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Developing a Web-Based Information System for Sub-Districts in North Sulawesi

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ABSTRACT

This research aims to create an information system in sub-districts in North Sulawesi that can be used easily by sub-district officials to process sub-district data and information. This research uses the Prototype Cycle method which has five stages, namely Quick Plan, Modeling Quick Design, Construction of Prototype, Deployment Delivery & Feedback, and finally Communication. The results of the development of this information system have been created and tested for use. From the test results, it was found that the website-based information system in the Tataaran 1 sub-district, South Tondano sub-district, can be used as a forum for collecting data and information for sub-district officials and can help the community with information related to activities in the sub-district and is easily accessible to all levels of society.

Keywords: Information System, Prototype, Website, Sub-Districts

INTRODUCTION

A sub-district is a legal community unit that has territorial boundaries and is authorized to regulate and manage the interests of the local community, led by the head of the sub-district or village head. Like the state government, the sub-district government also has its government structure and is under the auspices of the sub-district. To improve the development and more effective work of sub-district officials, information technology support is needed to make it easier for the public to express opinions and administrative matters easily and transparently. This information technology will make it easier to access information about sub-district profiles. One medium for gaining this access is using

Internet technology and Information Systems. The internet is used to make it easier to get information anywhere. Meanwhile, Information Systems can be used to search for valid data or can provide information in the management of official letters. Therefore, an information system is needed to make it easier for the community and also officials/staff in the sub-district to carry out existing tasks and needs. This includes profile information sub-districts, managing ID cards and certificates and permits, including access to complete information for people who have problems.

The term system comes from the Greek word "sistema" which means unity. A system is a collection of interconnected components that must work together to produce a unified method, and technical procedures that are combined and arranged in such a way that they become a single unit that functions to achieve goals (Parinsi et al., 2021; Arbie, 2000). Information is very important in an organization, without good and accurate information, the system designed or used in the organization will not be good and may not last long (Rumengan et al, 2021; Djamen and Pratasik, 2020). A system is a group of elements that are closely related to each other and function together to achieve certain goals (Sutabri, 2005). Information is data that has been processed in such a way as to increase the knowledge of the person using the data (Kadir, 2003). Information systems are systems created by analysts and managers to carry out certain specific tasks that are essential for the functioning of an organization (Scott, 2001).

From the definition of System and Information, the term system means a collection of parts, elements, or components of information flow that are interconnected with each other and are arranged in an orderly manner and constitute a single unit that is interdependent to achieve a goal. A website is a digital data information display that can present information. According to Abdulloh (2018), a website can be defined as a collection of pages that contain digital data information in the form of text, images, animation, sound, and video or a combination of all of them which are provided via the internet connection so that they can be accessed and viewed by everyone throughout the world. Website pages are created using a standard language, namely HTML (Abdulloh, 2018). According to Turban et al (2003), the Web is a system with universally accepted standards for storing, retrieving, organizing, and presenting information through a client-server architecture.

HTML is an abbreviation of HyperText Markup Language. HTML is what can be opened with a browser (IE, Mozilla, etc.). Because it is compatible with browsers, this format is suitable to choose if we want a report in the form of a web/internet page (Solichin, 2010). Xampp is a combination of open source-based development software such as PHP and MySQL. According to Riyanto (2010), Xampp is an open-source-based PHP and MySql package, which can be used as a tool to help develop PHP-based applications. Xampp combines several packages of different software into one package. The same understanding was expressed by Nugroho (2009) Xampp is an open-source-based PHP package developed by an open-source community. By using Xampp, you no longer need to be confused about installing other programs, because all your needs are provided by Xampp. Purbadian (2016) also explained that Xampp is an open-source software that is a development of Lampp (Linux, Apache, MySql, PHP, and Perl).

METHODS

Prototype

1. Communication

This stage is the stage of collecting data or information regarding the research that will be carried out. At this stage, the researcher collects information from various sources, including journals, articles, and related books. Then the software engineer and user meet and define the desired software goals.

2. Quick Plan and Modeling Quick Design

This stage is the fast planning and fast design stage. At this stage, the researcher made a quick design using a use case diagram model and interface design from the Star UML and MS applications. Word. Then the software engineer and user meet and the researcher shows the design plan that has been made to the user. If it meets the user's needs, it will proceed to the next stage.

3. Construction Of Prototype

In this stage, the researcher builds a prototype of the agreed web-based information system. The researcher created a prototype design which was translated into a programming language. Researchers use the Xampp application which contains Apache, PHP, and MySQL in the process of creating a database, entering user data, and Sublime Text for editing. This supporting application helps the process of designing a prototype model which is translated into a programming language. This prototype is an illustration of the program that will later be used or applied.

