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Website Development as a Promotional Supporting Tool on Butterfly Park

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***Abstract*—The rapid development of information technology makes it easier for people to get information quickly. One of the developments in information technology that is currently being developed is a website. The website is one of the tools that are now widely used as a promotional medium. This research focuses on developing a website that is used to promote Alian Butterfly Park. The Alian Butterfly Park (ABP) tourist attraction is still not widely known by the general public. One of the reasons for the lack of visitors is the lack of promotional media and information technology-based information about the Alian Butterfly Park (ABP). One of the reasons for the slow marketing process for this educational tourist spot is not implementing online marketing, such as the use of websites and social media. In this paper, we will discuss how to build a website as an online marketing medium for Alian Butterfly Park. In its development, the website was developed using the agile method, namely Scrum. System testing is carried out from two sides (users and managers). It shows that the website can be appropriately accessed on the Chrome browser with the Android operating system and Chrome browser with the iOS operating system, and Opera on the Windows operating system.**

Keywords—promotional, scrum method, tourist, website development

I. INTRODUCTION

The rapid development of information technology makes it easier for people to get information quickly. One of the developments in information technology that is currently being developed is a website. A website is a collection of pages on a domain on the internet that is created for a specific purpose and is interconnected and can be accessed widely through the home page using a browser using the website URL. Among other things, the function of the website is as a promotional medium. It is proven by implementing digital marketing using the website, and the products marketed becomes more salable [1]. The website itself is not only used to promote products but also as amedium used to promote tourist attractions.

Alian Butterfly Park (ABP) is one of the educational tourism objects based on the butterfly preservation and butterfly breeding museum located in Krakal Village, Alian District, Kebumen Regency, Central Java. In its development, the Alian Butterfly Park (ABP) tourist attraction is still not widely known. One of the reasons for the lack of visitors is the lack of promotional media and information technology-based information about the Alian Butterfly Park (ABP). One of the reasons for the slow marketing process for this educational tourist spot is not implementing online marketing, such as the use of websites and social media. In this paper, we will discuss how to build a website as an online marketing medium for Alian ButterflyPark.

II. RELATED WORK

The use of information technology is currently applied in various fields, one of which is a tool to promote a product ora place. This session will explain research related to the use of information technology as a promotional tool.

A research conducted by Salim et al. [2] used a website as a marketing tool to engage tourists. They examine the effect of visual and information delivery on the website to engage tourists to visit Indonesia and buy Indonesian products. The findings of this study provide insights into the way language and visual elements are purposefully utilized to portray the description of Indonesia authenticity as a famous tourist destination. This investigation improves the understanding of the Indonesian tourist destination, which ishighlighted through specific discourses, such as authentic nature and authentic cultural heritage.

Lion et al. [3] analyzed the effect of physical promotional activity for individuals with non-communicable diseases (NCDs) in Luxembourg through the website. The impact of promotional initiatives was subsequently tested by comparing the actual number of visits to our website (up to2 days after each event) with the theoretical number of visits predicted by the model. The results indicate that some initiatives can aid in the number of visits, but in general, their impact is limited. Some efforts should explore an increased rate of participation

in physical activity, additional promotional, and evaluative strategies.

Awichanirost and Phumchusri [4] analyzed the effects of sessions on unique visitors and unique page views of tourism websites based on time series data on Google analytics. To investigate, the researchers proposed a methodology. This research showed that all models of sessions well describe unique visitors and unique page views. The multiple regression results showed that the most impactful sessions of visitor types are new visitors who had the most effects on individual visitors. Still, returning visitors had the most impact on unique page views. Moreover, the most impactful sessions of traffics(channels) are referrals that had the most effects on unique visitors, while direct traffic had the most impact on unique page views. Furthermore, sessions of technology(browsers), Internet Explorer had the most effects on unique visitors, whereas Samsung Internet had the most impact on unique page views (browsers).

From the studies above, much research has been utilized website as a marketing tool in any field. A development methodology is needed to develop a good website. This study used Scrum method to build a website. Many kinds of research has been using the Scrum method to build software [5-7]. Scrum is a popular agile development method. This method provides a flexible development strategy, which is required mainly in the field of product development and maintenance, as the customer's requirements and expectations are considered to be volatile. Rather than following the traditional model of strategies and sequential development process, Scrum can provide the freedom of changing the software terms and the development process based on the requirements of the customers.

