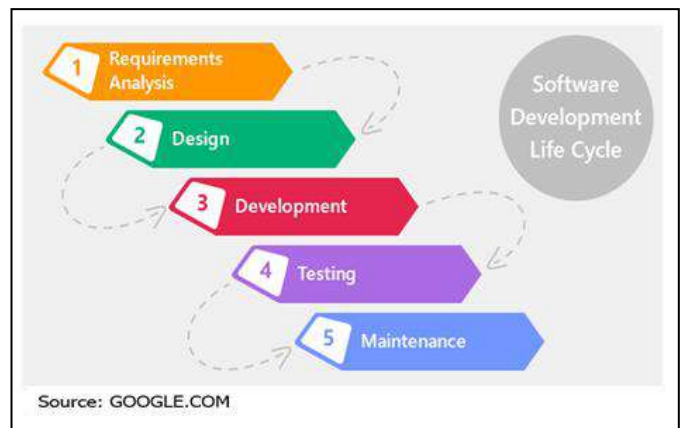


Fig 1: Modified Waterfall Sd

4.2. Theoretical framework

The Figure 1 shows the process of Online SPAMAST Graduate Tracer in Multiple Platform which indicates the categorized list of graduates, graduate's status, employment status graph model and other functionalities within the whole system. The project consists of three processes which were the input, process, and output.

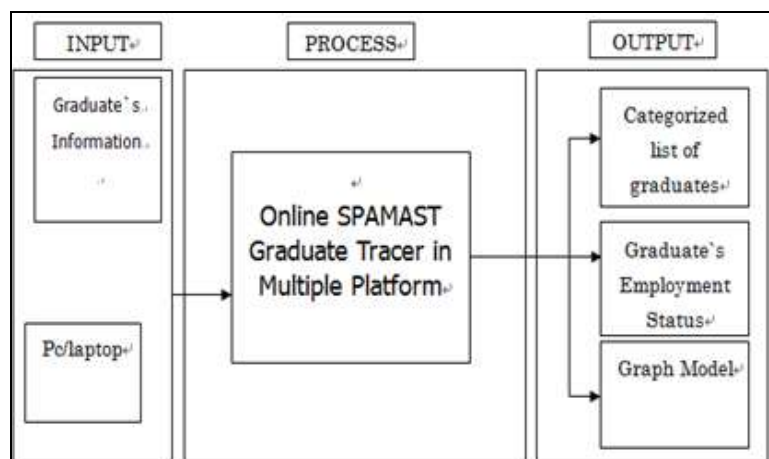


Fig 2: Theoretical Framework

4.3. Object modeling

Figure 3 shows the dynamic aspect of the website. It gathered the requirement of the system including internal and external influences. When the system gathered its functionalities, use cases are prepared and actors were identified. Extend component used for adding activities for the users. Include was used to extract use case fragments that are duplicated in multiple use cases. A use case was a list of actions or event steps, typically defining the interactions between a role and a system, to achieve goal. The users can browse the website and has the right to view the data. The administrator was able to change all the information in the website.

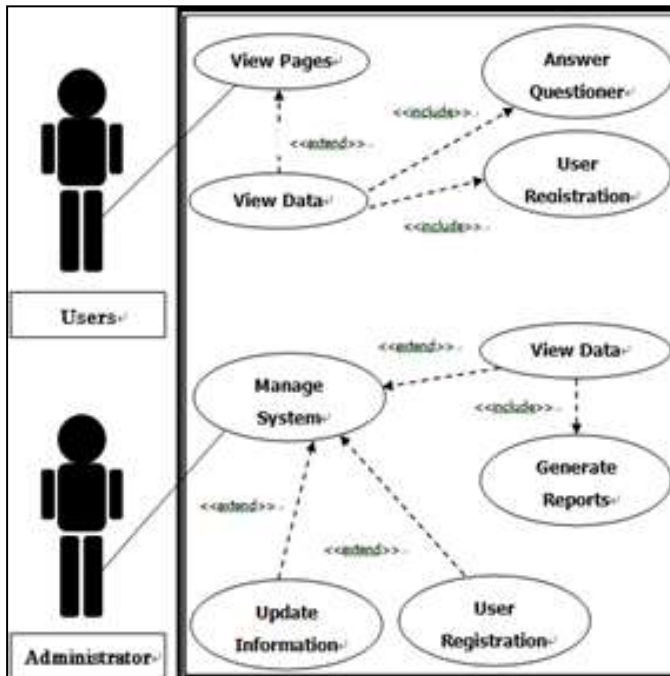


Fig 3: Use Case Diagram of the Project

4.4. Data flow diagram

Figure 4 shows step by step procedure of adding files. The process shows the graphical representation of the flow of data through an information system and its process aspects.

It's easy to understand the flow of data through systems with the right data flow diagram. This guide provides everything you need to know about data flow diagrams, including representing the functions or processes, which capture, manipulate, store, and distribute data between a system and its environment and between components of a system. The visual representation makes it a good communication tool between User and System designer.

