

Development of a Web-Based “Let's Donate” Fundraising Information System

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Abstract. This study aims to make it easier for donors who will donate without having to come to the place so that it is more effective and efficient. The development of this information system uses SDLC (Systems Development Life Cycle), which includes four stages, namely planning, analysis, design and implementation. By implementing this information system application, it is hoped that it will facilitate fundraising activities during both pandemic and non-pandemic periods. Fundraising is the process of collecting contributions from donors. Through data analysis, it is known that religious factors, the influence of campaigns and platform innovations have a positive effect, while the social spirit of the community has a negative effect. Overall, all factors are very important in influencing people to donate through online crowdfunding. The results of this study indicate that the factors of people's social life have a negative impact, because people believe that if someone has a high standard of social life, they are more likely to choose to provide assistance or donations directly rather than using the online system.

Keywords: SDLC, Fundraising, system application

1 Pendahuluan

Currently technology is developing very rapidly, and plays a very important role in supporting human activities to further optimize time [1]–[5]. Information systems have significant benefits for improving organizational performance [6], [7]. So that with this information system, most social institutions or foundations can use it for certain purposes, for example, to raise donations from donors. [8]. "Donors are people who make donations to the community in the form of funds, etc." [9]. Funds from donors to be clearer must have a fund management report, so that an effective information system is needed to convey the information provided quickly, precisely and accurately. Organizations need website-based information systems such as companies, educational institutions, and even social institutions, for example, Areta, which is an institution engaged in the social sector. [9]. With the website, information will be easier, more effective and faster in disseminating information for fundraising so that it can increase the number of donors quickly via the internet. [10]. Not only that, another benefit of this website is that donors can do it online which can be accessed anytime and anywhere as long as they are connected to the internet network. So that donors don't have to come directly to the place considering the Covid-19 which makes all activities limited.

In making the "Let's Donate" website, we will use the SDLC (The Systems Development Life Cycle) method. [11]. In this research, a web-based fundraising application will be built which is designed to make it easier for social institutions (Arera) with donors to make online donations.

2 Literature Review

For the development of information systems in this study carried out at an institution areta. Areta is an institution engaged in the social sector. This institution was established as a form of concern, the role of students to help make it easier for candidates/donors to donate. Previous research was conducted by creating an information system that can support decisions and control the running of the organization [12].

The information system is a unit of various elements that interact systematically and regularly to create information that will support decision making and control over the course of the company or institution. [13].

The development of a website-based information system is needed by institutions, companies, and even the public in finding and creating information. Website is a collection of pages consisting of several pages about various information in digital form connected to the internet [12].

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The development of software information systems engineering is a new system to improve the previous research / theoretical basis [13]. "SDLC refers to the model, the process used to develop a software system and describes the process, i.e. the developer accepts the move from problem to solution." [14] The stages consist of 4 stages, namely planning (planning), analysis (analysis of various problems), design (system design) and implementation (implementation of the design, planning, analysis that has been done previously).

3 Method

In this research, the SDLC (The Systems Development Life Cycle) method is used as a stage in software development, SDLC waterfall is a software development methodology used to structure, plan and control the process of developing an information system. [15]–[17], [17], [18]. The stages are as follows:

3.1 Analysis

The second stage is analysing system requirements, namely the "Let's Donate" application that can be used by the community, namely using Use Case Diagrams, Business Process Modelling Notation (BPMN), Sequence Diagrams [19].

3.2 Design

The third stage is designing the "Let's Donate" information system, at this stage the author designs an information system with a user interface that can be understood and understood by users by using Class Diagrams, Deployment Diagrams, User Interface Design, and Data Models. [20].

3.3 Implementation

The fourth stage is implementation, at this stage the author will describe the results of implementing the "Let's Donate" website and also testing to ensure its performance as designed [21].

4 Result

The results of the implementation of a web-based Donation Raising information system with the application name "Let's Donate" are used to facilitate fundraising activities or raise funds that can benefit the community and increase community participation in donating, so as to increase and stabilize the number of donations that Areta gets.

