

G2_DOCUMENTATION.docx



Universiti Teknologi MARA

Document Details

Submission ID

trn:oid::13381:89266746

Submission Date

Apr 2, 2025, 11:24 PM GMT+8

Download Date

Apr 2, 2025, 11:26 PM GMT+8

File Name

G2_DOCUMENTATION.docx

File Size

1.5 MB

56 Pages

7,591 Words

48,275 Characters





13% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.




Filtered from the Report

- Bibliography
- Quoted Text
- Cited Text

Match Groups

-  **106** Not Cited or Quoted 13%
Matches with neither in-text citation nor quotation marks
-  **0** Missing Quotations 0%
Matches that are still very similar to source material
-  **0** Missing Citation 0%
Matches that have quotation marks, but no in-text citation
-  **0** Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

- 4%  Internet sources
- 2%  Publications
- 13%  Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

Match Groups

- 100%** Not Cited or Quoted 13%
Matches with neither in-text citation nor quotation marks
- 0** Missing Quotations 0%
Matches that are still very similar to source material
- 0** Missing Citation 0%
Matches that have quotation marks, but no in-text citation
- 0** Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

- 4% Internet sources
- 2% Publications
- 13% Submitted works (Student Papers)

Top Sources

The sources with the highest number of matches within the submission. Overlapping sources will not be displayed.

1	Submitted works	University Of Tasmania on 2024-05-28	4%
2	Internet	www.coursehero.com	<1%
3	Submitted works	De La Salle University on 2024-03-09	<1%
4	Internet	etd.aau.edu.et	<1%
5	Submitted works	Technological Institute of the Philippines on 2021-12-19	<1%
6	Submitted works	University of Ulster on 2023-05-08	<1%
7	Internet	ejournals.ph	<1%
8	Submitted works	International School of Management and Technology (ISMT), Nepal on 2020-01-08	<1%
9	Submitted works	De La Salle University on 2024-01-31	<1%
10	Submitted works	De La Salle University on 2024-05-09	<1%

11	Submitted works	Global Banking Training on 2022-03-07	<1%
12	Submitted works	De La Salle University on 2024-03-03	<1%
13	Submitted works	University of Greenwich on 2024-09-06	<1%
14	Submitted works	Camarines Sur Polytechnic Colleges on 2022-07-04	<1%
15	Internet	www.javaguides.net	<1%
16	Publication	Sheo Kumar, Shhivangula Mahesh, Y. Ashok Kumar, V. S. Manoj Kumar, Manyala ...	<1%
17	Submitted works	De La Salle University on 2024-03-07	<1%
18	Internet	tml.nul.ls	<1%
19	Submitted works	Camarines Sur Polytechnic Colleges on 2022-07-06	<1%
20	Submitted works	University of Gloucestershire on 2010-10-26	<1%
21	Submitted works	University of Greenwich on 2017-12-06	<1%
22	Submitted works	University of Witwatersrand on 2014-09-15	<1%
23	Submitted works	CTI Education Group on 2025-03-12	<1%
24	Submitted works	De La Salle University - Manila on 2025-03-28	<1%

25	Submitted works	Higher Education Commission Pakistan on 2024-03-11	<1%
26	Submitted works	MMCL LEIO - Blackboard on 2025-03-28	<1%
27	Submitted works	Technological Institute of the Philippines on 2023-12-19	<1%
28	Submitted works	ssu on 2024-09-08	<1%
29	Internet	123dok.com	<1%
30	Submitted works	Colorado Technical University Online on 2025-01-20	<1%
31	Submitted works	Coventry University on 2011-04-27	<1%
32	Submitted works	Higher Education Commission Pakistan on 2024-11-29	<1%
33	Submitted works	Liverpool John Moores University on 2025-01-17	<1%
34	Submitted works	Napier University on 2018-01-18	<1%
35	Submitted works	Northwestern Mindanao State College of Science and Technology on 2025-01-16	<1%
36	Submitted works	University of Central England in Birmingham on 2017-05-04	<1%
37	Submitted works	University of Hertfordshire on 2024-10-28	<1%
38	Internet	www.etifor.com	<1%

39

Submitted works

Durban University of Technology on 2024-05-22

<1%



TECHNOLOGICAL UNIVERSITY OF THE PHILIPPINES – TAGUIG
Km. 14 East Service Road, Western Bicutan, Taguig City

Developing an Efficient Resort Management System: Integrating Real-Time Tracking and Automated Reports

A Project Presented to the
Faculty of the Electrical and Allied Department
Technological University of the Philippines Taguig
Campus Taguig City

In Partial Fulfillment of the Requirements for the Subject
System Analysis and Design

Submitted by:

Even Lloyd S. Billoned

Angelito M. Jacalan

Davimher S. Landas

Levi Asher H. Peñaverde

GROUP 2

BSIT-NS-2A

Submitted to:

Prof. Joan C. Mag-isa



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

TABLE OF CONTENTS

TITLE PAGE	1
TABLE OF CONTENTS	2
Chapter 1 The Problem and Its Background	
1.1. Introduction.....	4
1.2. Background of the Study.....	5
1.3. Statement of the Problem.....	7
1.3.1. Main Problem.....	7
1.3.2. Sub Problem.....	7
1.4 Objectives of the Study.....	8
1.4.1. General Objectives.....	8
1.4.2. Specific Objectives.....	8
1.5. Significance of the Study...	9
1.6. Scope and Delimitations.....	10
1.6.1. Scope.....	11
1.6.2. Delimitations.....	12
Chapter 2 Review of Related Literature and Studies	
2.1. Foreign Literature....	17
2.2. Foreign Studies.....	18
2.3 Local Literature.....	20
2.4 Local Studies....	21
2.5 IPO Diagram.....	23
2.6 Definition of Terms.....	24
Chapter 3 Methodology	
3.1 Research Method.....	27
3.2 Respondents.....	27
3.3 Research Instrument.....	28
3.4 Design Procedure.....	28
3.5 Program Flowchart.....	30
3.6 System Flowchart.....	36
3.7 Context Flow Diagram.....	37



1

Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3

3.8 Data Flow Diagram.....	38
3.8.1 Data Flow Diagram Level 0.....	39
3.8.2 Data Flow Diagram Level 1.....	40
3.8.3 Data Flow Diagram Level 2.....	41
3.9 Entity Relationship Diagram.....	42
3.10 Use Case Diagram.....	44
3.11 Gantt Chart.....	46

10



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Chapter 1

Problem and its Background

1.1 Introduction

Due to the continuous evolution of technology, many hospitality industries including the resort management, have seen changes because of the advancements in the equipment, tools, and materials in the recent years, because of technology and automation. Traditionally, most of the resorts in the present day are still using a manual way to manage their resorts, so being efficient is crucial for resort management systems to make the working methods easier, give the guests a greater experience, and improve the overall profits. Including the reservations, services of the guests, billing, call in housekeeping, to the platforms these various functions help the resort to operate more smoothly and to meet the expectations of the customers.

Despite the advantages of having a smooth and quality resort management system, there are several challenges. Including this is the costs of the development, the struggle on replacement of the old to new technology, and the training of the staff to adapt the new systems. Also securing the scalability and data security for the future demands and the related concerns.

This study is focused on discovering the benefits of an efficient resort management system, such as improved operational efficiency and the satisfaction of the customers during the service, also finding the challenges that the management faces when adopting the system. By understanding both the benefits and the challenges, the resorts can make smart decisions on how to keep up on the continuously evolving technology to improve their operational effectiveness and their service delivery.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

1.2 Background of the Study

The resort industry plays an important role when it comes to global tourism and also in the hospitality sector. It gives its guests a great experience and careful services depending on the culture and surroundings while adopting modern technology as the customer's expectations continually rise. The resort's operations involve the reservations, billing, housekeeping, services including the foods, sports, activities and practices. And also it can reduce the possibilities of mistakes and improve the workflow. These tasks are handled manually due to the difficulty of adopting technology and also sticking to the traditional way that sometimes leading to inefficiencies, it makes a delay on their service delivery. One of the challenges of global tourism is that the pandemic that the world will face in 2019 greatly decreases the global tourism and economy. Many businesses and resorts are greatly in loss due to no tourists visiting because of the GCQ (General Community Quarantine) and the lock down.

According to the Resort Management and Reservation System Project Report (Kamal Acharya , 2024) It is expected that international tourism revenue will not recover to 2019 levels until 2023. Meanwhile, over 65 percent fewer tourists visited the world during the first half of this year almost came to a standstill as compared to 8% during the global financial crisis and 17% during the 2003 SARS outbreak. This has been according to current studies by the IMF regarding tourism post-pandemics in the world. We are facing a lot of challenges because of the epidemic, especially the closure of businesses. Because of this, the economy of the nation is going down, and many businesses have to first cut staff. When the pandemic hits, a large number of workers and jobless people begin to rely on the government.

Resorts have different management approaches compared to other hotels because of their specialized facilities and the expectations of their guests. Mill (2011) noted that resort operations



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

depend on the type of resort, which could be mountain-based, beach-based, or golf/tennis-based, with each type having its unique development challenges and guest profiles. Resort management effectively addresses the issues associated with the provision of amenities such as spas, pools, water parks, and specialty properties such as cruise ships and casinos. Such features call for customized approaches to achieve operational and guest satisfaction objectives, thereby making resorts different from conventional hotel operations. Effective logistics management, including uninterrupted supply chains and digitalization, is crucial for improving the efficiency, sustainability, and market potential of health resorts and tourism facilities, particularly during economic and political challenges (Kazakov et al., 2023).

This study will explore how the resort management system optimizes the operations, focusing, reservations, billing, check in check out, housekeeping, while discovering associated challenges. And also this study is focused on enhancing and improving the management systems of resorts and while not affecting their traditional way.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

1.3 Statement of the Problem

1.3.1 Main Problem

Traditional resort management systems do not have real-time resource and guest activity tracking and rely on manual report creation, which results in critical service speed, accuracy, and scalability gaps. These gaps are expressed as:

1. **Slow operational responsiveness:** Manual processing of bookings, room allocations, and guest requests results in delayed response times, resulting in guest dissatisfaction and revenue loss.
2. **Frequent booking clash rates:** Lack of live updates on room status leads to duplication bookings and room allocation mistakes with over 15% error in manual systems.
3. **Inefficient scaling mechanisms:** Rigid systems fail to grow with changing seasons or high-arrival volumes, leading to operating collapses at periods of peak load.
4. **Poor guest retention rates:** Inefficient processes do not support real-time service expectations and customized experiences, lowering repeat bookings.

1.3.2 Sub Problem

1. **Inaccurate manual workflows:** Handwritten or spreadsheet data entry causes inaccuracies and delays in managing guest records.
2. **Fragmented data worlds:** Isolated systems for staff scheduling, inventory, and bookings hinder real-time visibility, which slows down vital decisions.
3. **Restricted reporting automation:** Manual tabulation of occupancy reports and financial statements requires 4-6 hours a week, boosting staff costs and potential errors.
4. **Ineffective resource usage:** Inadequate staffing scheduling and misuse of resources (e.g., rooms, amenities, and supplies) result in lost time and excess costs.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

5. **Technology misalignment with guest expectations:** Guests expect mobile-friendly, instantaneous services, while traditional systems utilize paper-based or non-integrated tools.