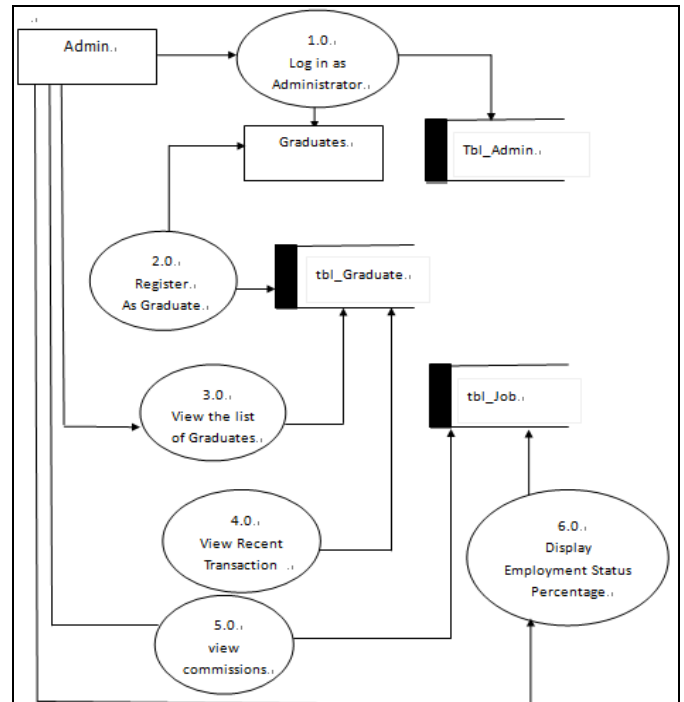


Fig 4: DFD of the Project

4.5. Entity relationship diagram

Figure 5 indicates and shows the interrelationship between each database table designs from one and another. Each database table had relationship with the other database tables utilizing the used of Primary Key and Foreign Key. An entity in this context is a component of data. In other words, ER diagrams illustrate the logical structure of databases.

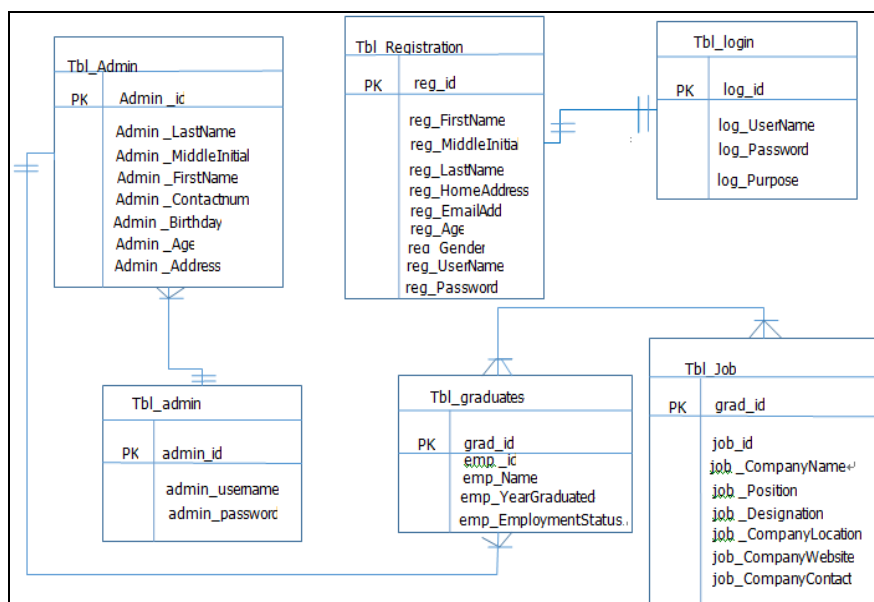


Fig 5: ERD of the Project

5. Results and Discussion

This chapter represents the result and discussion of the study which was the Online SPAMAST Graduate Tracer Study in Multiple Platform. The results were accordingly identified out from the objectives set by the researcher. Screenshots and figures were presented below in order to provide evidence for the output of the development. Methods and Processes were presented and showed how the developers come into result based on the objectives of the project set by the researcher, tables that derived from the questionnaire

that were given to the respondents during the testing were also presented as evidence of the final output gathered by the project.

5.1. Development of page that adopts multiple browser platform access of SPAMAST- Graduates information.

Figure 6 shows es` information by providing technical tools including the domain for the identification of a distinct URL which namely www.spamast.com.ph.