In making the information system "Let's Donate" the SDLC waterfall method is used, while the explanations for each are as follows:

4.1 Analysis

At this stage we can see and understand what the needs of the "Let's Donate" website are.

4.1.1 Use Case Diagram

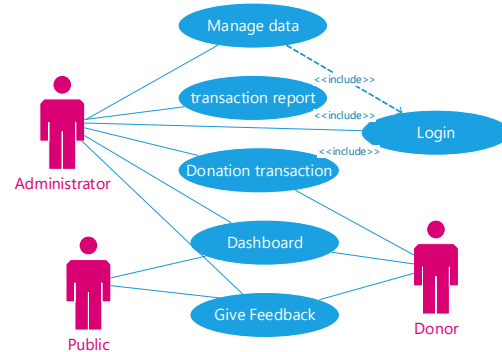


Fig 1. Use Case Diagram Website Let's Donate

In this application there are three actors, namely admin, donor and public. Admin can process data, view and process transaction reports, make donation transactions by logging in first, and access the dashboard home page and provide feedback. Donors can provide feedback, access the dashboard home page and make donation transactions by logging in first. Public can access dashboard home page and give feedback.

4.1.2 Business Process Modelling Notation (BPMN)

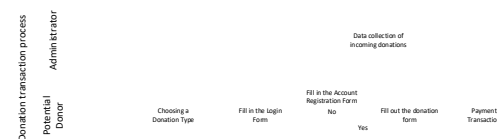


Fig 2. Business Process Modelling Notation (BPMN)

In Figure 2 explains the Business Process Modelling Notation (BPMN) in this donation transaction process, there are two actors who play a role, where prospective donors choose the type of donation which will later be directed to fill out the login form, if you don't have an account, you must fill out the account registration form first, if after that, it will be continued to fill out the donation form and make donation payments. Where donor data and the amount of incoming donations will be added and stored in the donation transaction data database managed by the admin.

4.1.3 Sequence Diagram

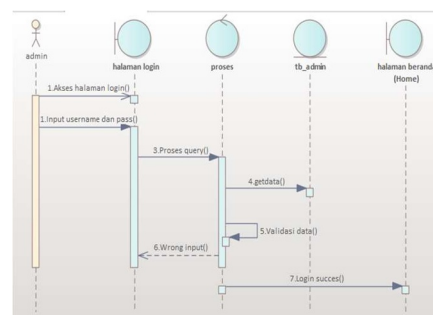


Fig 3. Sequence Diagram

Figure 3 explains that the admin can access the login page, input the username and password, then the data will be processed and added to the admin table and validated. If the data entered is incorrect it will return to the login page and if it is correct, it will be directly connected to the home page.

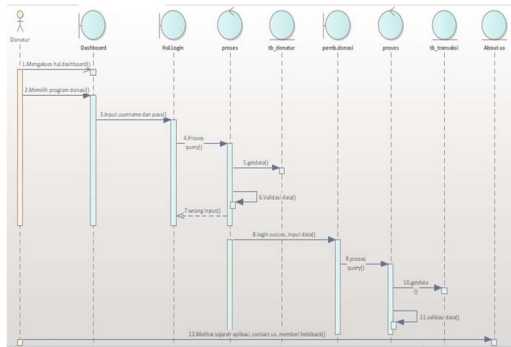


Fig 4. Donation transaction sequence diagram from the Let's Donate website

Figure 4 explains that on the dashboard page, donors can access the dashboard home page and choose the type of donation they want. If you choose the type of donation, you will be directed to the login page to enter your username and password, then the data will be processed and added to the donors table and validated. If the data entered is incorrect, it will return to the login page and if it is correct, it will be directly connected to the donation payment page to fill out the payment form, which later the data will be processed and added to the transaction table and validated.

