MASTER OF INFORMATION SYSTEMS

Capstone Project

UNIVERSITY OF THE PHILIPPINES
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MASTER OF INFORMATION SYSTEMS

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CAMALIGAN, CAMARINES SUR TOURISM WEB INFORMATION SYSTEM

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Acceptance Page

This paper prepared by FRANCIS LINEOSO S. ABILAY with the title: "**CAMALIGAN, CAMARINES SUR TOURISM WEB INFORMATION SYSTEM"** is hereby accepted by the Faculty of Information and Communication Studies, U.P. Open University, in partial fulfilment of the requirements for the degree course.

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BIOGRAPHICAL SKETCH

Francis Lineoso S. Abilay is a graduate of BS Computer Engineering at the University of the Philippines, Diliman, Quezon City. His undergraduate work focused on the development of a Palm device software with hardware interface in order to measure outputs of a PVC Solar Panel.

He spent most of his professional career as a web and SQL developer, team and project lead, as well as an analyst to various systems. He is currently working as an IT Analyst in one of the Banks in Singapore. He loves to solve online problems, manage queries and databases, and tinker with both software and hardware systems.

He plans to go back to the Philippines soon, and teach undergrad courses.

ACKNOWLEDGMENT

The author of the Camaligan, Camarines Sur Tourism Web Information System would like to express sincere gratitude to all those who collaborated and contributed to the completion of this project. Your support has been invaluable.

The author would like to extend my heartfelt gratitude to my project adviser, Prof. Mari Anjeli L. Crisanto. Your invaluable insights, suggestions, and support have been instrumental in facilitating the completion of this project.

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The author wants to thank the Abilay and the Berango families for their support, guidance, and encouragement during this project. I am particularly grateful to my wife, Joan Abigail, for her relentless encouragement and motivation to complete the project and for the time, patience, and understanding during the busy days juggling work and this project. To my two kids, Niko and Allie, thank you for the inspiration that served as the driving force behind the completion of the project.

The author is hopeful that this project will attract more tourists and revenues to the town of Camaligan and provide additional sources of work and income for residents and small businesses. The author is deeply indebted to this place where he spent his formative years, and desire to give back in any way possible.

Dedicated to:

Mama, Ninay, Niko and Allie. and to the Abilay, Segovia, and Berango Families;

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ABSTRACT

Camaligan, Camarines Sur River Park (hereinafter referred to as “Camaligan River Park”) is one of the booming tourist spots in the Bicol Region, with several tourist attractions including Camaligan River Cruise, a hanging bridge, private boat rentals, and an open function hall. The absence of an information website and booking system makes it difficult for tourists to know about the place and to reserve a scheduled visit. Similarly, the Camaligan Local Government Unit (“LGU”) makes extra effort to promote the Camaligan River Park and manually assist the visitors. The Camaligan Tourism Web Information System aims to boost the online presence of the Camaligan River Park and other tourist spots within the town. This new system will help facilitate online booking and reservation of the attractions and other facilities, provide up-to-date information and relevant details about the town’s tourism, answer online messages and queries, and support the Camaligan LGU to market places of interest in the municipality. In addition, the system will include a virtual tour of the entire stretch of the Camaligan River Park to give the tourists a holistic view and appreciation of what the place has to offer. An online map of the Camaligan tourist spots is incorporated for users' convenience and ease of navigation. With the Camaligan Tourism Web Information System in place, residents and tourists will have a digitally attractive resource about the Camaligan River Park, including a user-friendly online booking and reservation system. It will likewise help the Camaligan LGU to organize the tours and generate a full report of the bookings and revenues.

Chapter I
THE PROBLEM DOMAIN

Statement of the Problem and Objectives

The problem addressed by this project was the need for the online presence of the tourist spots in the municipality of Camaligan, specifically the Camaligan River Park and its attractions. The limited social media presence and tedious process of going to the Camaligan Tourism Office to book attractions and/or facilities are not sufficient to create a welcoming atmosphere characteristic of a tourist destination. The Camaligan Tourism Web Information System aimed to (i) raise awareness about the town's rich history, eventually resulting in increased tourist activities; (ii) aid the Camaligan LGU in advancing the town's tourism pursuits through organized tours and generation of reports on bookings and revenues; (iii) indirectly provide additional sources of work and income for residents and small businesses.

Background of the Project

Camaligan, Camarines Sur is a fourth-class municipality next to Naga City. Located near the Bicol River, the people of Camaligan gained their socio-cultural identity as river people and traders during pre-colonialism. The idea of building the park was to promote the town's culture and bring life to the river, as it was a reminder of Camaligan's significant contribution to history and its integral role in the emergence of the Bicol civilization [1].

The Camaligan River Park was developed in 2014 through the joint efforts of the Camaligan LGU and the Department of Tourism. The project consisted of a River Park, a hanging bridge, an MB Camaligan River Cruise, and an open function hall that could hold up to 200 people for special events and functions [2]. The MB Camaligan River Cruise was available for a 3-hour sunset ride on weekends, while other attractions were open daily.

Currently, the booking processes are all manually operated. Tourists purchase tickets through a manned ticketing booth or visit the Camaligan Tourism Office to request a reservation. Marketing and advertisement run through word-of-mouth or free social media accounts.

Significance and Scope of the Project

The project focused on the creation and set-up of the Camaligan Tourism Web Information System consisting of the following features:

1. Information on the Attractions and Packages offered by Camaligan River Park
2. Online booking system and report
3. Virtual tour of the Camaligan River Park
4. Tourist map of Camaligan town
5. Contact information and message-sending page

Website maintenance and future page updates are outside the project's parameters but can be considered for future evaluation and updates.

Documentation of Existence and Seriousness of the Problem

Currently, Camaligan Tourism lacks a dedicated website and booking system. At present, reservations for attractions and rides are managed through the Facebook page, by phone with Camaligan Tourism staff, or by walk-in visits to Camaligan River Park on weekends. As a result, tourists from outside Camarines Sur are often unaware of the park's existence. The absence of a dedicated tourism website and effective advertising has led to suboptimal revenue and exposure for the park.

Significance of the Study

The study aims to demonstrate how a Tourism Website with booking system could greatly increase the exposure of the Tourist spots and attractions to potential clients outside of Bicol Region.

The booking and reservation system could save time and effort for both the client who wish to book a spot for the attraction and get more information about what the place has to offer, and staff who will have an automated booking, payment and revenue reporting system.

The study will focus on the development of a system who are both informative and user friendly. An online virtual tour will be incorporated for clients to have the idea on what the Camaligan River Park has to offer.

Operational Definition of Terminologies

1. **Median** is the midpoint value on the group of data. For example, for 100 respondents, the answers are arranged from lowest to highest, and the 50th score would be the median.

2. **Average** is the central value in a group of data. For example, the answer for all 100 respondents – Add all the 100 responses, then divide it by 100, the result will be the average

3. **Reservations** pertains to the booked attraction that is already paid during the prescribed period of time. Reservation may not be cancelled by the Tourism staffs unless due to Acts of God.

4. **Virtual Tour** pertains to the interactive video created for the website. Users can select into different options of viewing the tourist spot.

