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WEB PROTOTYPE FOR DISPLAY INFORMATION OF VILLAGE PROFILE, A CASE STUDY IN THE VILLAGES UNDER ASSISTANCE BY GORONTALO STATE UNIVERSITY

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ABSTRACT

This research is aimed to design a prototype website contains profile of villages under Gorontalo State University (UNG) assistance. It is designed modularly to enrich the data served in UNG's website. This is important considering the implementation of four pillars of UNG which one of it, is totally IT based to be able to manage its documents and implement the "Tridharma Perguruan Tinggi" (three universities deeds) especially implementation of community services. In this sense, it is serving as the database for all community services that have been done by UNG. For these villages the information serves to open opportunity to share external resources to strengthen the villages institution, optimization of villages resources, capacity development of villagers, and sustainability of village governance which globally presented, which eventually improve the promotion of villages resources.

This research is made with prototype that enables sustainable development of information systems and adjusted to adaptively with current development of information technology. It is planned to be carried out in two years and first year output is a database and website contained these villages' profile. Website prototype result from this research in the first year is make possible to develop a geographical information system in second year, with a little modification in database and the interfaces.

Keyword : *prototype, website, guided village.*

1. INTRODUCTION

One of three universities deeds in Indonesia is community services. Gorontalo State University (UNG), the biggest university in the Gorontalo province, North region of Indonesia, implement a variety of community service, whether performed by faculty and students. In UNG Strategic Plan 2010-2014 [6], stated that the implementation of community service is done in the form of training, community service both economic and social, guided village, illiteracy eradication, field working college (KKS), 9-year compulsory education, disaster management, and assistance for economic empowerment.

From a variety of service activities as outlined previously, with not override other activities, one of the activities that are sustainable is guided village. It can be interpreted as a guided village, a model village where UNG intensively devote all available resources to develop a pilot villages to become self-sufficient villages and qualified and went on to become a role model for other villages. UNG with all the resources available it is possible to make this happen and is more than enough to find any solution of all the problems that exist in the village. For issues such as rural infrastructure, UNG has the engineering faculty. Economic issues can be handled by economic experts at the faculty of economics and business. Social problems can be solved by the faculty of social sciences. In order to increase community capacity through education and training, UNG has a faculty of education with complete of science learning facility. And so on, so it would seem a real touch of the largest universities in the province of Gorontalo to realize the community services as a part of college activity.

One of guided village of UNG is Dulamayo Selatan (South Dulamayo), near Gorontalo city, Indonesia. It is a village in the district of Gorontalo. As a village built that assisted by the largest university in Gorontalo, information of village profile and/or general information of potential resource in the village is not vague for all stakeholders in the UNG campus. With the availability of information is brightly lit and then allow all stakeholders in the campus to focus available resources to be directed to the village development. Unfortunately, of all the searches done on the official website UNG have not found it meant.

Based on the above presentation, will be made a prototype database and website (Web-based Information System) which presents a profile of assistance village of UNG with modularly designed and can be a add into UNG's infrastructure of information.

2. RESEARCH TOPIC, RELATED APPLICATIONS AND REGULATIONS

2.1 Research Topic

This Research specifically focused on the compilation and analysis of data community service, database design and integrate the information system prototype, designed in a modular fashion, presenting information about the village profiles were scouted by UNG, so it can be added to a web infrastructure that has been available in the UNG.

2.2 Related Applications

From the literature study, research and application of information systems that are similar to the information system that will be developed are described as follows.

- www.pesat.org. This site presents the Integrated Rural Services (PESAT) run by an interdenominational Christian service organization, established in 1987 as a response to the call to build villages in Indonesia through education, health services, economic and spiritual. In the deep search of this website have not found a information that contains data specifically related complete village profile data, monographs, a map of the village, the village's strategic plan or program that has been and will be done [15].
- <http://mandalahurip.or.id>. a website for Mandalahurip village located in the district Jatiwaras Tasikmalaya regency, Indonesia. The website is quite complete but unfortunately only contains information for one village, the village Mandalahurip [8].
- <http://id.wikipedia.org>. This website is an online encyclopedia, to further explore this site to find information on a particular area of the province and several villages. Unfortunately, from deep searching have been done specifically for the area provincial level data are relatively complete, but the information presented to the village level has not been much to be explored [7].
- www.database.teluktomini.org. This website was developed by Dako, Amirudin Y, made in 2010 for the UCN (International Union for Conservation of Nature) Asian regional, well known as SUSCLAM program (Tomini Bay Sustainable Coastal Livelihoods and Management). This site provides information on all the programs guided villages and contains information related to the study of participatory village. The information presented is complete and unfortunately only present data that village touched by such programs [2,3].

