



# Web-Based Abulyatama Alumni Information System

**Teuku Muhammad Ardiansyah**

Information Technology Faculty, STMIK Abulyatama  
Email: [teuku081193@gmail.com](mailto:teuku081193@gmail.com)

Received: 17 May 2021; Accepted: 27 October 2021; Published: 30 December 2021

**Abstract:** Tracer study is a study of tracer traces of graduates or alumni carried out to alumni after graduation. The obstacle faced by STMIK Abulyatama in conducting a tracer study is at the time of data collection, currently collecting data manually by distributing questionnaires and telephone interviews with alumni and companies. Therefore, it is necessary to develop a complete E-Tracer study service, which can provide information for higher education institutions for the benefit of curriculum improvements, trace alumni in detail and determine user satisfaction of college graduates. The research objectives are; (1) To find out the alumni information system using a web-based programming language, (2) Designing an alumni management information system using Data Flow Diagrams (DAD) and programming languages such as HTML, CSS, JQuery, JSON, PHP and MySQL as databases, and (3) To improve the existing system to be even better, by building an information system that can improve performance on alumni data collection at Abulyatama University. The stages in the research consist of; literature study, data collection, systems analysis, system development, and report generation. Based on the results of the alumni information system analysis, it can be seen that until now it is still done manually. The author can conclude several things, namely; (1) With a Web-Based Alumni Information System, it is hoped that it will make work easier and accurate and more time-efficient information can be obtained, (2) The use of a manual system has limitations in the data search process, because the data is still stored in archive form, (3) Difficulty in updating the latest data for publication to the public, and (4) With this application, it is expected to simplify and speed up the administrative process at Abulyatama University.

**Keywords:** Information Systems; Alumni; Tracer Study; Web.

## 1. Introduction

Tracer study is a study of tracing the traces of graduates or alumni carried out to alumni after graduation [1,2]. Tracer study aims to determine educational outcomes in the form of transition from higher education to the world of work [3,4], educational outputs namely self-assessment of mastery and acquisition of competence, educational process in the form of evaluation of the learning process and contribution of higher education to competency acquisition and educational input in the form of further excavation of the graduate's sociobiographical information [5,6,7]. Currently in Indonesia, the number of open unemployment according to data from the 2016 Indonesian Manpower Statistics is 7,024,172 people and 13.4% of them are educated unemployed (graduates of Diploma and S1 programs) (<http://www.bps.go.id>). There are several things that are the cause of the high unemployment rate with higher education, including the mismatch between the acquisition of educational competence and the needs/requirements of the available job opportunities, or the imbalance between demand and supply, as well as the quality of human resources produced. From these data, it can be seen that graduates with job demands can be different, and this makes universities must be precise and fast in seeing the condition of graduates by mapping alumni with a tracer study information system [8].

Tracer study is one of the activities that must be carried out by all universities in Indonesia, as a form of supervision of graduates that have been produced by universities, in the sense that each university must be able to continue to improve its implementation [9]. In the process of study activity this tracker first actually conducts a collection of questionnaires about graduates who have worked, to find out how long an alumni can get a job after graduation, and several questionnaires for input to campus related to work and study [10,11]. Universities need to search data for graduates, this data can be used for various needs. A media is needed to connect faculty graduates or graduates with other graduates so that they can be interconnected [12,13]. However, this is constrained because most universities have difficulty recruiting alumni data even though it has been carried out in various media. A more effective alternative media is needed to collect graduate data [14,15]. The obstacle faced by universities in conducting tracer studies is at the time of data collection. Some universities still collect data manually by distributing questionnaires and telephone interviews with alumni and companies. Therefore, it is necessary to develop a complete E-Tracer study service, which can provide information for

higher education institutions for the benefit of curriculum improvement, detailed alumni tracking and to find out user satisfaction of college graduates [16,17].

Tracer study Kemenristek Dikti has issued a Tracer Study Standard Questionnaire Form 2017 which can be downloaded on the page <http://Tracerstudy.ristekdikti.go.id/index.php/site/unduh> as a reference in making the questionnaire [18]. But the most interesting thing here is, where a web-based application for Tracer study is not provided for free. Most universities have complex problems such as lack of funds, facilities to human resources in the IT field, which makes Tracer study not widely used or spread on various College Websites. Regarding this, it is hoped that the web-based e-Tracer study can be used by Abulyatama University. From the description above, the research objectives are; 1) To find out the alumni information system using a web-based programming language, 2) Designing an alumni management information system using Data Flow Diagrams (DAD) and programming languages that support the development of a web, and 3) To improve the existing system to be more even better, by building an information system that can improve performance on alumni data collection at Abulyatama University.