5. **Tourism Map** is the integrated map of the town of Camaligan. It displays all the attractions, with its corresponding pictures and informative descriptions. User can choose on which one to visit based on the map

Chapter II

REVIEW OF EXISTING ALTERNATIVES

Some platforms provide customizable website creation, domain management, payment handling, and other useful features to streamline website development. One such example is WIX.com and Weblium.com, which offer a user-friendly interface for building websites with plug-and-play options, including CRM and data analytics integration. However, a drawback of utilizing these solutions is that administrators typically require at least a basic IT background to manage and construct a travel website effectively. Additionally, there's a monthly cost of approximately $100 for business-level websites and associated features.

The author also explored some open-source booking systems, such as Supersaas, Upbooking, and Freetobook. Their software provides features such as booking and cancellation, allows change in availability, and optimizes search results, among others. However, such features are only limited to booking services.

Another approach to promote Camaligan tourist attractions is to leverage promotional platforms like KLOOK, AirBNB, Trip.com, and many other travel websites. They can attract more visitors by listing the attractions as must-visit destinations in the Bicol Region with discounted rates. However, offering discounts on already affordable packages can negatively impact revenue for small businesses. Furthermore, fees are associated with these promotional platforms for advertising products, adding to the financial considerations.

The current booking system for tourist attractions is purely manual. Tourists go to the Camaligan Tourist Office to check if there is an available slot for the attractions. Since the slots are limited, some tourists cannot take the river cruise or enter the Hanging Bridge. To make a booking, tourist groups can go to the Camaligan Tourism Office to reserve a date ahead of time, an option recommended to tourist groups.

Another booking alternative is to use the Camaligan Tourism office mobile number. However, it is not posted publicly, so only a few can book. The Facebook account of the Camaligan River Park is another mode for chat, but it needs to be more closely monitored and could be more responsive.

Chapter III

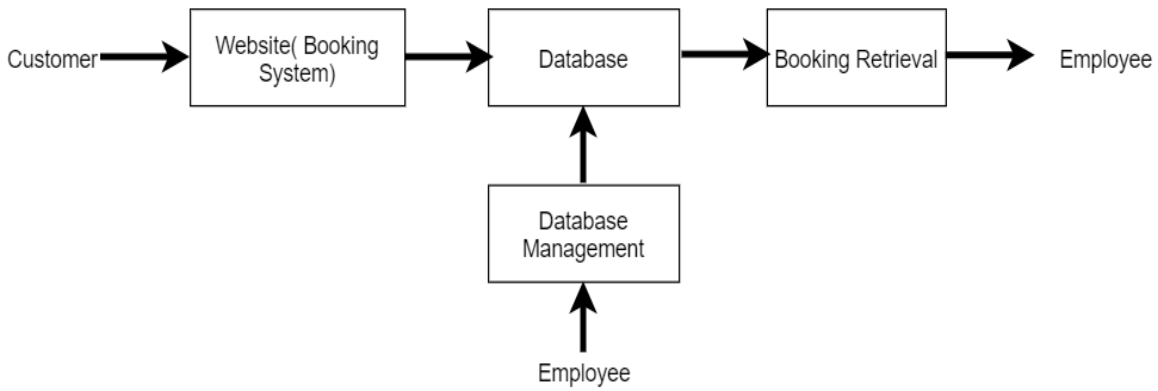
APPROACH TO BE TAKEN IN THIS PROJECT

Theoretical Framework

A. System Model

The system is classified into three main components. The first component provided some form of database management, allowing municipality employees to control what could be displayed and booked through the website. The second component was the booking system, which provided functionality for customer users to place their bookings and supply all necessary details. The third was the booking retrieval, which was to be used by the municipality employees to keep track of all bookings. This component handled retrieving and displaying booking information and updating completed bookings. Reports could also be generated to check on the revenue, booking details, and other relevant information for data analytics.

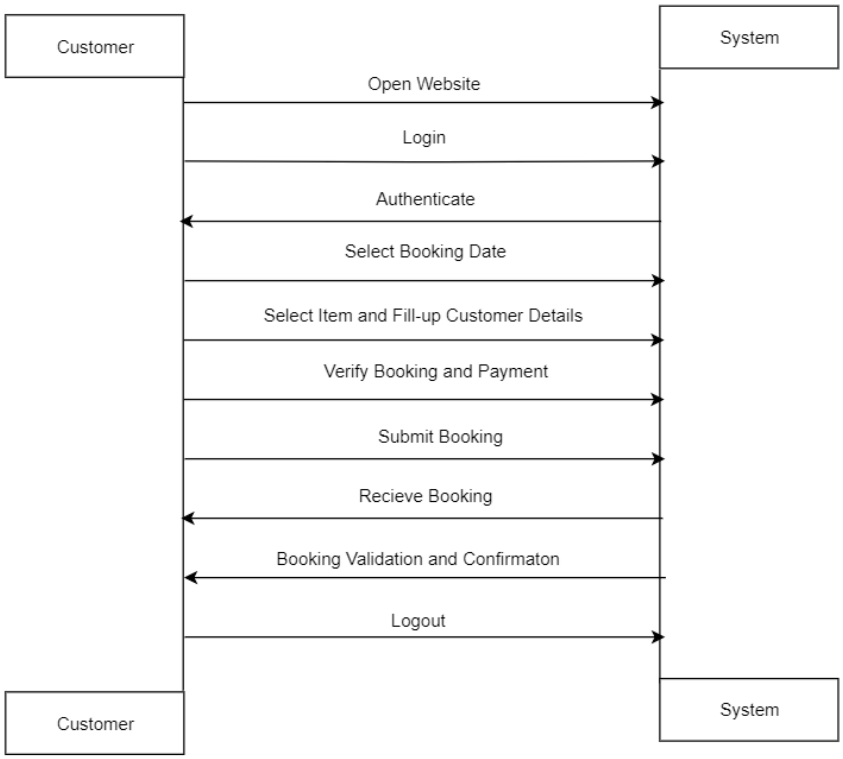
Figure 1. System Model



B. Sequence Diagram

The sequence diagram shows the different scenarios if interaction between the client and the system. It defines how the client accesses the system, data query and input, as well as on how the system respond to the customer queries and inputs.

Figure 2. Sequence Diagram



C. Software Design and Life Cycle

For the development of the project, we will utilize the waterfall model approach. The whole software development will be divided into different phase, and each phase will be a milestone for the project. Since this is a solo project, it would be easier to track the progress of the project by completing each phase sequentially before moving to another.

Rationale of the Framework

By using the waterfall model, developers can establish key milestones to monitor and report weekly progress. These milestones will also be used to create a Gantt chart, which will help track the project's schedule. The waterfall method allows for the identification of backlogs and defects at each milestone, facilitating easier resolution and completion.

The system model is divided into three phases, each serving as a milestone in the project's development. Initially, database objects and admin pages will be created. This will be followed by the development of the customer UI and business model for the booking system. Finally, the report and booking payment system will be implemented.

With a well-structured project schedule and the appropriate technologies, we anticipate that the project will be completed on time.

