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Design Of a Local Server-Based Student Data Collection System At Salafiyah Syafi'iyah Sukorejo Islamic Boarding School

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Abstract

Management of dormitory room data in Islamic boarding schools is still carried out manually by recording information in notebooks. This approach has the potential to cause data duplication, inaccuracies in record-keeping, loss of students' room placement history, and slow data retrieval processes. This study focuses on designing a dormitory room data management information system based on a local server, without including the implementation stage. The research methods include requirements analysis, system modeling using Unified Modeling Language (UML), and user interface design. The result of this study is a complete and structured system design that can be used as a reference for system development and implementation at a later stage.

Keywords: *system design, room data management, local server, Islamic boarding school.*

1. Introduction

Cottage Islamic boarding school is an Islamic educational institution that is not only focused on coaching religious , but also plays a role in implementation of formal and non-formal education. This role put cottage Islamic boarding school as part from national education system as arranged in Constitution Number 20 of 2003 concerning National Education System . With position said , the cottage Islamic boarding school sued For manage activity education in a way structured and sustainable . [1] One of activities that support the educational process at the Islamic boarding school Islamic boarding school is management student dormitory rooms . Management This related direct with student data per year , the number students based on his education , as well as report administration room . Based on existing conditions , data collection dorm room still done manually using book write or can be called with *Stanbook* .

The method potential cause problems , including the occurrence of recording double , data loss due to damage or disappearance book , no availability history displacement students , as well as the length of the data search and recapitulation process .As an effort to improve effectiveness data management , is required design system information that is capable save data centralized and easier search information . Remembering limitations internet access in the environment cottage Islamic boarding school , use of local server assessed more in accordance For support operational system internally . Study This focused on the stage design system that includes analysis requirements , database design , process flow , and design diagrams . Stage implementation system No discussed in study This Because be outside room scope study.

2. Review Library

2.1. Design System

According to John Buch and Gary Grudnitski, design can understood as a process of describing and planning something system through compilation previous elements separated become One integrated and functional unit . [2]

Design system aim provide a clear picture about How something system will built and run . Stage This covers preparation of process models, database structures , data flows , up to design interface.

2.2. System Information

System Information is a collection of various interconnected subsystems connected and working in a way guided . All component the functioning process data into information number of processes required accuracy as well as accuracy time for results can used in a way effective . [3]

2.3. Data Collection

Data collection is the process of recording correct and appropriate information with fact about something object , good That humans, objects, environment, and something events . In other words, data collection done for ensure that every recorded information describe condition Actually in a way accurate and can accountable . [4]

2.4. Cottage Islamic Boarding School

An Islamic boarding school is an Islamic educational institution traditional dormitory -style school . The students live and settle in the environment the while learn various knowledge religious under guidance a Kyai. [5]

2.5. Local Server

Local server Is a term used For refers to a functioning computer server as center data processing and storage in network local or LAN (Local Area Network). [6]

3. Methodologi Study

Methodology study That is framework work used researchers For directing the data collection and processing process according to with objective research . In research this , methodology understood as guidelines in designing steps research , which is different with technique more data collection press on the way or procedure data collection in the field . [7]

Study This including in study applied with approach descriptive qualitative approach This chosen Because study focus on analysis needs and design system For data collection students per year in local server- based dormitory rooms . Research This only limited to the stage design system , so that Not yet covers implementation system in the field .

Stages research conducted can explained as following :

1. Identification Problem
   Stage This aim For understand condition real in the cottage Islamic boarding schools , in particular in the data collection process students in the room who are still done manually . Condition the show the need system more data collection neat , structured , and easy used .
2. Literature Study
   Furthermore done search reference that is among them from books , journals , and study previously related with system information , dormitory management , data collection students , as well as database design . The goal is build runway strong theory For design system .
3. Data collection
   Data collected through a number of method : observation direct activities and conditions room students , interview with dormitory administrator for understand the administrative process , as well as studies document such as student lists and notes administration . Approach This confirm the data obtained complete and accurate .
4. Analysis Need
   From the collected data , it is determined need system Good from side functional or non- functional . This is covers need user , device hardware , and devices software required for data collection students Can walk more efficient and integrated .
5. Design System
   Stage design involving system modeling using UML for visualize channel work and interaction users . In addition , it is made structured database design so that the student data can stored and accessed in a way systematic , safe and easy operated .
6. Validation Design
   Design system No direct considered final. On the contrary , it is done validation through discussion and input from dormitory administrators so that the system truly in accordance needs , practical used , and supports activity administration daily .
7. Compilation of Research Results
   Stage end is to compile a report research that summarizes the whole process, starting from identification problem until design system . The report also includes recommendation development more carry on For stage implementation .