4. Deployment Delivery & Feedback

In this stage, the researcher builds a prototype of the agreed web-based information system. The researcher created a prototype design which was translated into a programming language. Researchers use the Xampp application which contains Apache, PHP, and MySQL in the process of creating a database, entering user data, and Sublime Text for editing. This supporting application helps the process of designing a prototype model which is translated into a programming language. This prototype is an illustration of the program that will later be used or applied. The prototype method is seen in Figure 1.

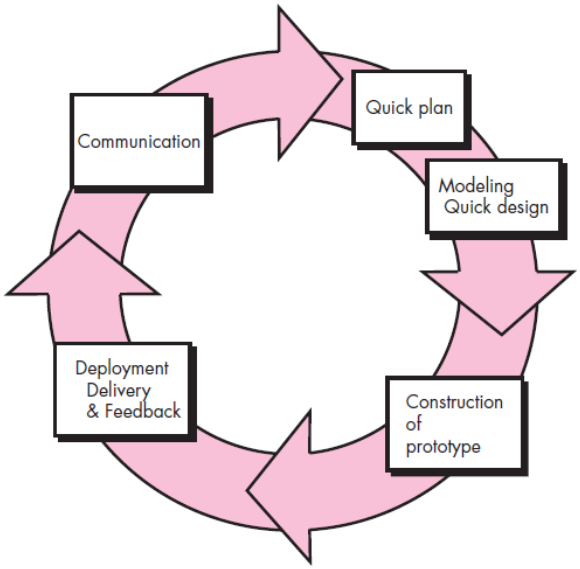

Figure 1. Prototype Method

RESULTS AND DISCUSSION

Use Case Diagram

1. Admin

Admins are required to log in first to enter the system. Then the admin enters the system to change or edit data, add data, view details, and delete data on the Village Profile, News, Village Program, Gallery, Population Data, and Information. The Subdistrict Profile section consists of the Vision and Mission, History, Management Structure, and transparent information to the community. Use Case Diagram in admin can be seen in Figure. 2.

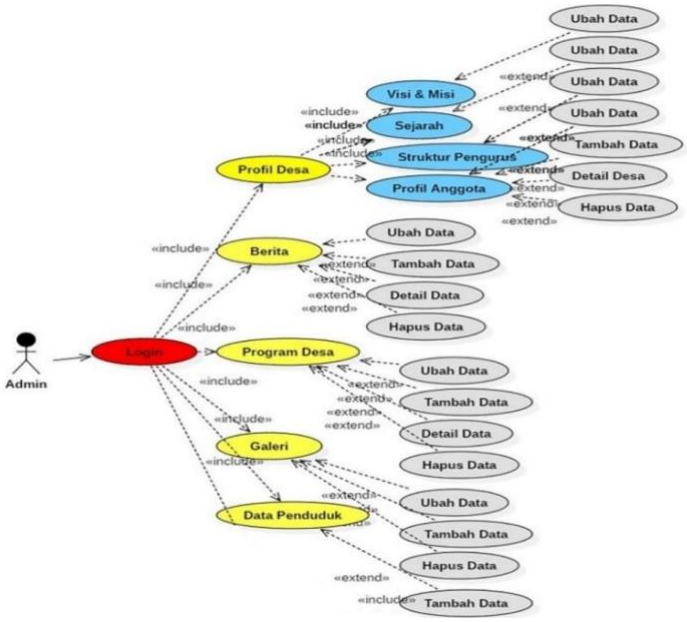

Figure 2. Use Case Diagram, pada Admin

2. User

Users or the public (users) will receive information that has been managed by sub-district officials. Users must log in and then register to be able to access the website. The user use case diagram can be seen in Figure 3.

