Data Collection Information System for Prospective Citizens and Citizens (Trainers) at PSHT Pekanbaru Branch Using the Laravel Framework

Yulisman 1*, Akhmad Zulkifli 2, Dimas Cindika Gustiani 3
Universitas Hang Tuah Pekanbaru 1,2,3
Email: yulisman@htp.ac.id 1*, zulkifli.akhmad@gmail.com 2, dimascindika12@gmail.com

ABSTRACT
The Data Collection System for Prospective Citizens and Residents (Trainers) in the Setia Hati Brotherhood in the Pekanbaru Branch still uses a manual system. Where paper becomes a means in data collection and data information sources. The rapid development of technology in the current era of globalization that can facilitate all respects, including data collection of information that can make data collection more effective and efficient. PSHT Pekanbaru Branch corrects the problem in this data collection to make data collection faster because the system has not been computerized. The data collection in the PSHT Pekanbaru Branch requires a new system so that the system can be improved. As for the system carried out by the writer who discusses structured development systems using the waterfall method, as well as analysis and design tools using the Unified Modeling Language (UML). As for the implementation, some software is published using the framework framework, the code editor uses Atom, the PHP package uses XAMPP version 3.2.4 (PHP 7.3.9, Apache web server 2.4.7 and MySQL database version 5.0.12) and which the last web browser using Google Chrome.

Keywords: Information System, Data Collection, Prospective citizens and Citizens (Trainers), Laravel Framework

This is an open access article under the CC BY-SA license.

1. INTRODUCTION

Information data management made as one _ excess from progress technology specifically in the field computer. Computer has penetrate to in One agency to agency other. Faithful Brotherhood _ Terate (PSHT) is something organization pencak the largest and oldest silat in Indonesia and spread throughout Indonesia. One of them is in Riau Province where there are 12 PSHT branches in the regency and 1 branch in Pekanbaru City. On the branch Pekanbaru Alone there are 14 branches that spread in various district. On the branch Pekanbaru data collection against twigs, amount students and numbers coach Still done in a manner routine through sheet paper. After from sheet paper will moved to in Microsoft Office Excel by the secretary branch. However, these data prone to is lost so that must done data collection repeat back. Especially for student data to be become candidate citizen. at the moment increase belt amount student Can just changed (decreased or increases) so secretary must add again. For citizen data active in Pekanbaru No arranged in a manner detail, only that became manager in every recorded branch. Whereas every branch can just increase, decrease or change citizen data. So that make it difficult manager For know amount active citizen.

Objective from study This is as following:
1) For build A system information data collection candidate residents and residents (trainers) in PSHT Pekanbaru Branch with using PHP, SQL and laravel framework.
2) For implement system information data collection candidate residents and residents (trainers) in PSHT Pekanbaru Branch.

1. System Information
   In book Anggraeni and Irvani (2017:1), System is mutual group of people Work The same with conditions _ systematic and structured rules _ For form One executing unit _ something function For reach purpose . Information is processed data become more useful and meaningful for recipient , as well For reduce uncertainty in the process of taking decision about something circumstances .
   Saputri et al (2019), stated that System Information is bunch procedure organization at the time held will give information share taker decisions and or For control organization .

2. data collection
   According to Dictionary Major Indonesian (KBBI) data collection is A homonym because of the meanings own the same spelling and pronunciation but meaning different . data collection has a deep meaning class noun or noun _ so that data collection can state Name a person , place , or all things and things that matter . data collection is a process, way , deed data collection , data collection , and data search. (Sugono , 2008).

3. PHP
   The definition of PHP according to Rozaq et al, (2015), "PHP itself actually stands for Hypertext Preprocessor , which is a high-level scripting language that embeds HTML documents. Most of the syntax in PHP is similar to C, Java, and Perl, but in PHP there are some functions that are more specific. While the main purpose of using this language is to enable web design that is dynamic and can work automatically.

4. MySQLi
   MySQLi is a PHP extension to access the functionality provided by MySQL 4.1 and above. The old MySQL extension will be deprecated in the release of PHP 5.5 and will be removed from there, therefore it is recommended to use the MySQLi Extension or PDO MySQL to write new PHP code. The MySQL extension can only be used for maintenance of old code that has been developed, from Harison and Syarif (2016).