Based on the above, all the literature search has been done, has not found the information system contains data about village profiles especially village under UNG assistance. Community service on the agency's website at UNG itself does not specifically related to data and information available on the activities of the target villages and KKSh has been done.

2.3 Regulations

In the Ministerial Regulation of the Republic of Indonesia No. 12/2007 about Guidelines for the data Preparation and Utilization of Village Profile explained that the Village profile is a comprehensive picture of the character of the village and sub-district families that include basic data, natural resources, human resources, institutional, infrastructure and facilities as well as the progress and problems faced by rural and urban. Profile of villages and sub-family consists of basic data, the potential data of rural and urban, and development level [4].

Furthermore, In the Ministerial regulation (Minister of Home Affairs) no. 13/2012 about village Monograph, explained that the village monograph is the set of data held by the village government and arranged in a systematic, complete, accurate, and integrated governance. Rural and urban monograph contains general data; personnel data; authority of data; financial data, and institutional data [5].

3. OBJECTIVES AND USABILITY OF RESEARCH

3.1 Research Objectives

- Compilation and analysis of data on community service activities that have been performed UNG specifically target village profile, monographs, spatial data, and the results of the activities that have been carried out in the village built and other relevant data. The compilation will be input to the determination of the variable / entity database.
- Designing a database based on the entities / variables defined in the previous analysis. The database needed to be guided village profile data storage
- Designing a web-based information system prototype that presents profiles village under UNG assistance.

3.2 Research Usability

1. Be a source of information for all parties associated with the implementation of 'Tridharma perguruan Tinggi', especially the community service activities that have been carried out by UNG in their guided village which display through the internet browser and can be accessed globally.
2. facilitating access to UNG guided village information for the needy.
3. facilitate monitoring of community service activities conducted by the State University of Gorontalo especially in the guided village.
4. develop means of supporting information and documentation activities about community service based Information technology/IT.
5. a blueprint for the development of IT applications designed on a modular basis for documenting and presenting information about guided villages, which can further broaden the variety of infrastructure present information that is managed by UNG.
6. be a reference for decision makers in determining the development of related policies and rural development in order to maximize the planning target community service activities are integrated.

4. METHODS

This research has been carried out in the whole village under UNG Assistance, community service agencies (LPM) of UNG, relevant agencies in local government (village empowerment agency) and in the computer lab of the Faculty of Engineering UNG. This research is planned for two years starting in July 2013-July 2015.

The main ingredient is the research data collected from guided village and related agencies. Such data can be either monographs, village medium-term development plan (RPJMDes), village profile, location coordinates, maps and other supporting data. For spatial data, was taking some points in each village using GPS (global positioning system). Some data can be obtained by observation and interviews with village officials, villagers, KKS students, NGOs and LPM UNG. Other data can be obtained by copying the data contained in the local government district / city and / or use the search engine available on the internet.

The data obtained are used as samples for the database planning requirements, interface design, and output design of information systems applications. By considering the wide scope of the study, especially for village monograph / village profile, which will be discussed in this study is that the data is considered important and can describe in general and concise profile of a village built. Data is collected from the village profiles / monographs, and then some of the data that are considered less relevant to the theme of the study will not be discussed further.

The method used in this study is a prototype. Prototype method chosen because it allows the process of sustainable development of the information systems that are made by adjusting the needs and the latest technology in the presentation of information systems.

The tools used in this study is

- Design of the information system applications using XAMPP package version 1.6.6a (included MySQL, PHP, Apache Server). XAMPP package is an open source product under the general public license (general public license), [11]
- For coding applications uses software program Macromedia Dreamweaver MX version 8.0 [9] and Notepad application that is integrated in the Windows operating system [16].
- To design the interface used Adobe Photoshop CS3 or later [10].
- The system used for testing Internet Explorer version 6.0 from Microsoft corporation [13] and Mozilla Firefox web browser made by Mozilla Foundation [14].