III. Research Methodology

A. Web Development Methods

Emphasizing scalability, the importance of using Scrum in an individually organized team, after which each management describes it in each process in the team [8]. Patterns of software development using the Scrum method include [9]:

1) Product backlog: The Product Backlog is a priority project requirement or feature that provides business value to the user. Features thatcan be added to the backlog at any time are known asProduct Backlog Items. The Product Backlog has a product owner who acts as a supervisor in the product backlog to make additions or subtractions that are made continuously inthe product backlog.

2) Sprints: In Scrum, work is done repeatedly or cycles in a time called sprints. Sprints are timeboxed, which have a start and end date for a job. The newsprint will immediately follow the process of completing the previous sprint.

3) Sprint planning: In the sprint, there is a Sprint Planning whose function is to guarantee work in a matter of weeks or months according to the agreement in a team which aims to define what must be achieved clearly. The work unit is needed to attain predetermined needs and must be under predetermined time. The time limit for sprints varies according to the backlog used in the sprints.

B. Use Case Diagram

On the Alian Butterfly Park information website, there are two actors, namely admin and visitors, who have different special rights. Admins can access and manage every menu on the website, namely the home menu, our stories, events, contact, and gallery. The following is an explanation of each menu.

1) Home menu: The home menu is the first landing page that displays general information about Alian Butterfly Park.

2) Our story menu: Our story menu displays stories from visits that have been made at Alian Butterfly Park.

3) Event menu: The event menu displays events that will be or are being held at Alian Butterfly Park.

4) Contact menu: The contact menu displays a list of social media addresses that visitors can contact.

5) Gallery menu: The gallery menu contains photos taken at Alian Butterfly Park. Meanwhile, visitors can only access website pages. Figure 1 will describe the role of each actor who interacts with the website using a Use Case Diagram.

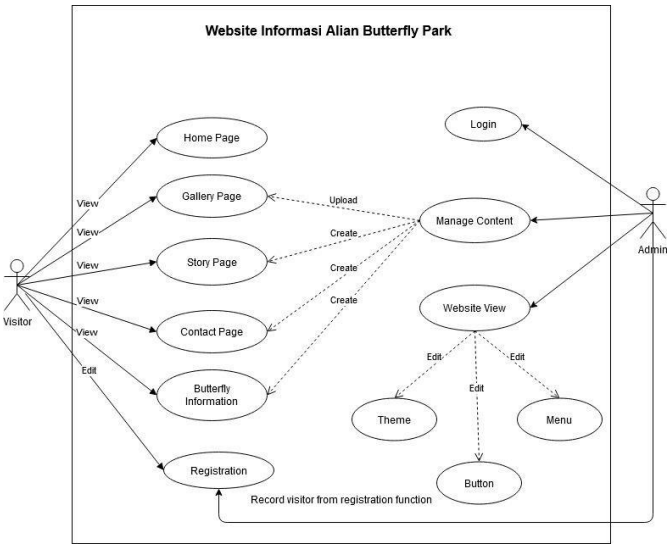

Fig. 1. Use case diagram.

C. Data Flow Diagram

Data Flow Diagram is a diagram that describes the flow of data or information from a process in the system created [10]. Data Flow Diagram for the Alian Butterfly Parkinformation website is illustrated in Figure 2.

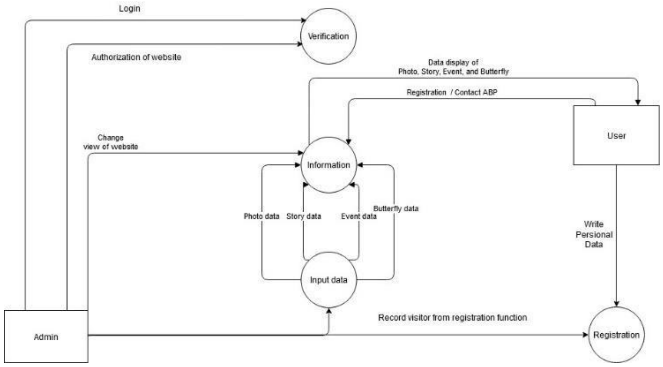

Fig. 2. Data flow diagram.