5. XAMPP
   According to Fridayanthie and Mahdiati in their journal entitled Design and Build of Intranet-Based ATK Request Information Systems (2016), explained that "XAMPP is a software that functions to run PHP-based websites and use MYSQL data processing on a local computer". XAMPP acts as a web server on the local computer. XAMPP can also be called a virtual Cpanel server, which can help preview it so that websites can be modified without having to be online or have access to the internet.

6. Laravel framework
   According to Rini and Valentina (2018), Laravel is a "framework open Free web-based PHP source created by Taylor Otwell and intended for developing web applications following a model - view - controller (MVC) or architectural pattern. Some of the features of Laravel are the development of a system of manageable modules, introducing different ways to access relational databases, utilities that help in application deployment and easy maintenance."
   According to Abdussalam and Saputra (2018), "Laravel is a PHP framework released under the MIT license, built with the MVC ( Model View Controller ) concept. Laravel is an MVP-based website development written in PHP designed to improve software quality by reducing initial development and maintenance costs, and to enhance the experience of working with applications by providing expressive, clear and time-saving syntax.
   According to Rosa AS and M. Salahuddin (2014:31), Waterfall is the simplest SDLC model . this model only suitable For development device soft with no specifications _ changing . _ _ The waterfall SDLC model ( waterfall ) is also often called with a linear sequential model ( sequential linear ) or channel life classic ( classic life cycle ) . Waterfall models provide approach channel life device soft in a manner sequential or sorted started from analysis , design , coding , testing , and stages supporters ( support ).
Following This is the Waterfall model image according to Rosa AS and M. Salahuddin (2014:29), namely:

a. Analysis need device soft
   Collection process need done in a manner intensive so you can understand device soft like what is needed by the user. Specification need device soft at this stage need For documented.

b. Design
   Device design soft is a multi-step process focused on design device programming _ soft including data structure, architecture device software, representation between advance, and procedure coding. Stage This translate need device soft from stage analysis need to representation design so you can implemented be a program in stages next. Device design The software produced at this stage is also necessary documented.

c. Making program code
   Design must translated to in the device program soft. Result of stage This is the appropriate computer program with design that has made on stage design.

d. Testing
   Testing focus on the device soft in a manner from facet logical and functional and ensure that all part already tested. This done For minimize error (error) and confirm the resulting output in accordance with what you want.

e. Supporter (support) or maintenance (maintenance)
   No close possibility au device soft experience change when already shipped to user. Bias changes occur Because exists errors that appear and do not detected moment testing or device soft must adapt with environment new. Stage supporters or maintenance can repeat development process start from analysis specification For change device existing software there is, but No For make device soft new.

7. Test Method
   Testing black box is type treating test _ device software which is not is known performance internal. So the testers looked device soft like like A box black which is not important seen contents, however Enough known testing process in the outside. Testing white box is testing outside interface user and be essence from system. Method This named thereby because of the device program soft, to the eye testers, like box white or very clear transparent seen. Testing white box is contrast with black box (Rusumawan, 2019: 112 – 113).

8. System Design
   Design or planning in development device soft is effort For construct A system that delivers satisfaction (perhaps informal) will specification need functional, meet the target, meet need in a manner implicit or explicit from facet performance nor use source power, satisfaction limitations on the design process from facet cost, time, and equipment. Quality device soft usually rated from facet satisfaction user device soft to device the software used (Agung, Inne, et al., 2012: 58).

9. Unified Modeling Language (UML)
   UML (Unified Modeling Language) is a standard language that is widely used in the industrial world to define requirements, make analysis and design, and describe architecture in object-oriented programming. UML emerged because of the need for visual modeling to specify, describe, build, and document software systems (Shalahuddin and Rosa AS, 2015: 133).

10.1. Use Case Diagrams
According to Sukamto and Shalahuddin (2016), states that "Use Case or Use Case diagrams are models for the behavior of the information system to be created". Use Case describes an interaction between one or more actors with the information system to be created. Roughly speaking, Use Case is used to find out what functions are in an information system and who has the right to use those functions.

