

## DONATION SYSTEM FOR ISLAMIC PRIMARY SCHOOL

Siti Aishah Muhammed Suzuki<sup>1</sup>  
Fauziah Abdul Wahid<sup>2</sup>

<sup>1</sup>Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM), Malaysia,  
(E-mail: aishah.fst@gmail.com)

<sup>2</sup>Faculty of Science and Technology, Universiti Sains Islam Malaysia (USIM), Malaysia,  
(E-mail: fauziah@usim.edu.my)

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**Abstract:** *The web-based system is a system that use internet server as communication mode to deliver information and services to the user. The requirement includes technology and sophisticated tools to deliver appropriate objectives in order to determine the features and design requirements, for example, to develop the Donation System for Islamic Primary School, design and development and applying the suitable security features into the system. Mostly a system usually focus on gaining attraction solely in direct and specific needs and lack in advertising any option provided. In this system, web development is used not only to deliver a message and view to the public about concurrent activities that were running in the Islamic primary school but they can also view many other option for fundraising. In general, a fundraising website was conducted for the school to publish their social activities for donation purposes. It also will ensure the effectiveness of doing it online rather than having limited time on blasting the news with zero responsive. The methodology applied into this system was Waterfall model of software development life cycle (SDLC), which comprises five phases for ensuring its process practicality. Security including blowfish hashing technique, error handling and disable right click was implemented as part of security development. Regard with the system development, language used was Hypertext Mark-up Language (HTML), Hypertext Pre-processor (PHP), Cascading Style Sheet (CSS) and JavaScript for developing the system.*

**Keywords:** *Web-based system, SDLC, Donation System, Islamic Primary School*

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## Introduction

Digital technologies that supports various payment systems are increasing whereby societies all across the world have started using innovative micropayment products (Alhothaily et al., 2017). According to Lee, Yen, and Fu (2016), the donation system can also help to establish any design project with certain types of purpose from any institutions. Apart from that, this online donation system was defined by Liu et al. (2017) as a monetary donation to satisfy the needs of donation. The donation system for Islamic primary school is a web-based system that signifies a donation system for Sekolah SERI Seremban, Nilai. The system is developed to provide a suitable platform for donors to donate for school development. The main objective of building the system is to determine the features and design requirements, to design and develop the system and applying any suitable security features into the system. This life-changing method will help the school to elongate more on their financial status and help to sustain good educational activities with the donation given by the donor (Ismail, 2013). The donation should be vary, thus it was divided into three categories that are for personal and academic development, development of school infrastructure and school-related program. Floyd (2015) provide detail discussions on how to understand the impact of characteristic or online marketing communication that donor desire. Donation is not only about giving money but user are free to donate goods such as book. So, each segment advertises some related issues and in need of donations either in terms of goods and services, and also money for their development.

## Problem Statement

The system was motivated by the current state of the user, where they unable to organize a simple donation efficiently. The online donation system is not widely known in the Nilai area, especially in school institutions. Some other online fundraising system are lack of activities via online which is unclear about it purposes (Abdul Rahman et al., 2016). According to Dahir (2017), the donation management will increase due to the blast amount of user so that it should be organize accordingly. By having a proper solution will ensure the school system for donation are working efficiently. There were many website that highlight on book donations but unfortunately its accessing towards the content is ultimately rare (Zell & Thierry, 2015). Usually, donors have to come to school to donate and they are not aware of what the school needs.

Validation for the donation nowadays has to be manually organized by the school committee, which consumes much work and time. Due to this issue, a solid solution needs to be done to provide a system as a sophisticated platform for donors to donate. School organizations will be in trust for their credibility and assure more users to donate freely. Apparently most of the existing system had some issues regarding the unauthorized access, which leads to data disclosure. Since the information should be kept confidential, it will cause a crucial situation to the school organization where it could be possible for any data manipulation to occur in future. Thus a system with robust security protection should be well-planned in order to protect the information

## Scope

The donation system for Islamic primary school mainly highlighted on user as a public user for a donation system in order to achieve the school target result for upon the development. The system will be a platform for users as donors to donate money, goods, and others for teachers'

and students' educational purposes. Advertisements were developed and published through the website for users to initiate a good understanding about the schools' need of donation.