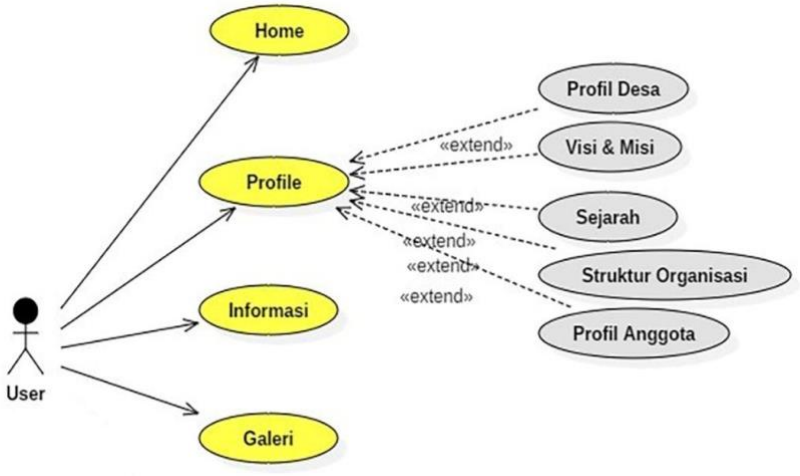

Figure 3. Use Case FIagram

The results of the research refer to the stages of the prototype development model that have been carried out. The following are the stages that have been carried out as follows: Quick Plan and Modeling Quick Design

At this stage, the researcher combines the fast planning stage and the fast design model. Based on the requirements, the researcher created an interface design for the user and admin.

a). The display on the main page (home) can be seen in Figure 4.

Figure 4. Display on the Main Page

Design

The programming code in Figure 5 is the login page for admin.

```
<?php if (!defined('BASEPATH')) exit('No direct script access allowed');
class Login extends MY_Controller {
public function __construct()
{
parent::_construct();
$this->load->model('Login_model', 'login');
}

public function index() {
if (!$_POST) {
$input = (object) $this->login->getDefaultValues();
} else {
$input = (object) $this->input->post(null, true);
}

if (!$this->login->validate()) {
$form_action = 'admin/login';
$this->load->view('admin/login', compact('input','form_action'));
return;
}

if ($this->login->login($input)) {
$this->session->set_flashdata('message', 'Login Berhasil!');
redirect('admin/dashboard');
} else {
$this->session->set_flashdata('message', 'Username atau password salah, Coba lagi!');
}

redirect('admin/login');
}

public function logout() {
$this->login->logout();
redirect('admin/login');
}
}
```

Figure 5. Login Page Programming Code for Admin

Figure 6 is the login page for admin.

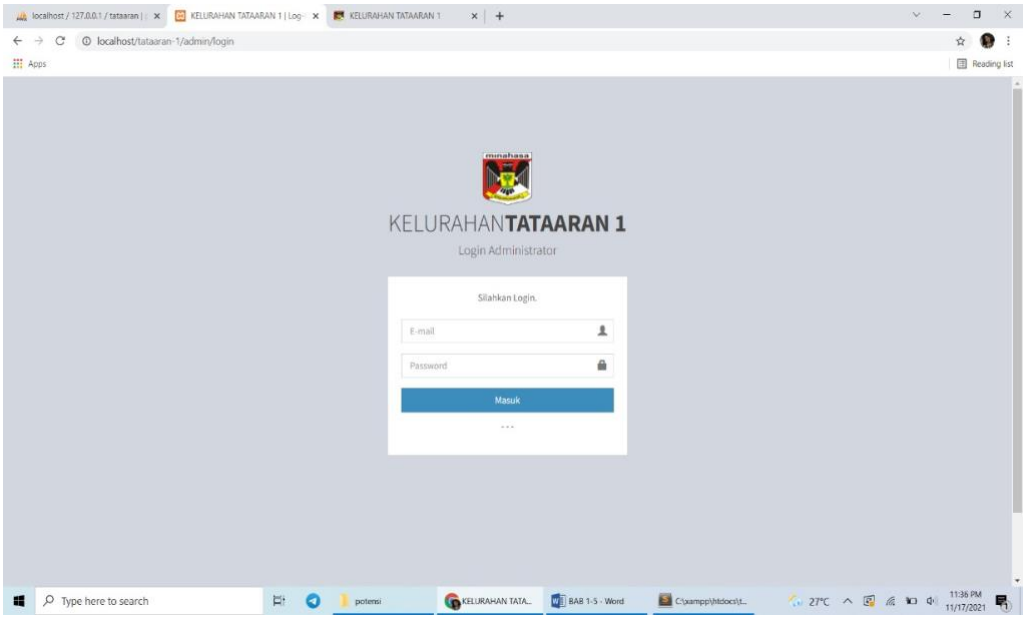

Figure 6. Login page for Admin.

CONCLUSION

Based on the results of the research and testing of the website-based information system that has been created, a conclusion can be drawn, namely: the researcher succeeded in developing a website-based information system in Tataaran 1 sub-district well, now the sub-district apparatus can more easily process data and information regarding Tataaran 1 sub-district. This system was created according to the needs required in the Tataaran 1 Subdistrict and can be accessed quickly via the internet using information and communication technology facilities in the form of a website anytime and anywhere regardless of distance and time.

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