10.2. Activity Diagrams

According to Elmayati (2016), states that "Activity diagrams describe the flow of system functionality. At the business modeling stage, activity diagrams can be used to show the flow of business work. Can also be used to describe the flow of events in a Use Case."

10.3. Class Diagrams

According to Munawar (2015), states that "Class diagram is a set of similar objects. An object has a state (state) and behavior (behavior). The state of an object is the condition of the object which is stated in the attribute. While the behavior of an object defines how an object acts and delivers."

10.4. Sequence Diagrams

According to Elmayati (2016), states that "Sequence diagrams are used to show functionality in use cases. This diagram shows the interaction between objects. Sequence diagram is a dynamic view of the system. This diagram emphasizes the time sequence basis of the messages that occur.

10. Overview General PSHT Pekanbaru Branch

Faithful Brotherhood Terate is pencak formal martial arts in organization that prioritizes brotherhood inside. Where is the PSHT itself own objective For form man virtuous sublime know right and wrong as well fear to Almighty God. One in intertwine eternal brotherhood eternal.

At the moment this PSHT branch Pekanbaru chaired by Kang Mas Akiyak who served since in 2017 and there are 19 places training (2 commissioners , 4 extracurriculars and 13 branches). Place exercise own different schedule different there were 2 meetings in a week and there are 3-4 meetings in a week. Every place exercise built by management place exercise or branch manager. PSHT Pekanbaru Branch Secretariat located on Jl. Soekarno - Hatta Gardenia Complex, precisely the Professional Development Vocational School.

Faithful Brotherhood Terate in 2022 will be enter 1 century old. PHT itself develop Because desire and determination from the residents and coaches who divide knowledge and training without payment. For PSHT residents and trainers of togetherness and brotherhood more important, That is one reason PSHT is able survive and thrive until moment this.

Like proverb in PSHT namely URIP IKU URUP which means "Life That live", meaning from proverb the is in life We must capable become benefits for others. In PSHT taught each other Help help, you know right and wrong, as well about favor character

2. METHOD

Method The author's research use in System Information The data collection for prospective residents and residents (trainers) at PSHT Pekanbaru Branch uses the so-called linear sequential model waterfalls. As for the steps Waterfalls can explained as follows:

A. Analysis Need
At this stage it is necessary to collect system requirements in the form of data on existing prospective citizens and residents (trainers). In addition, at this stage it is also the stage of analyzing the things that are needed in the implementation of making the system. System analysis includes how the system will work as well as the functions that can be carried out on the system such as granting access rights, prospective citizen data, citizen data, reports and others.

a. Data Needs Analysis
Based on method data collection is done, then the data becomes input (Input) is student data, citizen data, branch administrator data, administrator data branch, field data technique, athlete data, and coach data remain. Temporary that's what it becomes design output system This is information students, information residents, branch management information, information manager branch, information field technique, information athletes, and information regular coach.

b. Analysis of Hardware Requirements (Hardware)
Following This device hard used in analysis and design system will displayed in form table:

1. Lenovo M71E PC
2. Processor Intel Core i3 2100 @ 3.1 GHz,
3. Memory (RAM) 4GB,
4. 500 GB hard drive
5. Printer Interface USB 2.0 Hi-Speed

c. Software Requirements Analysis (Software)
   Following This device software used ___ in analysis and design system , is displayed in form table :
   1. Windows 10 Pro Operating System
   2. XAMPP 3.2.4 Apache 2.4.7 application as its webserver and client.
   3. MySQLI 5.0.12 as database.
   4. PHP 7.3.9 Software as the Programming Language.
   5. Atom 1.42.0 application as an HTML editor, web designing and managing web pages visually
   6. Google Chrome or Mozilla Firefox as Web Browser
   7. Microsoft Office 2013 to create a skip report

B. Design
   At stage it also analyzes How interfaces for every input output and processes on the system . Stage This there is a number of a must design made that is input and output design of data collection carried out , design system like design use cases, activity diagrams, sequence diagrams and class diagrams , as well as there is design databases from system to be created.

C. Making program code
   Design must be translated to in the device program soft . Result of stage This is a computer program in accordance with design that has made on stage design . On research here , coding done use Language PHP programming with use laravel framework and MySqi database .