1.4 Objectives of the Study

1.4.1 General Objectives

This study is centered on the development of a resort management system that integrates real-time tracking of guests and resources as well as automating report generation. The proposed framework seeks to end manual data manipulation, harmonize processes, and provide instant operating insights to facilitate efficient delivery of services, reduce delays, and enhance data-driven decision-making at resorts.

1.4.2 Specific Objectives

1. **Design real-time tracking modules** - Tracks room occupancy, staff activity, and amenity usage in real-time.
2. **Create automated reporting frameworks** - Produce daily occupancy reports, financial reports, and maintenance records without human intervention.
3. **Design a centralized database** - Harmonizes booking information, inventory levels, and guest preferences for easy data access.
4. **Set criteria for real-time alerts** - Informs staff of urgent guest requests, low inventory, or maintenance problems.
5. **Suggest a modular system design** - The system has the capability of customizing tracking parameters and report formats based on varying resort sizes.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

6. **Establish performance measures** - Determines the system's efficiency, such as report generation time, error reduction percentage, and guest response time.

Through these goals, this research aims to create a resort management system that is cost-saving and enhances overall guest satisfaction and resort performance.

1.5 Significance of the Study

This study may contribute in terms of new ways and easier processes. By introducing new functionalities, such as billing functions, log maintenance issues, and enhanced staff management, it expands the understanding of how modern technologies can improve resort operations and guest experiences. The system will help the resort owners to have an improved operational efficiency, Personalized Guest Experience, Optimized Resource Management, Scalable and Adaptable Solutions. This research will benefit the social communities and the local environment. The beneficiaries that will be the following:

Resort owners - they will benefit from the increased operational efficiency, reduced costs, more optimized resource management, and better revenue through dynamic pricing and data-driven decision-making.

Staff/employees - staff will experience an easier working experience and focus on their work because of the automation of the tasks that are made to help them work from service and to improve job satisfaction.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Guests - this will give them a better experience, quick problem resolution, better check-ins, personalized service, that will give them higher satisfaction, which is within their standards.

Investors - gives them better profitability and operational efficiency can result in their higher returns therefore the resort becomes more attractive for investment.

Technology Developers - Developers and engineers can see what is developing within resort management systems and use that to inspire new ideas or innovations for new projects.

Academics/Future Researchers - Research scholars (hospitality, business operation or IT systems in hospitality) can gain a starting point for new studies or extend current research.

1.5 Scope and Delimitation

This research focuses on developing a Resort Management System designed to streamline resort operations, enhance guest satisfaction, and improve communication between staff, management, and guests. The system will address key operational challenges faced by resorts, particularly in the Philippines, by automating processes, improving resource allocation, and providing real-time data visibility.

1.5.1 Scope

The research will entail the design and development of an integrated resort management system with essential features like room booking, guest check-in/check-out, billing, housekeeping, staff scheduling, and maintenance management. The system will eliminate manual processes to minimize errors, decrease operational expenses, and improve service delivery.

- **Key Features:** The system has the functionalities of feedback forms, billing email receipts, booking details, check in and check out reports, maintenance issue reporting, booking



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

confirmations, notification and alarms, and user-friendly interface for both customers and administrators.

- **Automated Reports:** This feature is focused on generating overall reports, on every transaction that the user will do. It is automated to send them an email which contains receipts.
- **Real-time tracking:** This feature focused on monitoring the customer's booked date, room status, and damaged or unusable items and notify them about their booking status. The admin will also receive notifications for every booking update in the admin dashboard.
- **Target Users:** The system will cater to resort owners, managers, staff, and guests. It will primarily target medium-sized resorts in popular tourist destinations. The system will also be adaptable for smaller resorts in provincial areas, helping them modernize their operations and improve guest experiences.

Functionalities

Users (Guests, Customers)

1. can log-in and log-out their account.
2. can create an account.
3. may choose what class of the room they want to avail.
4. After the booking they receive an email that contains the receipt.
5. can cancel their booking reservations.

Admin (Resort Owners, Managers)

1. can activate and disable user accounts.
2. Receives notifications of what the user books or avail.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3. can see how many transactions happen.
4. can restore the passwords of the users.
5. can see what room the guest avail.

1.5.2

Delimitations

While the Resort Management System aims to address many operational challenges, the scope of this research is limited in several ways.

- **Target Users:** The study will primarily target medium-sized resorts with basic digital infrastructure. Small resorts or those without any IT capabilities will not be included, as the system may require significant upgrades to their infrastructure.
- **Technology and Infrastructure Limitations:** The system will be designed for resorts with basic internet connectivity and standard hardware. Resorts in areas with poor internet access or those requiring specialized hardware upgrades will not be included.
- **Supply Chain Scope:** The system will focus on core resort operations such as guest management, housekeeping, and staff scheduling. It will not address external services such as travel arrangements, external vendor management, or international guest logistics.
- **Data Privacy and Security:** While the system will include basic security features, the study will not provide an in-depth analysis of compliance with local data privacy regulations, such as the Philippine Data Privacy Act (Republic Act No. 10173).

Functionalities

Key Functionalities

1. User Registration and Account Management



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

- **Customer Registration:** Customers can create accounts, providing personal information and preferences.
- **Role-Based Access:** System access is restricted based on roles (e.g., customer, staff, admin).
- **Account Sessions:** Customers and staff can log in, log out, and manage their accounts securely.

2. Room Management and Availability

- **Room Listings:** Rooms are listed with descriptions, images, amenities, and pricing.
- **Real-Time Availability:** Customers and staff can check room availability dynamically

3. Reservations and Bookings

- **Book, Modify, or Cancel Reservations:** Customers can book, update, or cancel their reservations.
- **Booking Confirmations:** Customers receive confirmations detailing their selected room and stay details.
- **Check-In and Check-Out Records:** Customer check-in and check-out times are recorded for tracking.

4. Billing and Payments

- **Transaction Processing:** Customers can pay for their reservations securely.
- **Receipt Generation:** After transactions, receipts are generated and sent via email.



Developing an Efficient Resort **Management System: Integrating real-time tracking and Automated Reports**

- **Payment History:** Customers can view their past payments and receipts.

5. Housekeeping and Maintenance

- **Task Tracking:** Staff can log and track housekeeping and maintenance tasks.
- **Room Condition Reports:** Any damages or maintenance issues found in rooms are documented.

6. Customer Feedback and Guest Services

- **Feedback Form:** Customers can provide reviews and comments about their stay.
- **Rating System:** Guests can rate their experiences to improve service quality.

7. Staff Management

- **Task Assignments:** Staff members can view assigned responsibilities and duties.
- **Task Notifications:** Staff receive notifications about incoming or pending tasks.

8. Notifications and Alerts

- **Customer Reminders:** Automated reminders for check-in, check-out, and scheduled activities.
- **Staff Alerts:** Notifications for new housekeeping or maintenance requests.

9. Reporting and Analytics

- **Booking Reports:** Generate reports on reservations, occupancy rates, and customer trends.



Developing an Efficient Resort **Management System: Integrating real-time tracking and Automated Reports**

- **Operational Efficiency Metrics:** Monitor housekeeping, maintenance, and service quality.
- **Revenue Reports:** Track financial performance, billing, and payments.

System Operation

1. User Interface

- A user-friendly interface with separate dashboards for customers, staff, and admins.

2. Backend Management

- A secure backend to handle user data, reservations, payments, and maintenance requests.

3. Additional Features

- **Flash Messages:** System-generated messages for immediate alerts and feedback.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Chapter 2

Review of Related Literatures and Studies

Introduction

This chapter contains the studies and literature which is gathered by the researchers that might help in constructing the study. Also this may help in terms of possible problems the researchers or developers might encounter during the development of the system.

2.1 Foreign Literature

The development of an efficient resort management system integrating real-time tracking and automated reporting is essential for optimizing operational processes and enhancing guest satisfaction. Online reservation systems have been widely studied for their impact on customer experience, with research highlighting the importance of user-friendly interfaces, service quality, and technical support in ensuring smooth transactions and high customer satisfaction (Laguador et al., 2019). The shift from manual to automated management has been observed in various industries, such as healthcare, where online clinic management systems have demonstrated the advantages of automated record-keeping and appointment handling. Similar principles can be applied to resorts, allowing for seamless check-ins, booking management, and real-time data processing to improve efficiency (IJASRET, 2023).

Real-time tracking technologies have also played a significant role in advancing resort management by enhancing operational monitoring and guest movement tracking. Studies on indoor navigation technologies emphasize the use of modern positioning and localization systems to improve visitor experiences and staff coordination (El-Sheimy & Li, 2021). In addition to tracking, automated reporting has proven to be a critical component in performance management.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

The implementation of Balanced Scorecards in businesses has demonstrated how automated data collection and reporting streamline decision-making, enabling resorts to monitor key performance indicators effectively (Spider Strategies, 2024). Moreover, industry-wide trends indicate a growing reliance on automation and data analytics in the hospitality sector, with global reports showing that automated financial and operational reporting systems significantly contribute to profitability and efficiency in hotels and restaurants (Euromonitor International, 2021).

By integrating these technologies, modern resort management systems can achieve improved guest services, efficient operational workflows, and data-driven decision-making. The combination of automated reservation systems, real-time tracking, and reporting tools allows resorts to remain competitive in a rapidly evolving industry. With the continuous development of technology, adopting such systems ensures that resorts can meet industry standards while delivering high-quality services to guests.

2.2 Foreign Studies

Studies suggest how resort and hotel management systems emphasize automation and logistics management, as well as task-technology fit, in enhancing efficiency and user satisfaction.

Mashika et al. (2023) discuss the urgency of logistics management in maintaining seamless operations in health resorts and tourism facilities in times of economic and political turmoil. The study points out the use of digital infrastructure and cloud services in optimizing logistics and service delivery.

also from Dzikria and Solihin (2023) investigate the task-technology fit model in hotel management, which shows that matching employee work with technological tools improves system adoption and service performance. The research presents statistical evidence that task-



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

technology fit has a direct influence on user perception and system usage. Acharya (2023) writes about a Resort Management and Reservation System intended to increase business automation, decrease costs, and automate transactions. The research draws attention to the transition from paper-based to web-based reservation systems, enhancing efficiency, accuracy, and business expansion. For Wiilams and Ajinaja (2019) concentrate on the implementation and design of a database-based reservation management system using object-oriented programming for scalability and ease of maintenance. Their research highlights the effectiveness of computer systems in minimizing storage capacity and enhancing information retrieval. Alam et al. (2024) propose a Python hotel management system developed with Django and MySQL to resolve inefficiencies in manual booking, payment, and administration. The research validates that automation minimizes errors, boosts security, and enhances managerial and customer experiences. These studies all attest to the incorporation of real-time tracking, automated reports, and digital infrastructure in resort and hotel management systems to maximize operational efficiency, user satisfaction, and service quality.

2.3 Local Literature



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Having an effective resort management system that has real-time tracking and automated reporting is vital to improve operational effectiveness and guest satisfaction. Recent research in the Philippines has highlighted the significance of such systems for the hospitality sector.