4.2 Design

4.2.1 Class Diagram

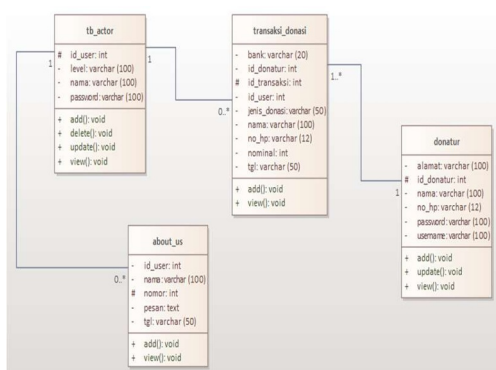


Fig 5. Class Diagram

Figure 5 shows the class diagram in this application, namely there is a table of actors that connects to donation transactions where 1 actor can make many donations or even don't donate, and the actor table also connects to the about us page where 1 actor can give feedback many times or not. give it. Meanwhile, the donors table connects to donation transactions where 1 donor can make a donation once or multiple times.

4.2.2 Deployment Diagram

Figure 6 shows the deployment diagram of the "Let's Donate" application.

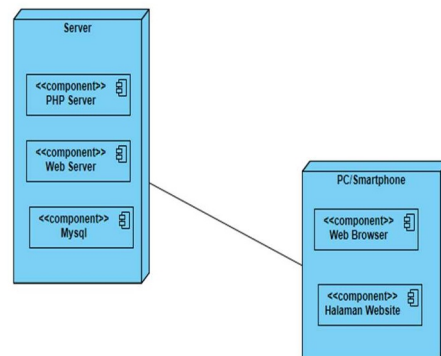


Fig 6. Deployment Diagram

4.2.3 User Interface Design

The author designs an information system with a user interface that can be understood and understood by the user. The following is the design of the "Let's Donate" website. Figure 7 shows the user interface of the Dashboard Home page.

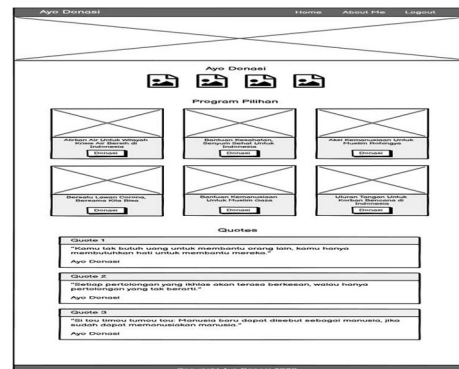


Fig 7. Home Website Dashboard Page Design Let's Donate

Figure 7 shows the user interface of the Donation Payment Page.

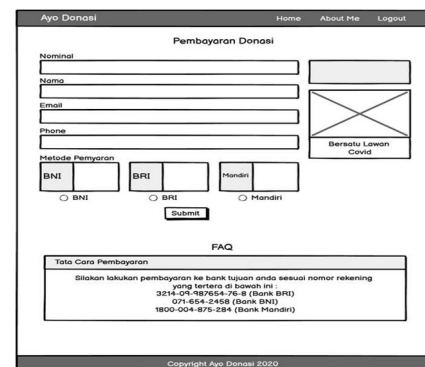


Fig 8. Website Donation Payment Page Design Let's Donate

4.2.4 Data Model

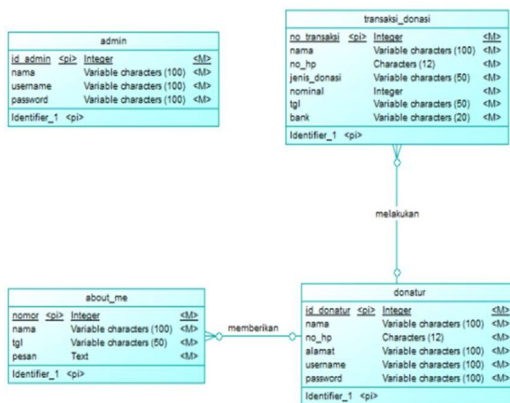


Fig 9. CDM Let's Donate Website

4.3 Implementation

At this stage the author will describe the results of the implementation of the "Let's Donate" website and also carry out testing to ensure its performance as designed.