Technologies Used

The following technologies will be used for the Project.

Table 1. Technologies used

Component	Technology Specification
Web Hosting	AWS EC2, Linux 2 AMI (HVM), 64bit, 8GB SSD Volume
Front End Development	HTML, Bootstrap, CSS, and JavaScript
Backend Development	PHP
Database Server	Mariana DB, MySQL
Data Access Layer	PHP
Database Scripting	TSQL
Interactive Virtual Tour Video	Stornaway.IO video creator
Tourist Map	MapMe map maker
Web Server	Apache LAMMP
Server Access, File Deployment	PuTTY, WINSCP
Code Repository	GitHub

A. Server Set-up

The system will utilize the Amazon Web Services for a cloud-based system. Using EC2, AMD Linux remote server 8GB space is created to act as the Application and Database server. The XAMMP applications were installed. XAMMP is an open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages. HTTPS setup was done to add security. The CamaliganTourism.info domain was set from Domain.com, and PuTTY and WinSCP are used to deploy from the local PC to the server.

B. Programming Language

For the database development, MySQL will be used, it is an open-source Relational Database Management System, which uses SQL languages for querying data. For Web Development, PHP (PHP: Hypertext Preprocessor) will be utilized. It is an open-source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. Bootstrap, JavaScript, and jQuery were used for a more responsive website.

C. Third-Party Plugins

For the interactive virtual tour video, Stornaway.io will be used for development. A project will be created using drone videos that the Camaligan Tourism office will shot and will be given to the author. Mapme.com will be used for the tourism map created for Camaligan tourism. These are all free to use website for students. Lastly, the Google Maps API for the map used in the Contact Us page.

Chapter IV

CHAPTER PLAN

Concept

The website is created using PHP since it is open software and to avoid licensing problems. The server was created using EC2 and utilized a free domain. The database management was developed using MySQL and included CRUD of the booking system, link-up with G-Cash for seamless payment, and the maintenance and report page for the administrative users.

Table 2. System Specification

NAME OF INFORMATION SYSTEM		Tourism Web Information System
DESCRIPTION		The Tourism Web Information System is a software for managing bookings and reservation. For the first phase of development, it shall allow online booking and reservation. This will be in coordination with the Local Government team
STATUS		For development
DEVELOPMENT STRATEGY		Develop a web application that tourists can access anytime, anywhere. This will be most useful for targeting local and foreign tourists, especially those who have less information about the local attraction.
COMPUTING SCHEME		Web-based
USERS	INTERNAL	Local Government staff as Administrator
	EXTERNAL	Tourists
SYSTEM OWNER		Local Government of Camaligan

Table 3. Database Specification

NAME OF DATABASE		Tourism Web Information Database
GENERAL CONTENTS/DESCRIPTION		Shall contain data of Integrated Booking System Database, including: • System users and login credentials • Menu information • Booking form templates • Booking payment and confirmation • System logs
STATUS		All databases will be for build-up
INFORMATION SYSTEMS SERVED		Tourism Web Information System
DATA ARCHIVING/STORAGE MEDIA		AWS Backup Services
USERS	INTERNAL	Administrator
	EXTERNAL	-
OWNER		Local Government of Camaligan

Methods

The project aimed to create a web information system for marketing and booking Camaligan's tourism services. The step-by-step process to establish the online system for the project was discussed as follows: The first phase involved creating a complete Information System Plan. As a resident, I proposed the system to the Camaligan LGU officers, gathering information from tourism staff through online interviews to understand current processes. Involving the right people ensured comprehensive strategic planning for the proposed web information system. To

determine the system's scope, a Strengths, Weaknesses, Opportunities, and Threats Analysis (SWOT) was employed to recognize internal strengths and weaknesses and external opportunities and threats. The target was to complete this first phase by the end of the semester.

The second phase focused on implementing the system. A fully functional website was created to manage the system, with a server set up using EC2 and a free domain. Database management was developed using MySQL, incorporating CRUD functionality for the booking system, linking with G-Cash for seamless payment, and including a maintenance page for administrative users. The target was to complete this second phase by the end of the Information System Project Implementation course.

With the system in steady use, the admin can utilize the reporting functionality to analyse data on frequent customer users, age groups, gender, and other relevant metrics. The reports would also provide insights into peak usage times, enabling informed decisions for advertising and improving customer experience to maximize business processes.

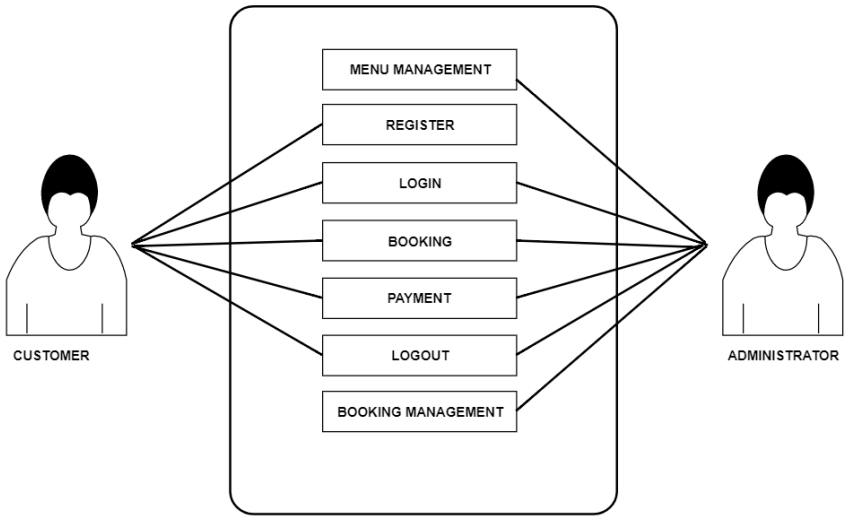
Plan for User Testing and Assessment

Software testing was planned to be conducted at the end of the project to identify defects and errors during the development phases and ensure customer satisfaction with the system. The project included unit, module, system, and acceptance testing.

After completing the development phase, administrators assigned to the project conducted end-to-end module testing. They would follow the user case suite for testing and adhere to test cases to correctly identify defects and errors.

External users were also involved in user testing to provide insight into the system's user-friendliness, which would help improve its overall usability.

Figure 3. User Case Testing



Implementation

The complete system is then transferred to the Camaligan Tourism Office. If the Tourism Office intends to use the system to go live, a documentation manual is provided for admin users to refer to. The manual served as a guide for the maintenance and updating of the system. The author remained on call to provide help and advice as needed.