A project report of the Resort Management and Reservation System for D' Rock Resort outlined the advantages of automating business processes. The system was meant to enhance the profitability of business, minimize costs, and streamline transaction processing, thus allowing the resort to host more guests, particularly during high seasons. Similarly, an action research at Saniya Resort and Hotel aimed at changing reservation processes manually into an automated system. The study utilized the Waterfall Diagram Model to inform the development of a successful automated reservation system, highlighting the importance of systematic planning and implementation.

In addition, a research on the Lakan Pakals Haven Resort Services Management System with Online Reservation proved that the implementation of an online reservation system considerably minimized the time spent on processing business transactions. The implementation rendered the resort more competitive by making it advertise and take bookings online, hence expanding its customer base. Furthermore, research on the determinants of customer intention to utilize resort online booking systems assessed elements like service quality, usefulness, ease of use, online comments, experience, and satisfaction. The results showed that these elements play a critical role in increasing guest experiences and encouraging the utilization of online booking systems. Together, these studies underscore the vital role of combined, automated systems in enhancing resort operations, guest satisfaction, and competitiveness in the hospitality sector.

2.4 Local Studies



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

The web-based management systems in the hospitality industry has helped significantly in efficient operations, customer satisfaction, and business decision -making. The research indicates the importance of digital solutions for hotel and resort management, with a focus on automation, real-time monitoring, and enhanced guest experience. Lapuz et al. (2021) developed an online venue and reservation management system with centralized data processing and employed data visualization tools as decision support. The system improved transaction monitoring, reservation management, and efficiency, reduced the workload of staff, and streamlined business operations. Castellano (2023) also focused on an online management system for a hotel and resort and showed that automation of reservations and financial transactions led to faster processing, improved accuracy, and improved monitoring of business performance. Mangca (2023) suggested an online resort reservation system using Laravel and SMS notifications, which further streamlined the reservation process, provided instant feedback, and ensured secure transactions. The study proved that automation reduced manual workloads, improved the guest experience through instant notifications, and allowed resort managers to analyze occupancy levels and revenue patterns for data-driven decision-making. While such studies target technological innovation in resort management, other scholarly work explores other determinants of resort operations. Asi (2019) examined environmental sustainability of CALABARZON resort hotels in terms of solid waste management, sanitation, and green policies. Findings revealed a probable association between sustainability practice and effective resort management, and therefore the role of environmental responsibility toward long-term business success. Mones and Borbon (2021) examined a guest-centric resort model in Cagayan Valley, analyzing how the changing economic conditions and changing tourism needs affect the operations of resorts. Their research highlighted the importance of adaptive business models, as resorts are a source of employment, investment, and community development.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

The research papers discussed in aggregate emphasize the role of effective resort management through technology, environmental sustainability, and customer focus. Automation and web-based systems significantly improve efficiency, decision-making, and customer satisfaction, while sustainability and economics ensure long-term business viability. The findings confirm the need to include real-time tracking and automated reports in resort management to enhance operations, customer services, and business performance.

2.5 IPO Diagram



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

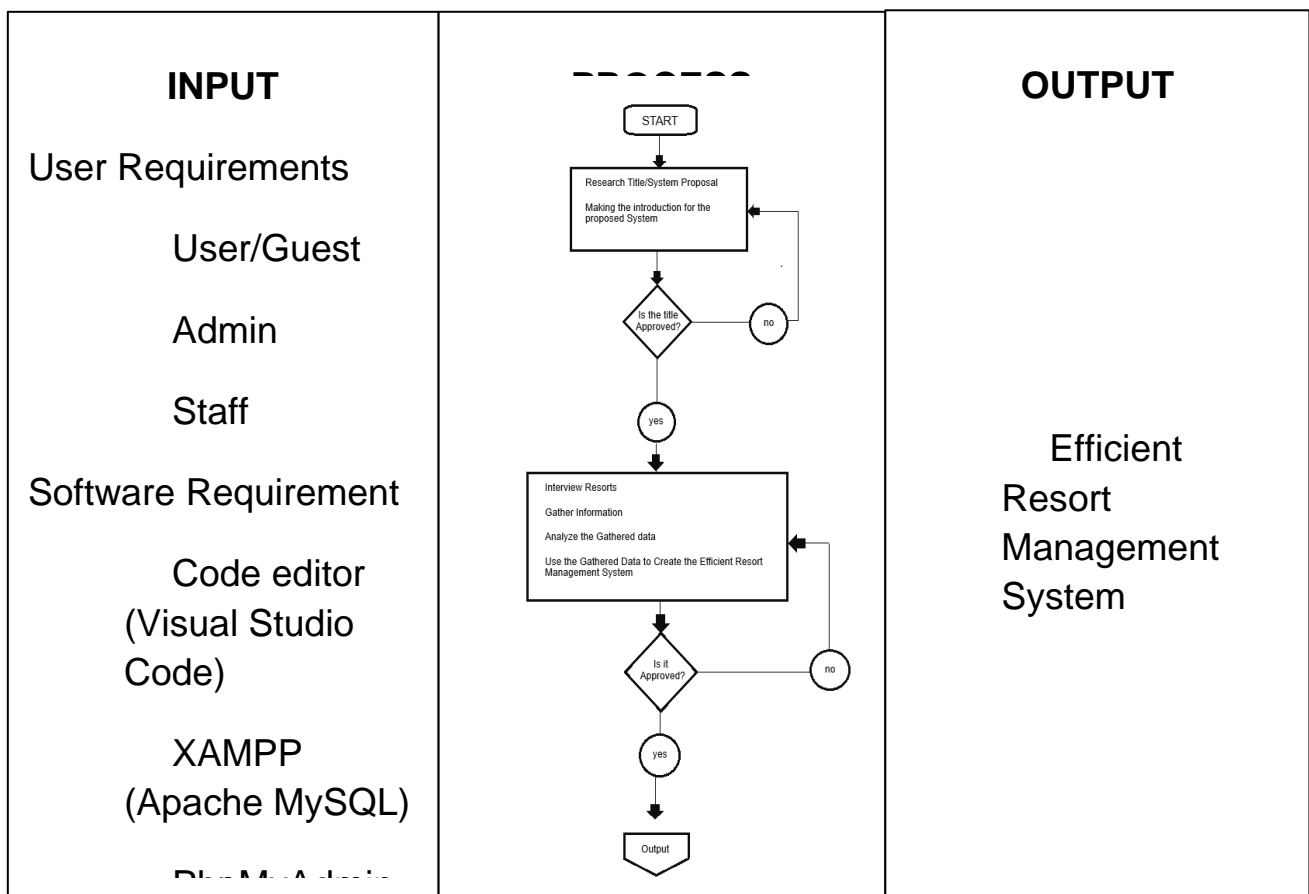


Figure 1. I.P.O. (Input, Process, Output) of Resort Management System

The diagram represents the Input-Process-Output (IPO) Diagram. It shows the data flow in the creation of the Efficient Resort Management System. The input includes user requirements, such as various types of users like guests, administrators, and staff, and the required software components. The system is designed with coding done in Visual Studio Code, database administration done in XAMPP (Apache MySQL), database administration done with PhpMyAdmin, and CSS, HTML, and JavaScript used for designing the user interface. The system is also accessed with any web browser to ensure convenience across various devices.

The system starts with a resort transaction proposal, where users make proposals for transactions like reservation or service requests. The system then checks for valid transaction to see if it is valid or not. If valid, the system retrieves related records, updates relevant information,



Developing an Efficient Resort **Management System: Integrating real-time tracking and Automated Reports**

and processes inputted data. The data is computed and used to make the system more efficient. The system then goes through a review and approval process after processing, so that the transactions are completed correctly before finalizing the output.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

2.6 Definition of Terms

Key Terms:

1. **Automated Reporting** – The automatic preparation of reports with the help of digital systems so that companies are able to monitor key performance indicators and make data-based decisions quickly.
2. **Balanced Scorecard** – A strategic management measurement system which enables companies to measure success on major fronts including financial performance, customer satisfaction, and operational effectiveness.
3. **Business Process Management (BPM)** – A process through which technology is employed to standardize and make business processes leaner, avoiding delays and enhancing the quality of service.
4. **Cloud Services** – Internet-based platforms that offer computing resources, data storage, and software applications, typically utilized in tourism and health resort logistics management.
5. **Database Management System (DBMS)** – Software system that allows users to store, retrieve, and manipulate structured data, typically utilized in hotel and resort reservation systems.
6. **Digital Infrastructure** – Technology infrastructure that enables business operations, such as cloud computing, online booking systems, and automated reporting tools.
7. **Guest Satisfaction** – An indicator of the quality of a hotel or resort in meeting customers' expectations for service quality, booking process, and operational effectiveness.
8. **Hotel Management System** – A computer system that is utilized to manage the operations of a hotel, such as bookings, payments, and administration, in order to improve service delivery and efficiency.



Developing an Efficient Resort **Management System: Integrating real-time tracking and Automated Reports**

9. **Indoor Navigation Technology** – Technologies that aid in tracking and guiding people in indoor environments, such as resorts, using positioning and localization technologies.
10. **Logistics Management** – The organization and coordination of supply chains, transportation, and resource allocation to facilitate smooth operations in resorts and tourism establishments.
11. **Online Booking System** – An online system that allows guests to reserve rooms electronically, bypassing the need for manual intervention and increasing efficiency.
12. **Operational Efficiency** – The capacity of a business to maximize its processes and resources in order to gain maximum output at minimum waste or cost.
13. **Real-Time Booking** – A digital reservation system feature that enables visitors to view availability and book rooms immediately.
14. **Real-Time Tracking** – Application of digital technologies in tracking guest movement and operational activity in real time, enhancing coordination and security.
15. **Reservation Management System** – A computer program that automates and simplifies booking and reservation processes within hotels and resorts.
16. **Scalability** – Capacity of a system to manage additional workload or increase functionalities without compromising performance.
17. **Self-Service Technologies (SSTs)** – Computerized systems that enable customers to perform tasks, including check-ins and payments, independently without the assistance of staff.
18. **Task-Technology Fit (TTF)** – A theory that measures the match between a technology and the task it is meant to facilitate, impacting system adoption and performance.
19. **Tourism Complex** – A building that houses a combination of tourism facilities, such as accommodations, entertainment, and leisure activities, to make visitor experiences richer.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

20. **User Experience (UX)** – The overall experience the user gets when he/she utilizes a digital system, including usability, satisfaction, and perceived usefulness.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Chapter 3

Methodology

Introduction

In this chapter, the researchers will provide the styles, techniques, and methods they used in completing this research, as well as charts and graphs. It shows how the system was developed and implemented through flowcharts, use case diagrams, and data flow diagrams. It also shows the schedule for building the system.

3.1 Research Method

This research utilizes the descriptive research approach to examine and document the evolution of the Resort Management System. The descriptive approach is utilized to sketch out the functionalities and user interactions in a systematic manner, involving customers, employees, and administrators. Systems development methodology is also integrated into the study, which adheres to the Software Development Life Cycle (SDLC) in developing, applying, and testing the system.

3.2 Respondents

The study participants are resort administrators, employees, and clients. The administrators give information on management requirements, including task allocation, confirmation of bookings, and management of customer information. Employees add value by providing information on their experiences in task performance and monitoring, while customers provide input on the ease of use of the booking process, payment system, and selection of rooms.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.3 Research Instrument

In order to gather the necessary data, the study employs survey questionnaires, system prototypes, and structured interviews. Survey questionnaires are administered to resort staff and clients to elicit feedback about the usability and functionality of the system. A prototype of the Resort Management System is also tested in a controlled environment, and structured interviews are carried out with administrators to determine the effectiveness of the system in managing activities such as booking management, discount application, and staff monitoring.