D. Testing
   Testing done with approach top-down to program structure . Testing system is element critical from guarantee quality device soft and representative study tree from specification , design and coding .
   on the system This writer do testing use trials _ blackbox that is to features on the system is Already in accordance with design or not . If still There is error in the program, then will back to the manufacturing process

E. Supporter (support ) or maintenance ( maintenance )
   Is stages he did maintenance to system that has walk with do update against system and do maintenance on a regular basis periodically order the system can Keep going walk with ok .

2. Data Collection Techniques
   For get data that will used in study This composer use a number of method data collection are as follows:
   a) Direct observation (observation)
      In this design, observations were made of activities directly related to the data needed in making a website-based program by coming to the PSHT Pekanbaru Branch Secretariat, any data as input or output in a data collection database .
   b) Interview
      Namely holding interviews with the section that handles data collection, in order to obtain data regarding the object of the activity under study, while the data needed to carry out the analysis in the interviews is regarding data on prospective residents, citizen data, the data collection process including names, branches, length of training and year of approval for citizens (trainers).
   c) Literature review
      Conducting library studies related to the scientific work, namely collecting related information from libraries or information sources in the form of journals, books, papers and several other sources related to the research needed.

3. Place and Time of Research
   For finish drafting task end in accordance with planned time , then _ need determined place and research schedule .
   1. Place Study
      Study thesis This done in the organization Faithful Brotherhood _ Terate in the Pekanbaru Branch and the data used is students , candidates citizens , and citizens ( trainers ).
   2. Research schedule
Timetable study making thesis This done on date February until with July 2020.

4. Analysis PIECES
For stage analysis This done analysis to performance , information , economy , control safety , efficiency and service customer . this guide known with Analysis PIECES ( Performance, Information, Economy, Control, Efficiency, Services ). From analysis This usually obtained a number of problem main , that is as following :

1. **Performance**
   - **Old System** : Problems with PSHT Pekanbaru Branch occurs in data processing , where the process of completion the must done with written One one by one so that eat quite a long time . this cause lateness in processing of student data nor residents , and duration look for return the required data and manufacture report every period and category .
   - **System New** : System No Again process manual data collection and processing , and reports will made in a manner automatically to create jobs manager more easy .

2. **Information**
   - **System** : Result of data processing at PSHT Pekanbaru Branch Still not enough relevant . That is Still exists no suitability between written information and actual information . Data processing against data collection students and residents will resulted constraints , because data collection Still done manually so recording information and production report is not very effective and efficient .
   - **System New** : Information student data reports , citizen data reports , athlete data reports as well as twig information not Again made manually , data created can displayed and printed .

3. **Economy**
   - **System** : The system used in PSHT Pekanbaru Branch the Still simple , ie use file form paper and map for data collection students and citizens , so needed budget Alone For purchase tool writing as well as costs expenditure will the more big . So needed change system so you can control cost expenses .
   - **System New** : Built system _ Already use computerized system . _ So that print report data collection Can budgeted for usage paper and ink can controlled expenses

4. **Control ( Control )**
   - **System** : Existing data Still use archive or file. If the data damaged or lost , then will raises problem security on student and citizen data .
   - **System New** : Data built Already use database system . So that minimize data loss .

5. **Efficiency ( Efficiency )**
   - **System** : Data Collection students and residents Not yet arranged with Good like in student and citizen data so the process of completion the need source more power .
   - **System New** : Whole activity data collection ( student data , waega data , athlete data , and branch data ) is done recorded by the computer inside system . this _ make task become more easy .

6. **Service**
   - **System** : PSHT Pekanbaru Branch Not yet Enough Good in give good service _ from facet data collection . Need quite a long time in give service to member , because experience difficulty consequence many stacked archives .
   - **System New** : With exists system information data collection candidate residents and citizens ( trainers ) make work manager in data processing becomes more accurate , effective and efficient .