Chapter V

RESULTS AND DISCUSSION

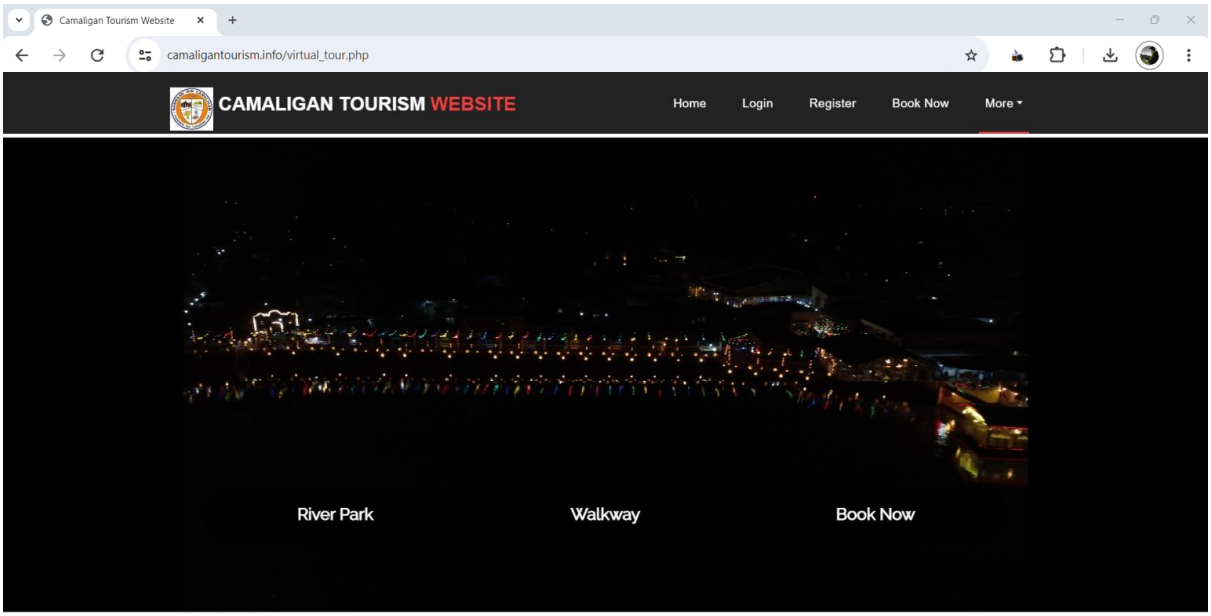
Resulting System

The Home page contains all the attractions and packages in Camaligan. There are links for the Virtual Tour, Tourism Map, and the Booking of attractions.

Figure 4. Camaligan Tourism Home Page

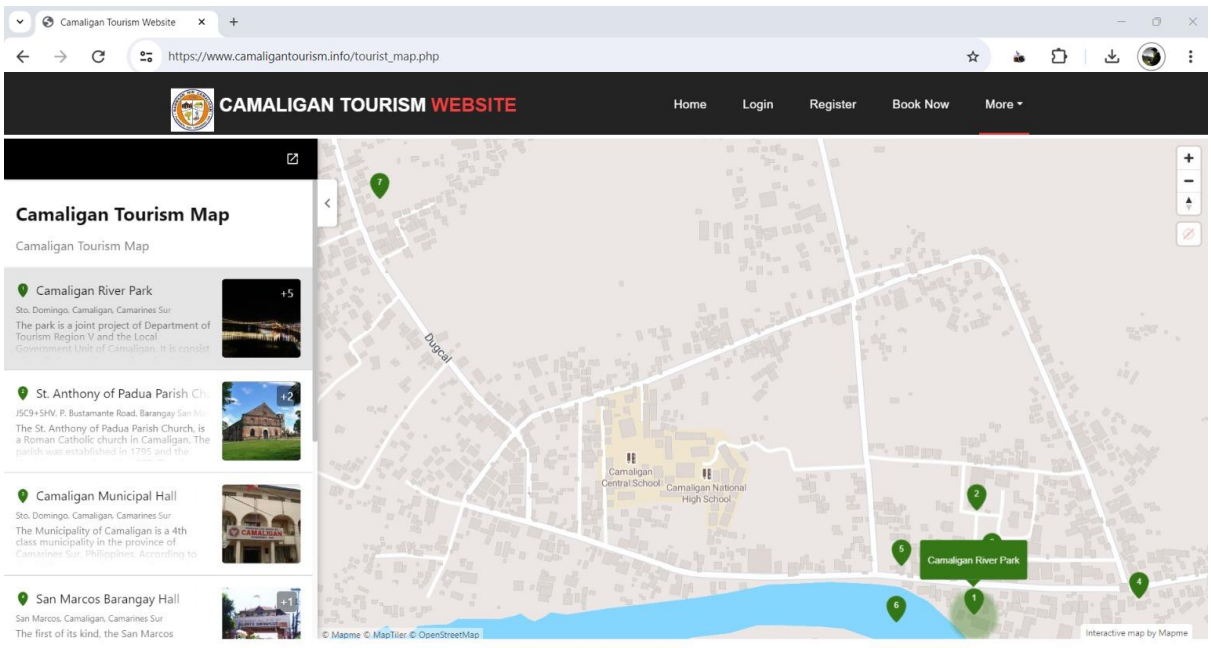
To help users see what the Camaligan River Park has to offer, a virtual tour has been added. Visitors can choose to book attraction packages by clicking on Book Now, or they can click on the various links to advance to the next videos.

Figure 5. Virtual Tour Page



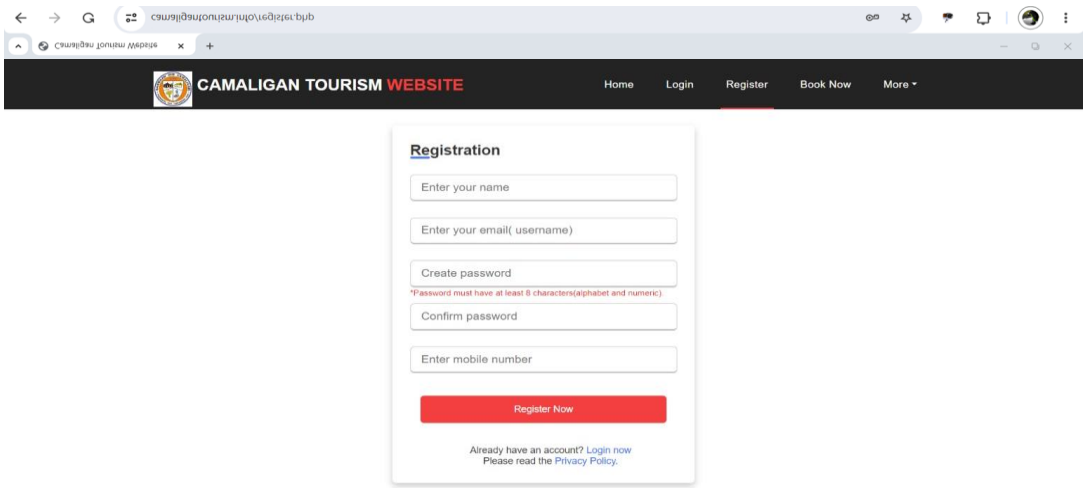
Tourism Map: The map contains the different tourist spots in the town. User can view some photos related to the attraction; The map can also serve as a guide if the user is lost in the town.