3.4 Design Procedure

The design is an iterative process to be able to deliver a working and effective Resort Management System. The initial step is Requirement Analysis, where the requirements of the main system users (administrators, employees, and clients) are determined. This entails seeking input from stakeholders via interviews, questionnaires, and observations to identify major system features like room reservation, payment processing, assignment of tasks, and user login. Knowledge of these requirements enables the development team to map the system's functionalities onto the resort's operational requirements.

The second step is System Design, in which conceptual and technical designs of the system are prepared. This is the step during which Entity-Relationship Diagrams (ERD), Data Flow Diagrams (DFD), and Use Case Diagrams are developed to graphically represent relationships between different components of the system. ERD establishes the database structure, illustrating how entities like guests, payments, bookings, and staff relate to one another. At the same time, DFD offers a graphical illustration of the way data gets exchanged between users and system processes so that all interactions are mapped out in an efficient manner. All these diagrams are the



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

basis of system development, enabling the software developer to comprehend and organize the software efficiently.

After the design phase, the Development process starts. This includes coding and deploying the intended system features, including user authentication, room booking management, payment integration, task tracking, and administrative controls. The development team makes sure that the system meets industry standards, including security features, database optimization, and user-friendly interfaces. Each module is developed and tested individually before integrating it into the entire system to avoid functionality problems.

Lastly, the Testing and Evaluation process is done to confirm the performance of the system. Functional testing, usability testing, and performance tests are done to test for and eliminate any defects or inefficiencies. Real users of the system, including customers and resort employees, are engaged in testing to get their feedback on the usability of the system and its overall performance. The required improvements and optimizations are subsequently implemented based on feedback from the users, with the system guaranteed to meet the needs of all stakeholders prior to complete deployment. This iterative process guarantees that the Resort Management System is scalable, reliable, and able to optimize resort operations.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.5 Program Flowchart

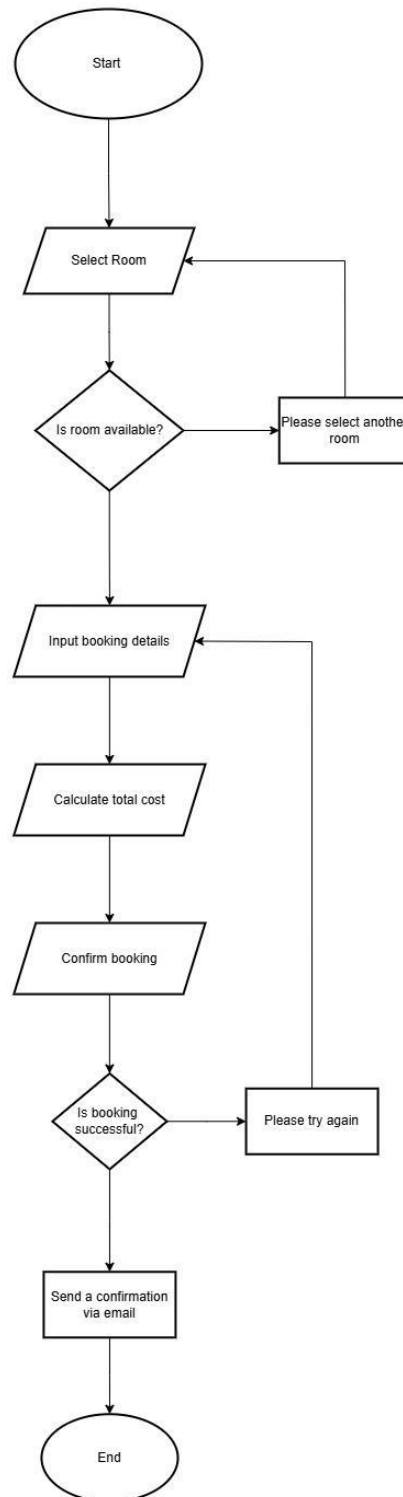


Figure 2. Booking Program Flowchart of Resort Management System

Figure 2 shows the process of room booking or room reservation in the system. A guest initiates by picking a room, after which there is a room availability check, and in case the room is



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

not available, the user is asked to select another. After a valid room is selected, the guest is required to provide information such as the date, number of guests, and the system's total charge is computed while considering the discount. After the guest confirms the booking, an email confirmation is sent right away if it was successful. If it fails due to issues such as payment, the user is asked to try again. The process completes after confirming the booking and sending an email, providing real-time availability communication and updates regarding the room.

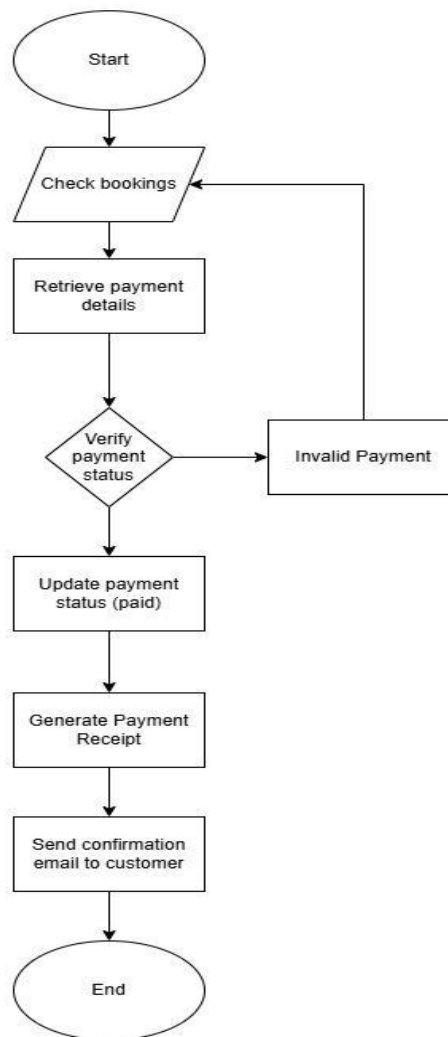


Figure 3. Payment Program Flowchart of Resort Management System

Figure 3 explains the step-by-step development of payment confirmation in the system. From the verification of prior booking and pulling out payment details pertaining, followed by system verification of payment status, in case invalid, i.e., declined card or incomplete transaction,



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

producing an error and it shall have to be corrected. For successful payment, status changed to "paid" and automated activities were handled: a receipt of payment is issued and a confirmation email is sent to the customer. Along the way, it ensured booking records were updated in real-time and linked with clear communication which eliminated manual follow-ups.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

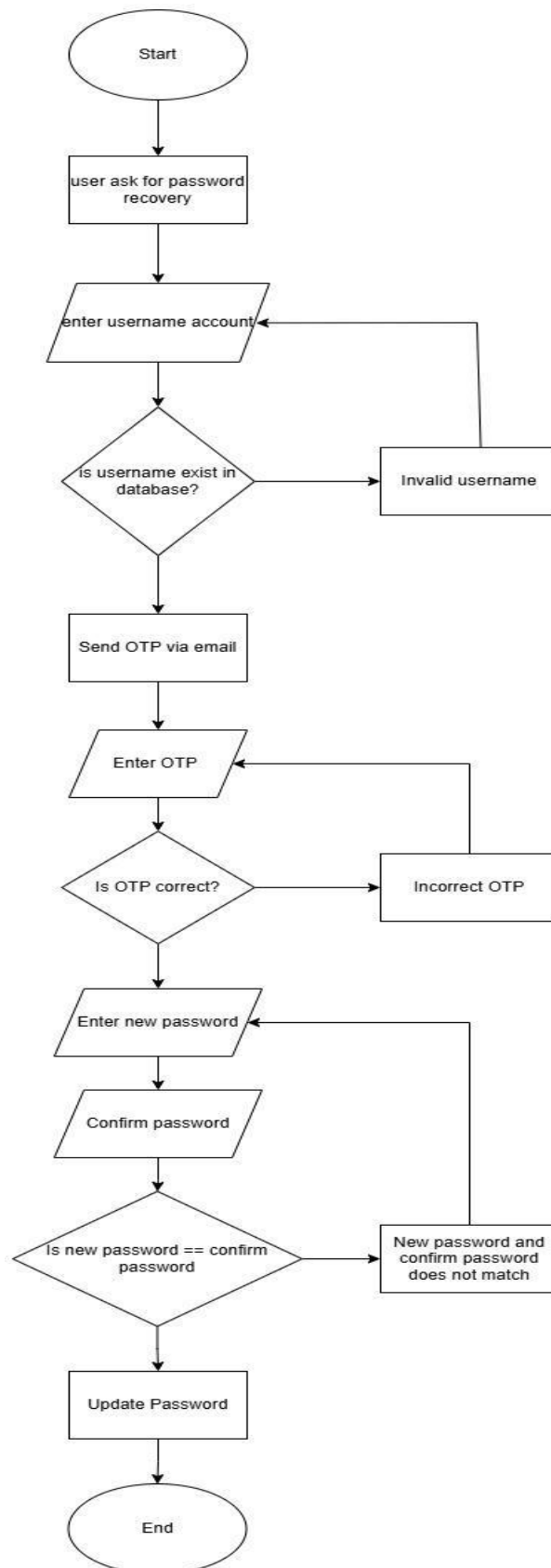


Figure 4. Password Recovery Program Flowchart of Resort Management System



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Figure 4 illustrates the recovery of the user account passwords. It initiates when the user initiates password recovery through their username. The system confirms if the given username is valid in the database; otherwise, it shows an error message. If the usernames are valid, an OTP is mailed to the user's registered mail. The OTP is provided by the user, which is authenticated by the system for accuracy. If invalid, the procedure resumes. When successful OTP verification is done, the user enters a new password and confirms the same. If they are identical, the system updates the credentials and completes the reset. It is this automated process that protects account recovery and reduces manual intervention and unauthorized access.

