

# Developing A Website For Alif Stone Park Of Natuna Regency Using A Desktop-Based Qr Code System

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## **Abstract**

*Alif Stone Park is a geosite tourism or rock garden from prehistoric times. It has giant granite rocks arranged beautifully along the shores of Sepempang Village, East Bunguran Sub-district, Natuna Regency, Riau Islands. Geosite tourism, or rock garden, is one of the tours in great demand by local and overseas visitors visiting Natuna Regency since it has historical value and has become the target of photo spots for visitors. However, Alif Stone Park possesses shortcomings, such as not having a permanent tour guide and a website providing information on its attractions. Accordingly, an easily accessible website is highly required to facilitate services in providing information. In this case, a QR code can lead to a website containing information about Alif Stone Park, covering its history, origin, tourist sites, and attractions. Therefore, a website was created utilizing a QR code scanning system to help visitors discover information. The development of the Alif Stone Park website underwent six stages: requirement gathering, requirement analysis, requirement specification, prototyping, implementation, and testing involving the developer, owner, and visitor. The implementation and testing revealed that the Alif Stone Park website, including its features, was successfully developed. The system scan was also successfully created. This website could be accessed using a QR code scanned from visitors' smartphones.*

**Keywords:** *Alif Stone Park, Geosite Travel, Tour Guide, QR Code*

## **1. Introduction**

Alif Stone Park is a prehistoric geosite tourism or rock garden. Along the shores of Sepempang Village, East Bunguran Sub-district, Natuna Regency, Riau Islands, giant granite rocks are arranged in a magnificent pattern. Geosite tourism, or rock garden, is one of the most popular tours among local and overseas tourists to Natuna Regency due to its historical significance and numerous photo spots. In addition, Alif Stone Park provides tourists with a variety of attractions, such as *Batu Alif* (Alif Stone), *Batu Bertanya* (Asking Stone), *Batu Jembatan Terputus* (Broken Bridge Stone), *Batu Penyu Raksasa* (Giant Turtle Stone), *Batu Bersantai* (Relaxing Stone), Sea Swing, Whale Skeleton, and others.

Furthermore, the abundance of attractions at Alif Stone Park encourages tourists to seek information on its tourist objects, history, origin, location, and the best photo spots. However, visitors receive substantially less of the previously specified items due to the absence of permanent tour guides, a lack of signage directions to tourist attractions, limited information about tourist objects, and good photo spots at Alif Stone Park. Consequently, future visitors wish Alif Stone Park would address these drawbacks and develop a website to help them visit this tourist spot.

Responding to these conditions, an accessible website is highly required to empower visitors to gain information on Alif Stone Park. In this case, a QR code will lead to a website containing information about Alif Stone Park, its tourist attractions, history,

origin, and location. Therefore, a website was developed utilizing a QR code scan system to help the visitors.

### **1.1 Website**

Researchers performed website or site can be interpreted as a collection of pages that displays text data information, still or moving image data, animation data, sound, video and or a combination of all of them, both static and dynamic which form a series of interrelated buildings where each connected to page networks (hyperlinks) [1].

### **1.2 Domain**

Researchers performed the domain is the address that will deliver to the intended website. On basically, a domain is a simple form of an IP address in the form of a combination tricky numbers. With so many websites spread on the internet, memorize combination of these numbers is certainly very difficult. The domain function is a tool for identify a web hosting [2].

### **1.3 QRCode**

Researchers performed QR code is a Quick Response Code, a two-dimensional barcode that it contains various types of information directly. To open a QR code This requires a scan or scan using a smartphone. QR codes also one of the technologies that is very practical and widely used in the current era this is all digital, for that QR code is important [3].

### **1.4 Requirements Gathering**

Researchers performed requirements gathering is a fundamental part of every project software development. Requirement gathering is a process of producing list (functional, system, technical, etc.) of all stakeholders (customers, users, vendors, IT staff) to be used as the basis for the formal definition from what project[4].

### **1.5 Requirements Analysis**

Researchers performed requirement Analysis is a process to obtain information regarding the system or software required by the user, so the hope is that the information system that will be created can help users in completing their tasks [5].

### **1.6. Requirements Specifications**

Researchers performed requirements Specification is a document that describes what will be the software does and how it performs. This also describes functionality required by the product to meet all stakeholder needs interests (business, users) [6].