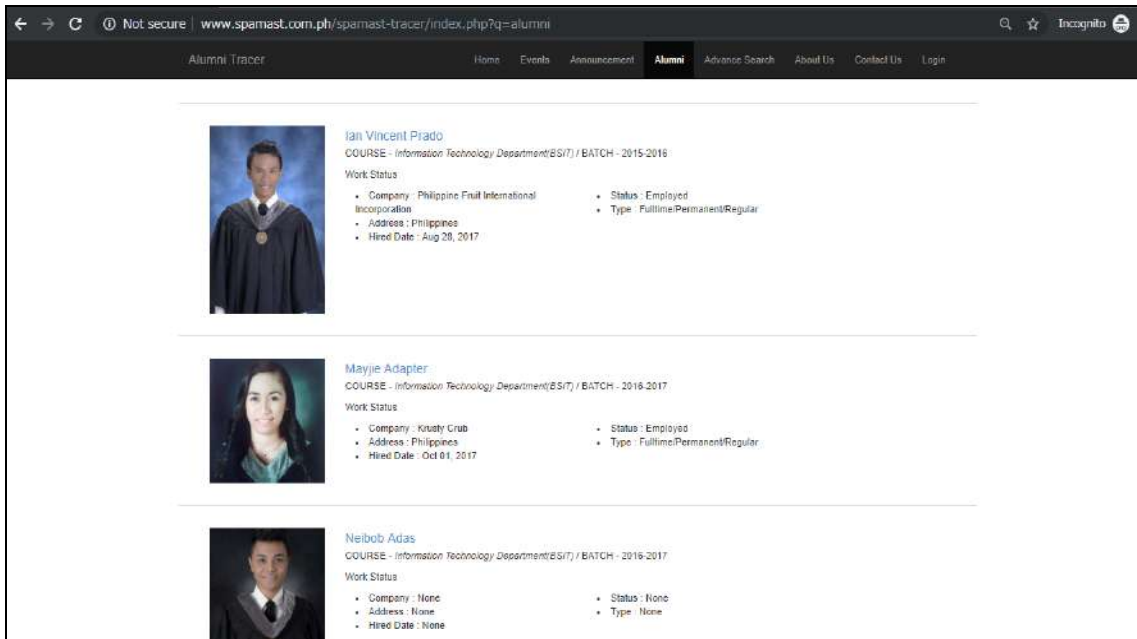
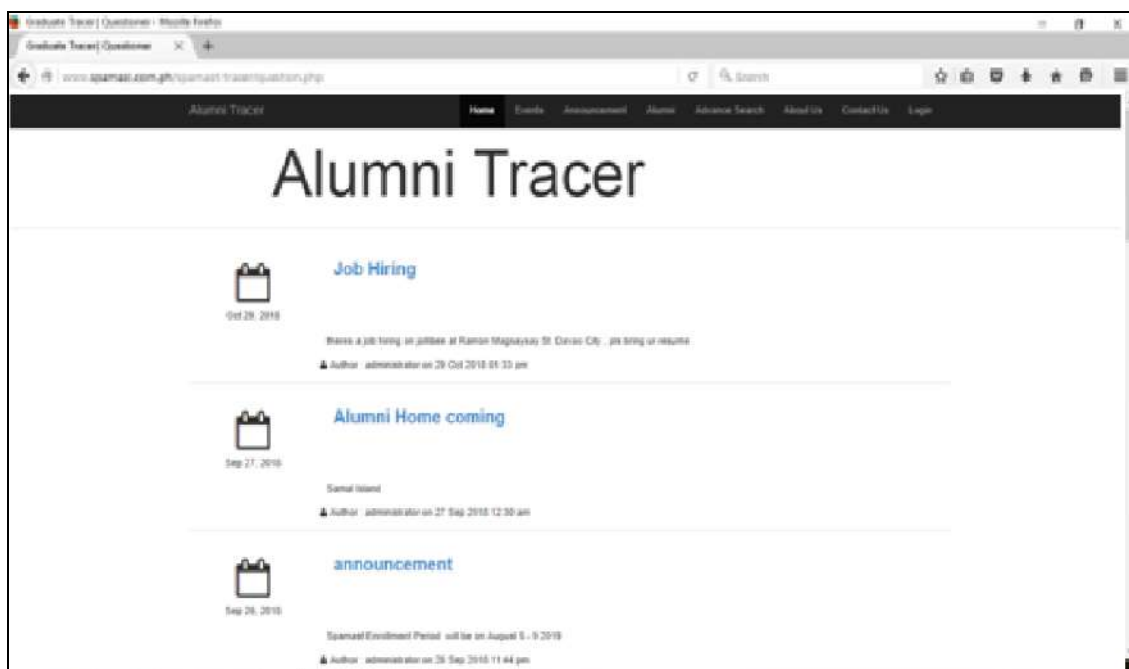


