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Digital Economy Creative System Using Laravel Based Responsives Web at Rumah Terang Ministries Production House

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Abstract

Rumah Terang Ministries is a creative economy production house that focuses on digital multimedia such as flat design, motion, films, movies and podcast content. This production house has been running and growing in its marketing media. The production house has target development and general market than before with Christian spiritual content.This is what makes Rumah Terang Ministries turn into a more general production house and requires digital marketing. The use of the website is seen as a solution as well as a system to bridge between content creators and consumer. Object oriented programming-based websites are consideredcapable of handling the needs of this Laravel based digital production house.Technically, the website that was built was using the Models Views Controller (MVC) concept based on the Laravel version 9 backend framework. The database system was developed using MariaDB 10.4.24 PHP 8.1.4, frontend using CSS Bootstrap version 5.2. The system that was built has a specific purpose as a media partner for creative economy digital product capable of broadcasting, branding, delivering consumers by map, aswell as media engagement between production houses and consumers.Furthermore, every ongoing project has a professional work base and has a good engagement framework. Web media can also be accessed by customersin various places to that it is easier for customers to make deals with the production house.

Keywords: Creative Economy Production House; Digital Multimedia Content; Laravel-Based Website; Object-Oriented Programming; Media Engagement Platform

1. Introduction

The information and communication technology has now become a necessity. Many people in Indonesia have used it in their daily life. Information technology has become the main facility for activities in various sectors of life which has implications for fundamental changes in the organizational management structure and operations. The information technology has been able to be explored by several people who are able to see technology business to expand their business. Futhermore, good business management is needed in order to feel the great benefits of this technological advance, especially in the production house sector.

Rumah Terang Ministries is a creative economy production house that focuses on digital multimedia such as grapich design, motion, films, short movies and podcast content. This production house has been running and growing in its marketing media. Organizational management is carried out by members headed by appointed chairman. Rumah Terang Ministries initially only made the needs of Cristian spiritual events, such as cristrian spiritual activities which are presented in the form of podcasts. Rumah Terang Ministries also makes graphic designs to disseminate information. The information disseminated through graphic design is like a speaker who will fill a podcast on an upcoming schedule. The graphic design aims to remind the congregation that the church will hold a podcast. The making of this graphic design is expected to attract the attention of podcastlisteners even though they come from other church members. After repeatedly handling church needs, especially in the multimedia field, Rumah Terang Ministries has better experience and understanding in the multimedia field than before. Good experience and understanding make the production house determined to expand the reach of potential customers. To realize these expectations, the production house needs a bridge that can connect between potential consumers and this production house.

This research was conducted to design digital marketing for Rumah Terang Ministries. The design is implemented in the form of a responsive website. The reason for the design is to facilitate production houses in broadcasting, branding, delivering customers through maps, as well as media engagement between production house and customers. This responsive

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website design uses the MVC (Model View and Controller) architecture. MVC is an application architecture consisting of three layers including a Model layer which interacts with the database, a View layer for the application interface, and a Controller layer which manages the two layers. The MVC architecture has the advantage that the division of applications by class allows the use of reusable code.

The information of the MVC architecture in an application applies the MVC architecture of a web application development framework called Laravel. This framework was chosen because Laravel uses a small number of configuration files compared to other frameworks, making it easier for application development. This research Laravel as an application development framework.

2. Methods

2.1. CollectingData and System Development Method

In preparation for this research, some data made to the web responsive. Data were collected using the observation method to analyze needs and resulting output [8]. Detailed data obtained through the process of interviewing the head of the department. Furthermore, responsive web design for Rumah Terang Ministries is supported by several scientific literature references. The resulting data is used as a benchmark for the content of the website. This responsive web using the System Development Life Cycle (SDLC) method. The SDLC method that apply is Waterfall model. The Waterfall model is an application development model with stages that are carried out sequentially [7]. This model is suitable for this website creation project, if there are errors and deficiencies can be corrected before moving on to the next stage. This model has 5 stages in the application development process, namely, the analysis phase, the design phase, the implementation phase, the testing phase, and the operational and maintenance phase [5].

2.2. Model View Controller Framework

Model View Controller (MVC) is one of the most frequently used architectural design pattern in website creation [6]. The MVC was invented by Trygve Reenskaug in 1970 as part of the Smalltalk system [2]. MVC was developed at Xerox PARC before the World Wide Web (WWW) and the personal computer era. The MVC has 3 layers, namely Model, View and Controller as shown in Figure 1. Model View Controller layers has a different structure and function in each layer [1]. Model layers are filled with eloquent models and service providers. Furthermore, view layers are composed by PHP Template and Blade Template. The last layer that makes up MVC is the Controller layers filled with routes, controllers, and resources.

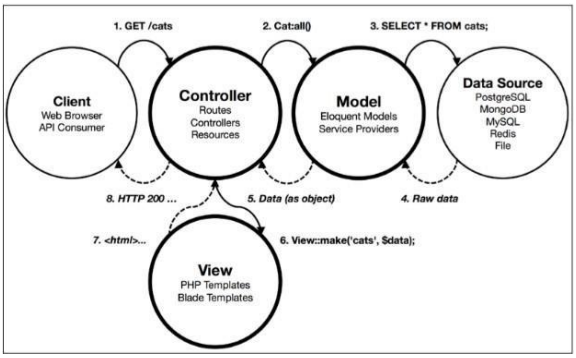

Fig. 1. MVC pattern diagram

The Model layer is an abstract class that represents data in an application. In general, model layer usually corresponds to records in any database or storage engine. Furthermore, view layer is the layer that presents the data in a suitable and desired format to the end client as an HTML web page. The view layer is the final visual representation of the data in the web application that has been received by the controller based on the model change. Laravel 9 comes with the blade template language, which allows developers to create reusable and learnable composition and layout templates [6]. The Controller layer is the class that handle the request and returns the appropriate response to the correct view. The controller acts as a coordinator between the view and the model.

The template blade engine or language is a template pre-processor that combines display elements to form the finished web page [4]. Blade templates serve as a separator between application logic and presentation. The blade template language is used to create and manage hierarchical layouts in web creation. Blade template contains a set of directives and control structures [3]. The blade template language is translated into PHP code at the end [3].

Table 1. Blade Syntax and Equivalent Parsed PHP Code

Sintaks PHP Standar	Blade
<?php echo $var;?>	{!! $var !!}
<?php echo htmlentities($var);?>	{{ $var }}
<?php if ($cond): ?>…<?php endif; ?>	@if ($cond) … @endif
<?php foreach($values as $value):?> …	@foreach($values
<?php endforeach;?>	…@endforeach

3. Results and Disussion

3.1. Requirement Analysis

Based on the results of interviews and observations at Rumah Terang Ministries Production House, the results of the needs analysis are as follows:

1. Admin are able to recapitulates incoming order data to sort the project creation process.
2. Admin are able to manage service data that will be offered.

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3. Admin are able to confirm incoming customer request.
4. Admin is responsible for scheduling the request project.
5. Customers are able to see what services are offered.
6. Customers are able to see the status of the request is being worked on or has been completed.
7. Customers are able to cancel their orders as long as the project has not been processed.
8. Admin able to updates the status of orders from customers.
9. Customers are able to see the projects that have been done by the production house.
10. Customers able to order service with the concept they have.

3.2. Designing the System

Figure 2 shows that the responsive web at the production house has 2 main actors who can run the system, namely the admin from the production house and the customer. Customer is everyone who visits the website and people who take advantage of the service. Admin is a crew in charge of serving customers to take advantage of services from Rumah Terang Ministries Production House. There are four boundaries in the system administrator, all of which have the consequence of forming a form on the back end website. Administrator dan customer are connected through a flow of events called include, where the data flow can come from the two actors.

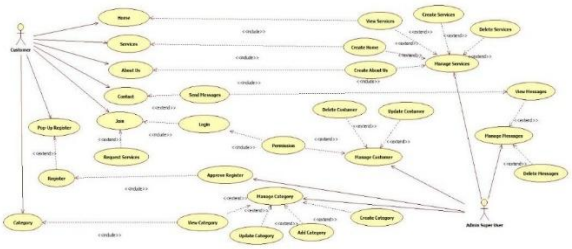

Fig. 2. Use Case Diagram of Responsive Web at Production House

Class diagram created from Use case boudary, figure 3 shows threre are three boundaries that are implemented into controller and entity. Futhermore, class diagrams also describe systems ranging from the front end or back end to programming languages and entities in the database systems. Flow of events data flows from one diagram to another through primary keys, foreign keys and manipulation operations.extending from the use case diagram leading to the boundary is depicted using the iconic stereotype.

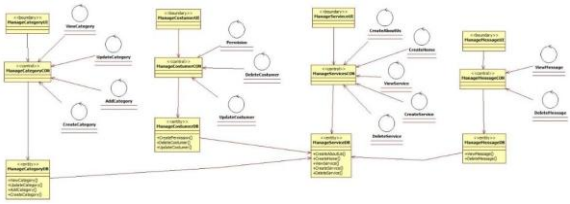

Fig. 3. Class Diagram of System Administrator

3.3. System Design Implementation

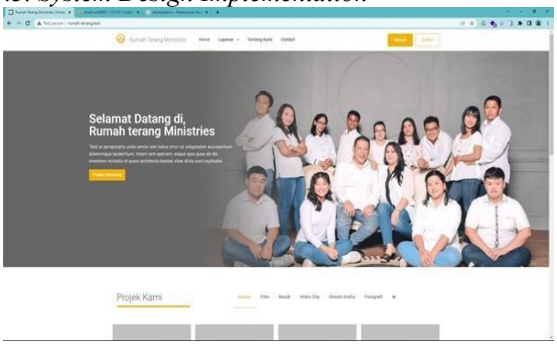

Fig. 4. Home Page

Figure 4 show the home page view. Accessing this page requires logging in with an already registered account. If customer do not have an account, customer are required to register by clicking the register button and web would direct brought to the registrations page. The user registrations page is asked to enter data such as name, username, email and password. After the user fills data, the system will check the validity of the data entered by the user. If data entered is valid, user will brought directed to the login page. The syntax used to validate the data entered by the user is as follows :

```php
<?php

namespace App\Http\Controllers;

use Illuminate\Http\Request;
use Illuminate\Support\Facades\Auth;

class LoginController   extends Controller
{
    //
    public function authenticate(Request $request){
        $credentials = $request->validate([
                            'email'=>'required|email:dns',
                            'password'=>'required'
                        ]);
        if(Auth::attempt($credentials)){
            $request->session()->regenerate();
            return redirect()->intended('/');
        }

        return back()->with('LoginError','Login failed!');
        dd('berhasil_login!');
    }
    public function logout(Request $request){
        Auth::logout();
        $request->session()->invalidate();
        $request->session()->regenerateToken();
        return  redirect('/');
    }
    public function login(){
        $this->session()->flash('success','registration success!!');
        return redirect('/');
    }

}
```

Fig. 5. Syntax Validation Process

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The validation process uses the features in Laravel. The system will check whether the registered email is available in the database or not. System can also check the correctness of the writing format entered by user. If data entered does not meet the validation criteria, the system will notify user that data entered is incorrect.

Customers could access the web freely after successfully logging in the home page has features Call to Action. The Call to Action feature has a function to invite users to take certain action when they first open the website. The home page also has a list of project that have been done by production house, then there are several summary lists of services, about production house, and collaboration with partners.

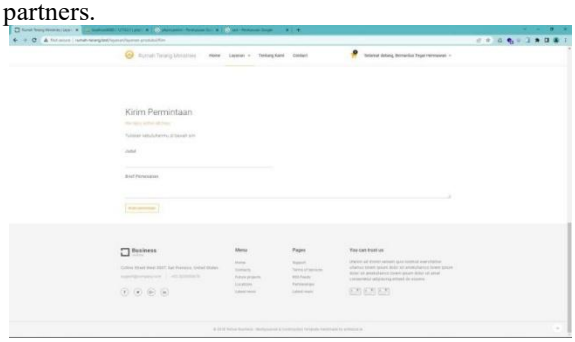

Fig. 6. User Engagement Page

The service page is depicted in figure 6. Customers in service page can place an order for the services. The customer can include the title along with the project details according to the concept that the customer has. If data entry is complete, the user will be redirected to the cart page. The cart page shows a list of services that have been ordered by the user. The user can still edit the request if the status is “not yet processed”. If the request has been processed by the admin, user can no longer make data changes or cancel of service orders.

3.4. System Testing

System test stage, in the responsive web at Rumah Terang Ministries Production House has been implemented. The assessment of the website using black box method to test the functionality of the system. The following are the results of testing using the black box method as shown in the tables 2 and 3.

Table 2. Add Function Testing Service Request Data

No	Scenario Condition	Expected Result	Received Result	Conclusion
1	The service request data form is filled following the provisions	Data saved in database	Data successfully saved to database	Success
2	Some attributes are not filled in the service request form	A warning appears on the text field that is not field	“Silahkan masukkan data anda” warning appears in the text	Success

Table 3. Service Ordering Function Testing

No	Scenario Condition	Expected Result	Received Result	Conclusion
1	The email and password are filled following existing data	Display homepage and list services	Display homepage and list services	Success
2	The email and password are filled randomly	Data not found warning appears	A ”Identifikasi email dan password tidak ditemukan" warning appears	Success
3	Service request is filled then click button send	Data has be successfully stored and displayed in the shopping cart	Data has been succesfulyy stored and displayed in shopping cart	Success
4	Service request is not filled then click button send	A data cannot send and warning appears	A warning apperats “Silahkan masukkan data dan detail pesanan anda”	Success

Based on table 2, the service request function succeded in saving the form data to the database. Validation function serves as a reminder to the user to fill in the data correctly, rather it can continue to expected page.

Based on the table 3, user can go to the home page and can see the list of service if the user enters email and password recorded in the database. Booking the service is done by filling in the title data and the order details if left blank, a warning will appear to fill in the data.

3.5. Operation and Maintenance

The responsive website created for Rumah Terang Ministries Production House require tools in making the web. Tools used are divided into four types such as hardware systems, display systems, software and

web hosting. The hardware tool used to create a responsive website is a notebook with specifics such as the model type is N15_17RF. Furthermore, BIOS number is 1.05.02 and has a memory of 16384 MB. The display system used in making this web has details such as name card and type from notebook is Intel® Core™ i7- 6700HQ @ 2.60GHz, memory displayed 2007 MB and memory shared is 8152 MB, monitor used is called Generic PnP Monitor with the current mode of 1920 x 1080 (64 bit). Responsive web requires some software as a constituent. The constituent software used is Windows 11 Pro as the operating system, web server uses Apache, the compiler database is MySQL, framework is Laravel 9, Bootstrap 5.2 used to UI Framework and the web browser used is Google Chrome. After the website is ready, we must to save it on hosting. The function of storing website data on hosting is the website can be accessed easily by potential customers. The web hosting specifications used are in the form of 2GB of storage, unlimited bandwidth and the database used is MySQL.

4. Conclusion

The digital creative economy could be applied to Rumah Terang Ministries Production House using an object oriented website based on the Laravel framework, futhermore the existence of Laravel-based website has responsives and dynamic capabilities, so that every content can be accessed using various digital devices. Based on the capabilities of the website, there is also the use of the Rumah Terang Mininstries website. Its usefulness is the ability of the website as a medium of engagement for customers.

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