### **1.7. Prototyping**

Researchers performed prototyping is the process of developing a prototype precisely for used first and continuously improved until the system is obtained intact. Prototyping is a process used to help software development in forming a model of the software must be made [7].

### **1.8. Implementation**

Researchers performed implementation or implementation is an activity carried out with planning and refers to certain rules to achieve a goal activity. Implementation can be done if there is already a plan or concept that is want to do. The purpose of implementation is to implement and actualize the plans that have been drawn up into a tangible form. It's because it's deep compiling a plan also arranges the goals to be achieved [8].

### **1.9. testing**

Researchers performed testing is a process of implementing a program with a goal found an error. A good test case is if the test have the possibility of discovering an unrevealed error. Something a successful test is when the test uncovers an error that was originally not found [9].

### **1.10. Php**

Researchers performed PHP is a web-based programming language where the system that is applied is on the server side. PHP can be inserted between scripts – HTML language scripts and other server side language arenas, with it then PHP will executed directly on the server. While the browser will execute the web page through the server

which then receives the "finished result" display in HTML form, while the PHP code itself will not be visible [10].

## 2. Method

The development of the Alif Stone Park Natuna website involved six stages, as displayed in Figure 1.

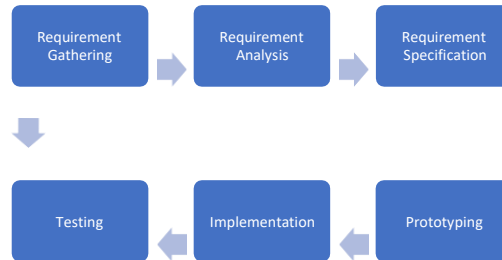


Figure 1 Research method stages

## 3. Results

### 3.1 Results and Discussion

#### Implementation

The implementation followed the design made in the prototyping stage. In the implementation, a website display was created for visitors. The display included the homepage, menu button dropdown, Alif Stone Park page, map page, photo page, tourist attraction page, page per tourist attraction, about page, and website footer.



Figure 2 Homepage display

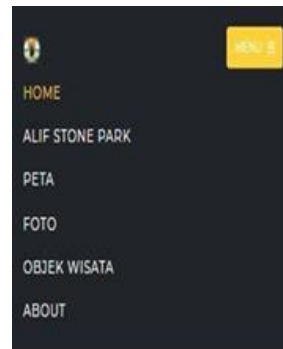


Figure 3 Menu button dropdown

Figure 2 illustrates the website's homepage display. On the homepage, Alif Stone Park's background reads "Welcome to the Alif Stone Park Natuna Website!" and "IT'S NICE TO MEET YOU." These two sentences were intended to greet visitors opening the website. This page was also equipped with a navbar with a menu button and the Alif Stone Park logo. This navbar was also on the Alif Stone Park page, map page, photo page, attraction page, and about page. Figure 3 depicts the menu button dropdown display. The color of the dropdown button followed the color of the website's navbar. The menu button dropdown had six lists visitors could select: home, Alif Stone Park, maps, photos, attractions, and about. When clicking the home list, the website

display moved to the homepage display of the Alif Stone Park website. For the list of Alif Stone Park, the website display moved to the Alif Stone Park page containing tourist information about Alif Stone Park. The map list illustrated the complete Alif Stone Park travel map. In addition, the photo list exhibited photos of domestic and foreign visitors who visited Alif Stone Park. Subsequently, the list of attractions portrayed the attractions at Alif Stone Park. Finally, the about list displayed an about page containing information about the website.



Figure 4 History and origin page display



Figure 5 Owner of Alif Stone Park page display



Figure 6 Final page display of Alif Stone Park



Figure 7 Alif Stone Park award page display

Figures 4, 5, 6, and 7 illustrate the Alif Stone Park page displays. Four timeline images were displayed on the page: history and origin, the owner of Alif Stone Park, writing awards, and Alif Stone Park writings. The history and origin of Alif Stone Park, the owner of Alif Stone Park, and the Alif Stone Park awards were the titles of three timeline images, respectively. First, the history and origin of Alif Stone Park covered how its early development turned into a distinctive and unique attraction for Natuna Regency. Then, the Alif Stone Park owner page provided information about the owner's profile. The awards won by Alif Stone Park were also included on the Alif Stone Park award page.