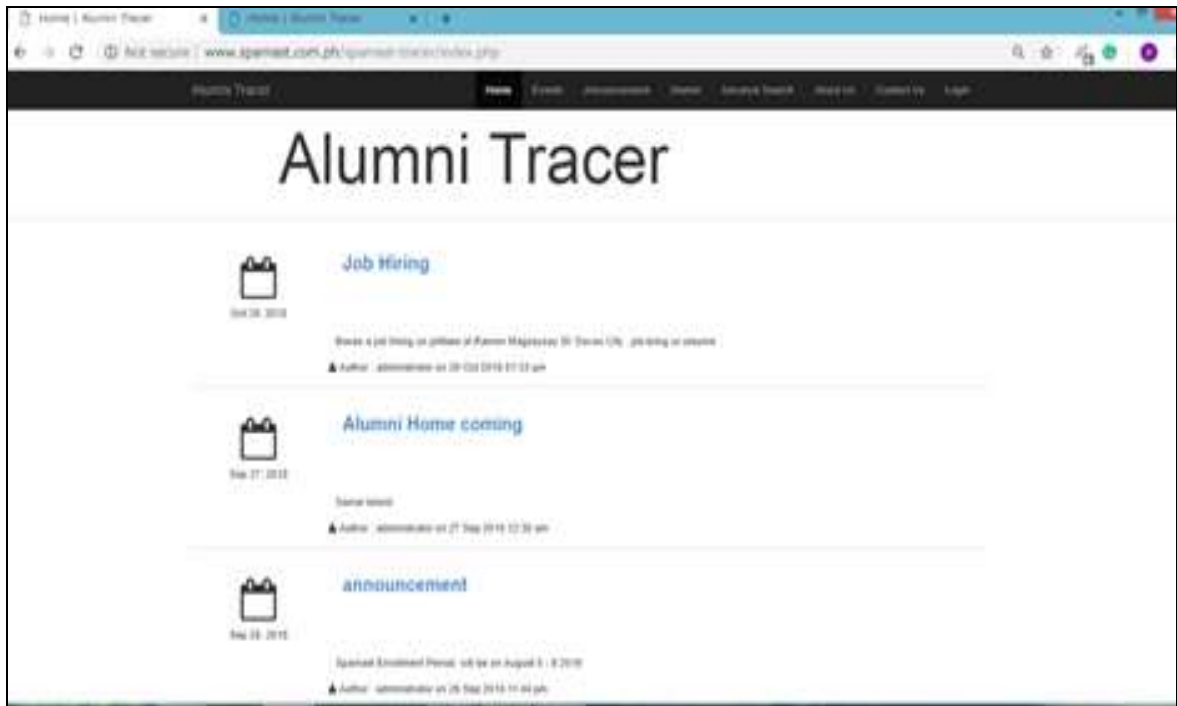
Fig 6: Main page of the website

When counting across all platforms, figure 7 shows the most popular browser that commonly used in browsing different websites that well organized. Online SPAMAST Graduate Tracer Study aimed to adopt multiple browser platform access, by then the developer applied Cascading Style Sheets (CSS) to create a uniform look across several pages

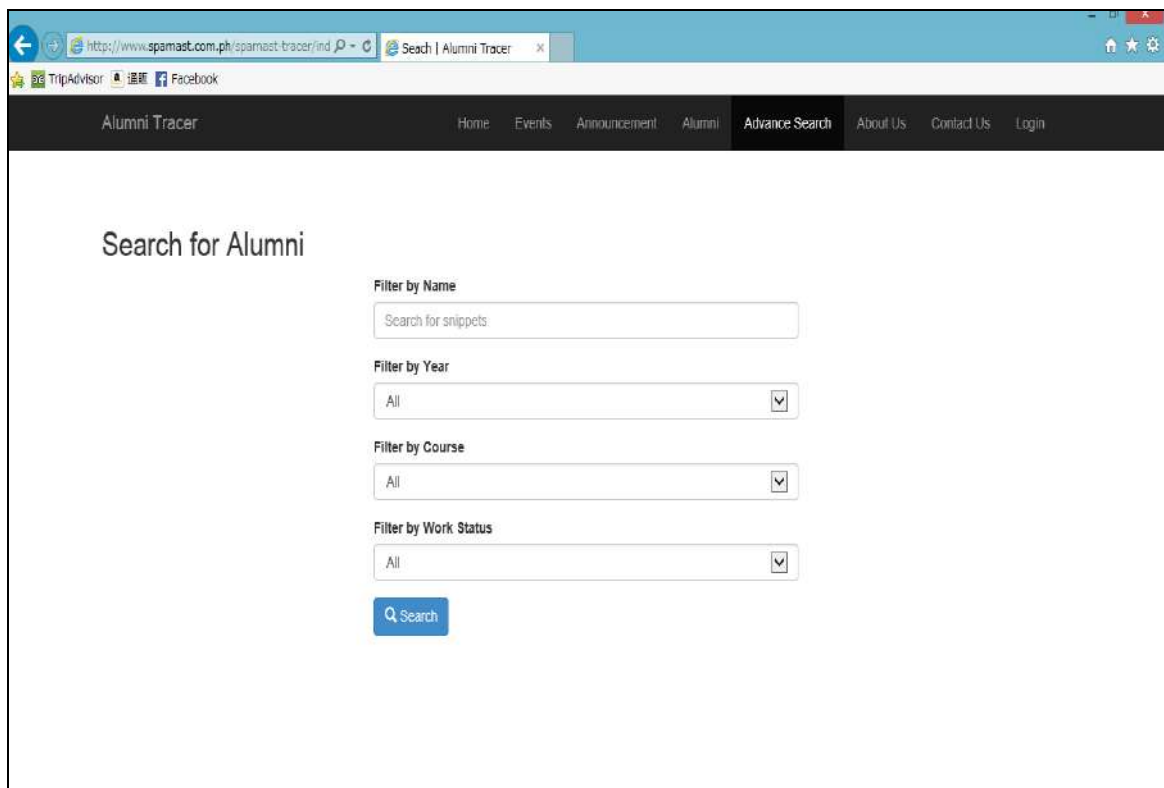
of a web site. CSS applied with auto-placement layout to optimize user interface design. The height and width was set as auto or default which means that the browser calculates the height and width, or be specified in length values, like px, cm, etc., or in percent (%) of the containing block.