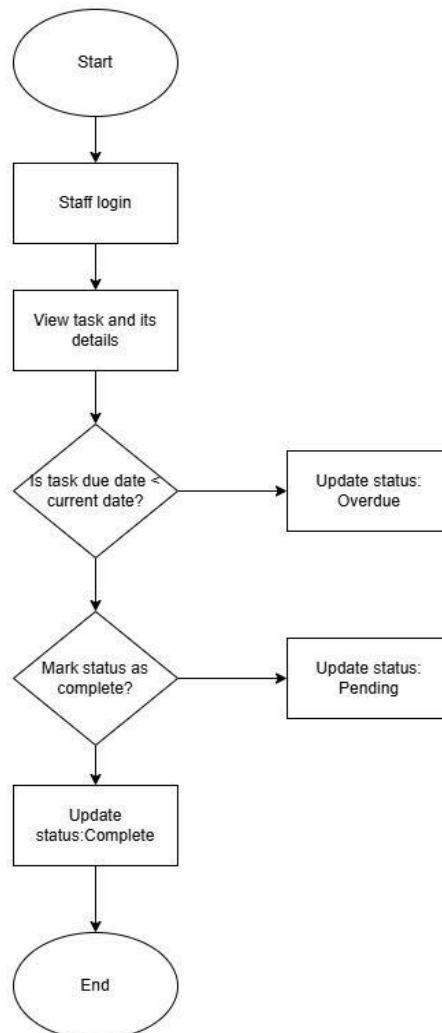


Figure 5. Staff Tasks Program Flowchart of Resort Management System



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Figure 5 shows the process of staff task management within the system. It starts with staff logging in to their accounts to view assigned tasks and their information. The system determines if the due date of the task is the same as the current date. If the due date has already expired, the task is automatically designated as "Overdue"; if the due date is yet to come, the status will still be "Pending". Employees can manually mark the task as "Complete" when done. This process provides real-time monitoring of task deadlines, encourages accountability, and automates status updates, making it easier for employees to prioritize tasks and avoid deadline oversights.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.6 System Flowchart

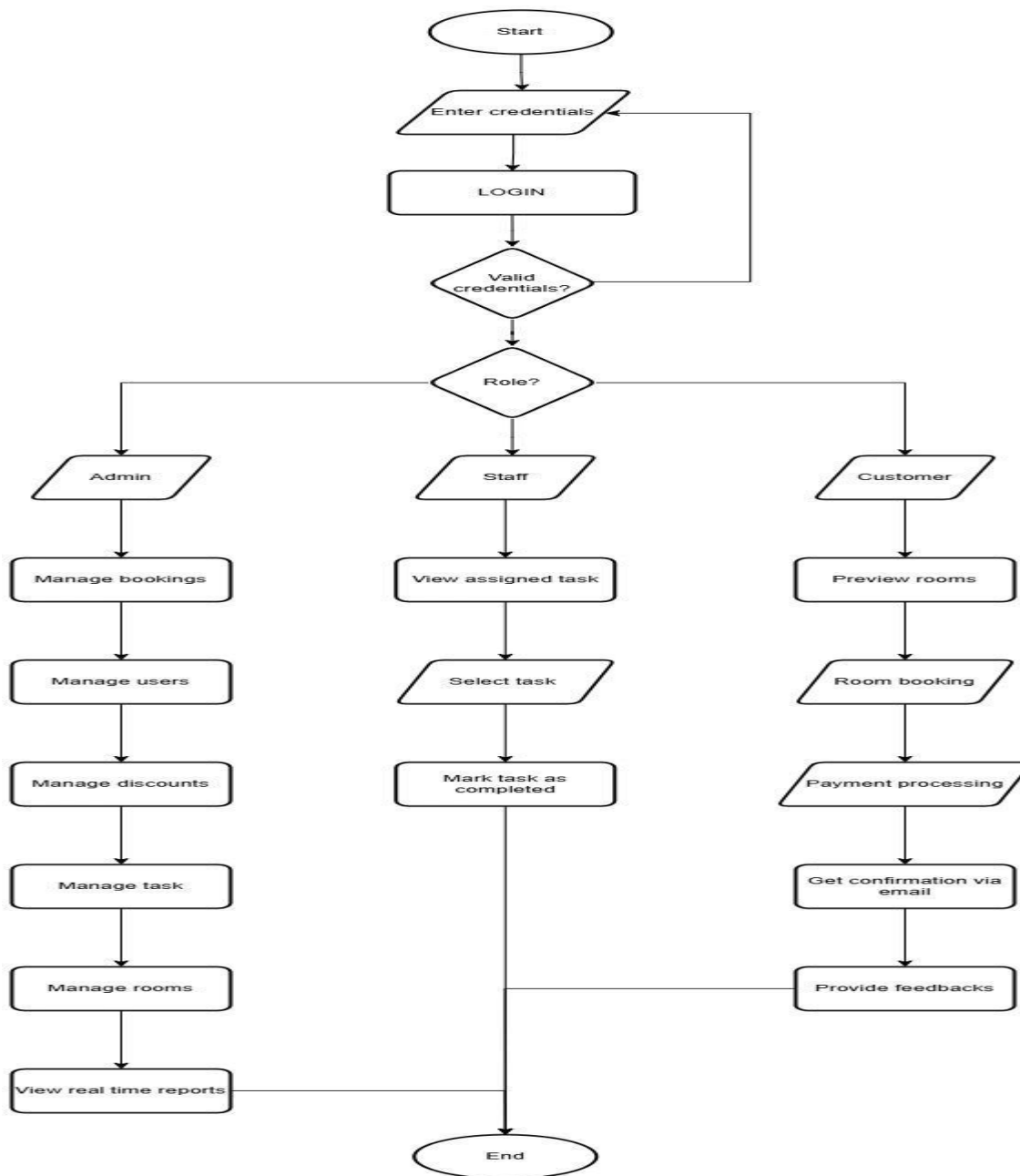


Figure 6. System Flowchart of Resort Management System

The system flowchart shows the login and role-based features of the system. It starts with users logging in with their credentials to authenticate. If the credentials are correct, the system checks the user's role—Admin, Staff, or Customer—and each of these roles has varied functions. Admins can add/edit bookings, users, discounts, tasks, and rooms and view real-time reports. Staff



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

are responsible for viewing tasks assigned, choosing tasks, and completing them. Customers are able to preview rooms, continue booking, pay, receive email confirmation, and leave feedback. The flowchart depicts the users' interaction with the system through visual representation according to their roles.

3.7 Context Flow Diagram

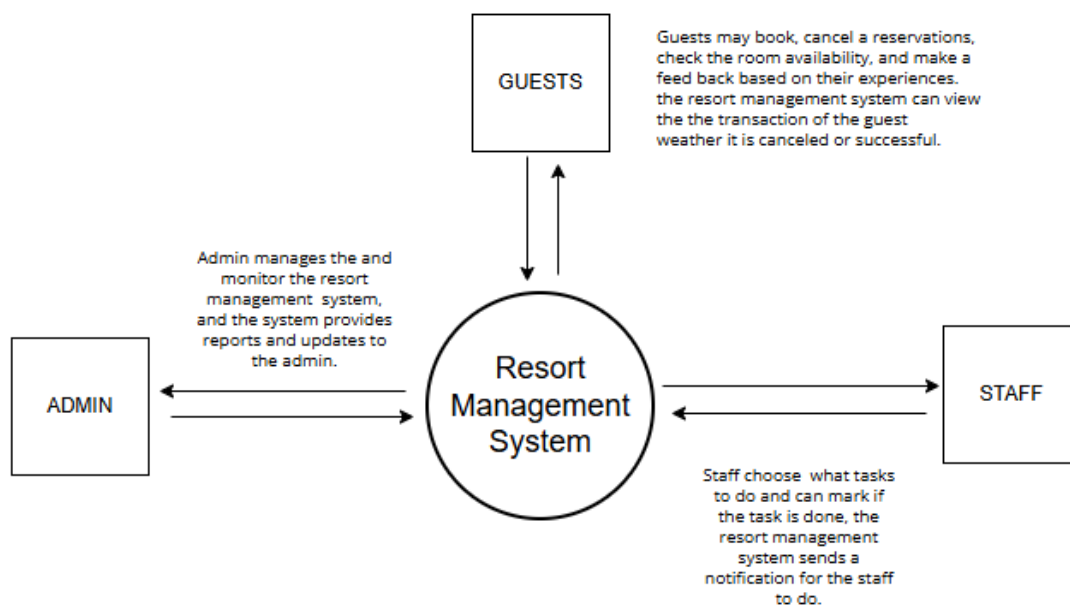


Figure 7. Context Flow Diagram of Resort Management System

Figure 7 depicts the context flow diagram of the Resort Management System based on three main roles: Admin, Guests, and Staff. The Admin manages and monitors the whole system, getting reports and updates to monitor operations. Guests use the system to make or cancel reservations, check room status, and provide feedback, while the system logs transaction statuses (success or canceled). Employees are tasked with system-provided notifications, allowing them to prioritize and take care of guest requests or operational tasks. The process prioritizes smooth coordination: guest activity initiates system updates, employees act on assigned tasks with alerts,



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

and the Admin oversees with in-depth reporting. The design provides effective management of reservations, commentaries, and everyday operations within the resort.

3.8 Data Flow Diagram

The Data Flow Diagram (DFD) is the flow of data in the Resort Management System. It shows how administrators, staff, and customers interact with various system elements. Customers use the system to make reservations, check availability, and pay. Administrators verify reservations, allocate tasks, and track resort operations. Staff receive task allocation and update task status when they are done. These processes provide smooth operations and effective management of resort activities.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.8.1 Data Flow Diagram Level 0

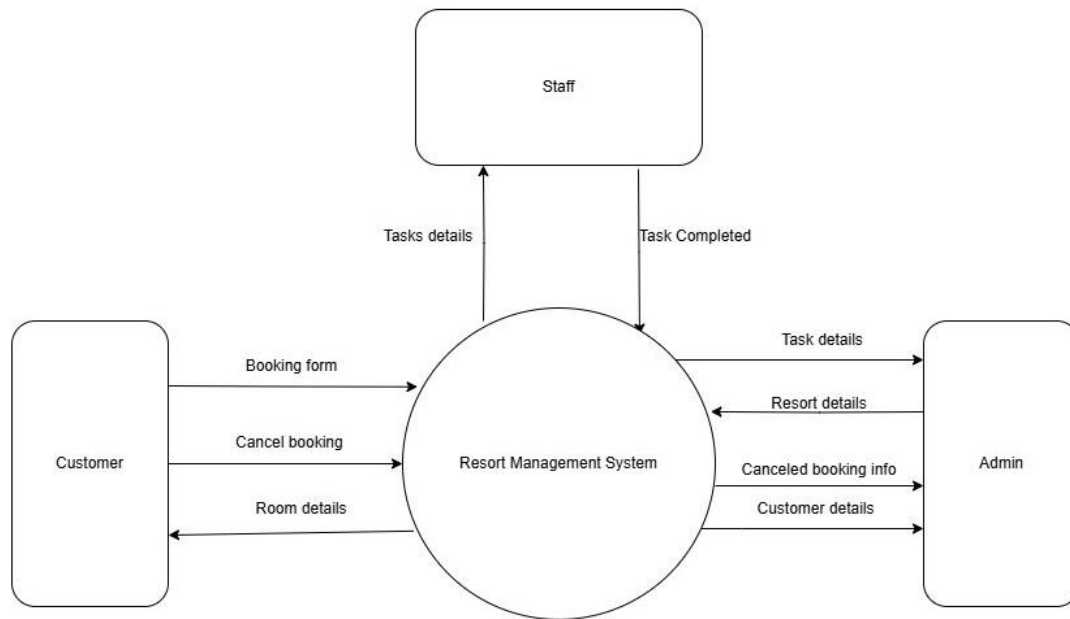


Figure 8. System Flowchart of Resort Management System

Figure 8 displays the Level 0 Data Flow Diagram for the Resort Management System, giving a general overview of information flow through the system. The diagram features a central process (Resort Management System) that communicates with three primary entities: Customer, Staff, and Admin. Customers are able to enter booking forms, cancel booking, and access room details. The system also communicates task details with staff members, who check tasks as complete. Moreover, administrators get resort information, customer information, and canceled booking information while also sending task information to the system. This diagram gives a simplified overview of the system's main functions and data exchange.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.8.2 Data Flow Diagram Level 1