D. Entity Relationship Diagram

Entity Relationship Diagram describes a form of database modeling that shows the relationship of the entity sets and explains the logical structure of the database [11]. Entity Relationship Diagram from the Alian Butterfly Park information website that was created illustrates when the admin logs in, the database used is the admin table for authentication using a name and password. The home page table is used to display information about Alian Butterfly Park. The butterfly table is used to provide information about butterflies in Alian Butterfly Park from their types and seasons so that visitors can find out whether or not they are in the butterfly season. The gallery table will be filled with photos of Alian Butterfly Park, starting from the place to the butterflies there. The relationship between the admin table and the home page, butterfly, and gallery tables is too many. Meanwhile, the relationship between the user table and the home page, butterfly, and gallery tables is many to one. Figure 3 is an Entity Relationship Diagram from the Alian Butterfly Park information website.

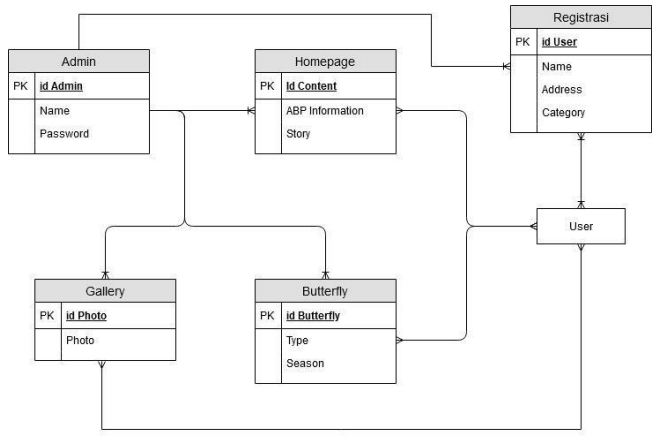

Fig. 3. Entity relationship diagram.

E. System Architecture

The development of this Alian Butterfly Park information website uses WordPress, which is a web application with the concept of MVC (Model-View- Controller) [12]. We can understand the WordPress architecture in making this website by looking at Figure 4.

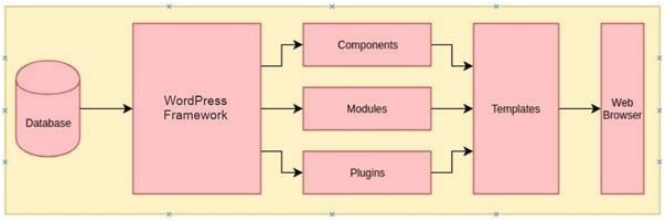

Fig. 4. System architecture.

The system architecture with WordPress contains the following layers [12].

1) Database: It is a collection of data that can be stored, manipulated, and organized in specific ways. The database stores some contents, including admin information, content, and other data needed on the Alian Butterfly Park information website. It is also used to store administrative information for managing the website. WordPress uses this database layer to ensure flexibility and extension compatibility.

2) WordPress framework: It is a collection of open-source software, on which the WordPress Content Management System is built. It is developed for flexibility and splits the framework into single modular packages, which helps each package to be designedmore efficiently.

3) Components: It is an application that consists of two parts, namely the website and administrator. Each time the page loads, the component is called for rendering the main page body. Administrators have the task of managing different aspects of the features, and the website has the task of rendering pages when website visitors make requests.

4) Module: It is an extension used for page rendering in WordPress and is also used to display new data from components. Modules often look like blocks or boxes in the sidebar, for example, login modules, etc. Module Manager can manage modules in WordPress.

5) Plugin: It is a kind of WordPress extension, which is very flexible and powerful for framework development. Plugins contain code that is used to run triggers for specific events, which are usually used to format the output of a component or module when the page is built. Event-related plugin functions are executed sequentially when a particular event occurs [12].

6) Template: It is determining the appearance of a WordPress website. In WordPress, the display has two types, namely the front end template and the back end template. The front end template has the function of presenting the website to the user. The rear end template has a role in connecting

developers with the database that makes up a website. The existence of a template also provides compatibility for developers to adjust the style and appearance of the website.

7) Web browser: It is where users interact. The web browser displays web pages to visitors. Http (hypertext transfer protocol) is used to communicate between website visitors and servers.