Mozilla Firefox browser



Google Chrome Browser



Internet Explorer

Fig 7: Screenshots of Web Browsers platform

5.2. Development of page that provides tracer questionnaire for manipulation.

Figure 8 shows the manipulation of tracer questionnaire which created in online. Once the graduates logged in the website, automatically the tracer questionnaire was ready to fill up. The graduates were able to upload a profile picture by clicking the picture box and choosing the file to upload.

As shown in figure 14, manipulation of the questionnaire was formed with pages by clicking the labeled details such as the basic information, other information, educational background, and work status of the graduates. And the graduates were able to add, update the information in the tracer questionnaire.

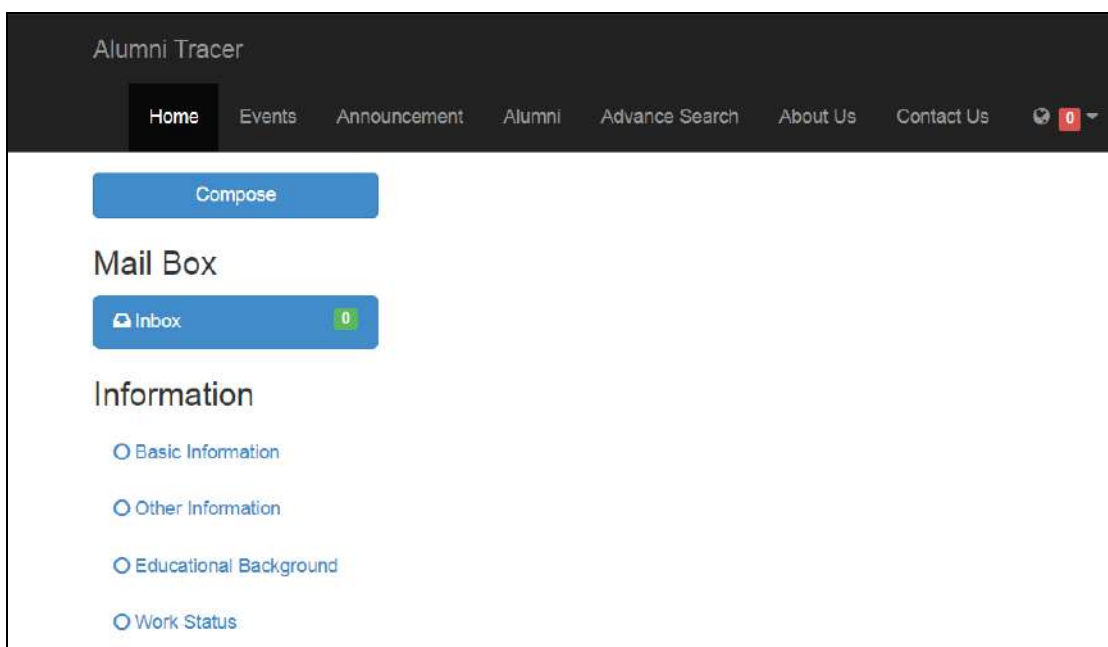
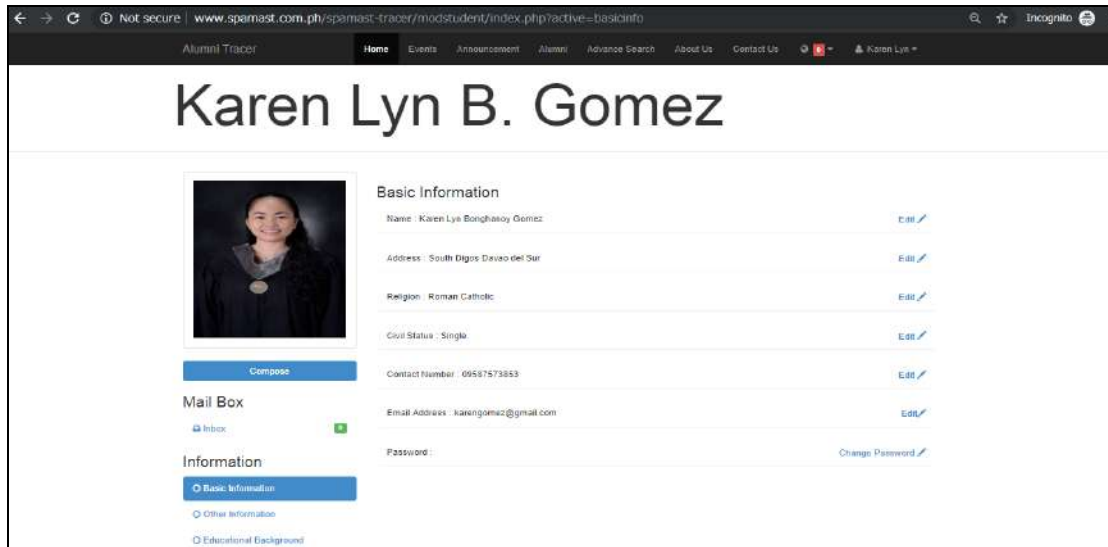
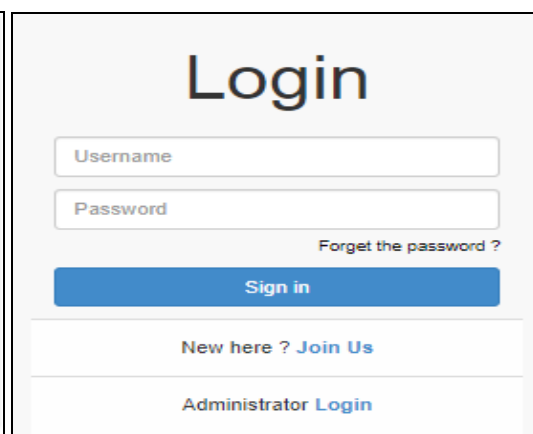
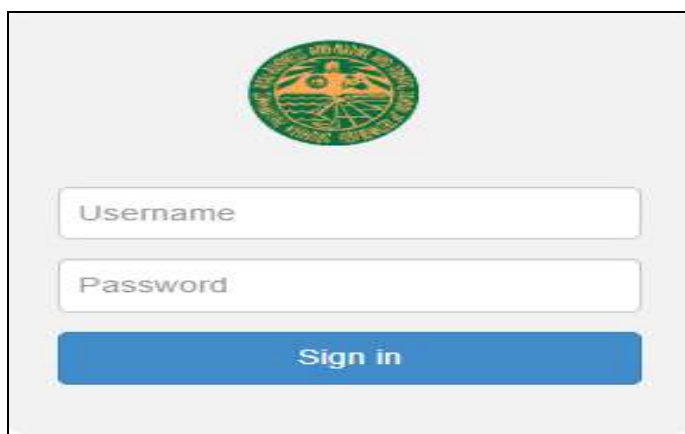