Figure 6. Tourism Map Page



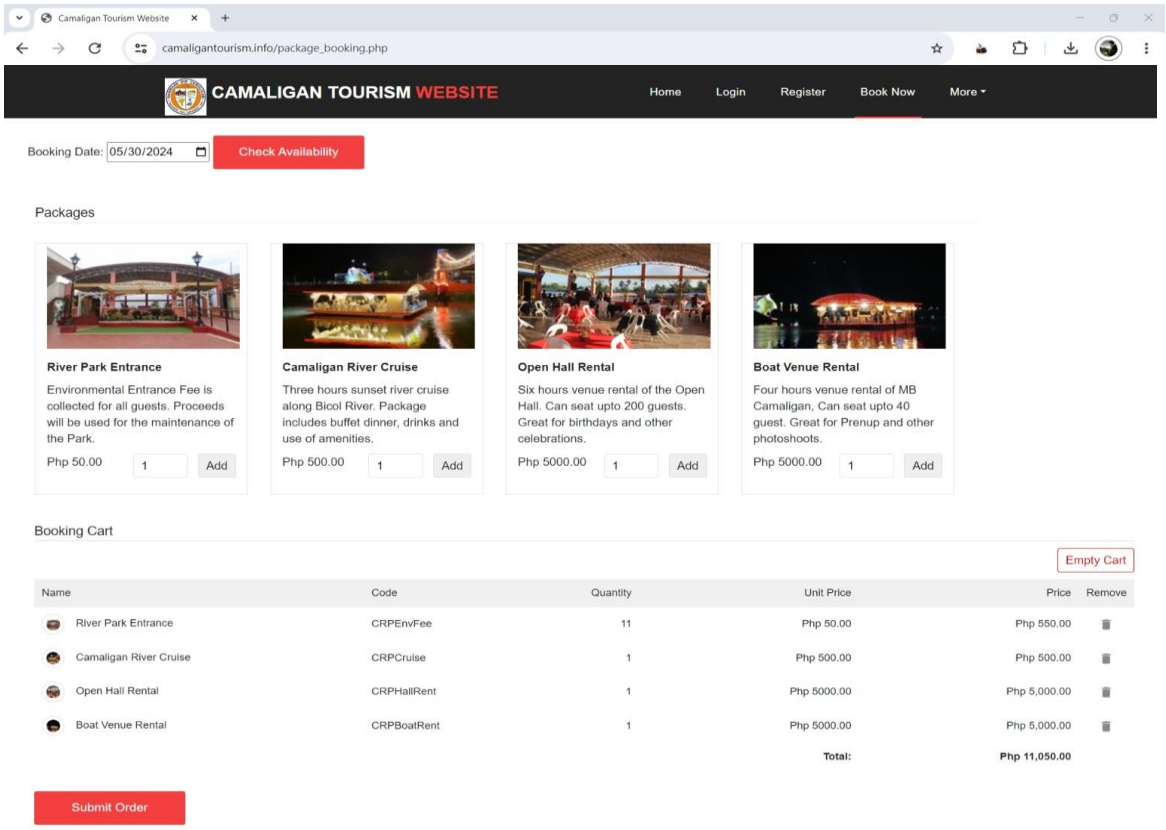
The Registration Page: User needs to register to be able to check out and make reservations.

Figure 7. Registration and Login Page



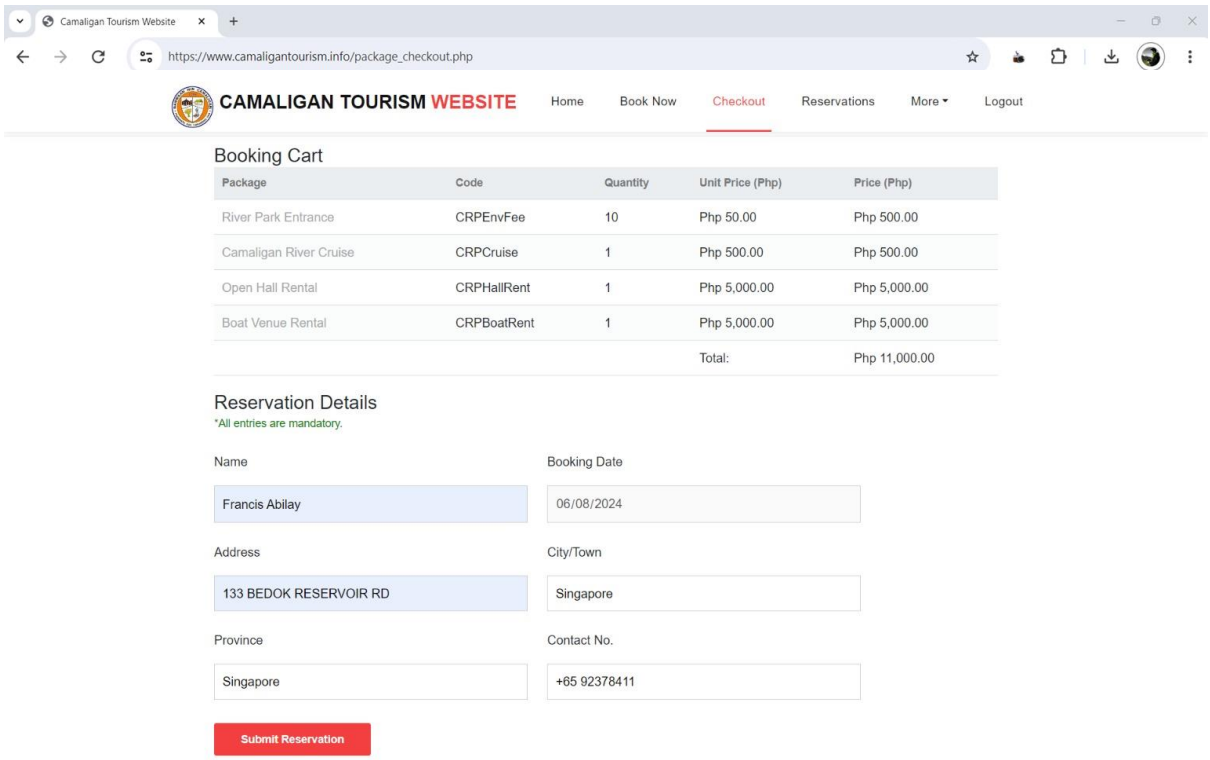
The Booking Page: Users can check for package availability on the date that they want to visit. They can add packages and quantities as well. By clicking Submit, they are required to log in.