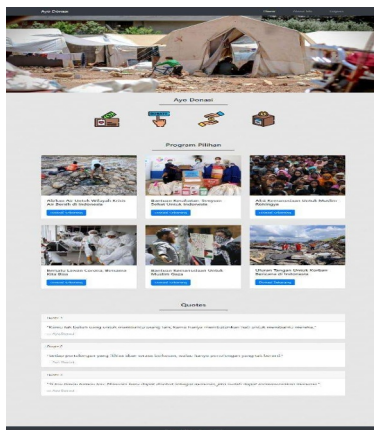


Fig 10. Implementation Dashboard Home Page

Figure 10 shows the Dashboard Home page, at the top of the page there are menu options such as Home, About Me, and Logout. After that, at the bottom of the page there are several selected programs that the user can choose from to choose what program the user will help donate later.

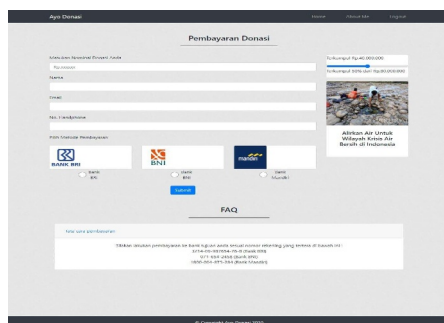


Fig 11. Donation Payment Page Implementation

Figure 11 shows the Donation Payment Page, users who have selected their preferred donation program will be directed to fill out several forms on this page. Here there are several input forms such as filling in the nominal donation, name, email, phone number and choosing the payment method. After the user has finished filling it out, here there is a "Submit" button to save and complete the payment stage.

4.4 Validation Testing

System testing is the final stage that ensures the software has met all the functional, behavioural, and system performance. We tested this system by entering several inputs that were not in accordance with the request, if successful then there were errors and deficiencies in the validation system. And when all the features in this system are tested, the results run smoothly and there are no errors.

5 Conclusion

The website's information system "Let's Donate" is inspired by the declining economy of the community due to the Covid-19 outbreak which has restricted all social and economic activities, so that the impact is very large on small communities.

The "Let's Donate" donation-raising information system is used as a crowdfunding medium to raise funds, provides a choice of humanitarian programs and payment methods that make it easier for donors and potential donors to spread awareness (donate), so they don't have to come to the place. This is necessary to expedite and accelerate the flow of funding information so that it can reach a wide community and its frequency is so high.

This website is managed by a social institution called Areta, in its use this website is made with features that make it easier for users to access it. Where this information system can be used by institutions or agencies, even people who want to donate or not.

In making this website, the SDLC (The Systems Development Life Cycle) method is used where the steps are planning, system design, analysis and implementation. The procedures in this application system are registration, login, choosing the type of social activity program, filling out the donation transaction form, and completing the payment stage. From the results of tests that have been carried out, all features in this system run smoothly and there are no errors.

References

- [1] W. He, Z. Justin, and W. Li, "Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID- 19 . The COVID-19 resource centre is hosted on Elsevier Connect , the company ' s public news and information ,," no. January, 2020.
- [2] R. Sathish, R. Manikandan, S. Silvia Priscila, B. V.