Fig 8: Questionnaire Interface

5.3. Development of page that has security feature for the users

The security feature was intended for the two users namely graduate and administrator which on common environment they were facilitating. The graduates should view basic information in the web pages. The administrator should also monitor the entries of the graduates. Since, the developer

analyzed how the system works considering the security of the system. The users must register first also before he/she can log in and access the particular pages. The security feature serves as a defense against unauthorized access and intrusion of the system. The form consists of basic types of protection; we have username and password which probably used for some software applications and web pages.



Sign Up

First Name:
Middle Name:
Last Name:
Course:
Department:
School Year: **To**
Contact No.:
Email Address:
Username:
Password:

Fig 9: Log in Section of the Website

5.4. Development of page that has logs file for the important events

Figure 10 shows the evidence on how the 4th objective in the Chapter 1 was answered. The website has a Log file in which the administrator noticed the recent transactions.

Logs file used in determining the recent transaction specially for the entries of the users. For example, the admin checked the logs activity when the graduates logged in to the website or he/she updated his/her profile.

Alumni Tracer administrator

Activity Log

Show 10 entries Search:

#	User	Activity	Access Info
1	angel	Log out into the System	2019-04-12 03:15:09
2	admin	Login into the System	2019-04-13 08:43:56
3	iarvincent	Login into the System	2019-04-13 08:56:68
4	iarvincent	Update Address into the System	2019-04-13 09:13:06
5	iarvincent	Update Address into the System	2019-04-13 09:13:10
6	iarvincent	Update Religion into the System	2019-04-13 09:13:43
7	iarvincent	Update Civil Status into the System	2019-04-13 09:13:62
8	iarvincent	Update Image into the System	2019-04-13 09:15:05
9	iarvincent	Add Education into the System	2019-04-13 09:16:47
10	iarvincent	Insert Company Status into the System	2019-04-13 09:20:06

Fig 10: Logs File of the Website

5.5. Development of page that generates reports of employment status through appropriate graph by employment category, agency category, year and course

Figure 11 shows the evidence of data restored by

formulating a table or a graph that determined the effectiveness of graduates employability and the quality of education.

4/18/2019 Print / Alumni Tracer

Report

Name : All
Year: All
Course: All
Work Status :