5. RESEARCH STAGES

The research began by collecting baseline data in particular monographs, rural and urban profiles. The data have been obtained and analyzed and sorted to determine the variables needed in information systems following the method used.

The method used in database design and information system design using a prototype. Prototype method allows to build an information system that can function in accordance with the objectives set out early and allow also for the ongoing development process of information systems developed to suit the needs and the latest technology in the presentation of information systems.

Furthermore, the research stages is given in the following figure.



Figure 1. research stages

6. RESULTS AND DISCUSSION

6.1 User Identification

Based on user identification process result that users of the information system is a higher education institution, UNG/LPM, faculty staff, students, government and community partner villages, NGOs, local governments and the general public audiences.

6.2 Results of Data Collection

The process of data collection is done by tracking the relevant literature, interviews and surveys to collect data sample of monograph/profile of guided village. Location data collection is guided villages, LPM, related agencies and the internet.

Literature searches are meant to supplement the data, theory and materials/applications associated with the study. The data were then used as data samples for designing databases on the next step.

Survey carried out for a closer look at the village's built, taking the primary data, and interviews were conducted to explore further the needs of potential users and complete availability of the necessary data in the system development. Informal interviews conducted on all prospective users of the system. Furthermore, the result of data collection described below respectively.

6.2.1 Literature Search Results

From the literature search process, among others obtained.

- There is an application related to the management of rural and urban profiles (Prodeskel-PMD) which is managed by the Director General under the Minister of Home Affairs of Republic of Indonesia [1]. Further investigation has been carried out and found that it takes special access to be able to use the application in question. Data are shown for guest users only data summary that has been done by all the village is listed on the application. In other words, to use the intended application requires a login process that requires a username and password input.
- The legal basis for making village profile and monographs, referring to references that have been written before (sec. 2.3).
- The number of guided village of LPM UNG today there are 12 villages, located in 4 districts in Gorontalo province, Indonesia.

6.2.2 Survey Results

Among other survey results are outlined below

- Currently in LPM UNG no website that specifically manage data guided villages, guided village data can only be found in separate files and treated with a variety of applications. Related databases village built yet available.
- Data related to the progress and results of the field activities are not recorded in the database and can only be found in the report of activities, and even then in a sober condition.
- At the village level, village profile data created in a book by following the existing format in the ministerial regulation of the village profiling. Furthermore, the book contains villages profiles handed over to the local government in the form of reports and fill in applications online 'Prodeskel-PMD'. Unfortunately, not one that is guided village has completed documents/upload to the intended application.
- Means of access to information and data related to potential of village yet freely available and relatively difficult to obtain specific information village.

6.2.3 Interviews Results

Compilation of the results of subsequent interviews can be seen on mapping user requirement below.

6.3 Variable Initiation

6.3.1 User Requirement Mapping

The results of the survey and interview then compiled and mapped based on the needs of each user and then presented below.

Table.1 Results of User Requirement Mapping

USER REQUIREMENT	USER			
	A	B	C	D
Database guided village	√	√		
Application of information systems that manage integrated data of guided village	√	√		
Data guided village can be displayed in real time and updated	√	√	√	√
Information about 'Tridharma Perguruan Tinggi' activities available without being restricted by working hours and easily accessible	√	√	√	√
Concise information about guided village profiles	√	√	√	√
Information about guided village monograph	√	√	√	√
Information about the availability of resources and the administration of the guided village	√	√	√	√
Information related to community service activities/ KKS and its outputs	√	√	√	√
Information about government programs/stakeholders	√	√	√	√
Information relating to the activities/guided villager related news	√	√	√	√
Information about guided village presented globally and easily accessible	√	√	√	√

Description: A: college institutions, UNG/LPM, faculty, students; B: government and villager in guided village; C: local government; D: NGO/community.

6.3.2 System Requirements

Based on data collected in the field and the identification of user needs, furthermore both results are analyzed. Analysis shall include the purpose of making information systems, organizational unit which will manage the system, the ability of information systems, the functions that can be performed by the system, and the design of the function/menu information systems in general. Results of this analysis are described below.

a. The Purpose of the Information System

The Purpose of making information system is to create a prototype system that presents information concise information about guided village profiles integrated with database management.

b. Organizational Unit

Prototype information system that is designed, used on UNG community service agencies (LPM) to support developing of process and documentation implementation of 'Tridharma Perguruan Tinggi'.

c. Ability of Information Systems

Expected result of the designed system is an integrated web-based system that can be accessed without restrictions of time and is not limited by geography, modular so it can be inserted into existing systems and be able to handle common things below.