Figure 8 Map page display



Figure 9 Photo page display



Figure 10 List of tourist attraction display

Figure 8 exhibits the map page, displaying the entire Alif Stone Park, with red points representing the tourist attraction locations. Additionally, the red points listed the names of each tourist attraction, allowing visitors to discover what this tourism has offered. Figure 9 depicts the photo page displaying photos of visitors who had visited Alif Stone Park, both domestic and foreign. Visitors from well-known figures, actors, actresses, singers, and others were also featured. Figure 10 presents the list of tourist attraction page containing 12 attractions. Visitors could view the names, photos, explanations, local maps, and photo galleries of each tourist attraction by selecting them.



Figure 11 Tourist attraction page display



Figure 12 Display of tourist object explanation page



Figure 13 Display of photo gallery page of tourist attractions



Figure 14 Map page display of the tourist attraction location

Figures 11, 12, 13, and 14 depict the tourist attraction page displays. The tourist attraction of Batu Alif (Alif Stone) was taken as an example of the page display. The explanations, local maps, and photo galleries were the three options for the navbar display; each had a corresponding icon. The book icon represented the option of an explanation list containing details on the selected tourist attractions. The map icon denoted the option of a local map list of the selected tourist attractions. Meanwhile, the image icon signified the option of a photo gallery list exhibiting pictures taken by visitors.

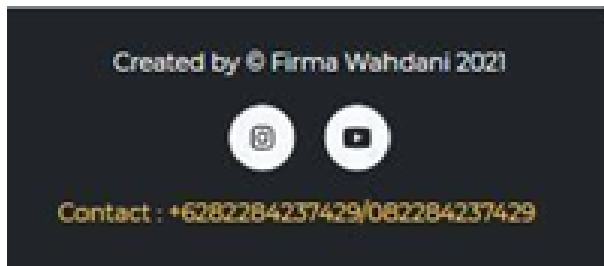


Figure 15 Footer display



Figure 16 About page display

Figure 15 illustrates the footer display, with a copyright “Created by @ Firma Wahdani 2021.” It also posted Instagram and YouTube icon buttons, leading to the social media pages of the website developer. The user could contact the developer using the contact provided in the footer and social media pages if detecting errors on the website. The about page, depicted in Figure 16, contained brief information about the Alif Stone Park website. Alif Stone Park’s logo and Instagram and Facebook icons were also provided on this page. The Instagram icon sent users to Alif Stone Park’s Instagram when they tapped it. Additionally, the Facebook icon brought users to Alif Stone Park’s Facebook page when clicked.

#### a. Hardware and Software

This study required hardware and software to develop the Alif Stone Park Natuna website. The hardware and software are listed as follows.

##### a. Hardware

This research utilized a laptop with the following specifications.

- a) Processor: AMD A12- 9700P RADEON R7, 10 COMPUTE CORES4C+6G 2.50 GHZ
- b) Video Graphic Array (VGA): AMD Radeon (TM) R5 M330 and AMD Radeon R7 Graphics
- c) Random Access Memory (RAM): 8 GB
- d) Memory: 1 TB

##### b. Software

This study employed the following software.

- a) Windows 10 Pro-64-bit as the operating system
- b) Visual Studio Code as the code editor
- c) Laravel as a framework to develop the website
- d) Google Chrome as the browser to access the Alif Stone Park Natuna Website

**b. Testing**

Testing followed the implementation stage. Three tests were run to assess the website. The website developer performed the initial testing, followed by the owner of Alif Stone Park, and ended with Alif Stone Park visitors running the final testing.

**c. Developer Testing**

- a) Purpose: This test aimed to ensure the functionality of the created features and identify errors or bugs in these features.
- b) Method: Black box testing was utilized to test each feature on the website.
- c) Procedure: The developer created 26 test scenarios. Subsequently, feature testing was performed under the test scenarios. The test results were then tabulated.

**Results**

Table 1 displays the test results, encompassing testing scenarios, expected results, results obtained, status, and cause of failure.