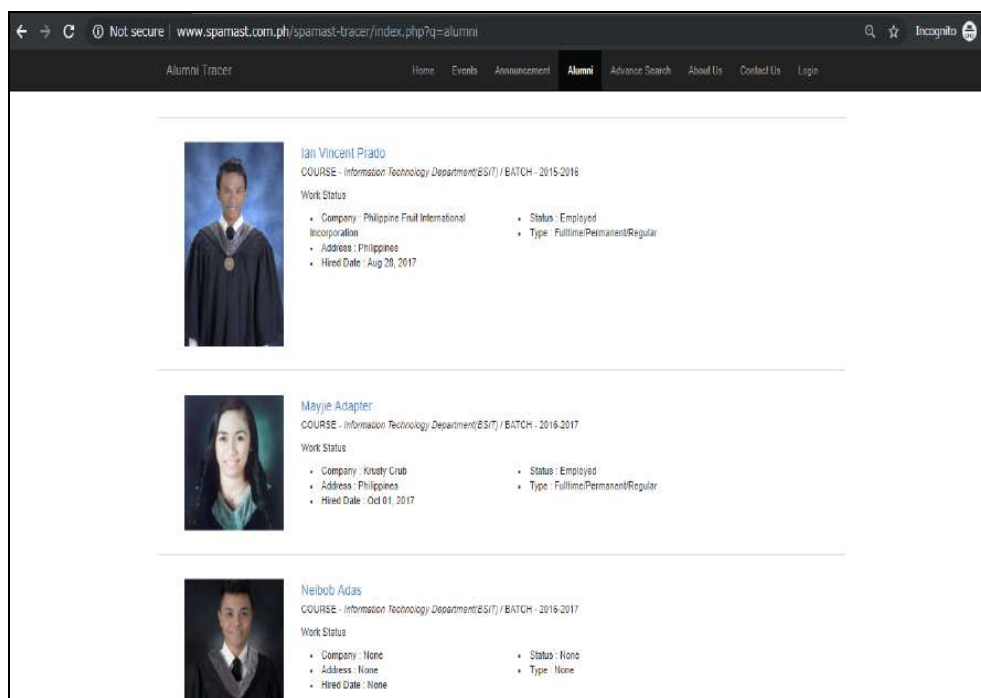
Name	Address	Phone Number	Email Address	Course	SY	Work @	Work Status
Yap, James King			James@ygmail.com	BSIT	2010-2011		Not-Employed
Cuenca, Jake Daniel		09500485334	jake@gmail.com	BSED	2012-2013		Employed
Surname, Name Middle		09121034228	gino@gmail.com	BSIT	2011-2012	jollibee	Employed
Papalid, Angel Turado		09105807177	angel.papalid@gmail.com	BSIT	2018-2019		Not-Employed
Camerino,, Alfred Lois Malimbag		09102290148	a.camerino@spamast.edu.ph	BSIT	2015-2016		Not-Employed
Empas,, James Ronnick Dingal		09206454176	j.empas@gmail.com	BSIT	2015-2016		Not-Employed
Estares,, Ian Greg Garcia		09071867111	i.estares@gmail.com	BSIT	2015-2016		Not-Employed
Honasan,, Joed Bedejarde		09118927775	j.honasan@gmail.com	BSIT	2015-2016		Not-Employed
Lasco,, Gypson Zafra		09984518332	gzafra@gmail.com	BSIT	2015-2016		Not-Employed
Matanggo,, Fitzmaerks Palulim		09126753190	fts24@gmail.com	BSIT	2015-2016		Not-Employed
Montero,, Jeibert		09075164198	jeibert90@gmail.com	BSIT	2015-2016		Not-Employed

Fig 11: Generated Reports

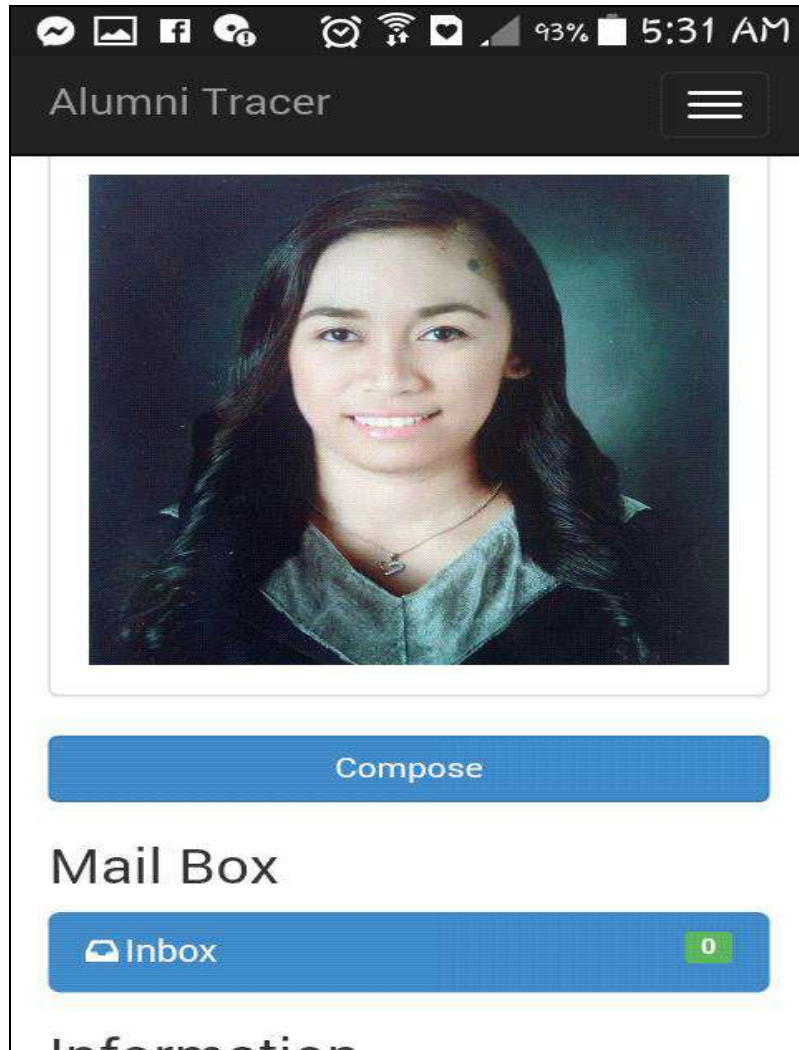
5.6. Performance of the system in terms of Desktop Display, Phone Display, Tablet Display