Fig. 1: *Stages Study*

4. Reseult And Discussion

a. Design Result System

Study This produce design system information data collection boarding school students Islamic boarding school based modeled local using Unified Modeling Language (UML). Planning done For provide a clear picture about function systems , data structures , and channel activity users , without covers stage implementation .
The system is designed only consists of from four page main , namely *dashboard* , students , rooms , and report . Four page the each other connected and designed For support the data collection process students per year , management room , as well as compilation report recapitulation of student data in a way more organized and systematic .
Modeling system in study This use Several UML diagrams, including use case diagrams, class diagrams, and activity diagrams.

1. *Use Case Diagram*
   Use Case Diagram is a description of the interaction that occurs between system with actors involved in it . This diagram used For show type interaction between users with system through usage scenarios certain . With so use case helps in form behavior the system that will developed as well as describe connection between users (actors) and systems in a way more structured[8]. In the draft In this case , the dormitory administrator plays a role as actor main thing that has right access full to all over function system . User can log in and logout, access the dashboard as page beginning , managing student data , managing room data , as well as see report recap of student data per year .

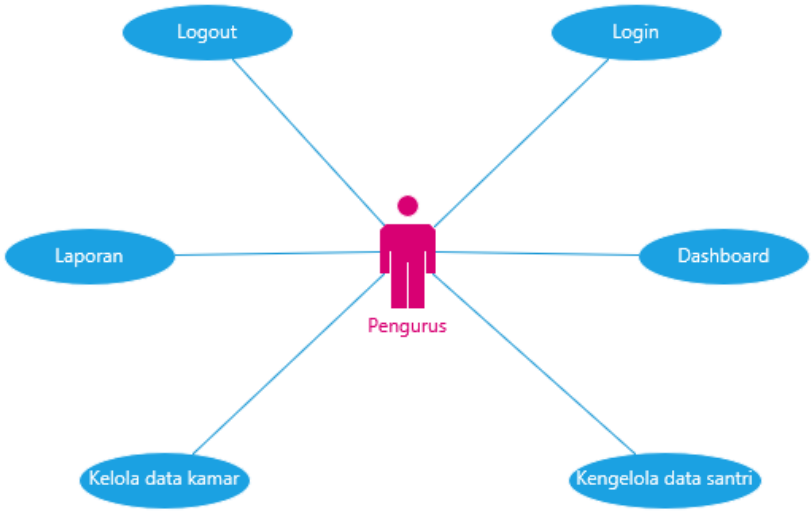

Fig. 2: *Use Case Diagram*

2. *Activity Diagram*
   Activity Diagram is visual representation of series ongoing activities in the system . This diagram show How system respond something order as well as display the result through sequence of steps activities that occur [9] The process starts when the user log in, then system display dashboard page . From the page said , the user can select the student menu , room , or report in accordance with needs . After all over activity done , user log out to end session use system .