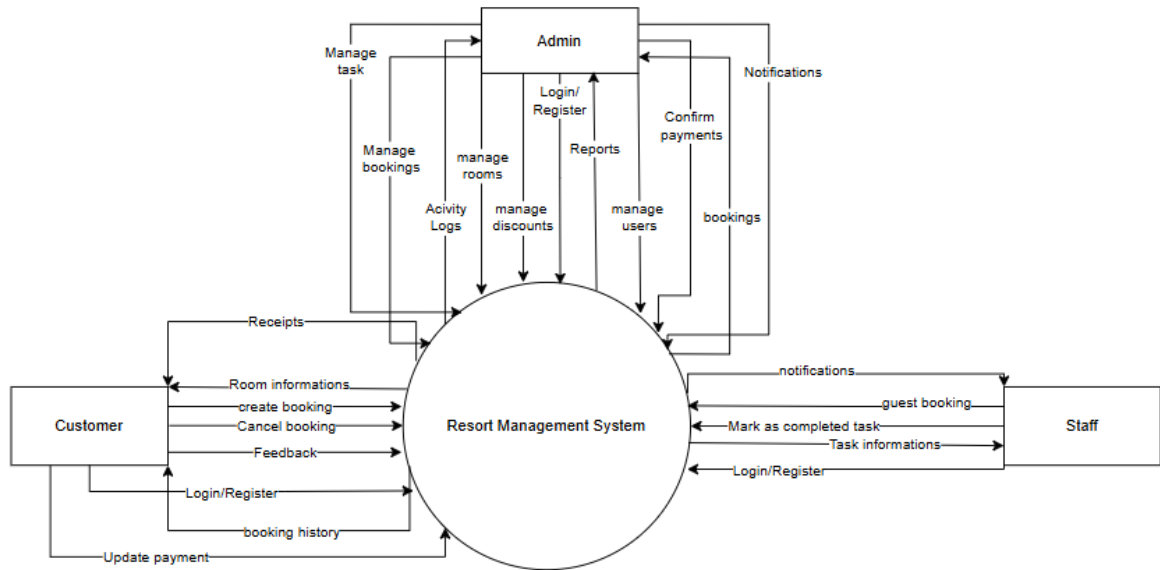


Figure 9. Level 1 Data Flow Diagram of Resort Management System

Figure 9 displays the Level 1 Data Flow Diagram for the Resort Management System. It illustrates the data flow in the Resort Management System, including three primary types of users: Admin, Customer, and Staff. Customers can login or sign up, view rooms, book or cancel rooms, give feedback, and modify payments. Customers receive receipts and booking history updates. Admins manage different functionalities, such as managing bookings, tasks, rooms, users, and discounts. Admins verify payments, create reports, monitor activity logs, and receive notifications. Resort staff members log in to view task details, indicate task completion, and handle guest bookings and receive alerts. The system facilitates smooth communication and automation among all the users, promoting ease in resort operations.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.8.3 Data Flow Diagram Level 2

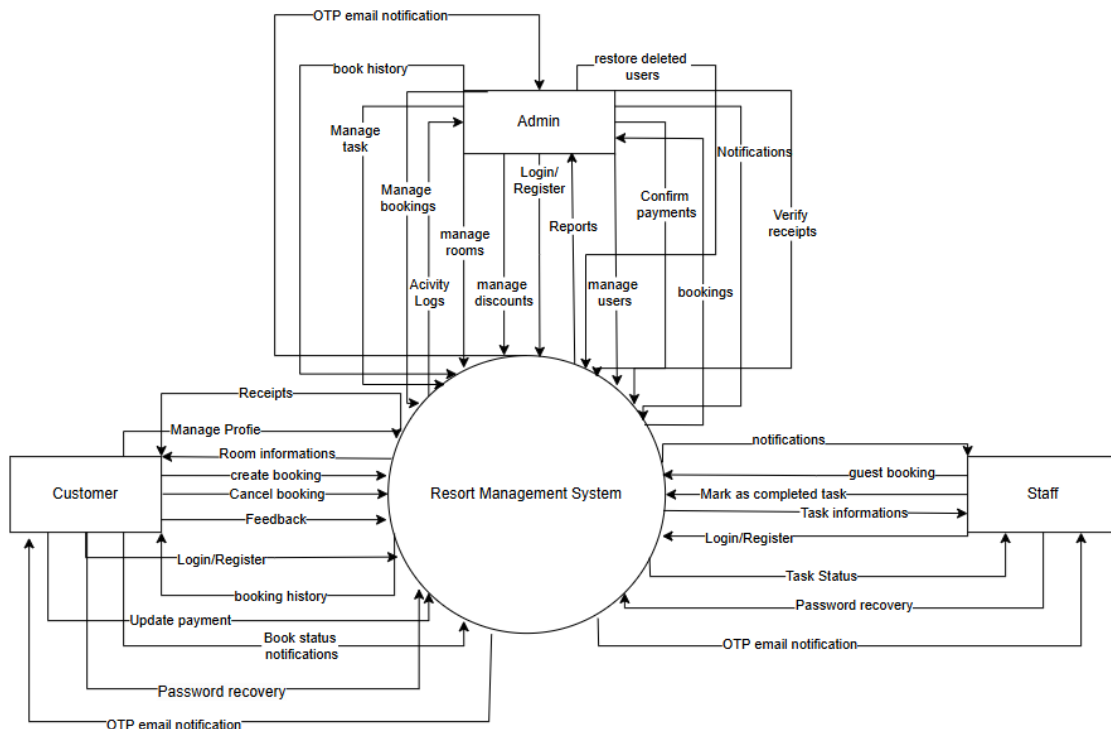


Figure 10. Level 2 Data Flow Diagram of Resort Management System

Figure 10 shows the flow of data in the Resort Management System, highlighting interactions among Customers, Admins, and Staff. Customers can register or log in, update profiles, view room details, make or cancel bookings, and recover passwords through OTP email notifications. They also get receipts, booking history, and status updates upon updating payments and giving feedback. Admins manage bookings, tasks, rooms, discounts, and users with further privileges such as payment confirmation, receipt verification, recovery of deleted users, and report generation. Staff members login, view task details, handle guest bookings, change task statuses, and reset passwords through OTP notifications. Real-time updates, automation, and coordination between users are maintained through the system.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.9 Entity Relationship Diagram

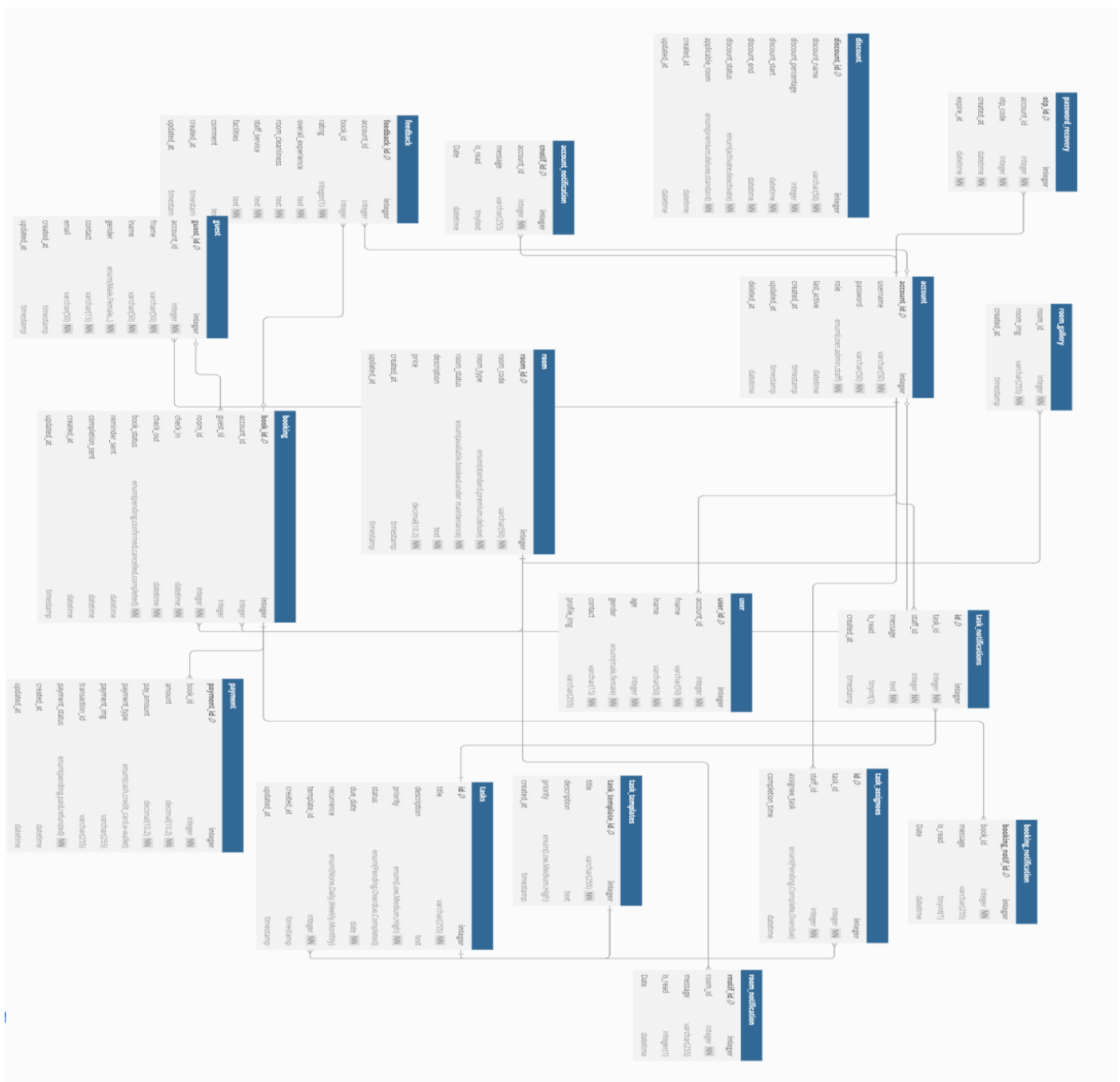


Figure 11. Entity Relationship Diagram of Resort Management System

The users table holds crucial information regarding customers and employees, including personal details, contact numbers, and role categorizations. The guest table is directly connected with customer-based data, while the employees are assigned different task orders. The booking



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

table links the guests with the rooms, maintaining data on check-in and check-out dates, booking status, and completion history. The customers' payments are recorded in the payment table and contain fields such as amount, type, transaction ID, and status.

To improve the guest experience, the feedback table enables users to rate and review room service, cleanliness, and staff performance. The tasks table helps maintain efficient operations by allocating and monitoring duties for staff, with other attributes like priority levels, due dates, and status updates. Different notifications are integrated into the system, including room notifications, booking notifications, and task notifications, keeping all users up to date on key updates.