### **Literature Review**

The literature review was conducted for collecting some detail and important information about the existing system for its style and features, which temporarily similar with Donation System for Islamic primary school.

### **Donation System**

The system represents two sections for the user and administration site. Users can view and fill in the requirement through the website and value some feedback for the system improvement or directly contact the school representative for any inquiries as mentioned in Hoefer (2012) stated that non-profit organization has direct service to client need assistance. Web system not only for collecting money but it can facilitate its donation process, where selected gifts and delivery of selected items is given (Miller & William, 2009). Apart from that, Jeannine and Cook (2017) stated that it was also an effort to raise money and help that does not involve submitting application manually.

Most of the advertisements are publicly made at ease so that all of the users can have the opportunity and understanding in accessing the website. A system should have its validity and sufficient reliability so that the online donation has a great potential in attracting people to use the system well (Treiblmaier & Pollach, 2008). Since the school targeted on achieving a sufficient amount of visitors, the system is made to attract as many visitors as possible, and also shared via the social media platform with others. Fallon et al. (2014) have an active, ongoing presence on Facebook, Twitter, and Pinterest. All the information regarding user details will be recorded into the system database which is PHPMyAdmin and able to be viewed by system administrator. This will ensure that the system can improve efficiency throughout information distributed and its functionality (Berthelette et al., 2015).

Meanwhile, for administration site, only selected person from the school top management are required to have the account and password to alter most of the content provided by the developer. The administration site was unknown to the user as it was cordially restricted for some people to prevent any misuse of content. Chen et al. (2013) describe more about the structural architecture for the system. The system development will be conducted using atom ide and localhost to achieve standard results of having a temporary website. Some other add on comprises a few programming languages such as Hypertext Mark-up Language (HTML), Hypertext Pre-processor (PHP), Cascading Style Sheet (CSS) and JavaScript to make it functional and related with the context. All of these requirements were used and implemented with a few line codes that are made from scratch.

### **Security Issues**

Technology evolves rapidly as many people try to penetrate the system illegally. Acosta (2008) states that merchants have to face are Internet fraud, product returns, non-delivery claims, disputes that leads to chargebacks and etc. Due to issues regarding security breach such as ransomware, worm attack, denial of service (DDoS) where it will disrupt or deny any normal computer processing which leads to slow-speed of computer processing (Urs, 2015). First of all, the hashing technique, which is blowfish was implemented for securing the password of

the administrator. The password will be encrypted and hash into its unique id thus enables admin to stay on secure site.

Apart from that, error handling takes part in ensuring users to fill in all the required fields before proceeds to the next page. However, all the data collected will be kept secure at the administration site and the personal identity will be anonymous for the public. Another security taken was embedding a proper JavaScript code to disable the right-click, copy and paste and viewing page source. According to Lowry et al. (2006), SSL use digital certificate and public-key technology to protect any confidential information and authenticate the server in a transaction. All of this measurement was taken to secure the site thus prevent from any possibility of being indulge in security issues.

### **Methodology**

According to Dong-Heon (2014) each charitable website has its own characteristic and uniqueness depends on its functionality. A methodology used for this system is waterfall model, which vary from the Software Development Life Cycle. In this model there consists of five steps which are requirement analysis, system design, implementation, testing, and maintenance. Each of the steps needs to be completed according to its sequence. The waterfall model is the recursive model that enables each phase to keep repeating until a perfect cycle.

Each of the phases consists of different approaches and time frames according to the process of developing the system. The analysis and design phase was initiated due to the problem statement and all requirements of the software product are gathered (Ali, 2017), after having a consultation with the school top management. Moving to implementation, the system will be demonstrated whilst implementing all the possible security and lines of code into the system. The testing phase will be conducted by the client of what is dos and don'ts and finally approaching maintenance if there are issues and improvement required.

### **Analysis/Result**

In this analysis procedure, few testing was carried out for ensuring the system meets the requirement according to client request. Error and system failure can be detected during this phase. In this phase there will be two type of testing that will be conducted which is Security Testing (Unit Testing) and Integration Testing. Apart from that, an evaluation on Client Acceptance Test will be carried out to validate the system user interface and its functionality.