Table 1 Test results

No	Testing scenarios	Expected	No	Testing scenarios	Expected
1	The user clicks the menu button on the homepage.	The menu button will display a dropdown list.	The menu button displayed a dropdown list.	Succeed	None
2	The user clicks the Alif Stone Park logo.	The user will move to the homepage.	The user moved to the homepage.	Succeed	None
3	The user clicks the dropdown list home in the menu button.	It will display the homepage.	It displayed the homepage.	Succeed	None
4	The user clicks the dropdown list of Alif Stone Park in the menu button.	The user will move to the Alif Stone Park page.	The user moved to the Alif Stone Park page.	Succeed	None
5	The user clicks the dropdown list of maps in the menu button.	The user will move to the map page.	The user moved to the map page.	Succeed	None
6	The user clicks the dropdown list of photos in the menu button.	The user will move to the photo page.	The user moved to the photo page.	Succeed	None
7	The user clicks the dropdown list of tourist attractions in the menu button.	The user will move to the tourist attraction page.	The user moved to the tourist attraction page.	Succeed	None
8	The user clicks the dropdown list of about in the menu button.	The user will move to the about page.	The user moved to the about page.	Succeed	None
9	The user clicks	The user will see	The user could see	Succeed	None

No	Testing scenarios	Expected	No	Testing scenarios	Expected
	the photo on the map section of the page.	the entire map of Alif Stone Park.	the entire map of Alif Stone Park.		
10	The user clicks the close map button on the photo page of the map section.	The map photo will be closed, and the user will return to the map page.	The map photo was closed, and the user returned to the map page.	Succeed	None
11	The user clicks the photos of visitors on the photo page.	The user will see the photos of visitors.	The users saw the photos of visitors.	Succeed	None
12	The user clicks the close photo button at the end of the photo.	The photos of visitors will be closed, and the user will return to the photo page.	The photos of visitors were closed, and the user returned to the photo page.	Succeed	None
13	The user clicks the x button on the photos of visitors.	The photos of visitors will be closed, and the user will return to the photo page.	The photos of visitors were closed, and the user returned to the photo page.	Succeed	None
14	The user clicks a photo of a tourist attraction on the tourist attraction page.	The user will move to the tourist attraction page.	The user moved to the tourist attraction page.	Succeed	None
15	The user clicks the Instagram logo on the about page.	It will display Alif Stone Park's Instagram.	It displayed Alif Stone Park's Instagram.	Succeed	None
16	The user clicks the Facebook logo on the about page.	It will display Alif Stone Park's Facebook.	It displayed Alif Stone Park's Facebook.	Succeed	None
17	The user clicks the Instagram logo in the website footer.	It will display the web developer's Instagram.	It displayed the web developer's Instagram.	Succeed	None
18	The user clicks the YouTube logo in the website footer.	It will display the web developer's YouTube channel.	It displayed the web developer's YouTube channel.	Succeed	None
19	The user clicks the dropdown list of explanations on the tourist attraction page.	It will display the tourist attraction explanation.	It displayed the tourist attraction explanation.	Succeed	None
20	The user clicks the dropdown list of local maps on	It will display the local maps of tourist attractions.	It displayed the local maps of tourist attractions.	Succeed	None



No	Testing scenarios	Expected	No	Testing scenarios	Expected
	the tourist attraction page.				
21	The user clicks the dropdown list of photo galleries on the tourist attraction page.	It will display the photo galleries of tourist attractions.	It displayed the photo galleries of tourist attractions.	Succeed	None
22	The user clicks the x button for the selected photo in the photo gallery of the tourist attractions.	The selected photo in the photo gallery will be closed, and the user will return to the dropdown list of the tourist attraction page.	The selected photo in the photo gallery was closed, and the user returned to the dropdown list of the tourist attraction page.	Succeed	None
23	The user clicks the right triangle button on the selected photo in the photo gallery of the tourist attractions.	It will display the following photo in the photo gallery of the tourist attractions.	It displayed the following photo in the photo gallery of the tourist attractions.	Succeed	None
24	The user clicks the left triangle button on the selected photo in the photo gallery of the tourist attractions.	It will display the previous photo in the photo gallery of the tourist attractions.	It displayed the previous photo in the photo gallery of the tourist attractions.	Succeed	None
25	The user scans the QR code for Alif Stone Park.	It will display the Alif Stone Park Natuna website.	It displayed the Alif Stone Park Natuna website.	Succeed	None
26	The user scans the QR code for a tourist attraction.	It will display the scanned tourist attraction website.	It displayed the scanned tourist attraction website.	Succeed	None
22	The user clicks the x button for the selected photo in the photo gallery of the tourist attractions.	The selected photo in the photo gallery will be closed, and the user will return to the dropdown list of the tourist attraction page.	The selected photo in the photo gallery was closed, and the user returned to the dropdown list of the tourist attraction page.	Succeed	None

Discussion: A total of 26 scenarios were employed to test the website features of Alif Stone Park, as described in Table 3.1. All scenarios were successfully tested, acquiring outstanding results. In short, all website features functioned properly, fulfilling the intended research goal. Conclusion: All features functioned appropriately, and no errors or bugs were discovered.