In addition, the discount_table handles promotional discounts for customers, correlating available discounts with room reservations. The room_gallery table holds images of available rooms, serving as a visual aid for guests. The password_recovery table adds security by processing password reset requests. These interrelated entities make up a well-organized and effective Resort Management System, maximizing the experience for customers and employees alike.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.10 Use Case Diagram

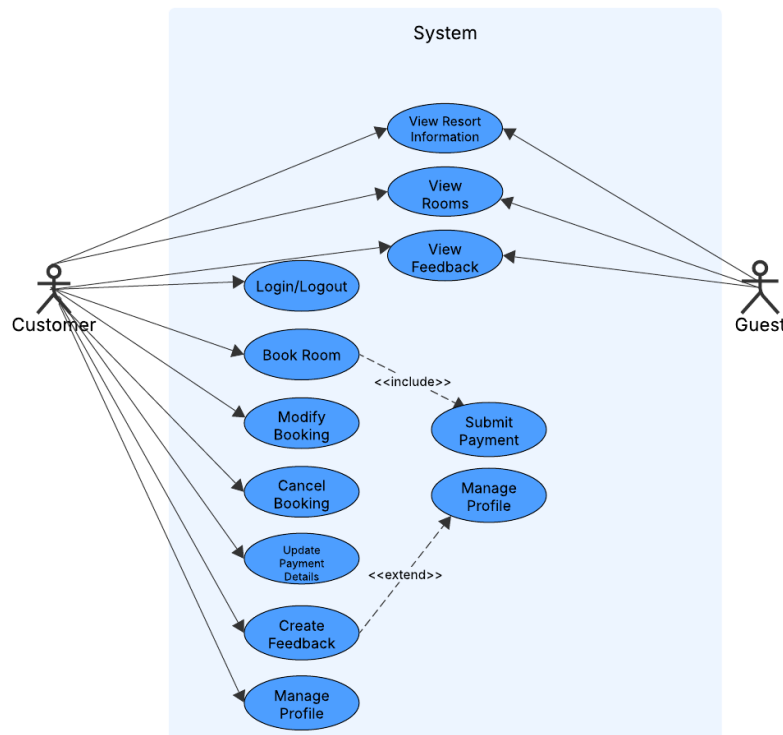


Figure 12: Customers and Guests Use Case Diagram of Resort Management System

Figure 12 shows how Customers and Guests interact with the Resort Management System.

Guests, being non-registered users, are able to see information on resorts, available rooms, and reviews from other users. Customers, being registered users, enjoy more features, such as log in and out, reservation of rooms, changing or canceling reservations, changing payment information, and making payments (which is a built-in use case within booking a room). They can also edit their profiles and give feedback, with the "Update Payment Details" option branching from "Change Booking" and "Cancel Booking," meaning it is an optional but connected function. The diagram succinctly describes how the users interact with the system according to their roles, the Guest has restricted access, and the Customer has complete access to booking and management of profiles.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

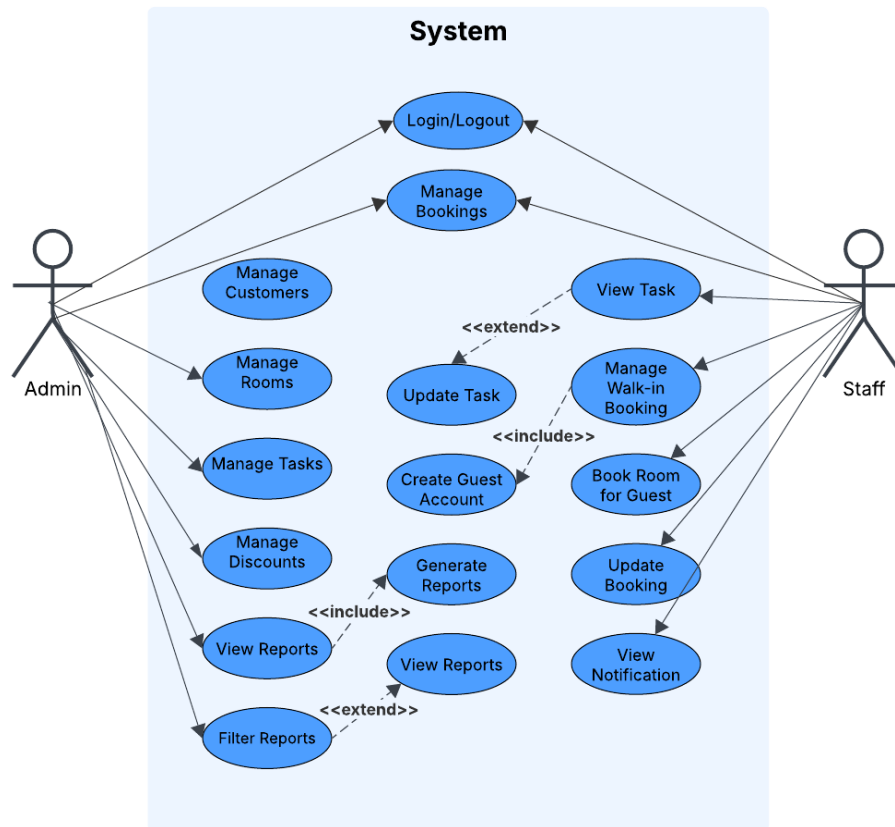


Figure 13: Admin & Staff Use Case Diagram of Resort Management System

Figure 13 shows how Admin, Staff, and the Resort Management System interact, describing their specific roles and system capabilities. Admins can control everything from customers to rooms, tasks, bookings, and discounts as well as generate and filter reports. They can create guest accounts and update tasks to ensure proper functioning. Staff, however, can access tasks, handle walk-in reservations, reserve rooms for guests, edit bookings, and access notifications. Both positions have common access to login/logout and booking management tools, with Admins having advanced privileges in updating tasks and



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

3.11 Gantt Chart

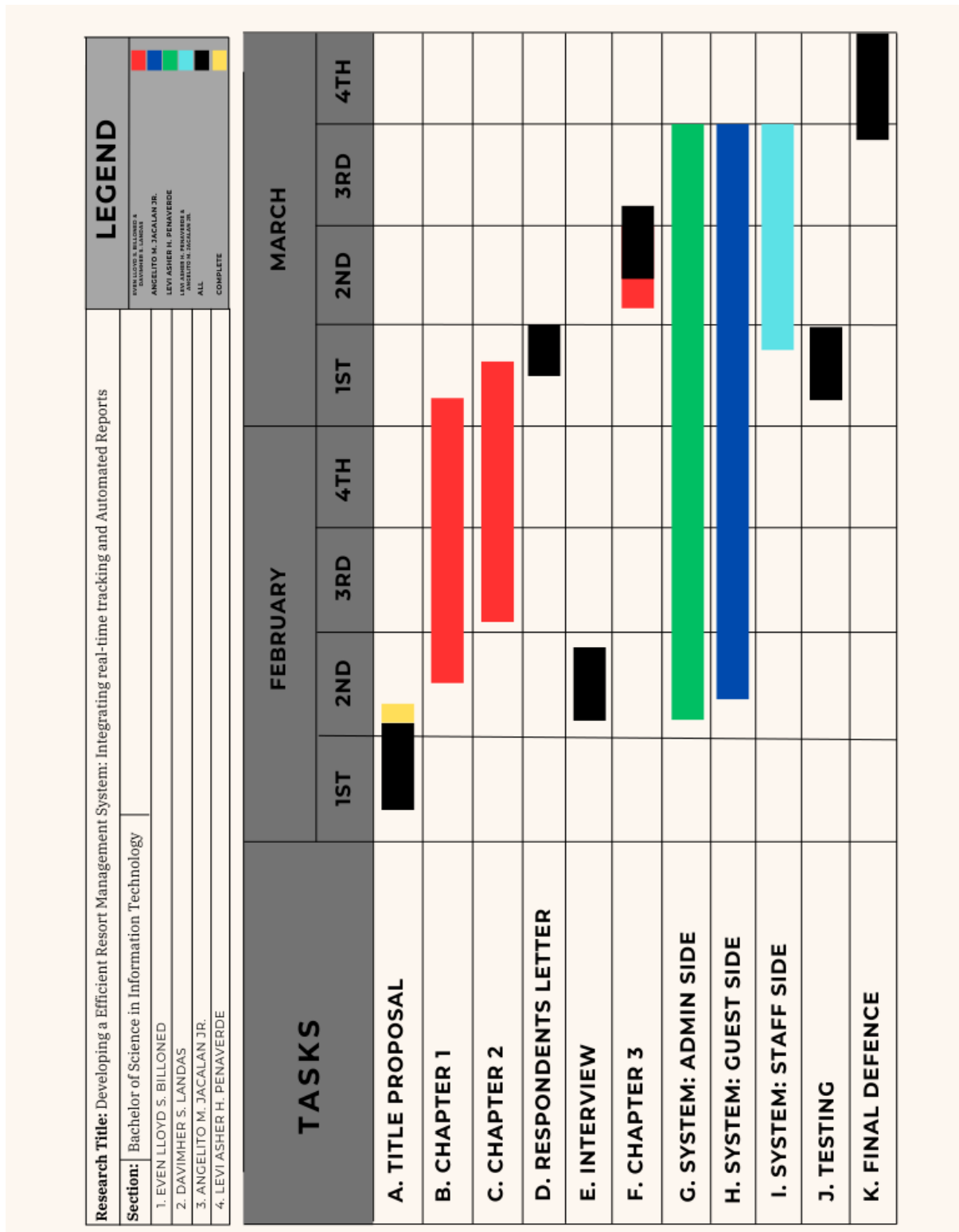


Figure 14. Gantt Chart for the Development Process of the Resort Management System



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

References:

- Laguador, J. M., Villas, C. D., & Delgado, R. M. (2019). Resort online reservation: Basis for action plan. *Asia Pacific Journal of Education, Arts and Sciences*, 6(3), 35-41.
- El-Sheimy, N., & Li, Y. (2021). Indoor navigation: State of the art and future trends. *Satellite Navigation*, 2(7).
- Spider Strategies. (2024). Creating a balanced scorecard: Step-by-step guide. *Spider Strategies Blog*.
- International Journal of Advances in Scientific Research and Engineering Technology. (2023). Online clinic management system. *IJASRET*, 9(4), 15-22
- Euromonitor International. (2021). Global overview of the hotel and restaurant industry. *Euromonitor International*.
- Haguisan, I. A. III, Adolfo, S. J. P., Celeste, N. M. M., De Guia, J. V. M., Erpe, N. T., & Gepilano, M. A. C. (2017). Guest's satisfaction: The case of a resort in Sipalay City, Philippines. *Development Education Journal of Multidisciplinary Research*, 6(1), 126-135.
- Si, W., Jia, H., & Li, Y. (2020). The impact of environmental practices on guest satisfaction and loyalty: A case study of resorts in the Philippines. *Journal of Hospitality and Tourism Management*, 43, 157-165.
- Motiur, R. (2019). Development of Online Resort Reservation System for MicroKodes Information & Technologies Ltd. *International Journal of Scientific Research and Engineering Development*, 2(3), 123-130.
- Quero, M. (2020). Creating integrated automated reservation system in Saniya Resort and Hotel. *De La Salle University Institutional Repository*. Retrieved from https://animorepository.dlsu.edu.ph/etd_masteral/5755/