## 2. Background and Analysis

To assist in the preparation of this research, it is necessary to have a clear framework for the stages. This framework is the steps that will be taken in solving the problems that will be discussed. The research framework used is as shown in Figure 1.

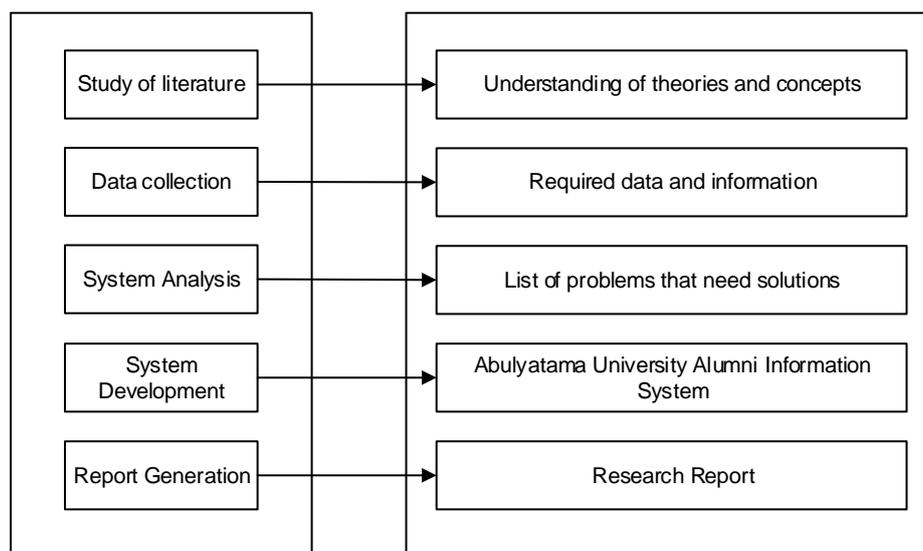


Fig 1. Research Framework

This research was conducted at the University of Abulyatama which is located at Blang Bintang Lama Street, KM. 8.5, Lampoh Keude, Aceh Besar District, Aceh Province. As for the special place of research is the management of alumni. In writing this proposal, the author uses several methods. Field Research is to obtain data directly from the research site so that the data needed in this research is the actual data obtained when the research was conducted. Software development is the latest industry, in an industry, development and growth is really needed to be better. Software development in a company is more than just writing code. Collaboration with other teams and team members with various specialties, is an additional step in documenting the software development process. The Linear Sequential Model, often called the Air Waterfall Model, is the oldest and most widely used software engineering paradigm [18,19]. This model proposes a systematic and sequential approach to software development that starts at the system level and progresses throughout analysis, design, code, testing, and maintenance [20,21,22].