Figure 8. Booking Page



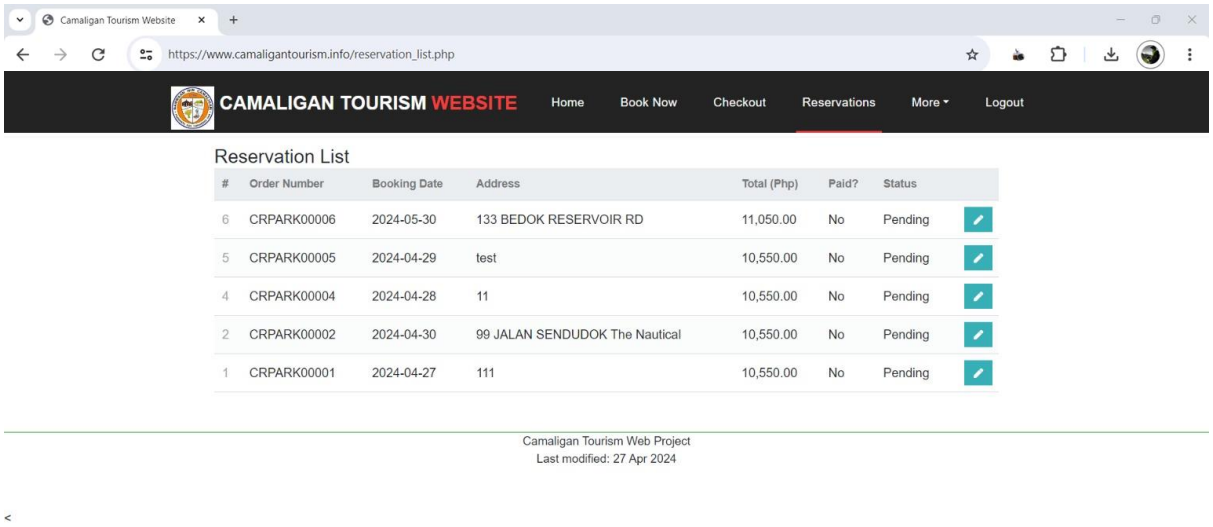
The Checkout Page: This is where the user fills up the personal details as well as confirms if they have the correct booking.

Figure 9. Checkout Page



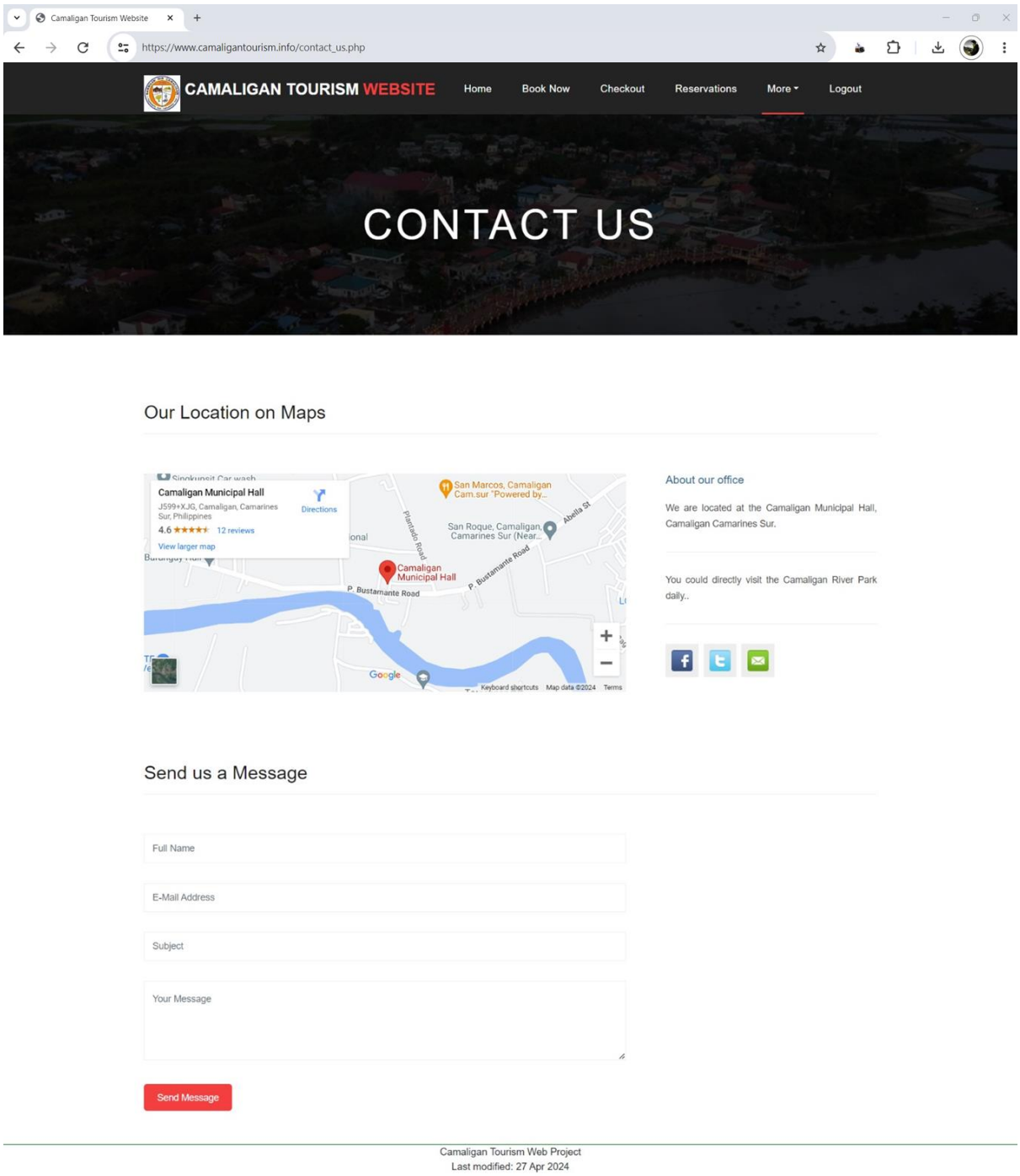
The Reservation Page: It contains all the bookings that the user has reserved. The user can edit details of his booking here.

Figure 10. Reservation Page



The Contact Us page: It contains the location of the Camaligan Tourism Office and its contact details. Users can also send messages to the officers through this page.

Figure 11. Contact Us Page



Project Assessment

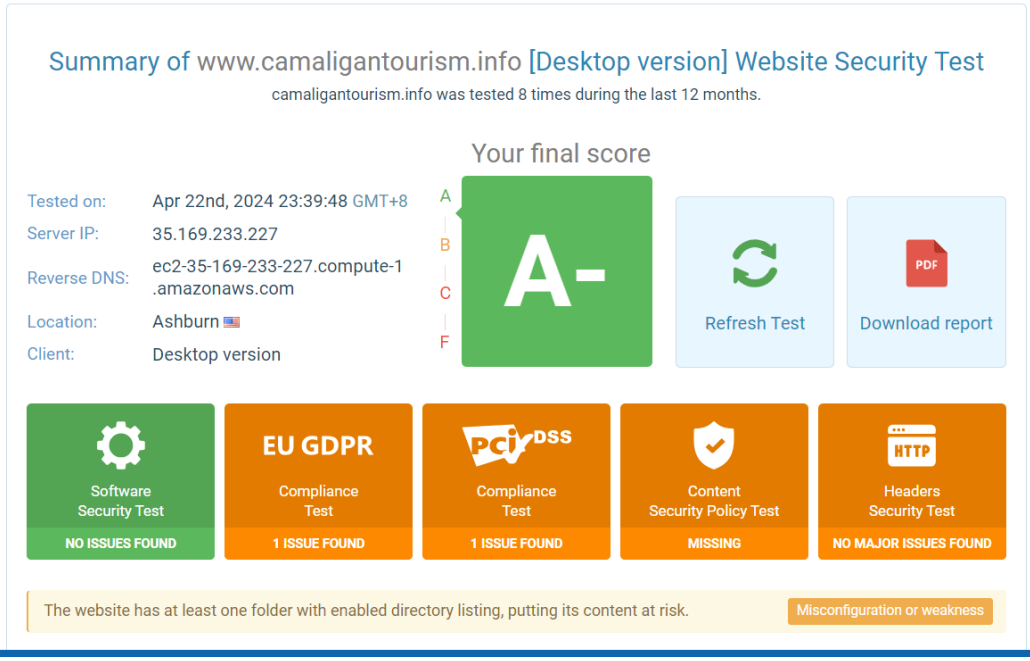
A. User Testing

Throughout the development phase, continuous unit testing was conducted per module to ensure all features worked accordingly. When the system went live, admins and volunteer users tested specific modules to assess their functionalities. Bug fixes and some suggestions were incorporated into the final version of the website.