1. input of data, especially data from activities in the guided village with limited access (for administrators on organizational units).
2. Output processing based on the data entered.

3. Displays data about the implementation of community activities devotion, in real time, covering activities temporarily devotion, and routine activities such as KKS and other relevant information,
4. Displays general data about the village built
5. Displays a summary of the profile or monograph, generally with quick and easy access
6. Displaying development and rural development programs that have been implemented in the guided villages, both by universities and government institutions/ relevant stakeholders, and
7. Can be accessed through the internet browser without the limited space and time.

d. System Functionality

Based on the basic requirements of the desired information system, and then compiled into the more specific needs, which will be represented in the form of functions and menus that exist in the information systems will be developed.

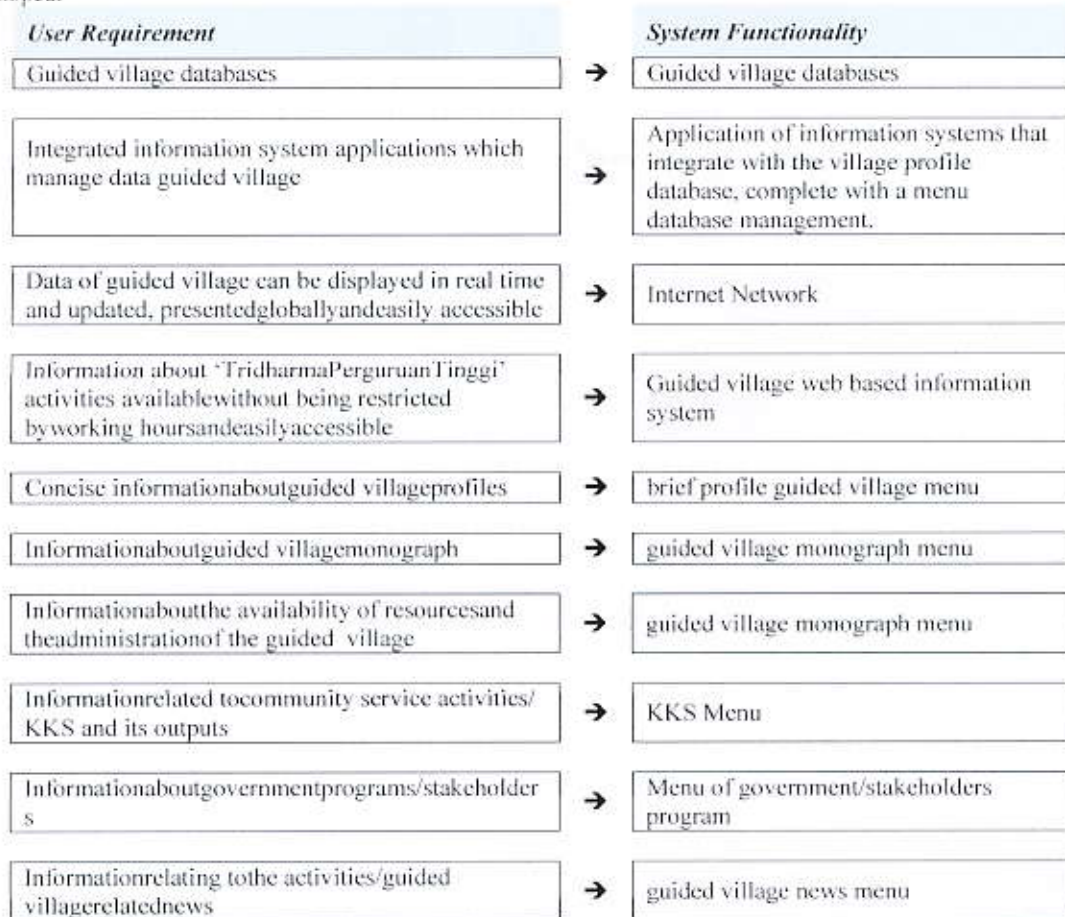


Figure 2. The relationship between user requirements and system functionality

Furthermore the functionality of the system described in the menu as follows.