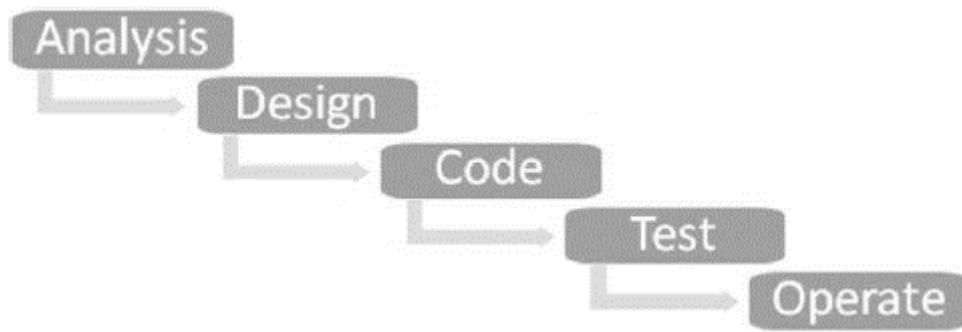
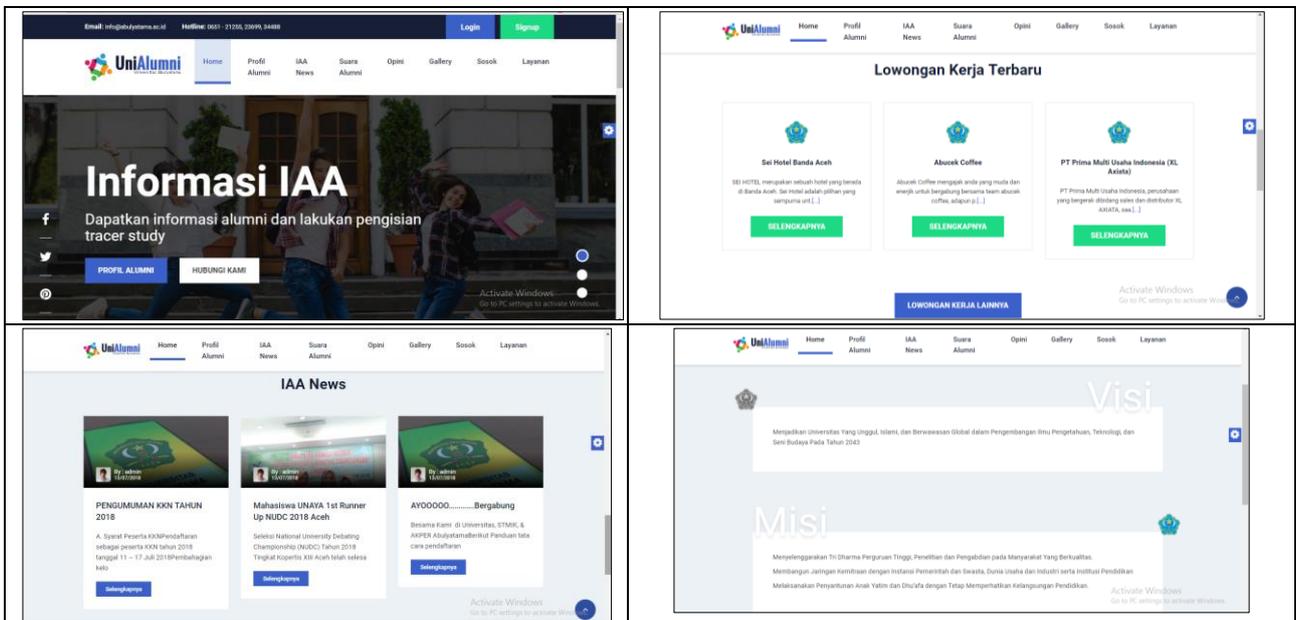


Fig 2. Stages in the Waterfall Model

### 3. Result and Discussion

The Alumni Information System that the author designed consists of several stages, namely input design, output design, database implementation, process design. The author hopes that this design will make it easier for every user, especially the tracer study section or the so-called alumni section. This input design consists of several program files, namely; 1) Alumni Entry Program, 2) Questionnaire Entry Program, 3) Faculty Entry Program, 4) Study Program Entry Program, 5) News Entry Program, 6) Gallery Entry Program, 7) User Entry Program, 8) Slider Entry Program, and 9) Category Entry Program. In designing this software using several database files that are interconnected with one another and use key fields to prevent repetition of the same data. Defining fields is used to explain and distribute fields according to the tables that have been obtained according to what is obtained, so that we can implement it into a computer-based application. Alumni Information System Using PHP MySql Application is basically not much different from the old system, the difference is the media and the equipment it uses. In inputting alumni data and questionnaires as well as other data processing, a new design system that uses a computerized application. In running the alumni information system requires workers who can operate computers so that it is easy to process information. The workforce needed to run this application, only one person is needed, and it is necessary to provide training and skills on using the application. Implementation is the stage where the system is ready to be operated at the actual stage, so that it will be known whether the system that has been made is actually as planned. In the implementation of this software, it will be explained how this system program works, by giving the appearance of the system or application created. The implementation of this application consists of several pages that have their own functions. The pages will appear sequentially in the order that has been programmed. The results of the design can be seen in Figure 3 below:



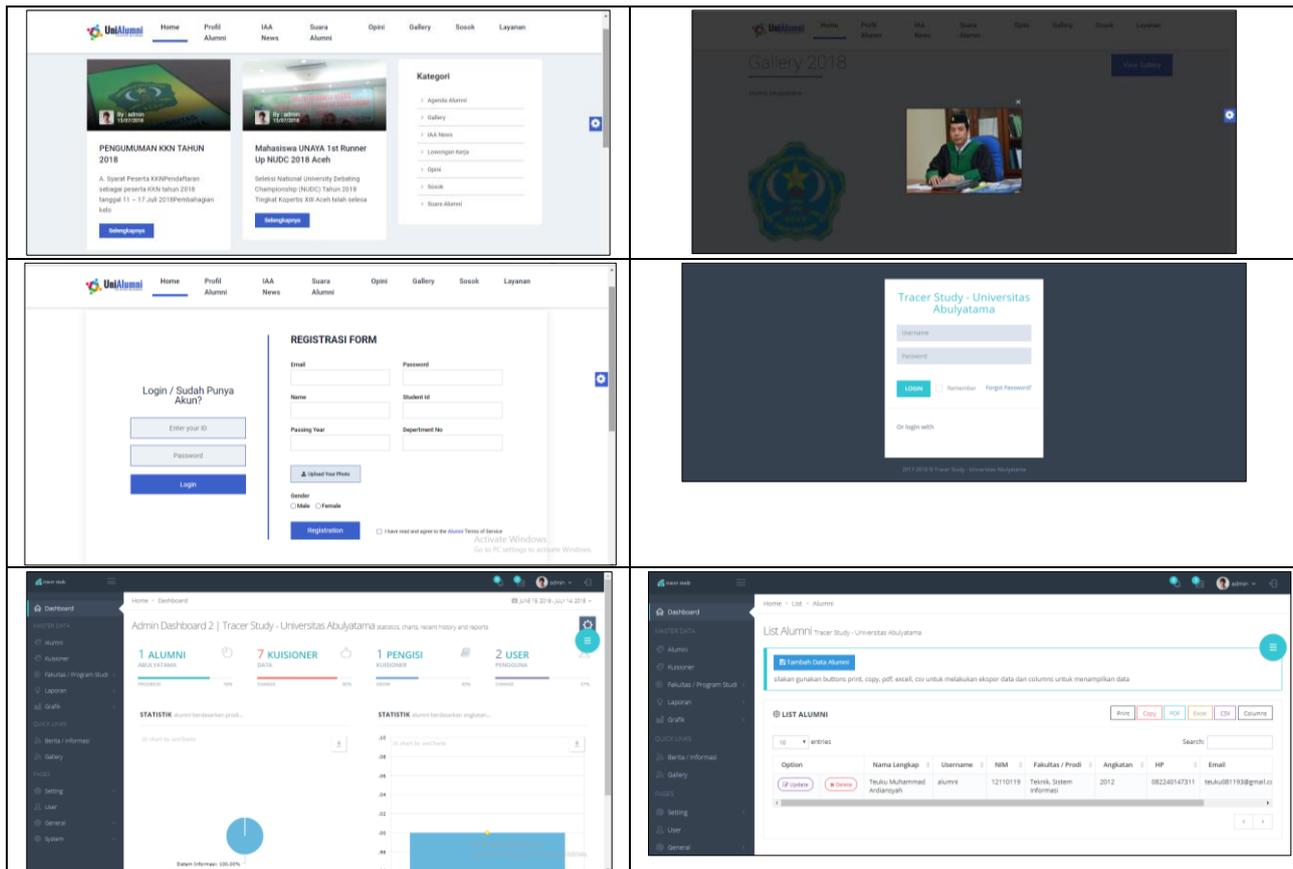


Fig 3. Design Results

## 5. Conclusion

Based on the results of the alumni information system analysis, it can be seen that until now it is still done manually. The author can conclude several things as follows

- 1) The system can be used to manage the results of tracer studies conducted online properly because the data is centralized on one server and can be searched at any time when needed.
- 2) The system can make it easier for alumni to provide information about the alumni concerned to STMIK Abulyatama for further data that becomes very valuable data to determine policies to be taken by management in order to improve the quality of graduates.

## References

- [1] Gines, A.C., 2014. Tracer study of PNU graduates. *American International Journal of Contemporary Research*, 4(3), pp.81-98.
- [2] Lucitasari, D.R. and Khannan, M.S.A., 2019. Designing Mobile Alumni Tracer Study System Using Waterfall Method: an Android Based. *International Journal of Computer Networks and Communications Security*, 7(9), pp.196-202.
- [3] Fiorentino, N., Sánchez-Monedero, M.A., Lehmann, J., Enders, A., Fagnano, M. and Cayuela, M.L., 2019. Interactive priming of soil N transformations from combining biochar and urea inputs: A <sup>15</sup>N isotope tracer study. *Soil Biology and Biochemistry*, 131, pp.166-175.
- [4] Rizka, M., Amri, A., Hendrawaty, H. and Mahdi, M., 2018. Analisis Dan Perancangan Sistem Informasi Tracer Study Berbasis WEB. *Jurnal Infomedia: Teknik Informatika, Multimedia & Jaringan*, 3(2), pp.68-73.