Multiple users with either admin or user roles carried out usability testing to ensure that all modules were tested for bugs and other missing features. User feedback on bugs and errors was addressed, and suggestions were considered for improving the system.

B. Security Testing

Figure 12. Security Testing Final Grade

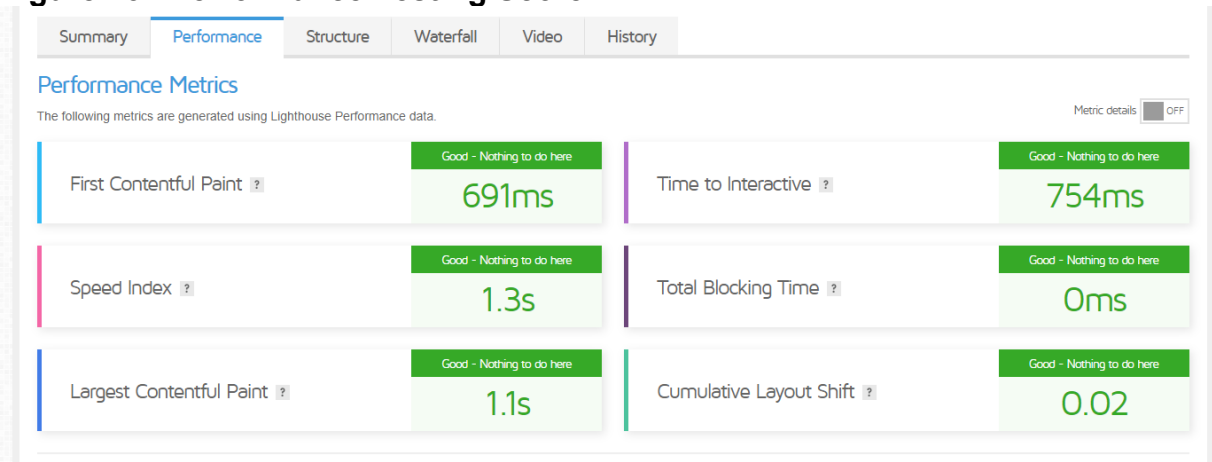


To ensure that the website created is secure and follows proper website standards, the author used the Immunuweb Website Security Test. Several tests and fixes were done before the A- result was achieved based on the system's suggested

flaws. The author added several required features, such as the HTTPS protocol, missing cookies settings and privacy policy, installing the latest JavaScript and Bootstrap, HTTP headers, and reconfiguring large-size images that slow down the system. With the final grade of A-, the system fully complies with the website security standards.

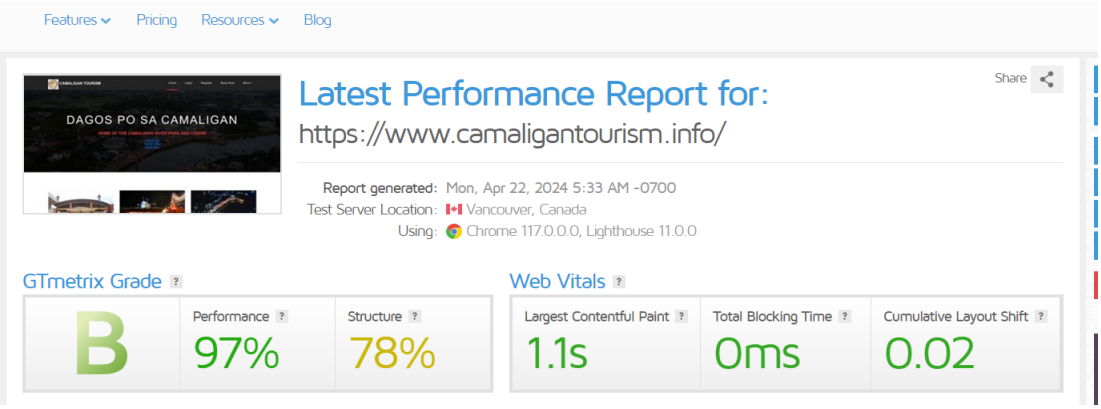
C. Performance Testing

Figure 13. Performance Testing Score



To test the website's performance, the website tester automatically scans the site, checks its components, and measures the loading speed of the website based on industry standards. Different performance metrics were measured using GTmetrix Performance Testing. The First Contentful Paint (FCP) is 691ms and marks the first point in the page load where the user can see anything on the screen. The Speed Index is 1.3sec, which measures how quickly content is visually displayed during page load. The Time to Interactive (TII) is 754ms, which measures a page's load responsiveness and is reliability-ready for users interactively. Finally, the Largest Contentful Paint (LCP), which is 1.1s, is the measure of the perceived load speed and the page's main content that has likely loaded. Overall, the website has a total grade of B.

Figure 14. Performance Testing Final Grade



D. Usability Testing

Usability testing involves getting real people to interact with the website and observing their behaviour and reactions to it. It is a necessary step to ensure that you build an effective, efficient, and enjoyable experience for your users [3]. For this project, we used remote usability testing through survey questionnaires.

The survey questionnaire will use weighted arithmetic mean to measure the result of the usability testing. We have tapped 40 respondents, a combination of Camaligan residents and persons from different regions who did not know of Camaligan River Park. Users were asked to do system testing of the website as potential tourists, explore its features, and go through the booking process.

The following criteria are to be tested for the survey

1. **Usability Test**: This test refers to how the user can use the system. The system is well integrated into its different features, and all components are working properly
2. **Security Test:** This test pertains to the ability of the website to protect the information and data of the users provided to the system.

3. **Interface Test:** This test refers to the system's User Interface features and how users ensure a smooth flow of features while using the system.
4. **Performance Test**: This refers to the time the user has to wait for each page to load. It is used to check if there is a broken link or if there are errors in each user request.
5. **Functionality Test**: This test ensures that the website performs as expected according to the user's actions and that no problems arise from each function.
6. **Portability Test:** This test must ensure that the website works for desktop and mobile browsers and adapts to each environment in terms of Interface and functionalities.

Using the 5-point Likert Scale in the survey, where the respondent's answer ranges from 1 to 5, with one representing "Strongly Disagree," 2 representing "Disagree," 3 representing "Neutral" or "Neither Agree nor Disagree," 4 representing "Agree," and 5 representing "Strongly Agree.". This scale provides a simple and efficient way to gather data on people's attitudes or perceptions towards a particular topic [5].