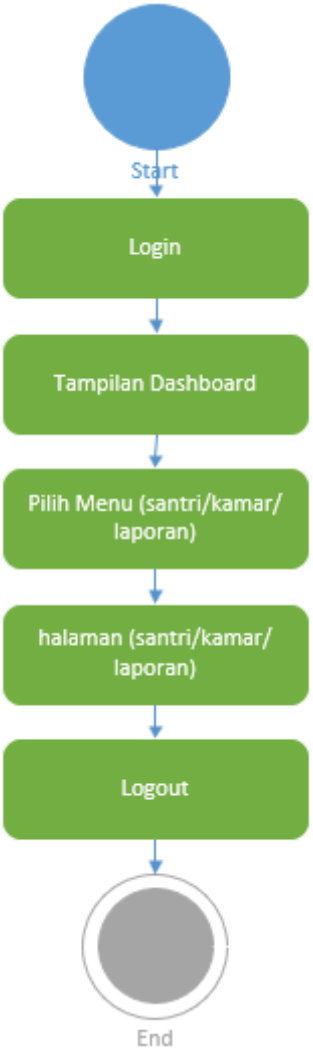

Fig. 3: *Activity Diagram*

3. Class Diagram

Class Diagram is visual representation of structure system that displays classes along with connection between components . This diagram used For describe flow and database design in the system to be built . [10] Based on results design , system consists of from four class main , namely dashboard, students , rooms , and reports . The dashboard class functions as page main display summary amount students and provide access to page others . Class students used For storing identity data grouped students based on year . Class room presenting capacity data rooms and structures room . Meanwhile that , class report play a role in serve summary of stored student data in system.

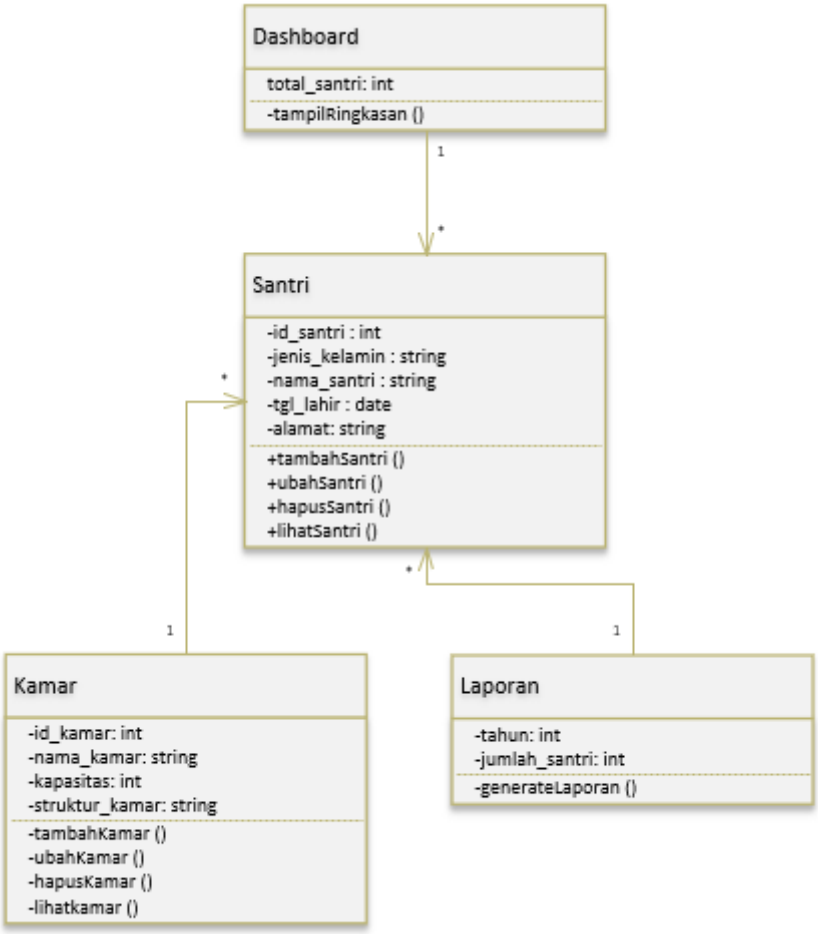

Fig. 4: *Class Diagram*

b. Interface Design

Interface design designed as connector between users and systems so that need notice aspect convenience use and clarity information . In the research this , design interface arranged in a way simple and functional so that it can used with easily by the boarding house administrator Islamic boarding school . Every page designed For support activity administration data collection rooms and students in a way effective .

1. Login Page

   Login page is working as access beginning to in system . On the page this , user required enter username and password for the authentication process . Design login page purpose For guard data security and ensure that only users who have authority that can access system .