1. Brief profiles guided village
2. Devotion which has been held in the guided village
3. KKS activities, include with programs and its output
4. News and updates of guided village
5. Database management

e. System Architecture

The system consists of a single database that is used to load profile data and other supporting data. This database can be shaped into a module to be inserted into the LPM's database. Similarly, the server, the server is already available today can be used together as a repository of database and information systems of guided village profiles.



Figure 3. System Architecture

Information system designed for the users who use a computer that has Internet network (including mobile computers, notebooks, netbooks, ipad and smartphone). How to access the system can be seen in the process of system scenarios in the next section.

6.4 Entity Variable

In general, a variable entity can be divided into three groups which are directly related to each other, i.e. in the guided village entities, entities in UNG institution, and entities to support the management of the planned system.

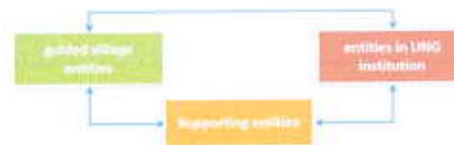


Figure 4. Entity Variable

The next three entities are described below

1. Guided village entities, including, among other master villages and village profiles, which contain attributes with reference [4].
2. Entities in UNG institution, including programs, activities and results related to the implementation of 'Tridharma Perguruan Tinggi', for example, KKS, community service and related activities other.
3. Supporting entities, intended to support the management of information systems in a sustainable and integrated database system. Entity referred to is user, info and comments.

6.5 Database Design

6.5.1 Logical Design

Logical design is done by setting the primary key and foreign key on each table and then linked to corresponding tables. Logical design stage results are presented in the form of footage obtained from the relation table management application database (phpMyAdmin), as below

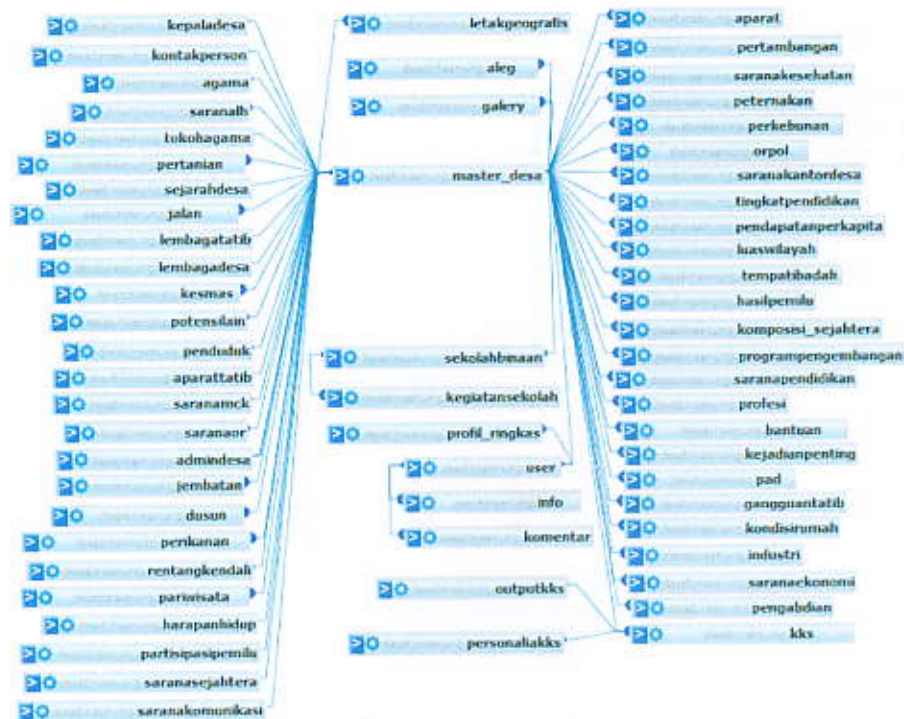


Figure 5. Logical Design

6.5.2 ERDiagram

In consideration of the available writing space, then the following ER diagram has been simplified so it can be contained in this manuscript.