There are two approaches to determine the result of the Likert-scale survey. One is through **Median** – for example, for 100 respondents, the answers are arranged from lowest to highest, and the 50^{th} score would be the median. The second approach is through the **Average** answer for all the respondents – Add all the 100 responses, then divide it by 100, and you will get the average. We will choose the Average computation, and the result will be based on the range interval below to determine the user's collective sentiments.[7]

Table 3. Likert-Scale Intervals

Likert-Scale Description	Likert-Scale	Likert Scale interval
Strongly disagree	1	1.00-1.80
Disagree	2	1.81-2.60
Neutral/Uncertain	3	2.61-3.40
Agree	4	3.41-4.20
Strongly agree	5	4.21-5.00

Table 4. Evaluation Survey Results

Criteria	Residents Average (10 Respondents)	Non-Residents Average (30 Respondents)	Combined Average (40 Respondents)	Interpretation
Usability Test	4.2	4.4	4.35	**Strongly Agree**
Security Test	4.5	3.93	4.075	**Agree**
Interface Test	4.6	4.15	4.475	**Strongly Agree**
Performance Test	4	4.46	4.325	**Strongly Agree**
Functionality Test	4.4	4.37	4.375	**Strongly Agree**
Portability Test	4.4	4.2	4.25	**Strongly Agree**
Total Mean	**4.35**	**4.251**	**4.31**	**Strongly Agree**

The results of the system evaluation survey with 40 respondents are generally positive. Regarding Usability, Interface, Performance, Functionality, and Portability, all got a **Strongly Agreed** result, meaning that the system is user-friendly, has outstanding functionality and performance, and is portable and usable even for non-technology-oriented respondents. The lowest score received was for the Security Test, where it got a 4.057 average, which is still Agreed on the Likert scale. Overall, the total average of 4.31 is still a Strongly Agree, which is outstanding.

The system is ready for implementation based on all the testing and resulting surveys.

Discussion

Implementing a Website and Information System like the Camaligan Tourism Website provided an opportunity to apply all the knowledge learned during the MIS course. Here are some of the helpful insights acquired during the system's development and implementation.

A. The importance of planning and coordinating with the stakeholders, the brainstorming sessions that helped arrive at a common understanding, and the need to develop the Tourism website. It is important to identify the key features needed by the system before we start with the design and development.

B. The officials' help proved vital in testing and finalizing the project. Having a different set of eyes is useful in improving the system. User testing is necessary for a quality website with user-friendly layouts and pages.

C. For a fourth-class municipality like Camaligan, it is hard to allocate a budget for Information Technology purposes. However, it is rewarding to create a system that will promote the town's tourism and help provide additional income for its people.

Chapter VI

CONCLUSION

Based on the objective of the project, the following conclusions are made:

A. Implementing the Web Information and Booking System will help boost tourism in the town of Camaligan. Establishing a dedicated website to show the tourist spots and the packages included in the Camaligan River Park attractions will give tourists an idea and encourage them to visit the town. The Booking and Reservation page will allow them to select the dates they want to see and the availability of the packages. Lastly, they can reserve and pay online, ensuring their travel and visit are secure.

B. The different testing and evaluation processes have helped ensure that the website created meets industry standards and that users will find it easy to navigate. The initial survey conducted among different respondents gave an average result of Strongly Agree, which is an outstanding rating.

C. The actual go-live and maintenance will pose some challenges. Still, with the help of capable admins, sufficient guidance from the user manual, and the author's support, any issue will be resolved accordingly.

Chapter VII

RECOMMENDATION

The author and stakeholders agreed to set up the website for one year. After that, the group will discuss further whether the need to continue with the website operation. One thing to consider is the weather and climate in the Bicol Region. For the past years, strong typhoons have destroyed both the MB Camaligan and the Hanging Bridge. Should there be an increase in the influx of tourists and growth in revenue after a year, and there is no considerable damage to the tourist attractions, we will decide whether to continue with the website.

References

1. ‘Camaligan’ (2005) Wikipedia. [Online].
   Available: https://en.wikipedia.org/wiki/Camaligan
   [Accessed] August 5, 2023.
2. ‘Camaligan River Park’ (2014) Wikipedia. [Online].
   Available: https://en.wikipedia.org/wiki/Camaligan
   [Accessed] August 5, 2023.
3. ‘A Complete Guide to Web Testing: How to Test a website’. [Online].
   Available: https://testfort.com/blog/a-complete-guide-to-web-testing
   [Accessed] March 16, 2024.
4. ‘What is End User Testing? Definition, Types, Questions and Best Practices’.
   [Online] Available at https://trymata.com/blog/2023/12/14/what-is-end-user-testing/
   [Accessed] December 17, 2023
5. ‘5-point vs 7-point Likert scale: Choosing the Best’. [Online]. Available:
   https://www.questionpro.com/blog/5-point-vs-7-point-likert-scale/
   [Accessed] December 17, 2023
6. Anderson, Liza. '5 Point Likert Scale Interpretation'. [Online].
   [Available] https://www.edrawmax.com/templates/1029616/
   [Accessed] December 17, 2023
7. Jackson, Jacob. ‘Setting up an SSL on AWS EC2 with Amazon Linux 2 — [A.N.T.S]’. 17 March 2018. [Online].
   Available: https://medium.com/@iamjacksonjacob/a-n-t-s-setting-up-an-ssl-on-aws-ec2-with-amazon-linux-2-55ff405c4062

[Accessed] December 17, 2023

APPENDICES

1. **The complete source code of the application is in:**

   https://github.com/FrancisAbilay/CamaliganTourismApp.git

2. **Technical References:**

- **Server Set-up:**

  - Using EC2, a Linux AMD remote server is created to act as the Application and Database server.

  - XAMMP applications were installed. XAMMP is an open-source cross-platform web server solution stack package developed by Apache Friends, consisting mainly of the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages.

  - HTTPS setup was done to add security.

  - The CamaliganTourism.info domain was set from Domain.com

  - PuTTY and WinSCP are used to deploy from the local PC to the server.

- **Programming Language**:

  - For the database development, I used MySQL, an open-source Relational Database Management System, which uses SQL languages for querying data.

  -For Web Development, I used PHP (PHP: Hypertext Preprocessor), an open-source general-purpose scripting language that is especially suited for web development and can be embedded into HTML.

  - Bootstrap, JavaScript, and jQuery were used for a more responsive website.

- **Third-Party Plugins**

  - Stornaway.io for the interactive virtual tour video. A project was created using drone videos that the group shot.

  - Mapme.com for the tourism map created for Camaligan tourism. I created a sample map using my student account.

  - Google Maps API for the map used in the Contact Us page.

3. **Evaluation Survey:**

   https://forms.gle/1VYWtfU4aeqHzfur9

4. **User Manual:**

   The user manual can be accessed through the link below:

   https://drive.google.com/file/d/1MjL4iDYoy9GFMUwlMISZYJFPMb3OuLM9/view?usp=drive_link