#### d. Owner Testing

**Purpose:** Owner testing aimed to ensure that the website met the expectation of Alif Stone Park’s owner. In addition, Alif Stone Park’s owner should find it easy to navigate and utilize the website. **Method:** The developer interviewed the owner to conduct owner testing, asking him three questions regarding his thoughts on the Alif Stone Park website.

- a) Are there any difficulties in using the website?
- b) Is it what you expected from the website?
- c) What do you anticipate for the website development?

**Participant:** The owner testing participant was the owner of Alif Stone Park Natun. **Procedure:** The developer previously instructed the owner to utilize the website to perform several scenarios. After completing the scenario assessment, the developer asked about the owner’s experience in utilizing the website, entailing the difficulty in utilizing the website, the fulfillment of the owner’s expectations, and the anticipation for the website development. **Results:** The developer interviewed the owner of Alif Stone Park and learned the results of the owner testing. After the owner had completed operating the Alif Stone Park website under the developer’s instructions, the developer sent the owner three questions.

Table 2 Interview Results

Question	Answer
Are there any difficulties in using the website?	The website was quite simple when I accessed it. It was excellent for navigating the website and was easy to understand.
Is it what you expected from the website?	Overall, it worked well and was simple.
What do you anticipate for the website development?	Future updates should cover additional guest review videos, videos of the homestay and its surroundings, and high-quality photos.

**Discussion:** The developer asked the owner three questions regarding his perceptions of the Alif Stone Park website. The findings uncovered that the website was created as simple and understandable. Additionally, the developed website was generally effective and easy to use. Moreover, the owner wished to enhance the Alif Stone Park website with guest testimonial videos, brief videos of the homestay and its surroundings, and high-quality photos. **Conclusion:** The website development surpassed the owner of Alif Stone Park’s expectations. The entire website was praised for being excellent, simple, and easy to navigate and understand.

#### e. Visitor Testing

**Purpose:** Visitor testing aimed to learn how visitors utilize the Alif Stone Park website. Additionally, the website features were accessed by visitors to reveal their user experience. **Method:** The developer employed interviews for visitor testing, asking each visitor three questions regarding the Alif Stone Park website. The questions are as follows.

- a) What do you think about the website?
- b) Have you obtained the information you want on the website?
- c) Is the website easy to use, or do you find it difficult to use?

**Participants:** Visitors of Alif Stone Park Natuna participated in the visitor testing, totaling 15 people. The initial participants amounted to 30 visitors. However, it was reduced to half of it due to the restrictions on community activities (PPKM). The 15 visitors involved in visitor testing represented half of the initial

target, generating valid test results. Procedure: The developer accompanied visitors during testing. The visitors should follow the developer's instructions. The visitors scanned the developer's QR, leading them to the Alif Stone Park website. They tested the website features. After completing the testing, the developer interviewed the visitors by asking them three questions about their opinions of the Alif Stone Park website. Results: The developer interviewed visitors of Alif Stone Park participating in visitor testing. In this regard, three questions concerning the Alif Stone Park website were addressed to participants. Each of the three questions served a purpose. The interview results were then documented in the following tables.

Discussion : The visitors asserted that the Alif Stone Park website was simple and helpful. For new visitors, it supplied some crucial information about Alif Stone Park and expanded knowledge. The website's presentation was simple, excellent, and appealing. They could discover the necessary information about Alif Stone Park, such as tourist attractions, site plans, photos of tourist attractions, history, and maps. Moreover, they believed the website was simple, practical, and easy to comprehend, even for unfamiliar people. Conclusion : The user experience demonstrates that the visitors encountered no problems, and the Alif Stone Park website was simple and easy to use with a helpful presentation. Additionally, visitors could quickly access the Alif Stone Park website by scanning a QR code. This website also made known to visitors previously unaware of the details of every tourist attraction, the map, and the history of Alif Stone Park.

#### 4. Conclusion

The Alif Stone Park website and its features were successfully developed. The website's scan system was successfully created and functioned properly. Additionally, a QR code that visitors could scan with their mobile phones to access this website existed.

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