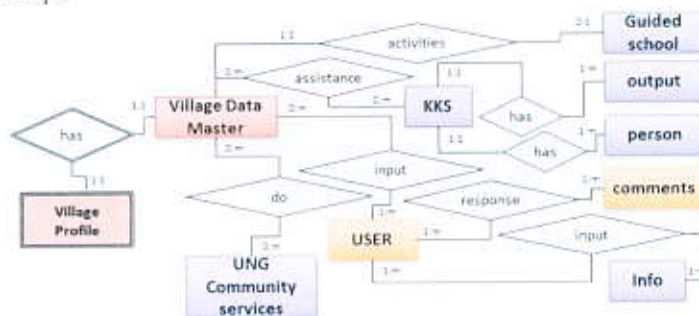


Figure 6. ER Diagram

6.5.3 PhysicalDesign

Physical database design is done by using a MySQL database with PHPMyAdmin application, generating database called 'desabinaanung' by the number of tables is 51 tables.

6.6 Design of Information Systems

Stage of the system design process, consisting of system process scenario determination, process design and system interface design on information systems to be created.

6.6.1 System Process Scenario

Parties will be interested in this information system is divided into two, namely administrator/manager of the system and those who benefit from the system/users of the system.

1. System manager (administrator), tasked with managing the system, which includes managing databases and information systems as a whole. To protect the security of the data, then the whole process of managing a database is protected by a key word to avoid things that are not desirable.
2. Users of the system (client browser), all parties use information systems. These parties may include college/institution, UNG/LPM, faculty, students, government and villager at guided villages, local governments, NGOs and the public at large. All services provided by the information system can be accessed by the user except for managing database access.

6.6.2 System Process

To illustrate the flow of information on the system or application, use Data Flow Diagrams/DFD. DFD is also used to describe the system at every level, broken down into more specific systems, begins with a context diagram or level 0 DFD as a description of the most common systems, and further broken down into greater levels of detail.

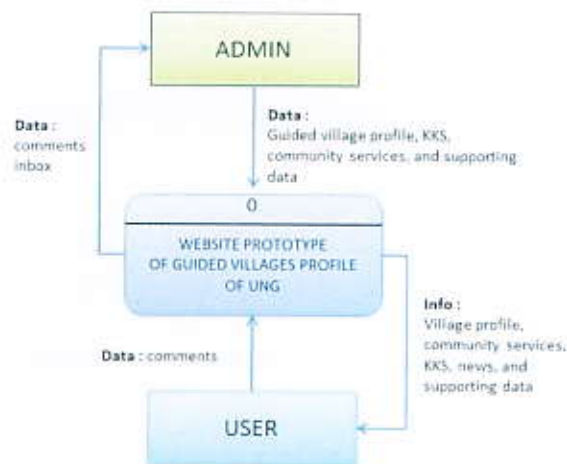


Figure 7. Context Diagram

6.6.3 Interface Design

Interface design is divided into two sections, namely the user and the administrator/system manager. It is intended to distinguish clearly states when accessing the system.



Figure 8. Interface Design

6.7 Implementation

Implementation is done after the design phase is done, appropriate steps below.

6.7.1 Algorithm Determination

Program algorithms set by referring to the purpose of designing a modular system that can be easily inserted in the existing system. To facilitate integration with the old system, the system is designed adaptive or can be easily customized to follow the existing system, so the logic of the process or algorithm that is used in the execution and output of the system input using a simple algorithm and system processes commonly used and shared in the process.

as simple as possible. Reference used in determining the program algorithm is the scenario process DAD system and predetermined.

6.7.2 Build database

Database used in the system is built using the MySQL database in PHPMyAdmin application contained in the XAMPP package. Database making reference is result of database design that have been made previously. This process then generates database 'desabinaanung' which consists of 51 tables. The tables are then filled with a sample of the data collected.

6.7.3 Coding

The process of writing source code program (coding) is done after the design of the interface is complete. The interfaces is input and output form, and the pages to display the data.

Furthermore, the application source code written using notepad and Macromedia Dreamweaver (trial version). Writing source code refers to the scenarios as well as the system processes a predetermined algorithm. Results of compiling source code programs is presented below.