- J. Sara, and R. Mahaveerakannan, "A report on the impact of information technology and social media on covid-19," *Proc. 3rd Int. Conf. Intell. Sustain. Syst. ICISS 2020*, pp. 224–230, (2020), doi: 10.1109/ICISS49785.2020.9316046.
- [3] A. A. Abdullayev, "Cluster method in the development of critical thinking technology in the lessons in primary school," *Sci. world*, vol. **5**, no. 81, pp. 16–19, (2020).
- [4] D. Wu and J. Zhu, "Technical Efficiency Evolution Model of the Integration of Information Technology and Manufacturing Technology," *Math. Probl. Eng.*, vol. **2020**, (2020), doi: 10.1155/2020/4905195.
- [5] A. Gupta, J. Ponticelli, and A. Tesei, "Information, technology adoption and productivity: The role of mobile phones in agriculture," *NBER Work. Pap.*, p. No. 27192, (2020), [Online]. Available: <http://www.nber.org/papers/w27192>.
- [6] K. E. S. Santos, "Evaluation of Computerized information systems of small business Organizations," no. January, (2020), doi: 10.22161/jhed.2.1.1.
- [7] A. Owusu and F. Broni, "The Case of Ghanaian Organizations Strategic Information Systems Planning (SISP) Implementation and Use in a Developing Economy :," no. April, (2020), doi: 10.4018/978-1-7998-2610-1.ch001.
- [8] S. D. Riskiono, F. Hamidy, and T. Ulfia, "Web-Based Donor Fund Management Information System at the Madani Orphanage," *J. Soc. Sci. Technol. Community Serv.*, vol. **1**, no. 1, p. 21, (2020), doi: 10.33365/jta.v1i1.670.
- [9] M. Ilham and P. P. Hayon, "THE EFFECT OF ORGANIZATIONAL COMMITMENT AND MANAGER KNOWLEDGE ON THE SUCCESSFUL APPLICATION OF ACCOUNTING INFORMATION SYSTEM (Case Study at District Offices and Villages in Semangga District, Merauke Regency)," *J. Ilmu Ekon. Sos.*, vol. **9**, no. 1, pp. 62–73, (2018), doi: 10.35724/jies.v9i1.716.
- [10] Tumpal Manik, "Analysis of the Role of Accounting Information Systems in E-Commerces Against Online Business Control," *J. Ilm. Akunt. dan Finans. Indones.*, vol. **1**, no. 2, pp. 51–64, (2018), doi: 10.31629/jiafi.v1i2.1244.
- [11] J. I. Olszewska and I. K. Allison, "ODYSSEY : Software Development Life Cycle Ontology," vol. **2**, no. Ic3k, pp. 303–311, (2018), doi: 10.5220/0006957703030311.
- [12] J. S. Pasaribu, "Development of a Web Based Inventory Information System," vol. **1**, no. 2, pp. 24–31, (2021).
- [13] H. Hourani, M. Abdallah, and A. A. Tamimi, "7E : A PROPOSED CHANGE MANAGEMENT MODEL INTEGRATED WITH," no. October, (2019), doi: 10.24507/icieel.13.10.941.
- [14] O. J. Okesola, A. A. Adebisi, A. A. Owoade, O. Adeaga, O. Adeyemi, and I. Odun-ayo, *Software Requirement in Iterative SDLC Model Software Requirement in Iterative SDLC Model*, no. November. Springer International Publishing, (2020).
- [15] S. Kang, Y. Shin, K. Cho, H. Cho, L. Researcher, and S. Researcher, "A Study on the Application Method of Fuzz Testing to Domestic Weapon Systems Considering the Software Development Life Cycle (SDLC)," vol. **31**, no. 2, pp. 279–289, (2021).
- [16] S. E. E. Profile, "INTRODUCING A NEW SDLC MODEL (SQUARE MODEL) FOR SOFTWARE DEVELOPMENT," no. June, (2021), doi: 10.13140/RG.2.2.12748.95361.
- [17] C. Series, "Developing Framework for Web Based e-Commerce : Secure-," 2020, doi: 10.1088/1742-6596/1566/1/012020.
- [18] V. N. May, "Mysql Database Processing Information System Using The System Development Life Cycle (SDLC) Method At Quality Guarantee Agency Working Unit At National University," vol. **4**, no. 1, pp. 392–398, (2020).
- [19] N. Hasanah and M. N. Indriawan, "Batam Travel Application Design Using Software Development Life Cycle (SDLC) Method," vol. **1**, no. 1, pp. 925–938, (2021).
- [20] A. International and P. Reviewed, "SOFTWARE SECURITY ASSESSMENT IN DESIGN PHASE OF SDLC USING MACHINE LEARNING APPROACH," vol. XIV, no. Ii, pp. 1–13, (2021).
- [21] M. Siddik, G. M. Putra, N. Manurung, and A. P. Lubis, "Implementation of E-Government Information System Application for Village Service," (2021), doi: 10.4108/eai.4-11-2020.2304648.