IV. Results

A. Home Page

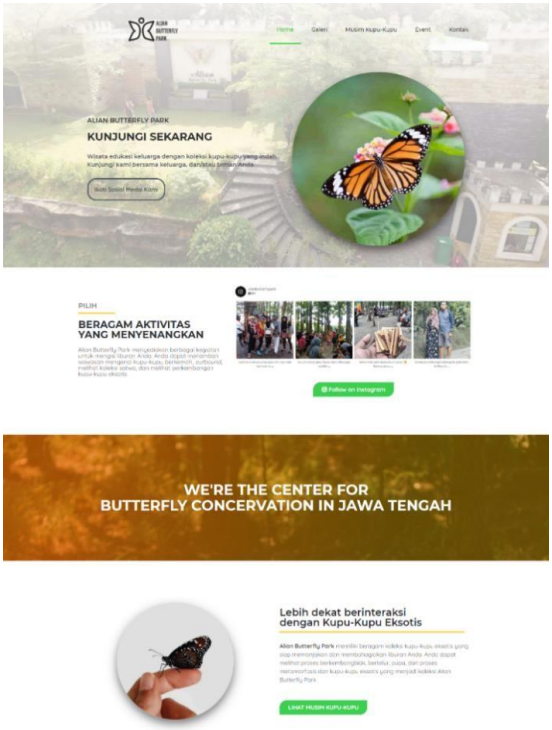

Fig. 5. Homepage display.

The home page (Figure 5) contains various information and elements that have been customized in the display design in the form of a wireframe. The home page provides a variety of general information that directs users to find more information about Alian Butterfly Park.

B. Gallery

The Alian Butterfly Park website gallery page (Figure 6) contains various information and elements adapted to the display design in the form of a wireframe. This page contains multiple collections of photos related to Alian Butterfly Park. On this page, if the user wants to see more photo collections related to Alian Butterfly Park, the official Alian Butterfly Park Instagram will direct them (@alianbutterflypark).

C. Musim Kupu-kupu (Butterfly Season)

The butterfly season page of the Alian Butterfly Park website contains various information and elements that have been adapted to the display design in the form of a wireframe. This page contains the butterfly season schedule available at Alian Butterfly Park. On this page, users can also see various types of butterflies in Alian Butterfly Park (Figure 7).

D. Event Page

The Alian Butterfly Park website event page contains various information and elements that have been adjusted to the display design in the form of a wireframe (Figure 8). This page contains the schedule of events at Alian Butterfly Park. On this page, users can see about Alian Butterfly Park by visiting the official Instagram of Alian Butterfly Park (@alianbutterflypark).

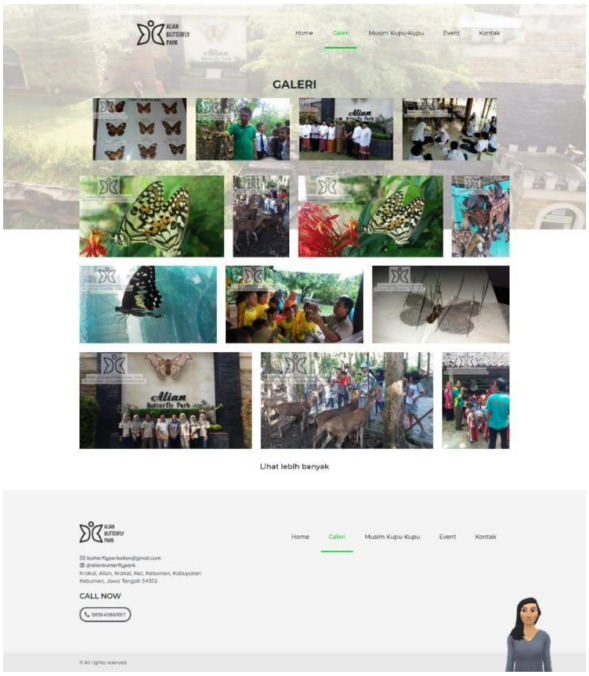

Fig. 6. Gallery display.

Fig. 7. Butterfly season calendar.