Figure 9. Start Page

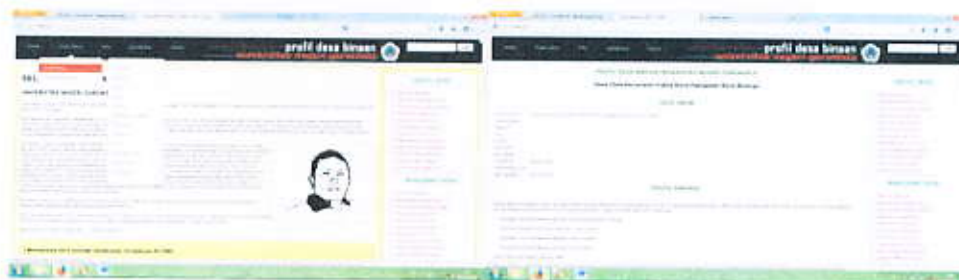


Figure 10. Some View of the User Side

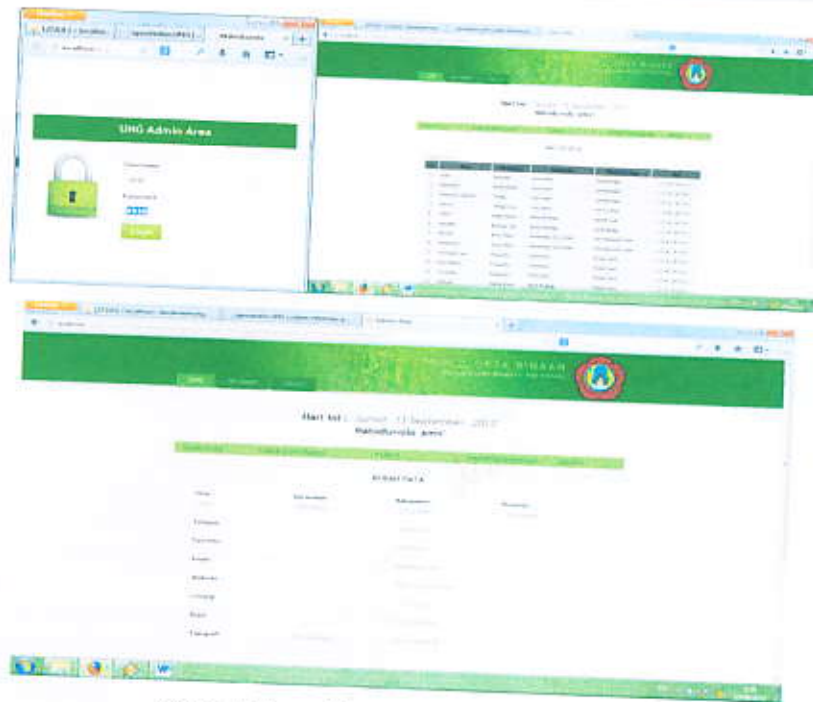


Figure 11. Some View of the Administrator Side

6.8 Testing

Online system prototype testing done in order to see whether the needs of each user are met with a dish that contained information on the prototype system made. This process is done by contacting the user (who contacted the data collection process) to access the address requested prototype that have been created and writes suggestions/questions/criticism on the form available on the online system.

The same thing conveyed to the academic community of UNG, such as students, faculty staff and others UNG's employees via internal interaction media such as telephone, social networking and orally, to access website prototype by giving access address.

For the guided villages that have limited access to the internet, do online and offline testing by showing the results of a prototype which has been presented online to village officials in several villages. Determination of sample villages was carried out with consideration of the availability of communications networks (handphone and modem), time, distance and transportation access.

User responses/recommendations to the prototype that have been made subsequently recorded, compiled and summarized in a subsequent recommendation system changes. Based on such recommendations, further improvements are done on the system as needed, and subsequently recorded on the maintenance log.

7. CONCLUSION

From the results of this study have been obtained

1. Compilation and data analysis about community service activities undertaken by UNG especially in guided villages, which become input to the determination of the variable/entity database.
2. Database 'desabinaanung' which consists of 5 tables and integrated with a prototype information system which is used to data management of guided village profile and community service activities are carried out by UNG.
3. Web-based information system prototype to display detailed data of village profile and various data and information about UNG activities in their guided village.

8. RECOMENDATION

1. LPM institution in the implementation of the four pillars of the UNG main program, especially totally IT, should begin to switch from the old system to a web-based information system particularly for newer data management related to the implementation of community service.
2. In connection with the transition to the new system, it requires the support of management, policy and strategy adjustment step in the process of adaptation to the system that has been developed.

3. Further information system development need to be done to improve the quality of information systems become more reliable and which contain more complete information.

9. ACKNOWLEDGEMENT

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