Fig. 5: *Login Page*

2. *Dashboard* Page
Dashboard page is appearance main after users succeed enter to in system . The dashboard is designed For display information concise about student data conditions in a way overall . In addition , the page This provide a menu to page students , rooms , and reports , so that make it easier users in access available features .

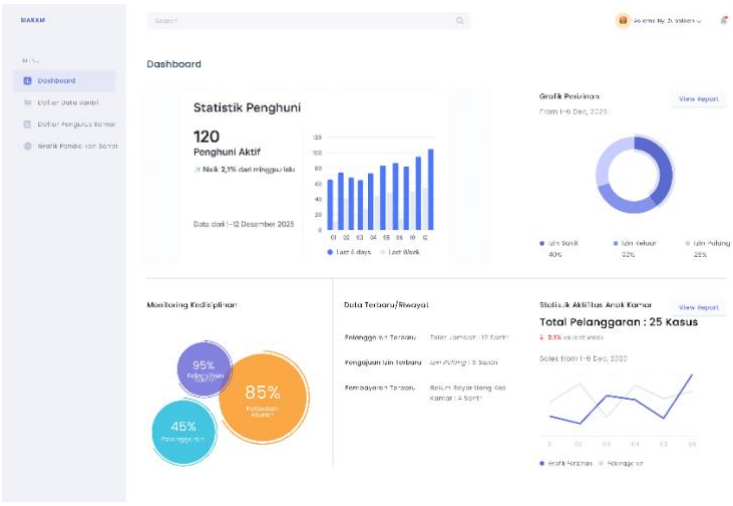

Fig. 6: *Dashboard page*

3. Student Data Page
Student data page used For manage information students based on year data collection . On the page this , user can do additions , changes , deletions , and view student data . The information displayed covering identity students and the rooms they occupy . Page design This made structured so that the data collection process can done in a way fast and neat .

Fig. 7: *Student Data Display*

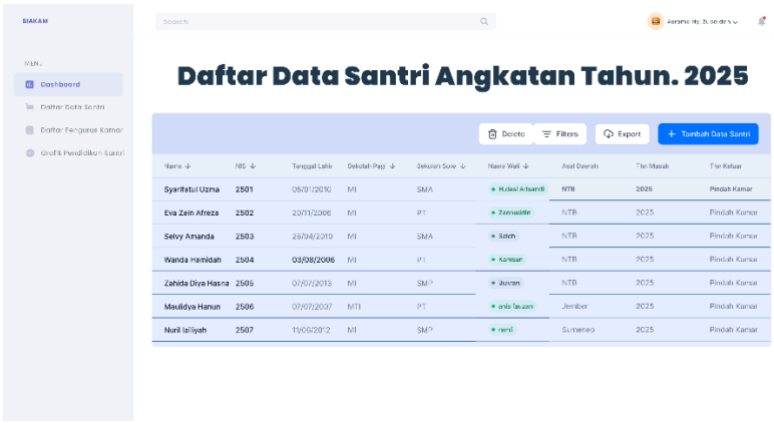

Fig. 8: *Student Data*

4. Room Data Display
   Room data page functioning For display and manage information dormitory room . The information presented includes room name , capacity , and structure room . Design page This intended For help dormitory administrator monitor condition room and adjust placement students in accordance with available capacity .