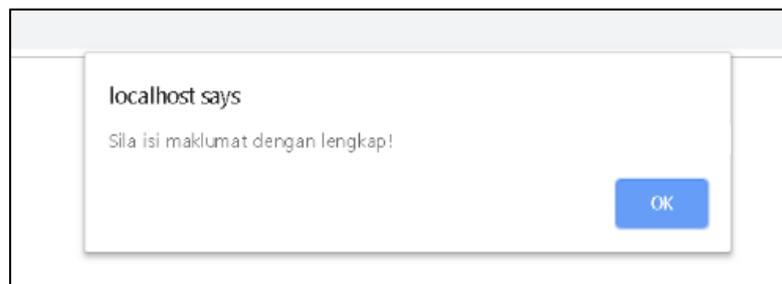
### **Unit Testing**

For security testing, the system will be tested for its functionality for the unit testing on security implementations. This will ensure how the system act after the implementations. There was three main highlighted security testing (unit testing) that will be discussed and carried out which is login for admin module, fill in information module and disabling right click, copy and paste module. Each testing simplifies the functionality depending on notification appears on the screen and below was one of the example on how it works.

**Table 1: Summary for Admin Login Page Testing**

Steps	Results
Leave the field with both empty username and password or both.	Fail. Fill in error message display on the pop out notification bar (refer Figure 1)
Inserting invalid password or username	Fail. Error message display on the pop out notification bar (refer Figure 2)

Figure 1 shows the pop up message notification bar appear as the admin was not inserted both password and username on the field. The message asked admin to fill in the required fill before proceed into the next page, while Figure 2 shows the pop up notification bar appears when admin fill in either wrong password or username into the field. The pop up message urge admin to fill in the correct input before proceed into the next page.



**Figure 1: Error login for empty field**



**Figure 2: Error login for Invalid Input Field**

### Integration Testing

Integration testing has being conducted by client, which is Sekolah Seri Seremban, Nilai. The system was tested from the beginning until the end which comprises user site and admin site. Both was tested according to its functionality that meets the requirement. Other than that, it was a process of identifying error as well as making a few consultation for further improvement about the whole system. Table 6.3 shows the summary of the testing conducted by client. A few module was tested by client which is login for admin module, fill in information form module and disabling right click, copy and paste module.

**Table 2: Summary for Integration Testing**

Test No.	Module Tested	Expected Output	Test Results		No. of Defected Found	Detection Description	Action Taken
			Pass	Fail			
1.	Login for admin	Login successful	/		None	None	None
2.	Fill in information form	All information was fill in successfully without leaving empty	/		None	None	None
3.	Disabling right click, copy and paste	The right click, copy and paste was disable successfully	/		None	None	None

### Discussion & Conclusion

There are a few segment that will be summarized for future enhancement of the system. All of the above will be elaborate further and how to manage it according to the system needs.

### Objective Analysis

System and design requirements was determined during the analysis and design phase. Most of the functional and non-functional requirement was stated in the previous section. The design and development of Donation System for Islamic Primary School was elaborated comprehensively. The system work accordingly from the beginning to the end of the process. The suitable security features was implemented into Donation System for Islamic Primary School, which consist of three features such as no right click and copy text, error handling for the requirement form and blowfish authentication using password default. All of the security features was created in order to prevent any unauthorized access into the system.

### System Limitation

Even though there is a strength about the system, limitations will be the main challenge in developing this system. There was time constraint in building the system and there are some requirement that was not fully followed. The system was not fully rehearsed by client as some of the features implemented into the system somehow was initiated by the developer through a sense of creativity and spontaneous idea. Therefore, continuous improvement need to be made to system from time to time.

### Summary

The Donation System for Islamic Primary School benefits most of the people where all of us can donate to the school to improve their infrastructure as well as for student development. The key features are to implement the system along with security implementation to prevent any cyberattack against it. Each of the cycles includes has been done accordingly and further improvement will be ongoing from time to time. This system aims to support the idea of the school having a proper web development site to gain trust thus donating it online.

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