5. **Process Analysis**
At stage This explain about analysis system new to implementation application data collection students and residents use laravel framework . System process started from data collection student from the branch carried out by the branch manager through form provided by the administrator. After form student filled the branch manager will register student data the to in system . Managers should too register branch manager and coach still other to in system .

data collection also done to athletes and officials carried out by the management field technique . Athlete will fill in form in accordance with identity and category athlete the . After data collection students and residents ( administrators and trainers ) to in system . Manager branch too hasru Register administrator data branch along coach branch to in system .

JICTAS, Volume 2 Number 1, June 2023 : 01 -16
Manager branch can view branch data and field data technique. However Branch and Field Managers technique No can View branch data. Furthermore report will made by administrator branch, report made in accordance with existing needs.

6. Analysis User

After finished analyze the process in the program created, Next is do analysis user. This analysis function For know admin user that will use programs. Users on the application This is as following:

a) Branch Manager is users who can access administrator data branches, branch administrator data, administrator data field technique, athlete data, student data, resident data and athlete data. And have right access to reports and pages information related development of PSHT Pekanbaru Branch.

b) Twig Manager who is one users who can access branch administrator data, trainer data fixed, student data and active citizen data in branches. Branch manager only can access report for branch data only.

c) Manager Engineering field is use that can access administrator data field technique, official data, and athlete data. Users This can access report only in parts field technique just.

7. Unified Modeling Language (UML)

Use Case Diagrams

Design use case diagram can describe need functional from system created. With designed use case diagrams this, then can described interaction between actors with system can seen in the picture under this:

![Use Case Diagram](image)

**Figure 4.1 Use Case Diagram**

Activity Diagrams

Activity diagram describe something workflows (flow work) or activity from a work process website. With he made activity diagrams, logie walk A application or system can studied and understood with easy.
Figure 4.2 Activities Login

Picture above explain how users use system that has made. Login used for protection beginning in use system. Users use n1w as the username and password that you created yourself. With validation then the user will given right access in use system.

Class Diagrams
Class diagrams on the system This consists from several interrelated tables relate One each other accordingly with provisions in the use case diagram that is made more first. Inside it there is attributes required for each class.

Figure 4.3 Class Diagrams

Sequence Diagrams
Sequence diagrams is a diagram illustrating interaction between object and indicate communication between these objects. The diagram also shows series messages exchanged by the conducting objects _ something task or action certain.
1. Login Sequences
Picture below explain How user flowcharts in do logged in, that is user input usernames and passwords to next system _ system do validation on database, if available system will give right access to user and displays page main.

![Figure 4.4 Login Sequence Diagram](image)

2. Citizen Data Sequence Diagram
Picture below This explain How inside user flow diagram do data collection citizens, that is with input the required data into the next system _ system will do storage in database.

![Figure 4.5 Sequences Citizen Data Diagram](image)

3. Student Data Sequence Diagram
Picture below This explain How inside user flow diagram do data collection students, that is with input the required data into the next system _ system will do storage in database.
4. Athlete Data Sequence Diagram
Picture below This explain How inside user flow diagram do data collection athlete, that is with input the required data into the next system _ system will do storage in database.

![Figure 4.6 Sequence Diagram of Student Data](image)

5. Branch Data Sequence Diagram
Picture below This explain How inside user flow diagram do data collection branch, that is with input the required data into the next system _ system will do storage in database.

![Figure 4.7 Athlete Data Sequence Diagram](image)

6. Twig Data Sequence Diagram
Picture below This explain How inside user flow diagram do branch data collection, that is with input the required data into the next system _ system will do storage in database.

![Figure 4.8 Sequences Branch Data Charts](image)
7. **Sequence Diagrams** Engineering Field

Picture below This explain How inside user flow diagram do field data collection technique, that is with input the required data into the next system, system will do storage in databases.

8. Manage Data **Sequence Diagram**

on the picture under This explain how to process an admin in manage all data, where an admin chooses data page to be managed, the next admin can add data, edit data, or delete data on the system.
3. RESULTS AND DISCUSSION

1. Results
Design results system information data collection candidate residents and residents (trainers) in the Faithful Brotherhood Terate (PSHT) Pekanbaru Branch implemented with use Language PHP programming and with laravel framework.

2. Appearance System
   2.1. Login Page Display
Figure 2.1 represents appearance of login on the system, where on the page This done validation and award right access to next user displayed page main yethang right access received.