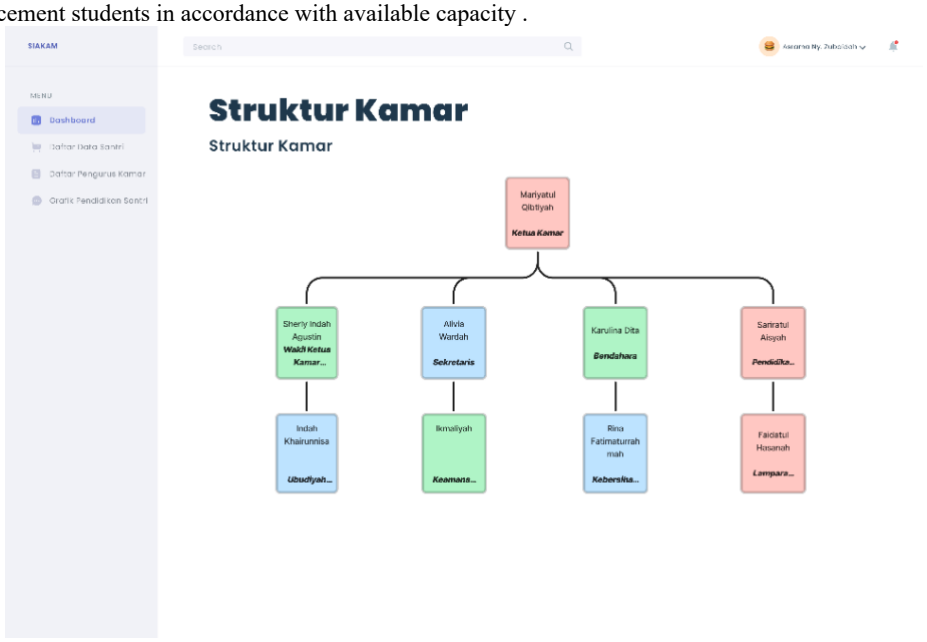

Fig. 9: *Room Data Page*

5. Report Page
   Report page used For serve recapitulation of student data per year . On page this , user can see summary amount students based on period specific . Page design report made simple and informative so that the data displayed easy understood as well as can utilized as material evaluation and documentation administration .

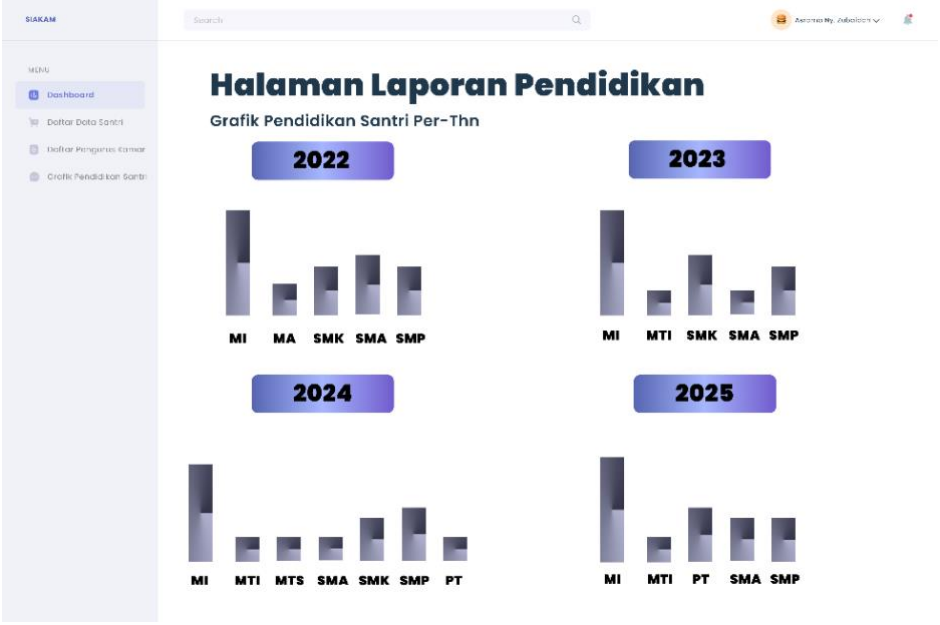

Fig. 10: *Report Page*

Study This produce A design system information data collection dormitory room in the boarding house Islamic boarding school local server based . Design system done with using Unified Modeling Language (UML) and equipped with design interface that includes dashboard page , students , rooms , and reports . Design This expected can assisting the data collection process students per year , management dormitory rooms , as well as compilation report data recapitulation more neat and structured , so that can used as base development system at stage next.

As development continuation , design the system that has been made can implemented to stage implementation in order to be able to utilized in a way directly by the party cottage Islamic boarding schools . In addition , improvements in the aspects security and appearance interface is also recommended For increase convenience and comfort in use system .

Saying Accept Love

Writer convey accept love to all over the party that has give support and contribution so that study This can be resolved with Good .

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