

ONLINE GRADUATE TRACER WITH MOBILE APPLICATION: A MODEL

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ABSTRACT

The study aimed at providing Liceo de Cagayan University an Online Graduate Tracer with Mobile Application that allows users to easily search job opportunities and post jobs quickly. The develop system empowers the users for quick evaluation of alumni performance and easy job posting career opportunities on the net. The iterative model was used in the system development life cycle for developing the system. For the data model, the Entity Relationship Diagram was used, while the Hypertext Markup Language (HTML) tag and PHP: Hypertext Preprocessor (PHP) was applied to code the machine instruction. The Android Studio was utilized for mobile development; Eclipse application was applied to tailor the system environment and Bluestacks application to connect other platforms. Likewise, Unified Modeling Language (UML) was also used to document the system flow. The completed system empowers the users to publish the job posting quickly and allows the alumni to access the website and view the job opportunities easily.

KEYWORDS - Online, Alumni, Mobile Application, Actor, Tracer Study

INTRODUCTION

Tracking the whereabouts of the alumni is very tasking. Similarly, it takes time to extract information on graduates' performance from the employer. The Internet advantage and mobile application have encouraged faculty members to create an online graduate tracer. According to Macatangay [9] "Information Technology plays a vital role to conduct tracer study in the academe. It helps to produce, manipulate, store, communicate, and information dissemination technique. The technology advancement and innovation can be used as a tool for a simpler and quicker way of collecting data. This can provide easy access to a large group of respondents in geographically diverse locations. Online and mobile-based surveys enable the users to design a survey that can be administered via an internet link which provides more cost-effective than manually administering surveys". Data can typically be exported, eliminating manual entry to improves its accuracy such as duplicate entries or reduce omissions [6]. Banawan [1] cited that "graduate tracer studies supply important personal details that will evaluate educational institutions assess the attainment of its vision, mission, and goals." Graduate tracer studies are surveys regularly used by higher education institutions (HEI's) to check on their alumni; observe what they are learning in so far as the training and education they have achieved from their alma mater [15].

[5] Describes a tracer study as an "impact evaluation instrument where the impact on target groups is sketched back to particular components of a project so that effective and ineffective project elements may be identified." In educational research, the tracer study is sometimes referred to as a graduate or alumni survey since its aim group is previous students." [12] notes that "graduate surveys are common for analysis of the connection between higher education and work." They provide quantitative-structural data on employment and career, the character of work and correlated abilities, and information on the professional orientation and experiences of their graduates. The tracer study is also used by institutions as a technique for knowing the whereabouts and career updates of their alumni and the relationship between their study and their professional reward. [10] The information to be learned focuses on the

knowledge of gaining employment and career improvement, and used to make whatever adaptations may be essential to increase the marketability of the qualifications and as a promotion tool for the institution's programs.

Even though the usual end of the course assessment can ask for the student to assess whether they have gained the knowledge and skills needed for fulfilling their objectives, there is little proof of this until the student has finished the entire course of study and has entered the workforce. By surveying a cohort of alumni from: a specific institution; profession; discipline; graduation date; the level of education; or a combination of these for comparative analysis, Schomburg presents examples of issues which can be addressed in tracer studies. Biographical data on "Where are our graduates now" may provide information on income, job title, nature of work, and years of service. He also believes that surveys should also contain information "about the kind of employment task the relationship between study and work, and professional values and job satisfaction." The information gained from survey items can be used by the graduate's alma mater and indeed other education stakeholders for core curriculum development and improvement.

[2] Cited that "institutions of learning set up consistent intervals of period to venture into the field and follow their alumni to find out what they are doing with the knowledge they gained and find out from them how best they think the institutions which trained them will be able to help them improved their acquired knowledge and skills through the development and innovation of curricula and course programs including school-based or work-based professional growth to live up to the expectations of the continuously changing technological and scientific working environment and company demands."

The online graduate tracer allows the alumni to search and view career opportunities thru the net. In like manner, industry partners can post employment and assess graduates. The proposed model will serve as a prototype for an interactive graduate tracer of Liceo de Cagayan University.

LITERATURE REVIEW

Institutions involved in developing human resources through long and short term programs have the duty to keep track of the performance of their graduates to determine accountability and whether or not their programs have impacted on the individual, the institution, or the country. Tracer study constitutes one form of empirical study which provides valuable information for evaluating the results of the education and training of a specific institution of higher education [4].

[18], tracer study is designed to investigate the employability of graduates of the University. In addition, it focuses on the quality of higher education and the condition under which the graduates have been employed and its role in job-seeking, the length of time graduates took before getting employed and how their areas of work are related to the programs offered by the University.

[12] Cited that employer graduate surveys constitute one form of empirical study which can provide valuable information for evaluating the results of the education and training of a specific institution of higher education. This information may be used for further development of the institution in the context of quality assurance. The advanced approach for tracer studies which should enable the institution of higher education to get information to indicate possible deficits in a given educational program and to serve as a basis for future planning activities. Further, information on the professional success (career, status, income) of the graduates are needed as well as information on the relevance of knowledge and skills (relationship between knowledge and skills and work requirements, area of employment, professional position).

Higher education produces highly skilled manpower whose mandate is to drive the economy of the country. It is therefore critical to ensure that the university products are meeting the expectations of the business community. One of the requirements for quality management in higher education is the consideration of different perspectives when trying to assure quality of teaching and learning. In this context, tracer studies represent an inclusive tool for incorporating graduates' points of view. The relevancy of the curricula offered by the university depends very much on how its graduates are performing in the job market and employer perception of the type of products being produced by the university is critical [11].

METHODOLOGY

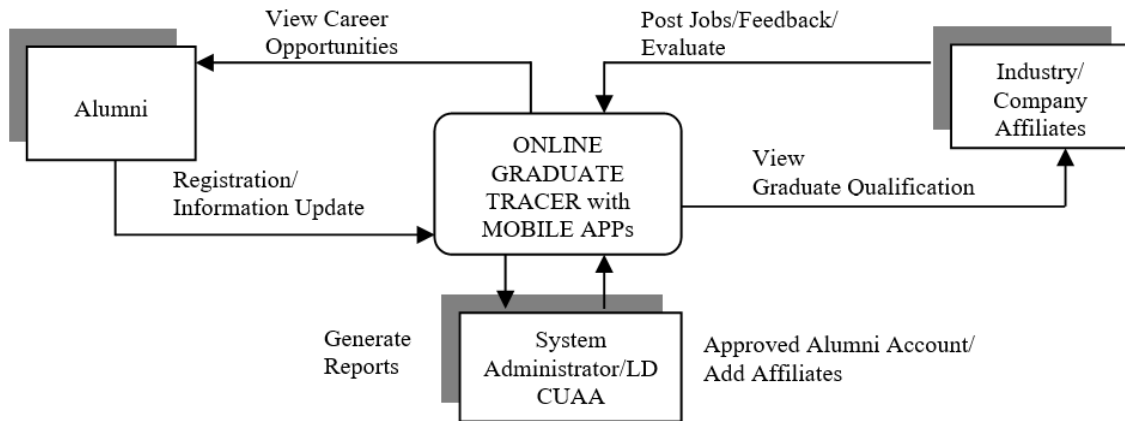


Figure 1. Context Level Data Flow Diagram

Figure 1 is a macro view of the entire system with three entities directly interacting with the system, namely alumni, industry/company affiliates, and system administrator/LDCUAA. A data flow diagram is a representation of data movement in the system: it's used an initial step to create an overview of the system without going into great detail [19]. The alumni must register before using the system. They must fill out the registration form for the system to keep track of the record during system validation. After the registration, the system will verify the records in the server then alumni can access the system by typing the ID number and password. Likewise, the alumni can also update profile information. Furthermore, the alumni can view career opportunities posted by the industry. The industry can post jobs, feedback, and evaluate alumni. The system administrator/LDCUAA can approve alumni registration; also, they can register the industry/company affiliates for them to access the system. Users can use a browser or download the application to access the website. Given the access, the users can view career opportunities and post jobs to the system.

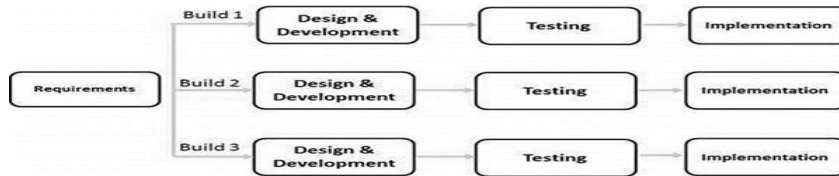


Figure 2. Iterative and Incremental Model

The development of the Online Graduate Tracer with Mobile Application followed the following cycles: (1) Requirements, (2) Design and Development, (3) Testing, and (4) Implementation. This approach is called the system development life cycle iterative and incremental model [16]. The procedure begins with necessities through the usage of iterative techniques that improve the methodology until the framework is figured it out. This also builds up a framework through repetitive series that alters structures and includes new functionalities.

RESULTS AND DISCUSSION

System Implementation

The online graduate website is an Internet page that uses software to create interactive experience of the users in searching, viewing, posting, and evaluating alumni. The website can be done for several reasons and by using various approaches to achieve this interactivity. Also, online graduate website allows users to go beyond simply reading the text and viewing images. Instead, this type of website can allow the users to modify the way in which the website displays or permit the user to create custom activities. Furthermore, mobile application platform gives alumni an advantage in utilizing the web and internet technologies.

This section presents the system design of Unified Modeling Language.

Use Case Diagram. It is a graphic demonstration that describes interactions of the system from the user’s point of view. Also, it defines the different functionalities of the system and how the user is going to interconnect with those functionalities. Likewise, use case diagram is composed of use cases that are symbolized by ovals containing the names of the use case. Actors are characterized using lines with the name of the actor written beneath the line. To signify an actor's participation in a system, a line is drawn between the actor and the use case [15].

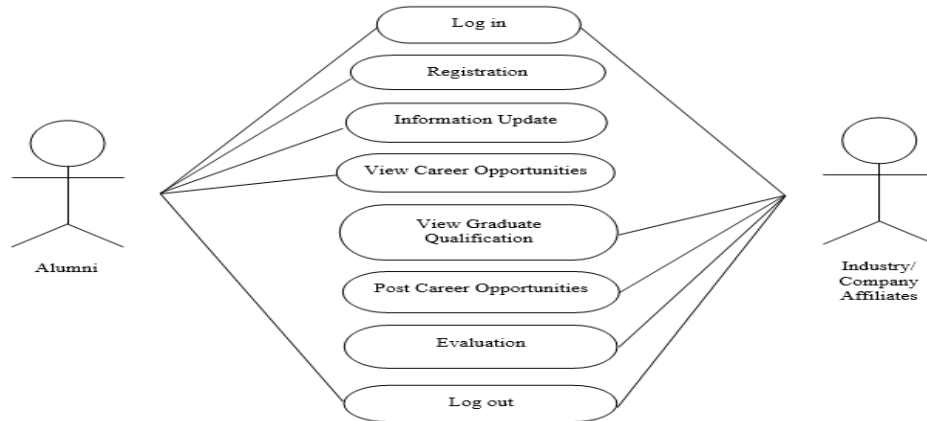


Figure 3. Use Case Diagram for Alumni/Industry/Company Affiliates

The figure 3 is a use case diagram of the study that represents the actor privileges in the system. The above diagram has two actors (alumni and industry/company affiliates) with eight uses cases, namely login, registration, information update, view career opportunities, view graduate qualification, post career opportunities, evaluation, and logout. Alumni has privileges in accessing the system such as login, registration, information update, view career opportunities, and logout while industry/company affiliates has allowed to view graduate qualification, post career opportunities, evaluation, and logout.

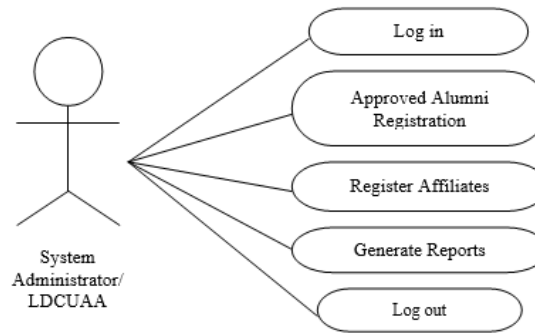


Figure 4. Use Case Diagram for System Administrator/LDCUAA

The figure 4 has only one actor (system administrator/LDCUAA) with five use cases as its privileges in accessing the system, namely login, approved alumni registration, register affiliates, generate reports, and logout.

Use Case Description. It is a list of actions that define the interactions between a role and a system to achieve a goal. Also, it’s a written description of how users will perform tasks on the website. It outlines, from a user's point of view, a system's behavior as it responds to a request. Each use case is represented as a sequence of simple steps, beginning with a user's goal and ending when that goal is fulfilled [17].

Table 1. Use Case Description for Log-in

Use case name	Log-in
Actor	Alumni/Industry/Company Affiliates/System Administrator.
Description	This use case is utilized by the actor to access the system.
Normal Flow	1) The actor invokes the use case by clicking the “Log-in” button. 2) The actor enters log-in name and password. 3) The system validates and confirms the log-in name and password. 4.) Use case occurrence ends.
Alternate Flow	If log-in name or password is not correct, actor has to re-enter a correct user name or password.
Precondition	Actor must be registered in the system.
Post-condition	Actor can access the system or just exit the website.
Assumption	Actor is on the website.

The table 1 represents a use case description for log-in. The actors (system administrator, alumni, industry, and company affiliates) will enter their ID Number and password in order to access the system. Their key-in ID Number and password will be matched to the registration table for system authentication. With the given privileges, the actor can enter the system.

Graphical User Interface (GUI). Allow the use of icons or other visual indicators to interact with electronic devices, rather than using only text via the command line [3]. Also, it enables a person to communicate with a computer through the use of symbols, visual metaphors, and pointing devices [7].

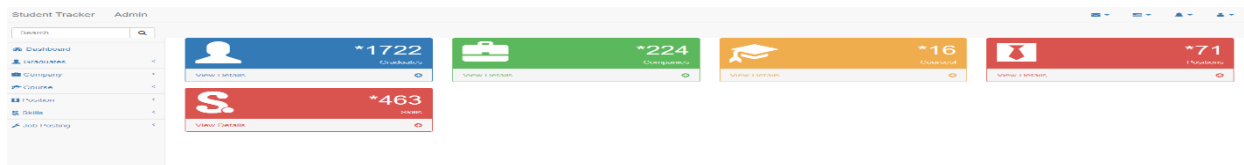


Figure 5. System Dashboard

The system dashboard window shows the total number of registered graduates in the university, list of linkage companies and industries local, national and international, courses offered of the university in all areas, job requirements submitted by the different linkage companies, and the different skills of Liceo graduates which are useful for their employment.

CONCLUSIONS

The completed online graduate tracer with mobile application helps facilitates the LDCU administration, LDCU graduates and its industry partners. With the new era of technology, the researchers firstly determine the basic information requirements both from the LDCU graduates and the industry partners to fill-in in the system needs. Secondly, design software architecture for the online graduate tracer for administration and future tracking of graduates purposes. Thirdly, the desire to match the skills and qualifications of graduates based on industry job requirements for graduates’/alumni job employment. Moreover, this helps in conducting the graduates’ evaluation online such as work performance evaluation of the LDCU graduates.

RECOMMENDATIONS

In order to determine the effectiveness of the online graduate tracer with a mobile application, there is a need to utilize the system as a website portal of the Liceo de Cagayan University Alumni Association (LDCUAA). Hence, it is recommended that the researchers may:

1. determine the vital/basic information of the LDCU graduates to supply the mobile application system needs.
2. design software for the online graduate tracer, thus, may also serve as a springboard for studies that may be done by future researchers.

3. collect the basic skills and qualification of the LDCU graduating students to rightly match the industries job requirement.
4. add features on the types of user's interaction in the system for graduates' evaluation and administrations future needs.
5. LDCUAA president shall recommend the utilization of Online Graduate Tracer in order to determine the effectiveness of the system.

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