- [5] Nudzor, H.P. and Ansah, F., 2020. Enhancing post-graduate programme effectiveness through tracer studies: the reflective accounts of a Ghanaian nation-wide graduate tracer study research team. *Quality in Higher Education*, 26(2), pp.192-208.
- [6] Aclan, E., Saban, G.A., Famerong, J. and Francisco, R., 2018. Tracer Study of AUP BEEed and BSED Graduates from 2012–2016. *Journal of Education, Psychology, and Humanities*, 1(1), pp.15-19.
- [7] Harianto, K., Pratiwi, H. and Suhariyadi, Y., 2019. *Sistem Monitoring Lulusan Perguruan Tinggi Dalam Memasuki Dunia Kerja Menggunakan Tracer Study*. Media Sahabat Cendekia.
- [8] Quan, Z., Huang, B., Lu, C., Su, C., Song, L., Zhao, X., Shi, Y., Chen, X. and Fang, Y., 2021. Effects of ryegrass amendments on immobilization and mineralization of nitrogen in a plastic shed soil: A 15N tracer study. *Catena*, 203, p.105325.
- [9] Mina, J.C., Reyes, E.J.G. and Salas, R.F., 2020. A tracer study of bachelor of science in information technology (BSIT) graduates of nueva ecija university of science and technology (NEUST), San Isidro campus. *International Journal of English Literature and Social Sciences*, 5(4), pp.1337-1344.
- [10] Del Rosario, P.Y., 2019. Tracer study of graduates of the college of industrial technology. *International Journal of Advanced Research and Publications*, 3(5), pp.23-31.
- [11] Soegoto, H.S., Wahdiniwaty, R., Warlina, L. and Heryandi, A., 2018. E-tracer study implementation of Indonesia Computer University alumni. *Journal of Educational Research and Reviews*, 6(2), pp.38-46.
- [12] Knappe, A., Hubberten, H.W., Pekdeger, A., Dulski, P. and Möller, P., 2020. A multi-tracer study on bank filtration processes in Berlin. In *Management of aquifer recharge for sustainability* (pp. 239-244). CRC Press.
- [13] Soetrisno, Y.A.A., 2019. Aplikasi Tracer Study Berbasis Web Pada Universitas Diponegoro. *Transmisi: Jurnal Ilmiah Teknik Elektro*, 21(4), pp.135-146.
- [14] Almasyhur, A.K., 2018. *Pengembangan aplikasi mobile tracer study menggunakan platform Android* (Doctoral dissertation, Universitas Brawijaya).
- [15] Permana, F.C., Firmansyah, F.H., Sari, I.P. and Hernawan, A.H., 2019. Developing a Tracer Study Information System Based on SMS Gateway to Support Career Development Program in UPI, Cibiru Campus. *Advances in Social Science, Education and Humanities Research*, 401, pp.252-256.
- [16] German, J.D., Buan, M.L.O., Carreon, A.B.G. and Ochoa, M.J.D., 2021. Employability and Achievement of Program Educational Objectives: A Graduate Tracer Study for Industrial Engineering (IE), Engineering Management (EMG), and Service Engineering Management (SEM) Programs of an HEI in the Philippines.
- [17] Mohidin, I., Suleman, S. and Asep, A., 2019. Rancang Bangun Aplikasi Tracer Study Alumni Kampus Politeknik Gorontalo Berbasis Mobile. *Jurnal Teknologi Informasi Indonesia (JTII)*, 4(1), pp.18-29.
- [18] Akbar, R. and Hajriyanti, R., 2020. Sebuah Kerangka Kerja untuk mengembangkan e-Tracer study berbasis Sistem Cerdas. *Jurnal JTIIK (Jurnal Teknologi Informasi dan Komunikasi)*, 4(2), pp.82-86.
- [19] Wali, M. and Ahmad, L., 2017. Perancangan Aplikasi Source code library Sebagai Solusi Pembelajaran Pengembangan Perangkat Lunak. *Jurnal JTIIK (Jurnal Teknologi Informasi dan Komunikasi)*, 1(1), pp.39-47.
- [20] Syaputra, A.H., Darussalam, U. and Winarsih, W., 2021. Rancang Bangun Sistem Pengelolaan Laundry menggunakan Metode Waterfall. *Jurnal JTIIK (Jurnal Teknologi Informasi dan Komunikasi)*, 5(1), pp.34-40.
- [21] Iqbal, T., Aprizal, D. and Wali, M., 2017. Aplikasi Manajemen Persediaan Barang Berbasis Economic Order Quantity (EOQ). *Jurnal JTIIK (Jurnal Teknologi Informasi dan Komunikasi)*, 1(1), pp.48-60.
- [22] Ardiansyah, A., Fitri, I. and Iskandar, A., 2021. Aplikasi Manajemen Perkantoran dan Absensi Online Berbasis Android. *Jurnal JTIIK (Jurnal Teknologi Informasi dan Komunikasi)*, 5(2), pp.126-134.