WEB-BASED RESORT RESERVATION SYSTEM OF SAN JOSE RESORT AND EVENT CENTER

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CHAPTER I

INTRODUCTION

This chapter includes the introduction, project context, theoretical framework, conceptual framework, objectives of the study, significance of the study, scope and limitations, and definition of terms used in the study.

The pressure of computers and invention is causing the globe to become technological, ultimately producing a more specific model of computers and diverse devices for communication. Our world is in a competitive environment where computers are placed into Technological advances enable the dissemination to several previously impossibly small particles to think about. Due to the accessibility and simplicity of web browsers, web applications are widely used frequently referred to as thin client of using a web browser as a client. The capacity to maintain and update without implementing and installing software on possibly thousands of client computers. Web application popularity of computers is largely due to their intrinsic support for cross-platform technology compatibility.

The San Jose Resort and Event Center is located at Purok 2, Barangay Sirang Lupa. It was established in 2002. The development of the resort was not easy; according to the owner of the resort, before he built the resort, he needed to save money, and when they had enough money, he continued to build the resort repeatedly before it was fully finished. Ed

Igas San Jose is the owner of the resort. The resort was named based on the surname of the owner.

Resorts are places of communities, or even commercial buildings that are run by a single business. There are resorts all throughout the world, families, couples, and other travelers continue to find them appealing. Business reservation links customer data to a customer, such as by a personal identity. A record pertaining to a specific facility on a specific piece of property or place. The process for registering collaborates with a property management system but may also collaborate with a system for managing staff.

It is a web-based system where you will be able to view the images of the resort by using our virtual that is composed of sequence of image that can be seen in the homepage. The system offers the easiest way to reserve in a resort. The system also proposed to lessen time in transacting with the employees. As more individuals look for travel and leisure choices, the tourism and hospitality sectors have seen enormous growth in the past few years. As a result, resorts and hotels are continuously working to improve their offerings and simplify their processes in order to satisfy visitors' rising expectations. An automated reservation system that enables visitors to conveniently reserve accommodation, amenities, and other services is an essential part of effective resort administration.

Project Context

The hospitality sector has experienced substantial expansion in recent years. Resorts have consequently gained popularity as vacation spots among individuals,

families, and corporate groups. However, many resorts still employ manual processes or antiquated technology for making reservations, which results in inefficiency, mistakes, and poor user experiences. The primary objective of this project is to develop and implement an enhanced resort reservation system that improves the overall user experience.

And the mixed-approaches strategy will be used for the research project, combining qualitative and quantitative research methods. Surveys, interviews with resort visitors and personnel, and a review of the current resort reservation systems will all be used to gather data. To find important insights and trends, the obtained data will be evaluated utilizing statistical tools and qualitative research techniques. A prototype of the improved resort reservation system will be created based on the findings, and it will be tested and reviewed by users. This study intends to offer useful insights into the shortcomings of the current resort reservation systems and to suggest creative alternatives to improve the user experience. The goal of the resort reservation system project is to enhance the hospitality industry's reservation process' accuracy, efficiency, and user experience. For both visitors and resort workers, it intends to use technology to speed and simplify the booking process, enhancing operational effectiveness and enhancing customer happiness. And the Researchers can concentrate their efforts on addressing the identified difficulties and attaining the targeted goals by establishing a clear context for the study activity.

Theoretical Framework

The development of web-based reservation systems should meet certain specific requirements for it to be fully functional. The system should have a good user interface

that is engaging and visually appealing. The system also needs to maintain an inventory of all the available accommodation offered by the resort. Information about the resort's amenities should be provided. The user should also be able to inquire about or book additional services.

This study is based on "A Web Application Framework for Reservation Systems and its Reusability Evaluation" by Feng Zhou and Takeshi Chusho.

Web applications are used in various business fields on the Internet and intranets. It is an efficient way to develop Web applications on the base of a framework. In this paper, after the well designing of its architecture, a domain specific framework for reservation is developed based on a meeting room reservation system. Then, the framework is applied to two types of reservation systems, an online bookstore system and a soccer ticket reservation system, and its reusability is evaluated. With the result of 62% and 65% respectively, high reusability of the framework has been confirmed. In addition, another framework for time-based reservation was developed, and the trade-off relationship between the range of the domain and the reusability has been confirmed. Finally, a visual tool is developed to generate the source code for the database access transaction.

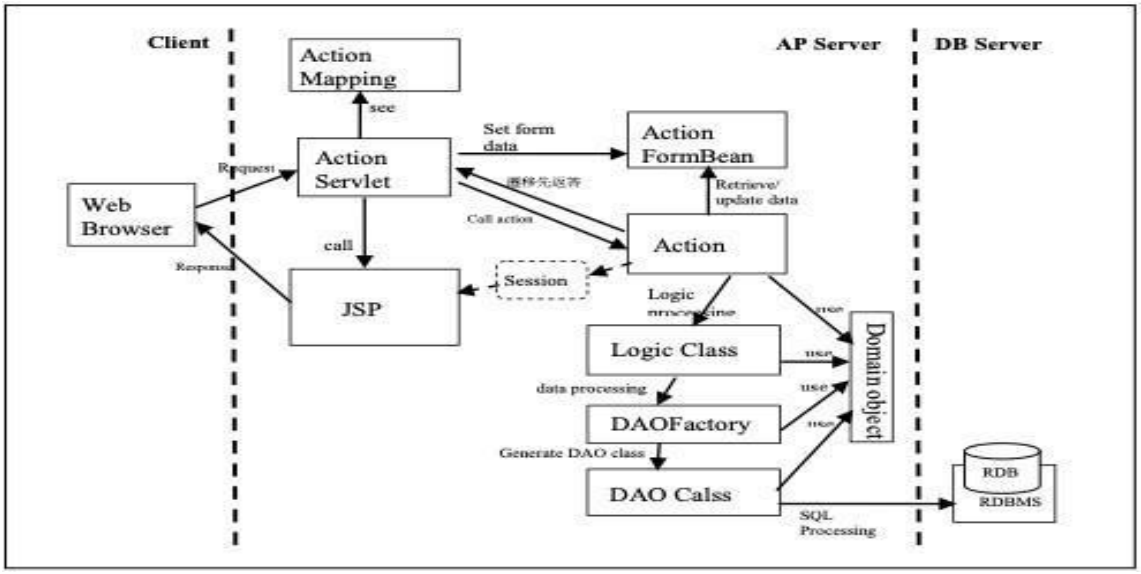

Figure 1.1: Framework of the study

The data access layer processes the data with the relational database. The common ways to handle this operation are JDBC or object-relational mapping framework like Hibernate, iBatis. In our framework, we adopted the Data Access Object (DAO) pattern in this layer.

DAO abstracts and encapsulates all access to the database. It manages the connection with the database to obtain and store data. DAO can be highly flexible by adopting the Abstract Factory and the Factory Method patterns. As we only use relational databases, the Factory Method pattern adopted DAO is selected for our framework. In this strategy, a DAO Factory produces a variety of DAOs needed by the application, so it becomes much more convenient and easier for extension and maintenance. With the 3-layer division, and after adopting Struts to the presentation layer and DAO pattern to the data access layer, the architecture of our framework is shown in Figure 1.1.

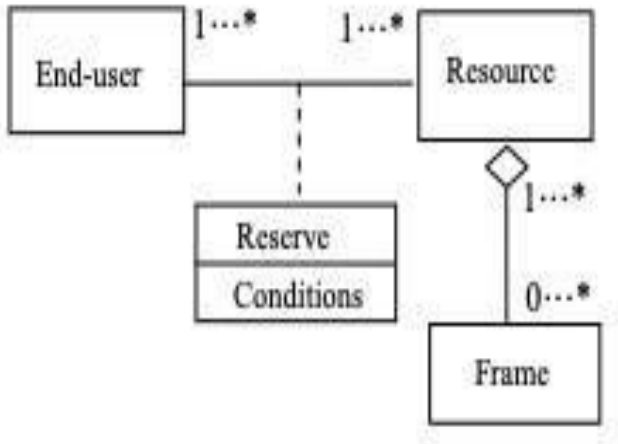

Figure 1.2: Conceptual model of reservation

In this paper, reservation is defined as the claim to obtain a future use of certain resources for a period in advance. And compared to the conventional way by paper records, we realize this claim by Web application. As the conceptual model being shown in Figure 1.2, there are end-users who follow certain conditions to make the reservation. There are resources being divided into reservable frames.

According to the type of frame which the resources have been divided into, the system of reservation is divided into 3 categories. Space-based reservation refers to the systems that choose the resource first according to time, and then choose the frame according to space. Ticket reservation is a sample in this category. Time-based reservation refers to the systems that first choose the resource according to space and then choose the frame according to time. Meeting room reservation is a sample in this category. In addition,

the systems that don't belong to these two categories, like the shopping system, refer to 'the others.' Figure 1.3 shows the system of reservation.

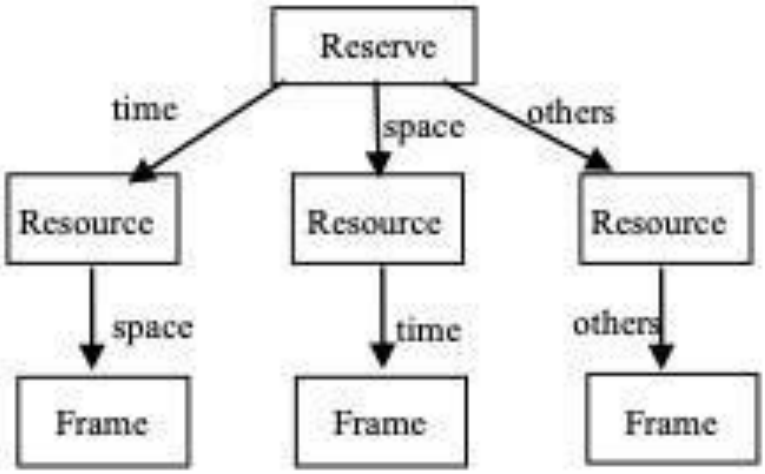

Figure 1.3: The system of reservation

In this paper, a concept of evidence theory is proposed, on how users will interact with the computer systems. The importance of usability and user experience should also need to be emphasized. By applying Human-Computer Interaction (HCI) to the development and design of a web-based reservation system, the satisfaction and efficiency of the users can be enhanced, which results in improved user experiences and increase in system usability.

The main objective of this system is to can how the customers can place a reservation without needing to go to the resort. Not everyone can be able to go to the resort and place a reservation due to a lot of different factors. Creating a web-based reservation system can help the customers know if the resort is available at a specific time or date. It

also saves time, as the customers can easily view the availability of the resort without needing to go and inquire there.

Conceptual Framework

The System's Overview indicates the process of the study and simplifies the function of the program. This serves as a guide to the study. The researchers show the step by-step process of how it works.

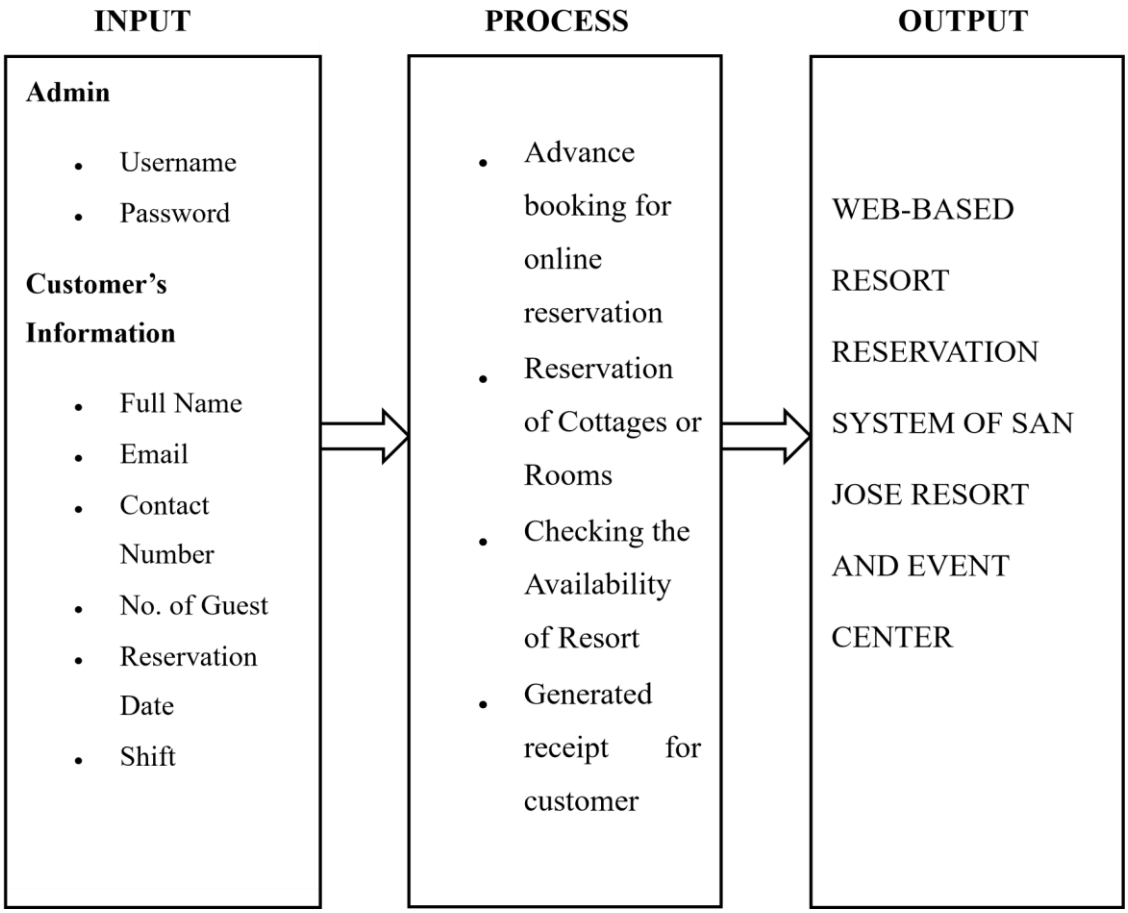

Figure 2.1: The Conceptual Framework of the Study

For the process of the system, the researchers will create a website that makes the resort more entertaining to see. The website indicates what cottages or rooms that the

Resort can offer. Using the system the customer may see the actual photos of the facilities of the Resort, we personally took those photos, so the guest won't have a problem about their expectations. When reserving the resort, guests must first contact the resort management to see if it is available for that day and time. Then choose which rooms they can use, if the venue will be used, if catering will be available and how many people will come. Second, fill in the required fields on the website, including personal information, then wait for the verification order from the management.

Objectives of the Study

The general purpose of this research is to develop a web-based resort reservation system in San Jose Resort that uses good booking experience for fast transaction. We created this system to help the customers, especially the people who want to find a good quality and affordable resort.

- To develop a system that will make a convenient reservation for the client of San Jose Resort.
- To develop a system that will monitor the number of guests in the resort.
- To develop a system that would help the resort manage the resort's profit in order to prevent a loss of revenue.

Significance of The Study

This study is conducted to benefit the following:

- **To the owner of the resort -** The systems will help the owners to have easy access in every part of the system.
- **To the front desk officers -** The proposed system could make the task of the front desk easier and convenient in terms of generating reports.
- **To the customers** - The web-based resort will minimize the transactions time consuming. The billing records of the customer will be placed in a secure database.
- **To the future researchers** - The team learns how to manage and choose the proper things to do to make the system work and to have determination and discipline.

Scope and Limitations

This study focuses on providing retailing business application using computerized system that enables business to track services and aims to provide accurate and reliable process on every transaction especially in a resort reservation. The study investigated the better impact of using technology today on how it affects our daily lives, especially for being a customer. With these studies it can help our customers to know the difference between the manual system and the online booking system.

With the support of these studies, those we serve will be able to differentiate between the use of manual systems and the current generation of computerized systems; our top priority will be to provide them with accurate information. Only those who have internet access are included in this study. The web-based reservation system is accessible through any web browser. If your phone has internet connectivity, you can also access it using your mobile device.

Definition of Terms

To better understand terms used in this study, the following were defined:

- **Technological** – a method of carrying out a task, particularly one that involves technical procedures, techniques, or understanding.
- **Intrinsic** – a valuable or interesting because of its basic nature or character, and not because of its connection with other things.
- **Cross-Platform** – is a type of application, program, software that works on various operating systems or devices. A platform means an operating system such as Windows, Mac OS, Android, or Ios.
- **Front desk officers** – responsible for taking care of guests and customers. Their work mainly involves interacting with customers and business partners, either in person or through phone calls.
- **Automated** – an automated factory, office, or process uses machines to do work instead of people.

CHAPTER II

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter includes synthesis, international and national literatures, and studies acquired from online journal resources that the researchers used as a reference for this paper in order to conduct an additional study. The related literature and study will help the researchers have a better understanding and a wider perspective on the topic gathered.

[1] Rui Tian, What is an Online Reservation System and Why Do You Need It? Stockholm: Sweden, 2021. An online reservation system is a piece of software that enables clients to schedule appointments or reservations online through a business's website or app rather than by phone or in person. A consumer may also be able to pay for their appointment or reservation services in advance using an online reservation system, depending on the platform's level of sophistication. Finally, these services allow clients freedom and independence through allowing them to manage their bookings as well. This enables them to modify or cancel them as needed without the hassle of making a call to manually make the change.

[2] Omnify, What is an Online Reservation System and why do you need it, Mountain View, California, United States, 2020. Today, almost everything in our world is essentially dependent on the internet, with businesses at the top of the list. Any company, regardless of industry, must today have a recognizable internet presence. Modern technology not only makes it easier for businesses to be found online, but it also makes it

simple for them to turn visits into sales using an online reservation system. In basic terms, an online reservation system enables potential customers to reserve and pay for a service online. This means that everything is done online, from the moment a customer decides they want to schedule a slot for your service (whether it's an in-person class or an online appointment) through selecting a date, choosing a time, and paying for the booking. It significantly lessens your staff's burden and eliminates the possibility of double bookings.

[3] Bookitlive, How does a booking system work? Australia, 2021. Online reservation systems are frequently offered as software-as-a-service (SaaS) in the cloud. Both your social media profiles and your current website can be connected to the system. The back end and the front-end, which are visible to customers, are two separate components of a booking system. Everything else is simple after all system components are active, including your services and resources, payment preferences, and notification settings.

[4] Square, Top 8 Benefits of Online Booking Systems for Business, 2022. For business owners who have always operated in a specific way, the internet can be a confusing and difficult place. However, those who have overcome their nervousness will tell you that there are countless opportunities to expand and improve your business on the Internet. Online reservations and booking are one of the simplest and most efficient applications of the internet for any company that accepts reservations or bookings. In addition to reducing no-shows, the ability for consumers to see exactly when you have a

free slot allows you to maximize reservations by avoiding the extended back and forth that frequently occurs when trying to find a free position over the phone.

[5] Iliyana Asenova, The Benefits of Online Booking Systems, Europe, 2018. A 24/7 online booking system is in operation. Potential tourists now can reserve a room whenever they like. Since you aren't restricted by working hours, it also increases your sales. A 24/7 online reservation system significantly improves the number of hotel reservations, according to studies. Reservation systems for hotels help increase productivity among your staff members. They won't be confined to a phone as they await visitor calls. Additionally, you will be able to accept reservations every hour of every day, seven days a week. (Iliyana Asenova, 2018)

[6] K. Decena, M. Delfin. "Factors Affecting the Usage of Online Booking Sites: Comparative Analysis on Agoda, Booking, and Hotels" 2022. Online travel agencies function like any other e-commerce website. The purpose of the research project is to investigate the significance of online booking and its effects on client satisfaction as well as the hospitality industry. The conventional method of making a hotel reservation is to use any offline source to request a reservation. The usage of a phone call would be such an offline source. Direct clients call hotel reservation services to check on room availability; this is time-consuming because the procedure is frequently difficult and error prone. Since the online booking site is a platform that provides services, more risks must be recognized and avoided in the e service quality offered. Security precautions and backup plans are

decided upon through risk assessment, the mode of failures in hotel rental price, hotel rating, hotel location, e-service quality, and interface, in order to help increase or maintain the happiness of users of the online booking site. Customers may be unhappy as a result of the failure, but they may choose to use another online booking site as a result, which is harmful to the online booking site's reputation. Finding solutions to these issues is therefore crucial, as is having a backup plan.

[7] A. Pamanay, J. Mestizo, J. Temilloso, D. Delos Santos, and J. Besinal, "Proposed Computerized Reservation System for Villa Prescilla Resort", AASgBCPJMRA, vol. 2, no. 1, Apr. 2020. Instead of using the manual technique they currently employ, a computerized reservation system is a type of software that enables admins to quickly modify customer reservations and organize the schedule and cost of any good or service. The suggested system will make finding or making reservations simple. The most important component of our proposal is a computerized reservation system that would make things easier for our customers. The following outputs have been developed: add customer's information, where the client entered all the necessary information about the customer; create reservation form, where the client created a reservation for the customer; print receipt, where the client printed the total fees that the customer was required to pay and the date of their reservation; view form, where the client could view all the recorded information and update the information. Researchers studied the client's issue and made the decision to assist them by creating a system to reduce it. The client chooses what they want to see and how to access the system based on the system's design. They can easily

update and delete the material by setting the system in place. Additionally, it can efficiently respond to consumer inquiries. It keeps track of the resort's reservation schedule.

[8] J. D. German, D. C. G. Yap and G. O. Binoya, "Design and Development of an Integrated *Room Reservation System for Higher Education Institutions," 2021 IEEE 8th International Conference on Industrial Engineering and Applications (ICIEA), Chengdu, China, 2021, pp. 231-236, doi: 10.1109/ICIEA52957.2021.9436766.* The development of modern technology has impacted the expansion of numerous sectors by bringing about advancements to enhance systems and procedures. In organizations, the use of information technology has a considerable impact on the minimization of errors and elimination of delays. The purpose of this study was to evaluate and improve the facility reservation procedure for a higher education institution in the Philippines. The fact that many organizations in charge of overseeing various facilities and rooms were dispersed across the campus necessitated a significant amount of travel.

[9] C. Inanud, B. Jandog, M. Juliano, E. Landicho, F. Mamac, and A. Babia, "Travel and Tours Management System – Core 1 Transaction (Tour Creation and Configuration, Customer Tour Itinerary Management, Transport Booking, Hotel Reservation*, Tour Looking)", AASgBCPJMRA, vol. 1, no. 1, Apr. 2019.* The current travel and tour company processes customer transactions manually, which takes longer during the payment process and creates issues with cancellation of bookings, updates to the customer's account, payment verification, and updates to the customer's tour activities. Using customer relationship management, the scrum team automates the transaction of booking a tour for

the customer, automates the design of the tour schedule for the customer, and keeps the client informed about the tour activities as well as upcoming promotions of the travel and tour company. The study's goal is to develop a reliable and beneficial running program system. The goal of creating the study is to assist and meet the needs of a business. It focuses on the creation of organize the schedule of tours and activities, transportation booking for traveler transportation, and hotel reservation for client accommodation.

[10] H. Jiang. "Research on Hotel Management Based Internet of Things and Big Data Analysis," International Journal of Reliability, Quality and Safety Engineering, Vol. 29, No. 05, 2240004 (2022) July 2023. Due to an increase in data volume, traditional hotel administration with internet-based customer service was unable to handle dynamic real time data effectively. The tourist experience is improved by self-services like pre-booking, registration, automated check-in and check-out, and user-selected payment options. This study examines the potential benefits of IoT and big data analytics for the hospitality industry in terms of boosting guest fulfillment and providing customized services. Additionally, it looks at how IoT can be applied in the workplace. This in-depth study demonstrates outstanding outcomes for IoT and big data in hotel management. The best detection accuracy is 97.51%, according to a simulation of the client occupancy detection model (CODM).

[11] Agulo, A. M. M., Agno, K. M., Andres Jr, A. C., Carandang, H. C., Rugay, V. G., Umali, M. A., ... & An, I. L. 2015. Customer Satisfaction on the Quality Services of

one Department Store in Batangas City, Philippines. Asia Pacific Journal of Academic Research in Business Administration. Customer satisfaction measurement is a challenging task. This indicates that there were no significant differences observed and suggests that the responses do not vary across the respondents' educational attainment. It is not just about meeting the needs of the customer, but also about providing them with an exceptional service through a highly motivated and well-trained team, good quality product, environmentally friendly facilities, and expert service.

[12] Renugadevi, S., and Janabai, G. 2017. A Study on Customers Attitude Towards Online Reservation in Madurai City. International Journal of Current Research and Modern Education, 2(1), 255-5428. Usefulness received the highest weighted mean of 3.26 among the items, followed by Satisfaction (3.13), and Ease of Use (3.11). This indicates that respondents agreed that the online reservation has proven to be effective because it gives customers comfort and ease when processing reservations and, occasionally, payments or other types of transactions. A reservation is a service provider, not a company that brands its products completely. It helps consumers get the tickets and lodging they need. Due to their importance as the core of the marketing proposition for water-based activities, resorts occasionally receive discounts. Given the give-and-take nature of the process, both parties stand to gain from this. For instance, included in the package are various airlines that permit travel agencies to market them as part of a travel package and in exchange will grant discounts or permit them to mark up the value for

profit. The least expensive option is Experience, with the lowest mean of 2.93 and verbal agreement.

[13] Kim, S., Kim, J., and Park, S. (2017). The Effects of Perceived Value, Website Trust and Hotel Trust on Online Hotel Booking Intention. Sustainability, 9(2262), 1-14. The use of social networking sites and websites for advertising has increased in recent years, allowing customers to view and learn about the various services offered in the market. Because consumers now have more access to crucial information like pricing and product reviews, businesses must make sure that they keep an eye on all aspects of marketing variables including product pricing, ad placements, and customer-reach methods. Any type of business should have ordered records and precise information. The management will be able to monitor cash flows and lower the risk of additional firm spending as a result.

[14] Generoso, E. a. M. (2019). Resort Online Reservation: Basis for Action Plan. The primary objective of the research was to evaluate resorts with an online reservation system. The goal of the study is to identify the variables that influence resort guests' decisions to book online. It seeks to determine the client profile in terms of age, gender, visit frequency, level of education, and frequency of internet use. In this study, the resort's online reservation system is assessed for service quality, utility, usability, experience, and satisfaction. They can also examine whether there is a statistically significant difference in the replies when they are grouped by the profile variable. Lastly,

to suggest a course of action based on the study's findings. The study evaluated resort reservations made online using a descriptive methodology.

[15] Truitt, L. J., Teye, V. B., & Farris, M. T. (1991). The role of computer reservations systems. Tourism Management, 12(1), 21–36. Computer reservations systems (CRS) have become critical instruments in the marketing and distribution of travel and tourism products and services. New systems have recently been developed in Western Europe, while the Asian and Pacific regions are in the process of establishing their own systems. This article reviews the importance of CRS with reference to the experience of the travel industry in the USA. Issues inherent in the application of the systems are discussed, and policy issues in response to the sophistication and global expansion of CRS are examined.

[16] De Silva, S. H. I. D. N., Wickramasinghe, M. T. A., & Gunasekera, D. (2022).

"Development of Flexible Airline Reservation System using Quality Attributes for Domestic Airlines in Sri Lanka". The airline industry is characterized by rapid change, innovation, and new technology. It is a fast-growing industry with annual revenues in the millions of dollars. From the up-sky, travelers could experience breath-taking views of Sri Lanka. So, using domestic airlines is the best way to travel in Sri Lanka. Therefore, local airline websites must be developed. However, there is fierce rivalry in the airline industry because everyone is striving to be the best to gain their market share through various strategies such as offering excellent customer service, low-cost fares, and other perks for

travelers. To accomplish those tasks, the researchers identified the importance of developing a web application through an investigation.

[17] Thangam, E. C., Mohan, M., Ganesh, J., Sukesh, C. V., & Prof, A. (2018). Internet of Things (IoT) based smart parking reservation system using raspberry-pi. International Journal of Applied Engineering Research, 13(8), 5759-5765. One of the important considerations of being a smart city is the Smart Parking facility. Finding a particular space to park our vehicle becomes an annoying issue. Besides, the number of vehicles in like manner rapidly grows once every day. It has been seen that the drivers struggle to find a halting extent without thinking about where parking space is open. The request for parking space prompts to develop the traffic congestion and excess consumption of fuel. To create an optimized solution for the crisis, many technologies evolved but it didn't benefit all varying with expense, efficiency, power, accuracy and other factors. In this review, we created a prototype of a novel smart parking framework for an urban domain considering reservation utilizing Internet of Things (IoT) by using Raspberry-pi.

[18] Jun, L. W., Iqbal, J., & Subaramaniam, K. (2023, June). Mobile-application easy book–Online restaurant reservation system. In AIP Conference Proceedings (Vol. 2756, No. 1). AIP Publishing. With the expansive growth of advanced technology, many users have started to adopt these advancements into their daily lives for better lifestyles. This research is to develop an online restaurant reservation system that allows the customer

to directly interact with the restaurant's staff about their needs and order. By providing this reservation system, the restaurant and customers will get to optimize food online reservation and booking experience.

[19] Basir, N. F., Kasim, S., Hassan, R., Mahdin, H., Ramli, A., Fudzee, M. F. M., & Salamat, M. A. (2018). Sweet8bakery booking system. Acta Electronica Malaysia, 2(2), 14-19. Businesses that are promoted through social media Facebook are one of the smartest ways to increase sales of a product. Sweet8Bakery is a business operated by a private cake seller who runs a small cake business order. Sweet8Bakery sellers also took this initiative as one of the ways to attract buyers. However, there are still some problems encountered such as booking information from customers still recorded through the manual method of bookkeeping. Therefore, the purpose of this project is to design a reservation system application to support the online system so that customer booking information can be managed properly.

[20] Saura, J. R., Ribeiro-Soriano, D., & Palacios-Marqués, D. (2022). Adopting digital reservation systems to enable circular economy in entrepreneurship. Management Decision. In the last decade, the hospitality sector has undergone numerous changes in the organization and structure of its business models. Specifically, the adoption of new digital technologies has initiated transformative changes toward circular economy and sustainability. The present study aims to analyze whether the use of the digital reservation system in circular entrepreneurship businesses has an impact on entrepreneurs' satisfaction and trust in the circular economy.

SYNTHESIS

A resort reservation system is an essential component of managing bookings and accommodations for a resort. It helps streamline the reservation process, allowing guests to make bookings conveniently while providing resort staff with efficient tools to manage and organize reservations.

The user interface of the resort reservation system is designed with guest convenience in mind, providing a seamless experience throughout the booking process. It offers a user-friendly interface that allows guests to easily search for available rooms, browse amenities, and make reservations effortlessly. To enhance the system's functionality, registration and login features are provided for both guests and resort staff, enabling personalized experiences and access to additional features. Moreover, the system ensures the security of online booking transactions through the integration of a secure payment gateway, safeguarding sensitive information and providing peace of mind to users. The room availability incorporates a centralized database that efficiently stores comprehensive room information, encompassing room types, descriptions, rates, and availability.

Centralized storage enables easy access and management of room-related data, ensuring accuracy and consistency across the system. The system also offers real-time updates on room availability, allowing guests to view up-to-date information and make informed decisions. The staff can easily access reservation details, monitor their status, and make necessary adjustments as required. This includes the ability to view, modify, or

cancel reservations based on guest preferences or changing circumstances. To streamline communication and enhance the guest experience, the system automates the process of sending reservation confirmation emails to guests. This ensures that guests receive timely and accurate information about their reservations, fostering transparency and providing them with peace of mind. Furthermore, the system incorporates dedicated customer support features, including a helpdesk, to effectively address guest inquiries, requests, and complaints. This comprehensive customer support functionality ensures that guests receive prompt assistance and personalized service throughout their stay, contributing to an exceptional guest experience. This integration ensures that information related to reservations, room availability, and guest preferences is synchronized across various systems, enhancing overall operational efficiency.

CHAPTER III

RESEARCH METHODOLOGY

This chapter describes the research methodology, such as the techniques used to obtain research aimed to find in the study. It covers the Research Design, Research Locale, Population of the Study, Sampling Design, Data Gathering Tool and Procedure, Technical Background, Algorithm Design and Techniques, Software Development, Methodology and

Implementation Plan.

Research Design

The researchers used both descriptive methods and developmental research to explain the needed data. Descriptive methods would be used to understand the current state of resort reservation systems, assess user behavior, preferences, and usage patterns or analyze the effectiveness of an existing system without necessarily generating something new. It entails monitoring existing systems, gathering data, and analyzing the results in order to explain and analyze the current situation. And developmental research would be used if the major goal of the research is to construct and develop a new resort reservation system or to improve an existing system. This method entails creating a prototype of a full-fledged system, testing its functioning, and iteratively improving it to satisfy specific

objectives and user demands. The emphasis of it is to develop a new system or improve existing.

Research Locale

Figure 3.1: The Research Locale of the study

The study was conducted at Barangay Sirang Lupa, as of the 2020 census, Barangay Sirang Lupa had a population of 12,938. This place was selected to know the efficiency of the said study among the customers who reserve or walk-in to the resort. The researchers aim to conduct a study in San Jose Resort and Event Center to better clarify and understand the problem of the resort. With the help of our web-based resort reservation system it helps the owner to have faster transactions with the customer.

Population of The Study

Figure 3.2: Circuit Map of San Jose Resort and Event Center

The study was conducted at the San Jose Resort and Event Center, a public resort located at Purok 2, Barangay Sirang Lupa, Calamba City. The target population for this study is the customers of the resort where the web-based resort reservation system can manage the customers who walk-in the resort. The respondents to this study are the caretaker and the owner, who manage the resort. The owner of the resort is interviewed face-to-face to discuss some problems at the resort and to know how the researchers will help the owner by creating a web-based system that will manage and process the resort. Before the study, the San Jose Resort and Event Center used a manual transaction process with their customer. The research conducts and tests the system with the customers to serve as the respondents of this study.

Sampling Design

The Researchers use a non-probability sampling that has a clear target sampling for the respondents wherein the researchers will construct a survey that has specific participants. There are no criteria for which person should join the study. Used when the sample needs to be collected based on a specific characteristic of the population. And the sampling may be faster and less expensive, but the results may not be generalizable to the full population. But it is essential to consider the limitations and potential biases associated with non-probability sampling. Convenience sampling is used in this study. It selects participants based on their convenience and accessibility are guests who are currently staying in San Jose Resort. It's helpful for gathering feedback quickly and at a relatively lower cost, but the findings should be taken in context and supplemented with other research methods if more comprehensive insights are required.

Data Analysis Plan

- **Slovin's Formula**

Researchers employed the Slovin's formula to calculate the sample size from the local population that will be used as the number of respondents for clients.

To compute:

$$n = \frac{N}{1+N\,e^2}$$

where: n = sample size
N = the population size
e^2 = Level of precision
margin error = 5%
confidence level = 95%

Figure 3.3: Slovin's Formula

- Five-point Lickert's scale

For the descriptive procedure of the system in order to analyze the data from the evaluation conducted is the Cronbach alpha. It is used to measure internal consistency or the reliability of the study. Upon the release of the system, a set of evaluations are given to the specific users. The evaluation form consists of different questions and trials to test the qualities based on the ISO/IEC 27001:2022. The primary respondents of the study are residents of Barangay Sirang Lupa. The results will be interpreted based on the following Likert's scale:

Weight	Range	Interpretation
5	4.21-5.00	Strongly Agree
4	3.41- 4.20	Agree
3	2.61 – 3.40	Neutral
2	1.81 – 2.60	Disagree
1	1.00 – 1.80	Strongly Disagree

Table 1.1: Lickert's Scale

Data Gathering Tools

The Researchers prepared some questionnaires for the owner to answer. The set of questions only involves the owner's business. These are the various data-gathering tools to compile the information needed:

Observation- a method for gathering information through observation of individuals, situations, or physical qualities as they happen naturally. Both structured and unstructured observation can be used to collect data. Data collection is carried out using variables and in line with a specified schedule in structured or systematic observation. On the other hand, unstructured observation is carried out in a transparent and unrestricted way because there aren't any predetermined variables or goals.

Interview- A method of qualitative study known as an interview relies on the collection of data through the use of questions. Two or more people participate in interviews, one of them is the interviewer who asks the questions.

Data Gathering Procedure

To gather information, the researchers prepared some sets of questions for the owner. Whereas upon visiting the resort, the researchers found that the owner was still using the manual method in terms of processing a transaction to the clients of customers. The researchers notice that the resort only has a few customers even in the peak season. The researchers implemented different gathering tools such as observation and interview to support their study.

The researchers proceed to have an interview with the owner, while the owner discusses how the business is starting to grow. The follow up questions will help the researchers to analyze the details more properly.

Software Development Life Cycle

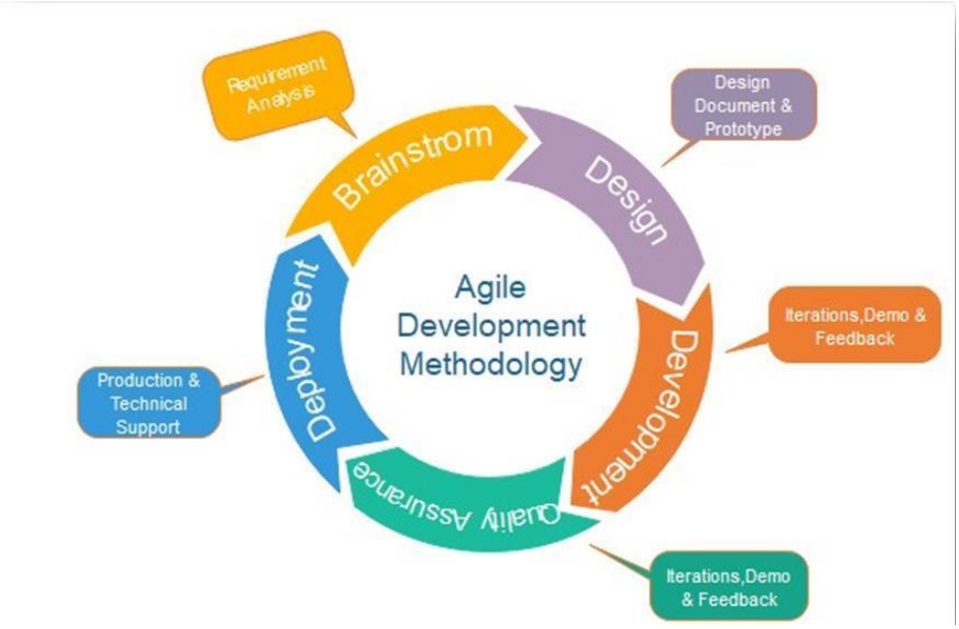

Figure 3.4: Agile Methodology Cycle

The agile process methodology is a process of breaking the project into phases and emphasizes the continuous collaboration and improvement of the system. This model seems to have a short time process to iterate and develop.

Figure 3.4: demonstrates the Agile Methodology cycle shows the cycle of the Agile Methodology, which was completed in constructing the system. This framework was used in the system's planning, development, design, and evaluation. And the researchers used this approach since it is brief, adaptable, and allows for changes as necessary. This also acts as a guide for creating the system they will use to better effectively and efficiently organize and handle each of the mentioned phases.

Phase 1: Brainstorm - The system starts by identifying and comprehending the requirement and figuring out the goals and commercial prospects. In order to correctly identify, discuss, and explain the plans and essential system components that clients require, the researchers begin communicating with them. Every development that will occur during this process needs to be documented during the system development phase. In order to construct the system, the researchers acquire data and requirements through the internet, interviews, and online research. It is important for the researchers to be ready for their upcoming system creation in order for the system effectively and the project to be successful.

Phase 2: System Design - After the planning stage, the requirements are transformed into full and exact system design specifications during this step. After the researcher and the client have discussed the project and the system software and hardware requirements have been established, the development team will start the development phase. The Resort Reservation helps the customers to easily book rooms or cottages in San Jose Resort and Event Center. With the help of our system, they can easily find or reserve the desired rooms or cottages they need.

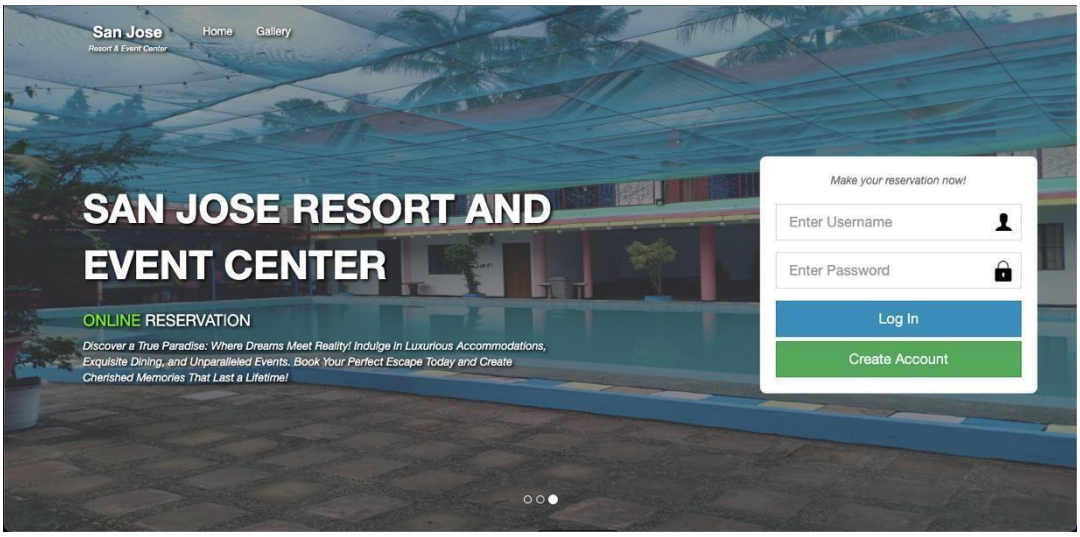

Figure 3.5: Log-in interface

Figure 3.5 shows the log-in page of the reservation system to be used by the clients, potential clients, staff and admin.

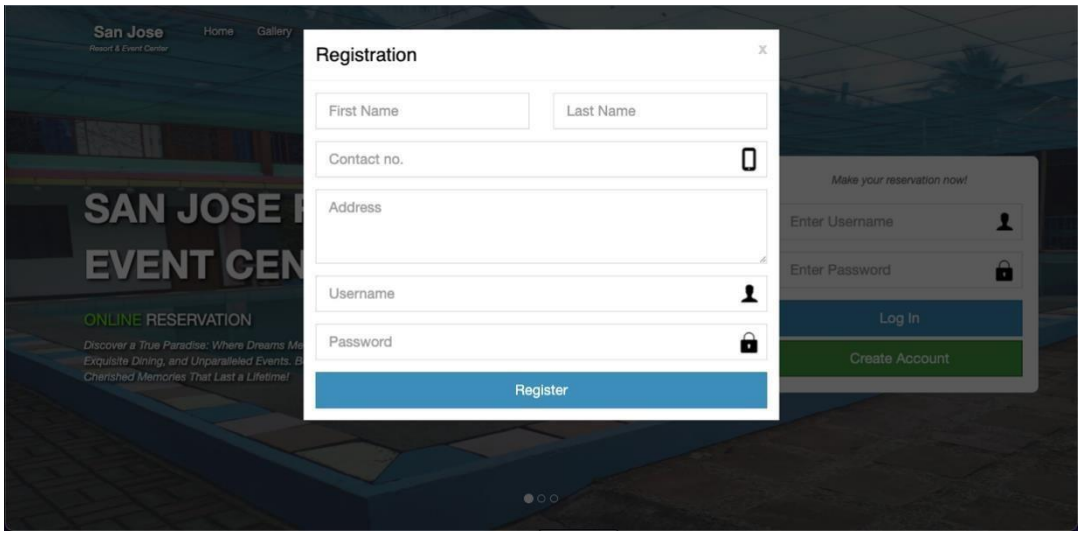

Figure 3.6: Create account pop-up.

This figure 3.6 is a pop-up, where the client can create their account to reserve.

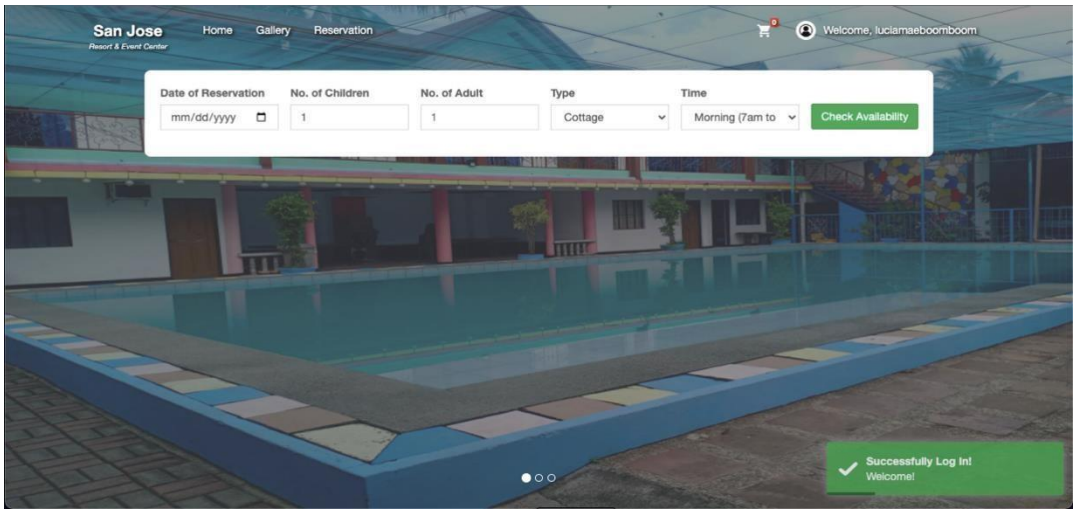

Figure 3.7: Client dashboard

After creating and logging in the account, the first thing the client will see is figure 3.7.

They are now able to reserve their desired amenities with their chosen accessible time.

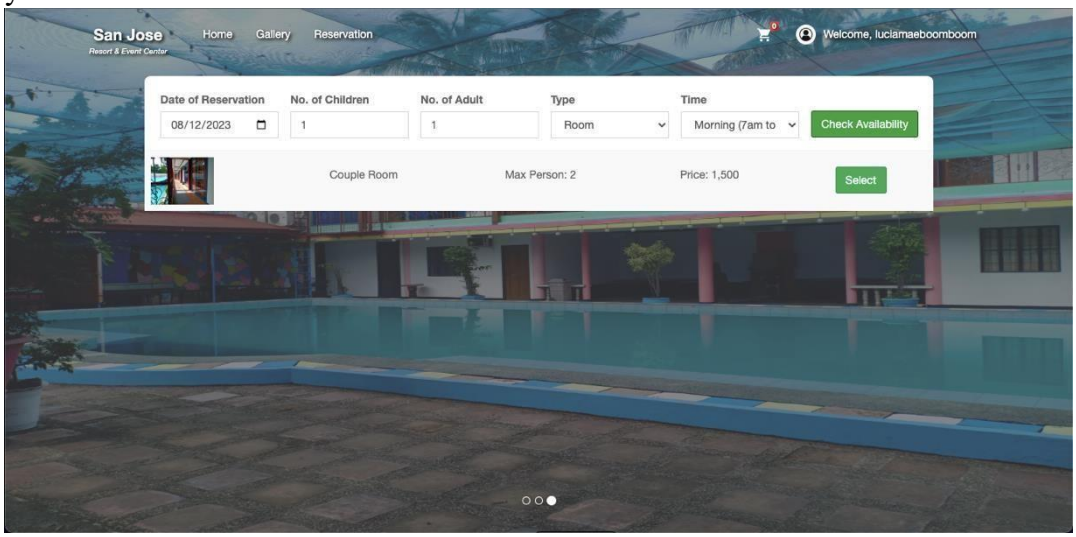

Figure 3.8: Check availability panel

Figure 3.8 is where will the client check the availability of their chosen amenity.

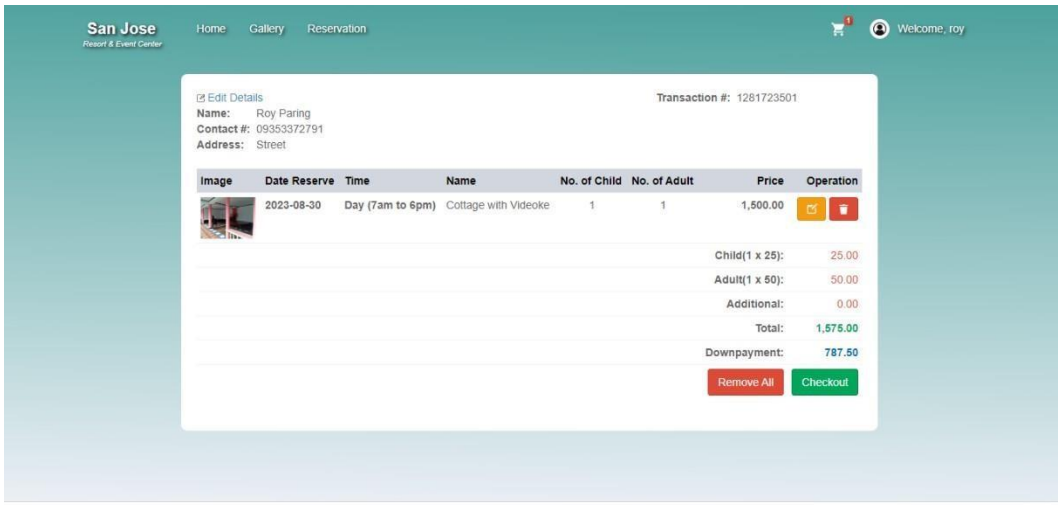

Figure 3.9: Check-out page

After partially reserving the client's chosen amenity, they will head to figure 3.9 to officially check it out.

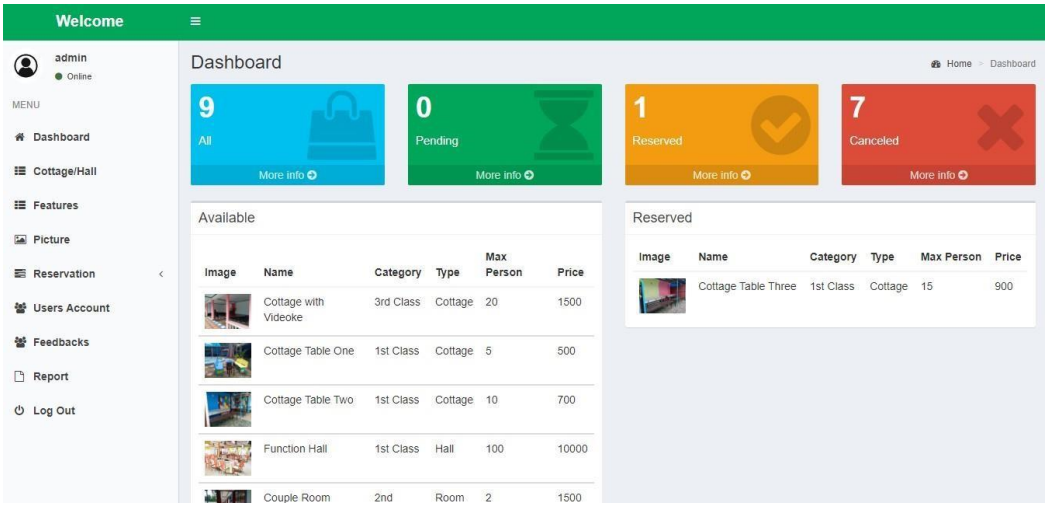

Figure 3.10: Admin dashboard

Figure 3.10 consists of all the reserved, pending, cancelled reservations and other features such as feedback and reports given by the clients or staffs.

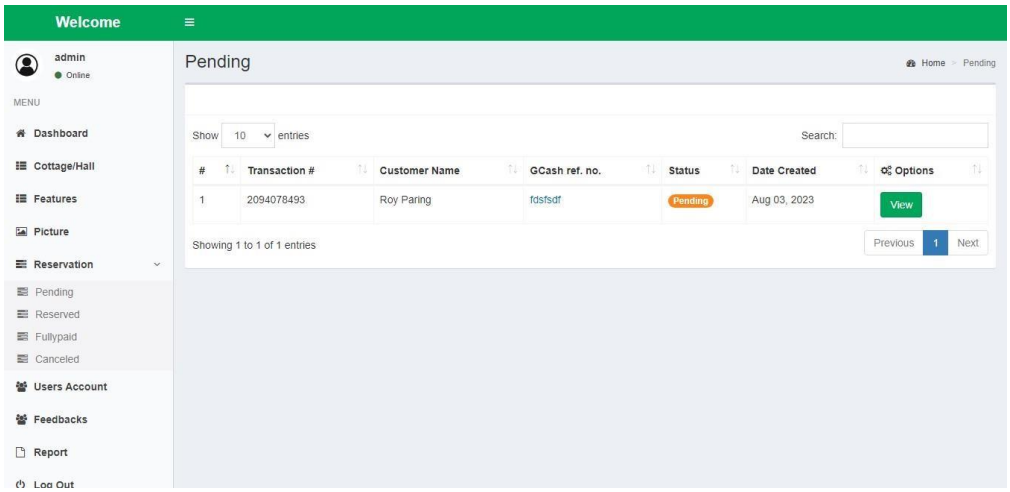

Figure 3.11: Pending section

After the client successfully reserved their chosen amenity, all of the data will be sent to the admin as seen in figure 3.11.

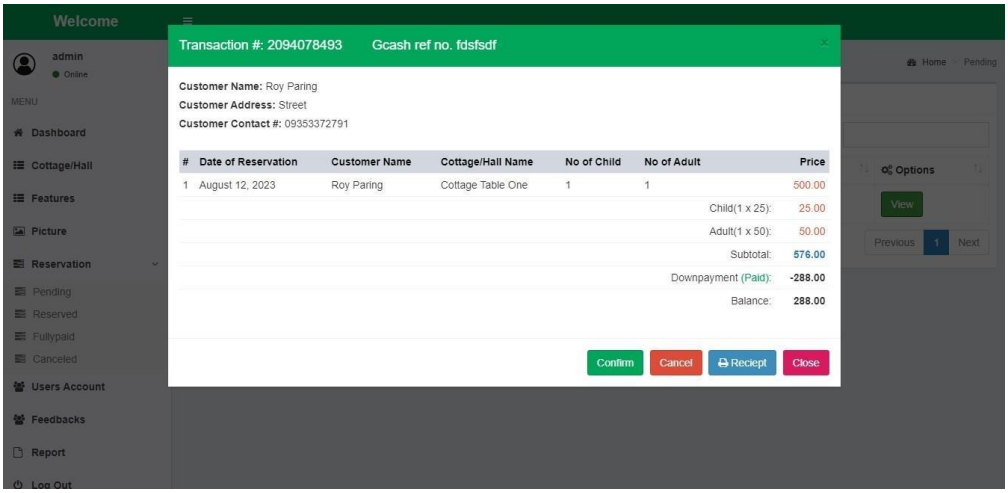

Figure 3.12: Confirming of reservation section

The next step for the admin is to check the reference no. given by the client to officially reserve them or confirm their reservation.

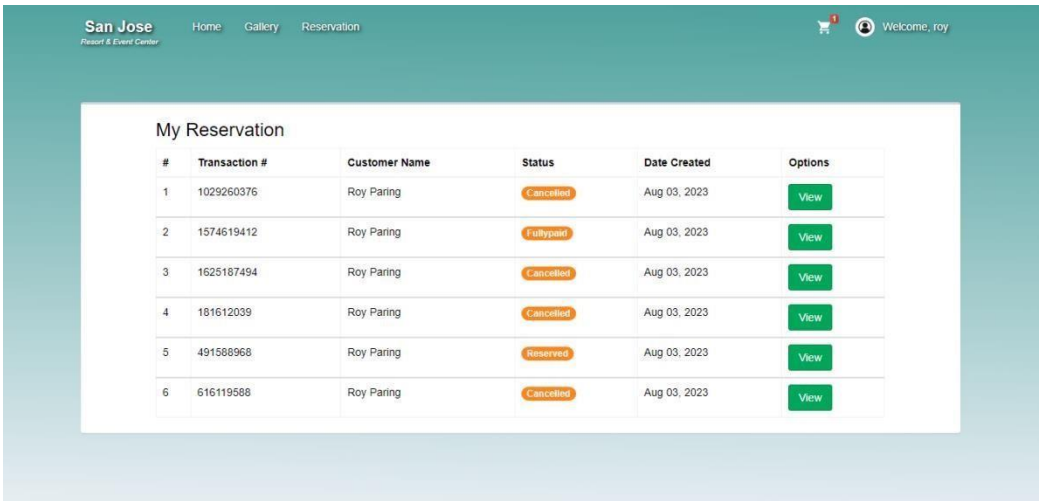

Figure 3.13: Reservation section

In figure 3.13, after confirming the reservation of the client it will now reflect in the reservation of the admin dashboard.

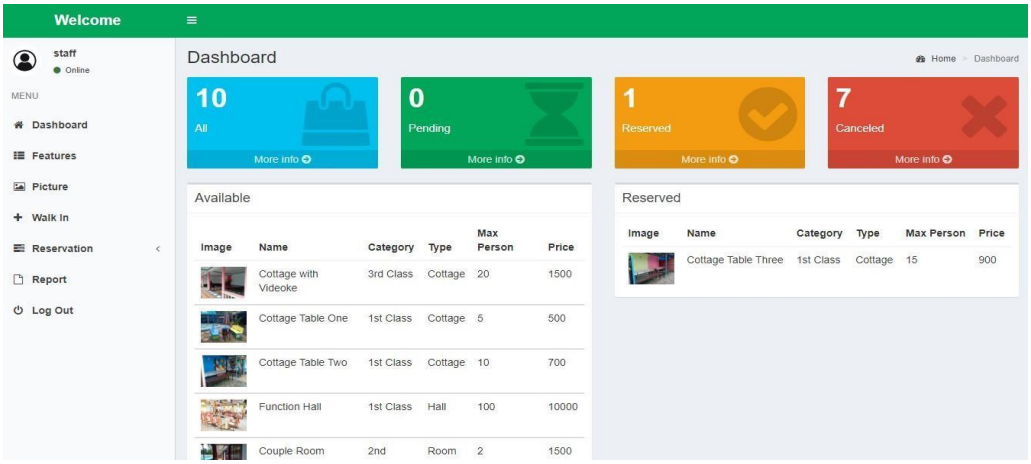

Figure 3.14: Staff dashboard

The staff also plays a vital role in the reservation system, they have access to the pending, reserve, and cancelled reservation just like the admin but they can no longer see the feedback feature.

Phase 3: Develop - The duration of the development process is the longest because it involves coding, figuring out what is required to construct the system, and making sure that it runs as intended in accordance with the program. In this stage, the researcher must construct or finish the system in accordance with the plans made by their team to fulfill the system's requirements. In developing the system, the researchers say that the developed system will benefit the following customers to have a faster transaction.

Phase 4: Testing and Quality Assurance – At this phase, when the system is complete, the researchers will test it to ensure that it works and to see if there are errors that must be corrected as quickly as possible before moving on to the following stage.

Phase 5: Deployment – At this phase, the researchers will give the system to the respective owner.

Technical Background

The researchers have developed a web-based system that enables users to reserve cottages or rooms at the San Jose Resort and Event Center. The web-based resort reservation system at San Jose Resort and Event Center is a resort reservation system that helps the owner of the resort easily monitor the customers reservations for cottages or rooms in their resort without using the manual process.

The table below shows the system software and hardware used in the development of the system.

Table 2.1: System Requirement and Specification

RECOMMENDED SYSTEM SPECIFICATIONS
• Windows 8.1 and above • Intel Core i5 and above • 8gb or 16gb and above • At Least 256 SSD and above

Table 2.1 shows the system requirement and specifications used in creating a web-based system. These specifications are the suggested minimum requirements due to the necessity for software to program commands and a substantial amount of storage to avoid circumstances when operating the system and transitioning slowly.

Table 2.2: Software Requirements and Specifications

Software	Version
Visual Studio Code	1.80
Cascading Styling Sheet	CSS3
JavaScript	Java 20 or JDK 20
PHP	8.2

Table 2.2 shows the software requirements and specifications that have been used when developing the system. Sublime text is the language used for the system's user interface and powerful features. CSS is for the layout of the whole system and other aspects of the web page. JavaScript is used to add dynamic and interactive elements to websites, such as image sliders and responsive menus. PHP is responsible for the creation of dynamic web pages and the processing of form data.

In developing this project, the following programming languages will be used:

Front end

- **HTML -** is the markup language we use to structure and define the meaning of our web content. We define paragraphs, headings, and data tables, as well as embed images and videos in the page.
- **CSS -** is a language of rules of style that we use to style the appearance of our HTML content, for example by choosing background colors and fonts and organizing it into multiple columns.

Back end

- **PHP -** is a popular open-source general-purpose scripting language that can be inserted into HTML and is well suited for web development.
- **JavaScript -** is a scripting language that enables you to do pretty much everything, including creating dynamically updated content and managing multimedia.

Algorithm Design and Techniques

First Come, First Serve Algorithm is a type of scheduling algorithm that is used by operating systems and networks to execute queued tasks based on their time of arrival. Regardless of how heavy or complex the task is, the one who arrived first gets served. This algorithm doesn't waste time by prioritizing tasks based on their urgency. While this algorithm is efficient in handling tasks that are similar in nature, it doesn't work well when it comes to handling complex systems or tasks. This is how the First Come, First Serve

works. Suppose that we have 4 requests to process in the CPU's queue, which is P1, P2, P3, and P4. P1 is a complex process, which has a 21 burst time while the remaining are only 3, 6, and 2. No matter how large the process is, P1 will be finished first since it's the first one to come.

The image below shows the process:

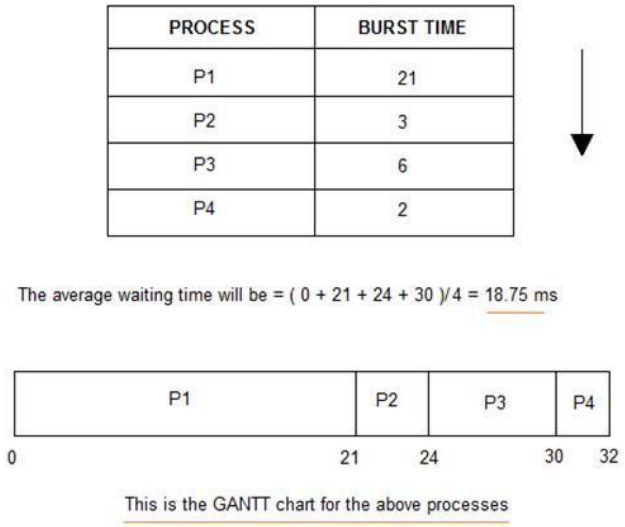

Figure 3.15: Gantt Chart of First Come, First Serve Algorithm

This type of scheduling algorithm is non-preemptive. Which means, if a process is already running, it cannot be interrupted by another process until the current process is already finished. A real-life example of this is when you go to the grocery store. When it is already time to pay at the counter, the first one in the line gets served first. If you're the last one in the line, you will be placed at the back and wait until your turn comes. First Come, First Serve algorithm is the simplest process of scheduling algorithm as it is easy to implement. The cons of this algorithm are small processes suffer starvation if there's a big process that arrived first. Just like in a grocery store, if you're second in line and only

have a few items on your cart, yet the first one has so many items in their cart, you have to wait for a long time no matter how few your items are since the first one needs to be finished.

first.

In this paper, the researchers used the FCFS in their system that will help the client manage the reservations easier. This helps the client save time, as the system will already prioritize the ones who make the reservations first.

Application of Algorithm

The Researchers use the Algorithm First Come First Serve (FCFS) in terms of reserving the resorts. The First person to arrive at the system will be the priority to choose which resort they want to avail. The Researchers also the Algorithm Priority, the first to schedule at the specific resort will be the first one to be taken care of. Even if the other person really needs a resort the priority will only have the access to use the Resort.

CHAPTER 4

RESULTS AND DISCUSSION

This chapter presents the results of the evaluation and interpret the gathered data to respond to the objectives of the study. There are presented tables to analyze data and extract meaningful results.

The general objective of the study is to develop a web-based system with Reservation system that uses First Come First Serve Algorithms to make it easier to provide the facility to the customers to reserve a room or cottages for a hassle-free tour. The system aims to provide a user-friendly interface that enables guests to easily navigate, check room availability in real-time, and make secure online reservations. Accurate and up-to-date information about the resort, including room types, amenities, and pricing, is important.

Table 4.1 – Specific objectives 1, 2, & 3, - *Survey Results*

CATEGORIES	Highest Proportion	Median	Interpretation
1. Using the web-based resort reservation system makes it easier to book a reservation.	69%	5	Strongly Agree
2. The reservation process allows us to accomplish tasks more quickly.	63%	5	Strongly Agree

3. The online system process provides a secure and convenient experiences for users.	58%	4	Agree
4. The available room options clearly presented, and did you find it easy to choose the best that suited you the most.	58%	5	Strongly Agree
5. Using the web-based resort reservation system improved my reservation process.	58%	4	Agree
6. Based on your observation to web-based reservation system, users expressed their willingness of considering booking with us again in the future.	58%	5	Strongly Agree
7. I found this web-based resort reservation system to be more flexible to interact.	56%	5	Strongly Agree
8. The information provided on the resort reservation system is clear and comprehensive, encompassing details about room types, amenities, and policies.	61%	5	Strongly Agree
9. Guests are encouraged to provide feedback after their stay to contribute to the continuous improvement of our resort reservation system and enhance the overall guest experience.	56%	5	Strongly Agree
10. Rate your satisfaction with the speed and efficiency of our web-based resort reservation system on a scale of 1 to 5.	69%	5	Strongly Agree

Legend: 5- Strongly Agree 4-Agree 3-Moderately Agree 2-Disagree 1-Strongly Disagree

The survey's results, which were specific to the study's goals 1, 2, and 3, indicated whether or not the establishment's current booking procedures will be significantly improved by the introduction of a reservation management system. Based on the Table above, questions 1 to 5 which answers the objective 1 has an overall average of 69% of the respondents that agrees to the statements of question 1 to 5. For objective 2 which catered by question 6 has an average of 58% of the respondents which can be interpret as agree to the statements in question 6. And lastly objective 3 which states the streamlining the process of booking which is questioned in the survey numbers 7 to 10 which had the overall average highest proportion of 69% of the respondents agreeing to the statement 7 to 10.

This indicates that the majority of respondents have a positive perception of the Reservation Management System's implementation, with an important degree of agreement across all survey goals. These results offer insightful information about how well the new system might work to improve the establishment's current booking procedures.

Object number 5: To evaluate the developed system using ISO 25010:2010 standard in terms of usability, and efficiency of the system.

Table 4.2 – *System Evaluation based on Usability*

Usability of the System	Highest Proportion	Median	Interpretation
1. The system is simple to use and manage.	60%	5	Strongly Agree
2. The user's engagement with the system user interface is interesting and fulfilling.	59%	4	Agree

Legend: 5- Strongly Agree 4-Agree 3-Moderately Agree 2-Disagree 1-Strongly Disagree

Table 4.2 shows how the Web-Based Resort Reservation System is easy to used and operate by the user. And presented in the table, “The system is simple to use and manage.” has the proportion of 60% and “The user's engagement with the system user interface is interesting and fulfilling.” has the low proportion proportion of 59%.

Table 4.3 – System Evaluation based on Functionality

Functionality of the System	Highest Proportion	Median	Interpretation
3. The system set of functions covers all the specified tasks and user objectives.	59%	4	Agree
4. Buttons are correct according to its use.	60%	5	Strongly Agree

5. The system meets its goal.	59%	4	Agree

Legend: 5- Strongly Agree 4-Agree 3-Moderately Agree 2-Disagree 1-Strongly Disagree

Table 4.3 shows the Resort Reservation Management System based on its functionality. In accordance with the results, “The system serves its purpose.” has the proportion of 59% with a median of 4 and interpreted as Agree. “Buttons are correct according to its use” has the proportion of 60% that has a median of 5 and interpreted as Strongly Agree. Nevertheless, the overall said indicators have been interpreted with Agree and has results of 4 median. Thus, the system meets its goal.

CHAPTER 5

SUMMARY, FINDINGS and RECOMMENDATION

This chapter contains the summary and findings from the data gathered and recommendations for future studies to develop. It can guide future researchers and serve as additional knowledge for the research study.

Summary of Findings

This chapter presents the summary of findings, conclusions, and recommendations. This study is entitled "Web-Based Resort Reservation System in San Jose Resort and Event Center," which aims to provide a user-friendly interface that enables guests to easily navigate, check room availability in real-time, and make secure online reservations. It's important to have accurate and current information on the resort, including details about room categories, features, and costs through the use of the resort reservation system.

A descriptive method was the approach used by the researchers in the study and the convenient sampling design was also used to gather data that is needed. The researchers used a survey questionnaire via google forms to the owner of the resort and to the customers for the dissemination and collection of data needed. The respondents of this study are only limited to those San Jose Resort and Event Center customers and to the owner that will handle the system.

The functionality and usability of the system was evaluated according to the performance test. The system usability revealed an average weighted mean of 5 with an interpretation of “Strongly Agree” while the system functionality revealed an average weighted of 5 with an interpretation of “Strongly Agree”. This indicates that the system possesses a very high level of usability. The findings imply that respondents are satisfied with the features and functionality of the system. It also showed that the system was easy to use, efficient, and easy to understand. Moreover, the participants expressed a strong agreement and found excellence with system capabilities, functionalities, and user-friendliness.

Conclusion

The San Jose Resort Reservation System is a system that allows users to have a safe and easy transaction. It demonstrated their ability to streamline operations and allow for seamless visitor interactions by offering speedier booking procedures, intuitive user interfaces, and integration with other management systems.

The researchers have concluded that by employing the reservation system, along with the help of the First Come First Serve algorithm, and by conducting a performance test to evaluate the usability and functionality of the system, positive feedback was received from the respondents regarding its efficiency, convenience and user-friendliness. The data obtained suggests that implementing such a reservation system can contribute to faster processes, greater convenience and overall improvement in customer satisfaction.

Moreover, the study shows that integrating a reservation system, instead of relying on manual reservations, would be a valuable asset for making an online reservation in San Jose Resort. It reduces the difficulties and challenges faced by customers, thereby presenting the system with the potential for further development and adaptation in similar businesses, ultimately enhancing client satisfaction and improving customer relationship.

Recommendation

The study's findings have led the researchers to recommend the following course of action:

- To the owner of the resort - The researchers recommend the owner to provide wide reporting and analytics capabilities to track key performance indicators, examine booking trends, and gain insight into customer behavior, enabling data-driven decision-making.
- To the customers - The researchers want the users to familiarize the system before using it. To avoid surprises upon arrival, the researchers recommend that clients confirm reservations and double-check all details, such as dates, hotel type, and any additional services they have chosen.
- To the front desk officers - The researchers recommend that the front desk officers provide seamless engagement with social media sites, allowing customers to share

their bookings, ratings, and experiences while using social proof to attract new guests.

The researchers recommend future researchers planning on developing reservation-based systems that uses the first come first serve algorithm to utilize the San Jose Resort Reservation System as a starting point or basis. As well as, to make improvements on the existing system including making the system more user-friendly and to pay close attention to the security and privacy concerns.

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