   2.2. Home Page Display
Figure 2.2 represents appearance of page accessed by administrators branch, where on page There is a number of Photo about information from PSHT Pekanbaru Branch itself and several forms that can be accessed by the branch.
2.3 Display of Student Data Pages
Figure 2.5 illustrates appearance from student data that has inputted. Appearance This can accessed by administrators branches and branch managers.

![Figure 2.5 Display of Student Data](image)

2.4 Display Citizen Data Page
Figure 2.7 shows appearance from some citizen data that has been inputted. This page can accessed whole user that is manager branches, branch managers and bid management technique.

![Figure 2.7 Resident Data Display](image)

2.5 Athlete Data Page Display
Figure 2.9 displays athlete data page that has inputted. Which can accessed page This is manager branches and administrators field technique. On the page This there is several buttons used for add or delete that data Alone as well as on the page This there is supporting athlete data information _ use system.

![Figure 2.9 Athlete Data Display](image)

2.6 Data Page Display
Figure 2.11 represents appearance from branch data. Namely a number of information about the branches that have been inputted. Besides it, also contains Lots his number of branches. Which can accessed page This is manager branch.

2.7 View of Engineering Field Data Pages
*Data Collection Information System for Prospective Citizens and Citizens (Trainers) at PSHT Pekanbaru* 
Branch Using the Laravel Framework (Yulisman et all)
Figure 2.13 represents appearance page field data information technique. This page can be accessed by administrators branch. This page contains data from field technique like Name chairman, as well as Name manager himself.

2.8 Administrator Data Page Display
Figure 2.15 is appearance from the management data input form is good for manager branches, branch managers, and administrators field technique. Administrator data is used for permission access at login. This page can be accessed by administrators branch. Manager branch will enter administrator data in accordance with need. Manager put in along with the username and access level so that can access system in accordance need.

2.9 Branch Page View
Figure 2.16 is appearance from Pekanbaru Branch page. Filled with a profile form, management form, and activity form. Profile forms containing a number of information regarding PSHT Pekanbaru Branch, management form contains management data and activity forms contain data on the activities of the Pekanbaru Branch.

2.10 Display Activity Page
Figure 2.17 is page activity from PSHT Pekanbaru Branch. This page only can be accessed by administrators branch. So that manager branch on duty for control activity data branch.
2.11 Report Page Display

Below this there is containing page report from citizen data, student data and athlete data. What’s next report This will printed in accordance with PSHT Pekanbaru Branch needs.

4. CONCLUSION

Based on results and descriptions discussion in chapters previously can concluded that System Information Data collection for prospective citizens and residents (trainers) requires analysis system, design system, capability in implement results design system with apply Language programming and development system databases, as well do testing to implementation the system.

System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch is solutions offered. For support performance manager in facet data collection candidate citizens and residents so that can optimizing the process of data collection and data processing of candidates residents and citizens.

1. For more he explained System Information data collection can concluded as means For answer or overcome a number of problems that exist in the system Data collection is running, which includes:

   With exists System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch can increase performance in processing of candidate data citizens and citizens, because on the system This data management already computerized.

2. With exists System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch can give convenience in data search due to the system This Already have storage _ form databases so that make it easy in data search.

3. With exists System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch can make it easy in making student data reports, citizen data and athlete data in a manner accurate and precise.
1. **Suggestion**
   Based on drafting reports and conclusions above, then the following below can become material consideration for study next:
   1. Expected on research furthermore System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch can be built with access through smartphones user.
   2. Expected on research furthermore System Information Data Collection of Prospective Citizens and Residents (Trainers) at PSHT Pekanbaru Branch can build more good again so that every inhabitant own right access to see their respective data.
   3. There is maintenance and development to system that has made to the system still awake with well, with method do repair to system error in the application program.

**BIBLIOGRAPHY**


[2]. Adyanata Lubis, 2016 Basis Data Dasar, Yogyakarta: Deepublish, 201


**BIOGRAPHIES OF AUTHORS (10 PT)**
The recommended number of authors is at least 2. One of them as a corresponding author.

Please attach clear photo (3x4 cm) and vita. Example of biographies of authors: