

iReserve: An Online Event Reservation for Lipa City Cultural with SMS Notification

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ABSTRACT

The study proposed a web-based research iReserve: An Online Event Reservation for Lipa City Cultural, to integrate SMS Notification. In the existing manual system of reservation, the major challenge on the administration was

conflicts of schedule with the event reservation. Thus, iReserve: An Online Event Reservation for Lipa City Cultural was proposed to serve as a useful tool for booking events and send updated notifications about the status of the request event details by integrating SMS technology. iReserve is designed to process the booking request and search for clients' available target event schedules from the system database. The study used the software development life cycle in developing the proposed application. The web application structure was designed using workflow, entity-relationship, context, and use case diagrams. The web application was developed using different open sources such as HTML, CSS, JavaScript, PHP, and MySQL. iReserve was evaluated using ISO 9126 software evaluation tool assessing the web applications' functionality, reliability, usability, efficiency, portability, and maintainability. The study concluded that using several diagrams and a combination of open source technologies, the web application designed and developed would meet the specified functionalities.

Keywords — online event, online reservation, Lipa City Cultural, SMS Notification, Software Development Life Cycle

INTRODUCTION

Technology can be seen in different business areas, providing better solutions to clientele' demands as innovation arises. Technology nowadays is proliferating, converting manual systems to digitized ones leading to web-based systems combined with embedded systems to create a change known as the Internet of Things (IoT).

Internet of Things (IoT) is expected to spread rapidly over the coming years, and this convergence will unleash a new dimension of services that improve the quality of life of consumers and productivity of enterprises, unlocking an opportunity referred to as the Connected Life (Understanding the Internet of Things, 2014). Internet of Things and mobile communication devices have gradually become an indispensable necessity in our daily lives. With newer and more powerful models rolling out each year, modern technology has provided us with communication and information access tools. This digitalization enables the next wave of life-enhancing services across several major sectors of the economy, allowing new commercial models, building new capabilities and new services running on different platforms: web, tablets, and mobile.

According to Oliveira and Fraga (2011), information technology was considered an essential tool in improving competition and the economic

conditions of a country. Additionally, information technology was commonly agreed to impact the productivity of a company that applied it significantly. With the vast presence of the Internet, the reservation process becomes easy and convenient. These days, as it becomes increasingly technology-based, businesses everywhere are contemplating new and effective systems for the event schedule. For all the optimism surrounding online reservations, some stressed that technology advances could only go so far in smoothing the reservation process.

Chang, Belanger, and Uysal (2006) stated that the internet and technology had changed how information is distributed how people do business in the industry. Its impact has been well studied, but sometimes the time element seems to be ignored to investigate risks taken and trustworthiness held by the online audience. In most cases, the time element should be included, especially for e-commerce sites, because pre-travel plans are usually made, and a time-lapse does exist between “the time a reservation is made” and “the time the reservation is confirmed.” Refanidis and Yorke-Smith (2009) mentioned that in the last decade, various research efforts and commercial offerings have sought to provide levels of automated assistance with time management. Basic calendaring, collaboration, and communication concern event negotiation or scheduling, while others concern task management and monitoring. When automated scheduling is employed, events and tasks are often treated separately, with the latter being kept out of the user’s calendar.

As the internet of things was developed, online reservations and shopping or hotel booking became part of customers’ daily lives. Service organizations, such as retailing companies or hotel companies, event venues are providing services to their customers not only in person but also in cyberspace. Online shopping enables anyone to access a virtual marketplace, where the content of a transaction is information about services or goods, and to interact with different systems and other people in a fast and convenient way (Novak, Hoffman, & Yung, 1996). IoT is not just limited to the transfer of information through the web; mobile networks could also be a suitable medium of deployment for its services and other applications. It offers a more diversified set of capabilities. The mobile phone had become increasingly popular ever since the rise of Short Message Service (SMS) in the early 2000s in Europe and some parts of Asia when businesses started to collect mobile phone numbers and send off wanted (or unwanted) content. The past decade has witnessed a revolution in using ICT in Developing countries (Jaiswal, 2011). Short Messaging Service (SMS) is a protocol used in communications that gives way to exchange short text messages

from one mobile telephone device to another. SMS or text messaging dominates today's communication since seventy-four percent of all cell phone users send and receive text messages nowadays. The technology behind SMS has paved the way for the rapid growth of text messaging improvement that has allowed users to broadcast SMS text messages from mobile phones and computers with SMS software and through public SMS gateways. The link between text messaging to SMS technology now connotes the terminology of "SMS" as the act of texting or sending text messages even with a different communications protocol (Olaleye, Olaniyan, Eboda, & Awolere, 2013). Many applications needed to do real-time notification, especially when an event occurs, thus web and mobile with SMS as the gateway to communicate with costumers' shows excellent potential in transforming data into useful information.

There are lots of researches and innovation that uses web and mobile technology. In the study of Maulana, Nugroho, and Santoso (2017), a queuing reservation system was developed for medical centers built using PHP, CodeIgniter Framework with MySQL Database, MQTT, responsive design, and cloud-based storage. The IoT-based system is provided in medical centers and synchronized with the web-based app, making a queuing system with two methods for reservation; it's an online and offline method. The system makes the queue time more effective and efficient as applied to the public service system. Yugopuspito, Herwansyah, Krisnadi, Cahya, & Panduwinata (2016) also designed and developed a hotel-like booking system for a parking slot, a reservation-based parking system. In the study, the system allows the user to book a parking slot in advance. The system also provides a module that would notify the user based on several events such as users entering their grace period of cancellation; users entering the parking lot; a reminder for the user who will end the parking, they may extend the period of parking, or the must leave at the end of the parking period; and thanks notification and wrap-up bill. The system was developed and tested successfully using different constraints.

Another study conducted by Sakthi, Leo, Monisha, and Ramesh (2014) was an advanced train reservation and passenger intimation with a safety system that focuses on an interactive and user-friendly system that modernize the railway system of India through the application of modern technologies such as GPS, touch screens, GSM and other advanced communications system. The study helps railway management to track lapses and dilemmas encountered using the manual mode. Another study conducted by Mushtaq (2019) deals with enhancing the usability of an Online Airline Reservation System by making it more flexible,

considering the travelers' compliant behavior. Other factors that affect customers' behavior, such as service quality attributes and external variables, were computed to determine their association with travelers' flexible behavior and ascertain their range and strength of association using Pearson Correlation Coefficients and Multiple Regression Analysis. Shibata, Ueda, Sun, and Ito (2016) proposed an online scheduling system for tours by one-way electric vehicle (EV) sharing. The system focuses on taking reservations of tours with their multiple destinations, and time windows stay time for visiting each destination. After reservation, the system then tells the user the sequence and scheduling of visits to each destination and which specific EVs to take. The EV's battery status enables users to move long distances without concerns about the remaining battery. The study showed that the proposed system improved the acceptance rate of reservations while reducing the relocation count (the number of EVs moved to rebalance the distribution) by up to 15%. Relevant to the study mentioned above, Atcharyachanvanich (2019) proposed research focusing on assessing customer's attitudes towards using online hotel reservations in Thailand. It was designed to investigate whether or not the perceived trust and perceived risk would affect the customer's attitude. The model was developed, and its hypotheses were tested by using structural equation modeling. The results of the questionnaire filled out by 446 Thai university students pointed out that the customer's perceived trust is significantly associated with the customer's attitude towards using online hotel reservations. Still, the customer's perceived risk does not affect the attitude towards using it.

Lipa is one of the three cities in Batangas, Philippines (the others being Batangas City and the City of Tanauan). It is situated 80 kilometers south of Manila. According to the latest census, it has a population of 283,468 inhabitants in 59,063 households. The city is considered a religious center due to the numerous magnificent churches, convents, retreat facilities, and seminaries. Dubbed as the "Little Rome of the Philippines," tourists usually flock to the city, especially during Lenten Season. It is also the Archdiocese of Lipa and the home of two popular apparitions, the Shower of Petals in 1948 and the "Lady" atop a coconut tree in 1993. It is also the host to the annual Marian Pilgrimage: The National Day of Prayer for Peace and the Sanctification of the Clergy.

Being at the forefront of economic activities in the province and the region, Lipa City is ideal for investments due to its business-friendly environment. It provides great opportunities for light industries such as the LIMA Industrial Estate, Nestle Philippines, and other multi-national companies. Having been identified as one of the ten cyber growth corridors in the country, Lipa City has

great potential in business process outsourcing. It has been chosen as one of the Top 10 Next Wave Cities for a couple of years.

With this, the Lipa City government needs more automated systems that would cater to its investors' and residents' needs for more opportunities and success in the future. The above-mentioned literature and researches have a significant impact on developing an online reservation system for the Lipa City Cultural Center (iReserve), considering the implication of internet and mobile technology. iReserve aims to provide a solution for the problems encountered by the Lipa City Cultural Center management in using their current manual event reservation system, such as conflicts on event reservation resulting from double-booking; blocking of dates for priority reservations like events imposed by government officials, and management of schedule for events happening on same dates. The developed web-based system with SMS notification simplifies the reservation process faster, easier, reliable, and more efficiently through the different software tools and techniques.

OBJECTIVES OF THE STUDY

The general objective of the study is to develop an online reservation system for Lipa City Cultural Center. Specifically, the study aimed to: (1) design a web application with the following features: reservation of events based on client's target date, posting of public news and events announcement, management of reservation database, searching of available dates for client's preference; report generation; (2) construct the web application using HTML, CSS, JavaScript, PHP, and MySQL; and (3) test and improve the web application using ISO/IEC 9126 testing standard for software in terms of functionality, usability, reliability, efficiency, portability, and maintainability.

METHODOLOGY

The researchers used the software development life cycle (SDLC) waterfall model to develop the web application and ISO/IEC 9126 testing standard as an assessment tool to evaluate iReserve. Aside from the assessment tool, iReserve was also evaluated based on the demographics of the 30 respondents.

Initially, data and information were gathered by studying existing online reservation systems of the same concept and the current operation of the Lipa City Cultural Admin Office. After identification of user requirements/specifications

and analysis of the manual reservation systems, including its processes, the design of the iReserve system was illustrated using various system design tools like a flowchart, data flow diagram, and use case analysis for a straightforward interpretation of the flow of the system of data including its relationships to different entities. The detailed logic diagrams, process diagrams, and description of all functional and non-functional requirements were used for more specific system design. Next to design was the implementation of all the user and system requirements gathered used in coding through different programming languages such as HTML and PHP as the primary language for the system's functionality and features, MySQL for its database and SMS API module that served as a link for notification between the website and mobile phones of the end-users.

iReserve prototype was then tested based on form validation, file handling, and error handling by its end-users. By structured verification approach, detected defects by the proponents were solved immediately. A useful system review was necessary for good software design, accuracy, and quality. The validation process was also used to examine whether the software satisfies the user requirements and matches conditions for which it was made through ISO/IEC 9126 software evaluation standard.

RESULTS AND DISCUSSION

In this chapter, the results of the study are presented and discussed following the main objective of the study; to develop an online reservation system for Lipa City Youth and Cultural Center. Figures 1 to 3 several present diagrams which are results of the first specific objective – to design a web application considering the user requirements. Figures 4 to 6 show screenshots of the results of the second specific objective – to develop the web application using several open source technologies. And Tables 1 to 7 present the results of the third objective of the system – to test and improve the web application, the researchers used the ISO/IEC 9126 software standard.

A flowchart illustrates the sequence of processes in a system using several symbols. The step-by-step procedures of iReserve are shown in Figure 1. The user needs to log in to the system before sending a reservation. The admin also requires to log in to the system before approving reservations. The illustration presents that the requirement to log in is the user must have a valid username and password; if it is validated, they can access the system and manage the events. Only the administrator can approve the event reservation request and confirm

through electronic mail, and if the reserved event is approved, they will fill out the forms.

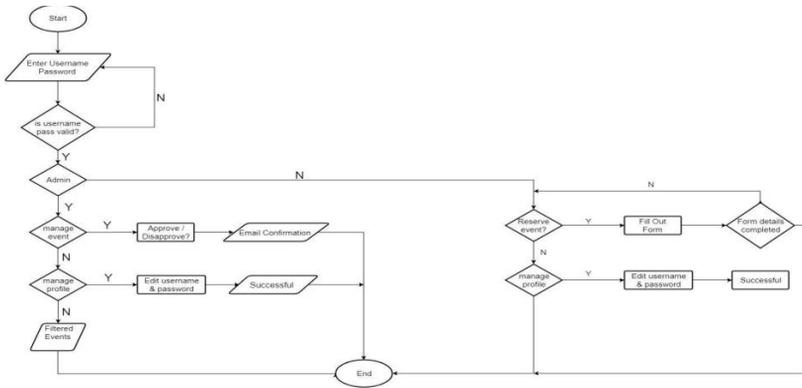


Figure 1. Flowchart of iReserve

A context diagram shows a broad overview of the user requirements of a system under consideration as a single high-level process and then shows the relationship of the system. There are two types of end-user for iReserve, as shown in Figure 2. The admin refers to the Lipa City Youth and Cultural Center personnel who has high-level access to the system, and the user relates to the persons who apply for reservations.

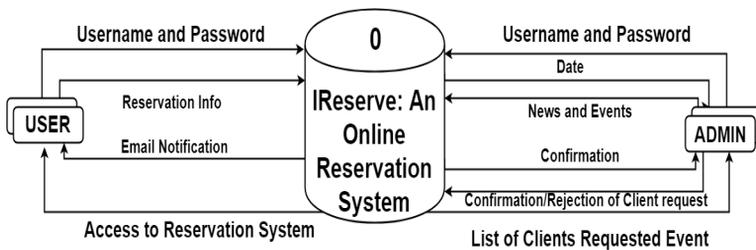


Figure 2. Context Diagram of iReserve

A use case diagram is a simple illustration that summarizes the interaction of the user to the system. It shows the functionalities of a system from the end user's

perspective. The use case diagram of an admin account is shown in Figure 3. The admin account has full access to the system. An admin can approve or decline user requests and post announcements to the website.

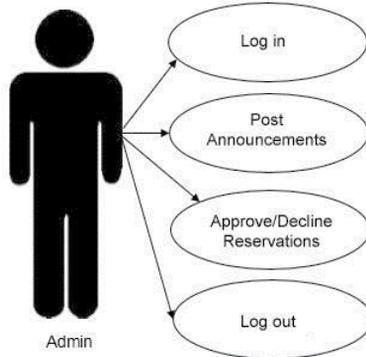


Figure 3. Use Case Diagram of Admin

A website visitor needs to create a user account to access a system. A user account can only send reservations aside from viewing the content of the website, as shown in Figure 4.

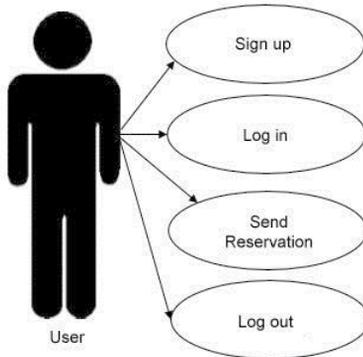


Figure 4. Use Case Diagram of User

Figure 4 shows the data that is stored in the database of the system. A user needs to register first before accessing the system, and the data provided by the user are stored in tbl_user. After registration, a user can apply for a reservation,

and the details are stored in `tbl_reservation` and `tbl_status`. The admin confirms the application, and the status of the application is stored in `tbl_confirm`. The admin also posts announcements, which are stored in `tbl_post`.

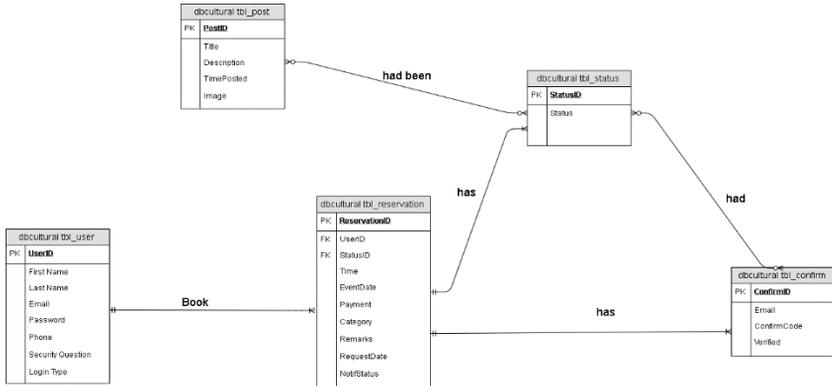


Figure 5. Entity Relationship Diagram of iReserve

Figure 5 shows the login module of iReserve. A signup button is provided for users who do not have an account. They will be required to fill in all the necessary information needed for the registration, like the user needs to provide an email address to register. An account is required to access the system, which will be validated for access control. The login module also allows the user to recover their registered account if they forgot the username and password through forgetting the password.

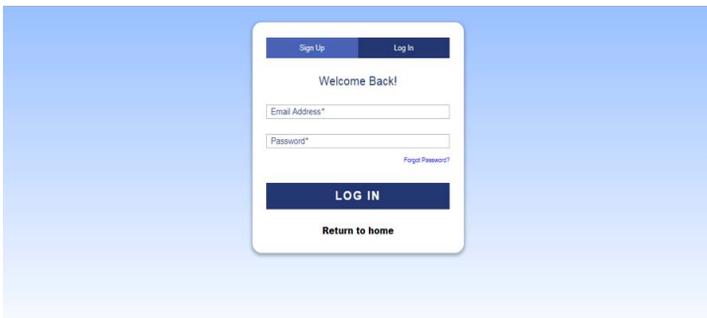


Figure 6. Login Module of iReserve

Figure 6 shows the news and events page of the system. It is accessible by both admin and user accounts to see information and update. This feature helps the user view Lipa City Youth and Cultural Center's schedule the upcoming events and programs and immediately check its availability of dates before submitting a reservation request in the system to avoid conflicts. The administrator can find all the requested activity and use the search function through filtering by date request.



Figure 7. Event Page of iReserve

Figure 7 shows the requests list sent by the users to the administrator site. Only an administrator account can confirm and approve the reservation request of the users. An application can be approved or rejected depending on the availability of Lipa City Youth and Cultural Center from the list of event dates.



Figure 8. Reservation Request Page of iReserve

Figure 8 shows the reservation form that the users need to fill out to request for Lipa City Youth and Cultural Center. The user needs to provide the required fields before submitting the request, including its category of event, payment details, and the target date of the event.

The screenshot displays the 'Reservation Form' interface. At the top, there is a navigation bar with links for 'Home', 'List of events', 'Reservations', 'FAQs', and 'Logout'. Below this is a banner for 'Lipa City Youth & Cultural Center' featuring a collage of photos. The main form area is titled 'Reservation Form' and contains the following fields:

- Category:** A dropdown menu currently showing 'SPORT ACTIVITIES'.
- Payment:** A text input field with the value '1,000.00'.
- Event Date:** A text input field.

 At the bottom of the form are two buttons: 'Cancel' and 'Save'. Below the form, there is a footer with the text 'About us | Gallery | News & Events | Calendar | Reservations | FAQ |' and 'Copyright © 2018. All Rights Reserved'. To the right of the footer are social media icons for Facebook and Twitter.

Figure 9. Reservation Form of iReserve

To determine the performance of the system, this study adopted the ISO 9126 evaluation instrument for software, with the following criteria: functionality, usability, reliability, efficiency, portability, and maintainability.

The following were undertaken during the software evaluation: (1) presented the system to the respondents from Lipa City Youth and Cultural Center, (2) demonstrated and explained the functionalities of the system to the respondents, (3) asked the respondents to use the system for evaluation, (4) distributed the questionnaires to the respondents. In compliance with the data privacy act, the respondents were not required to provide their names in the surveys. Their answers were treated confidentially, (5) tabulated the data and computed the mean for each criterion and the overall mean for all criteria, and (6) interpreted the results for the equivalent descriptive rating in Table 1.

Table 1. Demographics of the Respondents

| Group | Count of No. | 16-25 | 26-35 | 36-45 | 46-55 | All % | 16-25 % | 26-35 % | 36-45 % | 46-55 % |
|----------------------|--------------|-------|-------|-------|-------|-------|---------|---------|---------|---------|
| Non-resident of Lipa | 4 | | 1 | 2 | 1 | 13% | 0% | 14% | 17% | 25% |
| Private Sector | 2 | | | 2 | | 7% | 0% | 0% | 17% | 0% |
| Public Sector | 9 | 2 | 1 | 6 | | 30% | 29% | 14% | 50% | 0% |
| Resident of Lipa | 8 | 2 | 3 | 1 | 2 | 27% | 29% | 43% | 8% | 50% |
| School | 7 | 3 | 2 | 1 | 1 | 23% | 43% | 29% | 8% | 25% |
| | 30 | 7 | | 12 | 4 | 100% | 100% | 100% | 100% | 100% |

The participants of the research consisted of 30 respondents from different groups and ages. Non-resident of Lipa 4 (13%), Private Sector 2 (7%), Public Sector 9 (30%), Residents of Lipa 8 (23%) and schools 7 (23%).

Table 2. Gender of Respondents

| Gender | Non-resident of Lipa | Private Sector | Resident of Lipa | School | Grand Total | Non-resident of Lipa % | Private Sector % | Resident of Lipa % | School % | Grand Total % |
|--------|----------------------|----------------|------------------|--------|-------------|------------------------|------------------|--------------------|----------|---------------|
| Female | 2 | 1 | 3 | 3 | 13 | 50 % | 33 % | 50 % | 43 % | 43 % |
| Male | 2 | 1 | 6 | 4 | 17 | 50 % | 67 % | 50 % | 57 % | 57 % |
| | 4 | 2 | 9 | 7 | 30 | 100 % | 100 % | 100 % | 100 % | 100 % |

Participants were asked personal questions such as age and gender. As seen in Table 2. 43% of participants are female and 57% of participants are male.

Table 3. Age of Respondents

| Age | All | Female | Male | All % | Female % | Male % |
|-------|-----|--------|------|-------|----------|--------|
| 16-25 | 7 | 5 | 2 | 23 % | 38 % | 12 % |
| 26-35 | 7 | 1 | 6 | 23 % | 8 % | 35 % |
| 36-45 | 12 | 5 | 7 | 40 % | 38 % | 41 % |
| 46-55 | 4 | 2 | 2 | 13 % | 15 % | 12 % |
| | 30 | 13 | 17 | 100 % | 100 % | 100 % |

In addition, as seen in Table 3 23% of participants for ages of 16-25, 23% for ages 26-35, 40% for ages 36-45 and 13% for ages 46-55.

Table 4. Rating Scale for Interpreting the Evaluation Result

| Numerical Rating | Interpretation |
|------------------|----------------|
| 4.51 – 5.00 | Excellent |
| 3.51 – 4.50 | Very Good |
| 2.51 – 3.50 | Good |
| 1.51 – 2.00 | Fair |
| 1.00 – 1.50 | Poor |

Table 5 presents the results of the evaluation regarding the system's functionality. The system gained an overall mean of 4.9, which is equivalent to an excellent rating. This indicates that the system meets the users' needs.

Table 5. Functionality Evaluation of iReserve

| Indicators | Mean | Interpretation |
|--|------|----------------|
| The software performs the tasks required. | 4.9 | Excellent |
| The result is as expected. | 4.9 | Excellent |
| The system interacts with other systems. | 4.8 | Excellent |
| The software prevents unauthorized access. | 4.9 | Excellent |
| Composite Mean | 4.9 | Excellent |

Table 6 presents the results of the evaluation regarding the system's usability. The system gained an overall mean of 4.9, which is equivalent to an excellent rating. This indicates that the system is user-friendly and provides an attractive user interface.

Table 6. Usability Evaluation of iReserve

| Indicators | Mean | Interpretation |
|---|------|----------------|
| The software is easy to use. | 4.9 | Excellent |
| The system is quickly learned. | 4.9 | Excellent |
| The system is used without much effort. | 4.9 | Excellent |
| GUI interface looks good. | 4.8 | Excellent |
| Composite Mean | 4.9 | Excellent |

Table 7 presents the results of the evaluation regarding the system's reliability. The system gained an overall mean of 4.6, which is equivalent to an excellent rating. This indicates that the system is fault-tolerant and recoverable.

Table 7. Reliability Evaluation of iReserve

| Indicators | Mean | Interpretation |
|--|------|----------------|
| Most of the faults in the software have been eliminated over time. | 4.7 | Excellent |
| The software handles errors. | 4.7 | Excellent |
| Software resumes working and restores lost data. | 4.5 | Excellent |
| Composite Mean | 4.6 | Excellent |

Table 8 presents the results of the evaluation regarding the system’s efficiency. The system gained an overall mean of 4.7, which is equivalent to an excellent rating. This indicates that the system is prompt and effective.

Table 8. Efficiency Evaluation of iReserve

| Indicators | Mean | Interpretation |
|--|------|----------------|
| The system responds quickly. | 4.7 | Excellent |
| The system utilizes resources efficiently. | 4.7 | Excellent |
| Composite Mean | 4.7 | Excellent |

Table 9 presents the results of the evaluation regarding the system’s portability. The system gained an overall mean of 4.8, which is equivalent to an excellent rating. This indicates that the system is accessible and convenient to use.

Table 9. Portability Evaluation of iReserve

| Indicators | Mean | Interpretation |
|--|------|----------------|
| The software can be moved to other environments. | 4.9 | Excellent |
| The software is installed quickly. | 4.9 | Excellent |
| The software complies with portability standards. | 4.9 | Excellent |
| The software is easily replaced with other software. | 4.5 | Excellent |
| Composite Mean | 4.8 | Excellent |

Table 10 presents the results of the evaluation regarding the system’s maintainability. The system gained an overall mean of 4.8, which is equivalent to an excellent rating. This indicates that the system is restorable to operational status when a failure occurs.

Table 10. Maintainability Evaluation of iReserve

| Indicators | Mean | Interpretation |
|---|------|----------------|
| Faults are easily diagnosed. | 4.8 | Excellent |
| The software is easily modified. | 4.8 | Excellent |
| The software continues to function if changes are made. | 4.8 | Excellent |
| The software is tested easily. | 4.9 | Excellent |
| Composite Mean | 4.8 | Excellent |

Table 11 presents a summary of the evaluation results. The system's functionality and usability received the highest ratings. On the other hand, reliability received the lowest rating but still was excellent. The system attained an overall mean of 4.8, which is equivalent to an excellent rating. This indicates that the system complies with the ISO 9126 software quality standards.

Table 11. Overall Evaluation of iReserve

| Criteria | Mean | Interpretation |
|-----------------|------|----------------|
| Functionality | 4.9 | Excellent |
| Usability | 4.9 | Excellent |
| Reliability | 4.6 | Excellent |
| Efficiency | 4.7 | Excellent |
| Portability | 4.8 | Excellent |
| Maintainability | 4.8 | Excellent |
| Overall Mean | 4.8 | Excellent |

Table 12 presents the results of the computer system usability. The system gained an overall mean of 4.86, which is equivalent to an excellent rating. This indicates that the users find the system effective and it satisfies their needs.

Table 12. Results of the Computer System Usability

| Criteria | Mean | Interpretation |
|--|------|----------------|
| Overall, I am satisfied with how easy it is to use this system. | 4.9 | Excellent |
| It is simple to use this system. | 4.9 | Excellent |
| I am able to complete my work quickly using this system. | 4.8 | Excellent |
| I feel comfortable using this system. | 4.9 | Excellent |
| It was easy to learn to use this system. | 4.9 | Excellent |
| I believe I became productive quickly using this system. | 4.8 | Excellent |
| The system gives error messages that clearly tell me how to fix problems. | 4.7 | Excellent |
| Whenever I make mistakes using the system, I recover easily and quickly. | 4.7 | Excellent |
| The information (such as online help, on-screen messages, and other documentation) provided with this system is clear. | 4.9 | Excellent |
| It is easy to find the information needed. | 4.9 | Excellent |
| The information provided with the system is effective in helping complete my work. | 4.9 | Excellent |
| The organization of information on the system screens is clear. | 4.9 | Excellent |
| The interface of this system is pleasant. | 4.9 | Excellent |
| I like using the interface of this system. | 4.9 | Excellent |
| This system has all functions and capabilities I expect it to have. | 4.8 | Excellent |
| Overall, I am satisfied with this system. | 4.9 | Excellent |
| Overall Mean | 4.86 | Excellent |

CONCLUSIONS

Reservation of events in Lipa City Youth and Cultural Center needs automation to improve the current system. As per the client, Admin Office Lipa City Hall, the purpose of the system is to have a well-organized schedule of

events - to be able to accept reservations for Lipa City Youth and Cultural Center without conflicting other events that have prior reservations – and to disseminate information online. Thus, the system was proposed and developed to cater to the client's needs to manage a schedule of Lipa City Youth and Cultural Center efficiently through the online reservation and to post news and announcements through a website.

The software has many benefits such as improvement of efficiency and productivity, reduction of errors, increase in quality of service. For this reason, it becomes essential to understand the factors that affect the intention of use of i-Reserve.

Based on the findings of the study, the following conclusions were derived, (1) using a flowchart, context diagram, an entity-relationship diagram, the proposed system was successfully designed such that: (a) the user can send reservation online; (b) the admin can manage the requests sent by the user, and (c) the user and admin can search for available dates of Lipa City Youth and Cultural Center, (2) the proposed system was developed successfully using: (a) HTML and CSS for the user interface; (b) JavaScript for form validation and error handling; (c) PHP for sending and retrieving data to and from the database; and (d) MySQL for data storage; and (3) Using ISO/IEC 9126 testing standard for software, the functionality, reliability, usability, efficiency, maintainability, and portability of the proposed system was tested and was rated excellent.

RECOMMENDATIONS

Based on the results, the researchers offer the following recommendations that iReserve be adopted by the city of Lipa, but in the process, only a specific group of individuals from the admin of Lipa City Youth and Cultural Center will be given admin accounts and manage reservations for it will yield additional income generation and when it becomes operational, online payment can be integrated into the system for faster transactions.

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