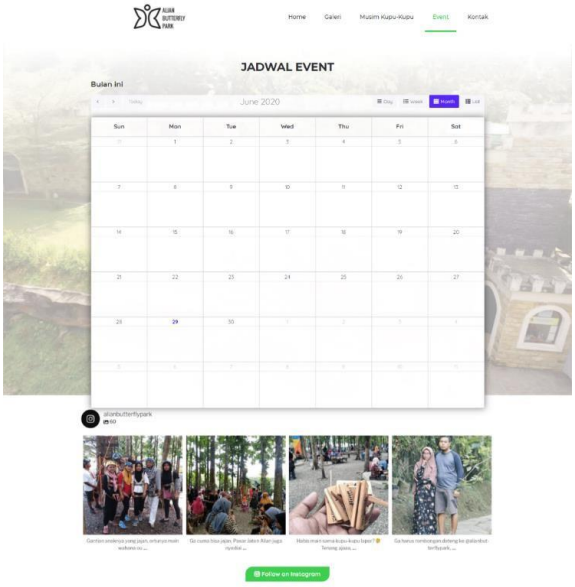

Fig. 8. Event schedule page.

E. Contact Page

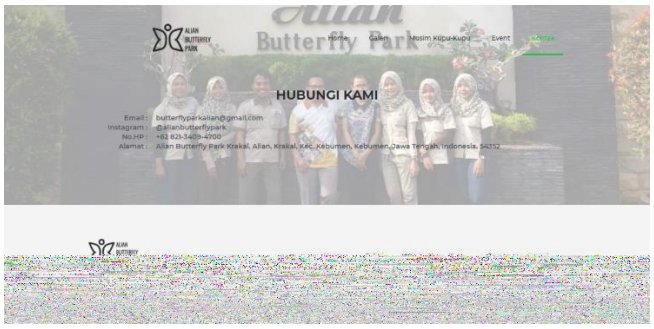

Fig. 9. Contact display.

The contact page for the Alian Butterfly Park website contains various information and elements that have been adapted to the display design in the form of a wireframe. Users can view Alian Butterfly Park's official contacts (Figure 9).

F. System Testing

We use the requirement testing method at the system testing stage. The requirement testing method is used to ensure that each function that has been built can work as expected on different operating systems, versions, and devices.

Table I shows the results of system testing that we did on Chrome on the Android operating system, Chrome on the Windows operating system, Safari on the iOS operating system, and Opera on the Windows operating system.

Table II shows the results of system testing from the administrator's side. We did the testing on, Chrome, Firefox, Opera, and Internet Explorer on the Windows operating system.

Results of Tables I and II present the capability of User and Administrator for accessing the Alian Butterfly Park website using a different operating system.

TABLE I. SYSTEM TESTING (USER)

Function	Implementation on				
	Chrome Android	***Chrome Windows***	***Firefox Windows***	***Safari iOS***	***Opera Windows***
View HomePage	Success	Success	Success	Success	Success
View Gallery Page	Success	Success	Success	Success	Success
View Event Page	Success	Success	Success	Success	Success
View Butterfly Season Page	Success	Success	Success	Success	Success
View Contact Page	Success	Success	Success	Success	Success
View Article	Success	Success	Success	Success	Success
Access Chatbots	Success	Success	Success	Success	Success

TABLE II. SYSTEM TESTING (ADMINISTRATOR)

Function	Implementation on				
	Safari MacOS	***Chrome Windows***	***Firefox Windows***	***Opera Windows***	***Internet Explorer Windows***
Login	Success	Success	Success	Success	Success
Manage Website Content	Success	Success	Success	Success	Success
Write Website Articles	Success	Success	Success	Success	Success
Edit Page	Success	Success	Success	Success	Success
Manage Theme	Success	Success	Success	Success	Success
Manage Gallery Information	Success	Success	Success	Success	Success
Manage Event Information	Success	Success	Success	Success	Success
Manage Butterfly Season Information	Success	Success	Success	Success	Success
Manage Contact Information	Success	Success	Success	Success	Success

V. CONCLUSION

The rapid development of information technology makes it easier for people to get information quickly. One of the developments in information technology that is currentlybeing developed is a website. The website is one of the toolsthat are now widely used as a promotional medium. This research focuses on developing a website that is used to promote Alian Butterfly Park. In its development, the website was generated using the agile method, namely Scrum. We carried out the results of system testing from two sides (users and managers). It shows that variousoperating systems can access the Alian website.

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