The development of Online SPMAST Graduate tracer Study in multiple platforms imposes advancement in acquiring an efficient scope of an organized, easy and fast access of

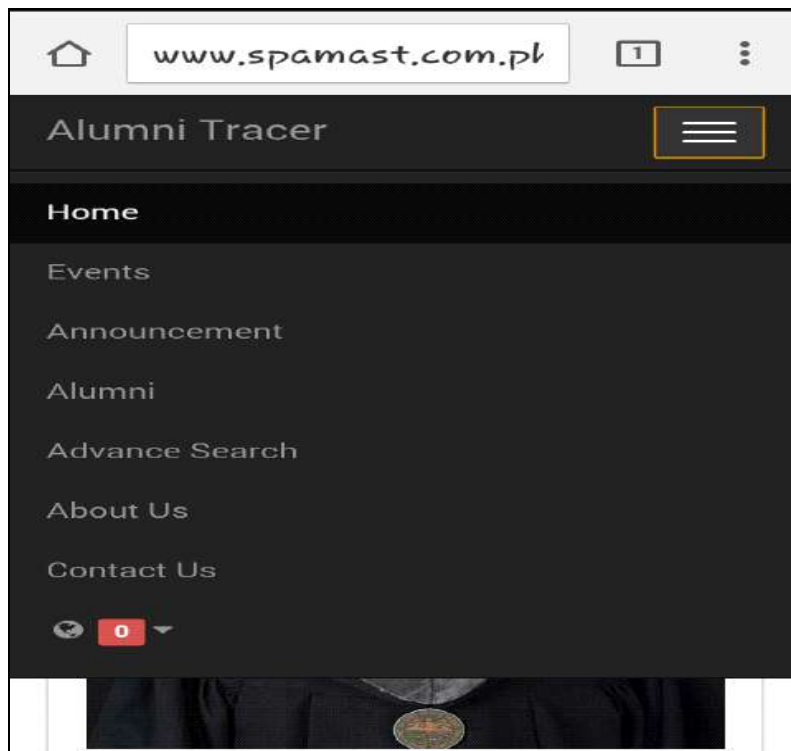
information of the Graduates even it was performed in deferent environment. The most important and obvious reason multiplatform was the ability to run the same software on multiple platforms and to be able to move resources across different devices.



Desktop Display



Phone Display



Tablet Display

Fig 12: Display of the website interface

5.7. Level of effectiveness of the Online SPAMAST Graduate Tracer Study in Multiple Platform

From the overall results based on the adopted questionnaire from ISO series [6], it was concluded that the system was functioning well, as expected, though problems were in existence. But these constraints did not affect much on the overall usability of the system. Somehow, the quality of the results obtained from the system measures performance and suitability in an effective way. The system was given a 4.56 remark which favored a positive response from the evaluators.

Table 1: Over-all Descriptive Result of the Level of Effectiveness

Particulars	Mean	Description
Functionality	4.48	Very Agree
Usability	4.56	Strongly Agree
Efficiency	4.69	Strongly Agree
Total Mean	4.56	Strongly Agree

7. Summary, conclusion and recommendations

7.1. Summary

The project was conducted to create an innovative alternative solution in the process of advanced knowledge. The project entitled Online SPAMAST Graduate Tracer Study in Multiple Platform was very useful also that specifically suited to the graduates information and Employment status. The system was developed with intuitive interface and factual information. The system provided data for the employability of the graduates as Web-Based form. The study found out that the functionality, usability and the efficiency of the project which was evaluated and rated by the fifty (50) respondents has a totaled rating scale of 4.56 which means the project Online SPAMAST Graduate Tracer Study in Multiple Platform was acceptable in its features and the appearance of the website. On the other hand, evaluators had also given recommendations. These problems and recommendations recorded during the testing that would help the project's future development.

7.2. Conclusion

It was concluded that the proposed study was succeed and during the testing of the project it was concluded by the fifty (50) respondents and agreed that the project met all the objectives, from the manipulation of data from the graduates, functionality of the particular web pages, and generating reports of Employability Status of the graduates. As stated [3] in most current software development practices, programmers are targeting their applications to multiple platforms. Therefore, the researcher also concluded that multiplatform approach was very useful in the whole development which helps to solve problems were in running the website in different environment or different devices.

7.3. Recommendations

The very positive response from the evaluators does not mean that the system is perfect and future developments are limited. The testing did not only proved the acceptable usability of the system but also provided recommendations for future study or development.

Here are the overall recommendations of the applications:

The website needs improvements in terms of manipulating data of Employability so that the admin can easily produce

hard copy of the results.

Improve the user interface design of the website.

Provide effective techniques that should help to avoid hacking for the privacy of the website.

Provide different forms of graduates` tracing mechanisms and apply effective ways on how to encourage greater cooperation of the graduates involved in tracing.

Enhance the verification of the security features for the identification of the users` entries.

8. Acknowledgment

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