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

- Resort Management and Reservation System Project Report. (2024). *SSRN Electronic Journal*. doi:10.2139/ssrn.4838667
- *What is Reporting Automation?* / Jaspersoft. (n.d.). Jaspersoft.
<https://www.jaspersoft.com/articles/what-is-reporting-automation#:~:text=Reporting%20automation%20is%20a%20tool,and%20other%20time%2Ddependent%20information.>
- Balanced Scorecard Institute. (2024, October 15). *Balanced Scorecard Basics - Balanced Scorecard Institute*. <https://balancedscorecard.org/bsc-basics-overview/>
- *What are Cloud Services?* / Glossary. (n.d.). HPE EUROPE.
https://www.hpe.com/emea_europe/en/what-is/cloud-services.html
- Tucci, L. (2023, December 15). *What is business process management? A guide to BPM*. Search CIO. <https://www.techtarget.com/searchcio/definition/business-process-management>
- Stedman, C. (2024, May 28). *What is data management and why is it important? Full guide*. Search Data Management.
<https://www.techtarget.com/searchdatamanagement/definition/data-management>
- Neos Networks. (2025, February 25). *What is digital infrastructure?*
<https://neosnetworks.com/resources/blog/what-is-digital-infrastructure/>
- Cloudbeds. (2024, November 5). *What is Guest Satisfaction & How is it Measured?*
<https://www.cloudbeds.com/hotel-guest/satisfaction/>
- Pagel, G. (2024, September 23). *What is a Hotel Management System (HMS)?* Planet.
<https://www.weareplanet.com/blog/hotel-management-system-guide>
- *Indoor Navigation* / Resonai. (n.d.). <https://www.resonai.com/indoor-navigation>



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

- O'Donnell, J. (2023, July 20). *logistics management*. Search ERP. <https://www.techtarget.com/searcherp/definition/logistics-management>
- Quijano, M. C. A., Balontong, R. P., Eregia, R. C., Jr, & Cambronero, P. P. R. B., Jr. (2017). *Online reservation system for the use of university facilities for the OVPSA*. BAHÁNDÌAN, Institutional Repository of Central Philippine University. <https://repository.cpu.edu.ph/handle/20.500.12852/2369>
- Hanna, K. T., & Gillis, A. S. (2024, May 10). *operational efficiency*. Search Business Analytics. <https://www.techtarget.com/searchbusinessanalytics/definition/operational-efficiency>
- Propeller, H. (2016, September 13). *The importance of real time reservations via your website*. Hotel Propeller. <https://hotelpropeller.com/real-time-reservations/>
- *What is REAL-TIME TRACKING?* (n.d.). BeatRoute. <https://beatroute.io/glossary/real-time-tracking>
- Cloudbeds. (2025, February 21). *What is a hotel reservation system and why is it important?* Cloudbeds. <https://www.cloudbeds.com/articles/hotel-reservation-system/>
- Contributor, T. (2024, July 10). *scalability*. Search Data Center. <https://www.techtarget.com/searchdatacenter/definition/scalability>
- Bhasin, H. (2021, April 25). *Self service technologies – Definition, Meaning and 10 Examples*. Marketing91. <https://www.marketing91.com/self-service-technologies/>
- *What is Task-Technology Fit* | IGI Global Scientific Publishing. (n.d.). <https://www.igi-global.com/dictionary/task-technology-fit/33043>
- *Tourist complex Definition* / Law Insider. (n.d.). Law Insider. <https://www.lawinsider.com/dictionary/tourist->



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

[complex#:~:text=Tourist%20complex%20means%20land%20or,their%20normal%20place%20of%20residence.](#)

- ProductPlan. (2024, November 22). *What is User Experience? | Definition and Overview*.
[https://www.productplan.com/glossary/user-experience/#:~:text=User%20Experience%20\(UX\)%20is%20the,their%20overall%20task%20completion%20process](https://www.productplan.com/glossary/user-experience/#:~:text=User%20Experience%20(UX)%20is%20the,their%20overall%20task%20completion%20process).
- Lapuz, I. A., Riguera, R., Sesbreno, A. S., Torres, R. M., Franco, G. R., & College of Computer Studies, De La Salle University. (2021). Web-Based Venue and Reservation Management System with Data Visualization. In *DLSU Research Congress 2021*.
<https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2022/EBM-10.pdf>
- Asi, L. M. U. (2019). Environmental sustainability plan for resort hotels in CALABARZON, Philippines. *Asia Pacific Journal of Multidisciplinary Research*, 7(4), 86–94.
<https://www.apjmr.com/wp-content/uploads/2019/10/APJMR-2019-7.04.12.pdf>
- Mones, J., & Borbon, N. M. D. (2021). Framework of guest focused among resorts in Cagayan Valley Region, Philippines. *International Journal of Research Studies in Management*, 9(3)
. <https://doi.org/10.5861/ijrsm.2021.m7733>



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Attachment

Program Coding

Introduction

The Development of Efficient Resort Management System: Implementing Real-time Tracking and Automated Report was implemented by using The backend logic is handled using PHP, MySQL is used for database management, and Bootstrap is utilized for frontend design. The system employs a structured approach that separates business logic from the presentation layer, enhancing both maintainability and scalability.

System Module and Implementation

The system consists of modules designed to manage the Resort Management System.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

- **User authentication** - Manages user login and role-based access control (RBAC) for Guests, Staff, and Administrators.

```

if(isset($_POST['login'])){
    $username=trim($_POST['username']);
    $password=trim(sha1($_POST['password']));

    try{
        mysqli_begin_transaction($conn);
        $sql="SELECT account_id, role FROM account WHERE username=? && password=? && deleted_at IS NULL LIMIT 1";
        $stmt=mysqli_prepare($conn,$sql);
        mysqli_stmt_bind_param($stmt,'ss',$username,$password);
        mysqli_stmt_execute($stmt);
        mysqli_stmt_store_result($stmt);
        mysqli_stmt_bind_result($stmt,$ID,$role);

        if(mysqli_stmt_num_rows($stmt)>0){
            mysqli_stmt_fetch($stmt);
            $active="UPDATE account SET last_active=now() WHERE account_id=?";
            $stmt1=mysqli_prepare($conn,$active);
            mysqli_stmt_bind_param($stmt1,'i',$ID);
            mysqli_stmt_execute($stmt1);
            if($role=='admin'){
                echo $_SESSION['ID']=$ID;
                echo $_SESSION['role']=$role;
                $_SESSION["login_success"]='yes';
                header('location:admin/index.php');
            }elseif($role=='user'){
                $_SESSION['ID']=$ID;
                $_SESSION['role']=$role;
                header('location:user/view/home.php');
            }elseif($role=='staff'){
                $_SESSION['ID']=$ID;
                $_SESSION['role']=$role;
                header('location:staff/dashboard.php');
            }else{
                $_SESSION["status_check"]="yes";
                include("alert.php");
            }
        }else{
            $_SESSION["status_check"]="yes";
            include("alert.php");
        }
    }
    mysqli_commit($conn);
} catch(Exception $e){
    mysqli_rollback($conn);
    echo $e->getMessage();
    header('location:'.$_SERVER['PHP_SELF']);
}
    
```

- **Booking Reservation Management** - allows Guests/Customers to book, makes the admin manage bookings, and make the staff see what tasks to do.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

```

$conn->begin_transaction();

// Insert booking
$sql = "INSERT INTO booking (account_id, room_id, check_in, check_out, book_status, created_at)
VALUES (?, ?, ?, ?, ?, NOW())";
$stmt = $conn->prepare($sql);
$stmt->bind_param("iisss", $account_id, $room_id, $check_in_datetime, $check_out_datetime, $book_status);
$stmt->execute();

if ($stmt->affected_rows == 0) {
    throw new Exception("Failed to insert booking.");
}

$last_id = $stmt->insert_id;

// Insert booking notification
$message = "New Booking";
$sql_notif = "INSERT INTO booking_notification (book_id, message, Date) VALUES (?, ?, NOW())";
$stmt_notif = $conn->prepare($sql_notif);
$booking_status = 'pending';
$stmt_notif->bind_param("is", $last_id, $message);
$stmt_notif->execute();

if ($stmt_notif->affected_rows == 0) {
    throw new Exception("Failed to insert booking notification.");
}

// Commit transaction
$conn->commit();

// Redirect to payment page
header("location: ../payment/create.php?book_id=$last_id&amount=$amount");
exit;
} catch (Exception $e) {
    // Rollback transaction in case of error
    $conn->rollback();
    echo "<script>alert('Error: " . $e->getMessage() . "'); window.history.back();</script>";
}
}
?>

```

- **Email notification** - notif or sends confirmations of bookings to users.



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

```

82 //sent receipt email
83
84 // Fetch payment details
85 $payment_sent = "SELECT * FROM summary_payment WHERE attached_receipt IS NULL AND payment_status = 'paid'";
86 $pres = mysqli_query($conn, $payment_sent);
87
88 if (mysqli_num_rows($pres) > 0) {
89     while ($row = mysqli_fetch_assoc($pres)) {
90         require_once('../resources/fpdf186/fpdf.php');
91
92         $booking_id = $row['booking_id'];
93         $customer_email = $row['email'];
94         $customer_name = $row['NAME'];
95         $amount_paid = $row['amount_paid'];
96         $check_in = date("F d, Y", strtotime($row['check_in']));
97         $check_out = date("F d, Y", strtotime($row['check_out']));
98         $room_code = $row['room_code'];
99         $room_type = $row['room_type'];
100
101         // Generate PDF Invoice
102         $pdf = new FPDF();
103         $pdf->AddPage();
104         $pdf->SetFont('Arial', 'B', 16);
105
106         // Header
107         $pdf->Cell(190, 10, 'Resort Management System', 0, 1, 'C');
108         $pdf->SetFont('Arial', '', 12);
109         $pdf->Cell(190, 10, '123 Beachfront Road, Paradise Island', 0, 1, 'C');
110         $pdf->Cell(190, 10, 'Email: info@resort.com | Phone: (123) 456-7890', 0, 1, 'C');
111         $pdf->Ln(10);
112
113         // Title
114         $pdf->SetFont('Arial', 'B', 16);
115         $pdf->Cell(190, 10, 'INVOICE', 0, 1, 'C');
116         $pdf->Ln(5);
117
118         // Customer Details
119         $pdf->SetFont('Arial', 'B', 12);
120         $pdf->Cell(190, 10, 'Customer Details', 0, 1, 'L');
121         $pdf->SetFont('Arial', '', 12);
122         $pdf->Cell(190, 10, 'Name: ' . $customer_name, 0, 1, 'L');
123         $pdf->Cell(190, 10, 'Email: ' . $customer_email, 0, 1, 'L');
124         $pdf->Ln(5);
125

```

Curriculum Vitae

Name: Even Lloyd S. Billoned

Email: billonedlloyd@gmail.com | **Contact Number:** 09633769624



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Education:

Bachelor of Science in Information Technology

University Enrolled:

Technological University of the Philippines - Taguig | **Expected Graduation:** 2027

Name: D:avimher S. Landas

Email: @gmail.com | **Contact Number:**

Education:

Bachelor of Science in Information Technology

University Enrolled:

Technological University of the Philippines - Taguig | **Expected Graduation:** 2027

Name: Angelito M. Jacalan Jr.

Email: jacalanangelito@gmail.com | **Contact Number:** +639501841852

Education:

Bachelor of Science in Information Technology

University Enrolled:

Technological University of the Philippines - Taguig | **Expected Graduation:** 2027

Name: Levi Asher H. Penaverde

Email: leviashpenaverde@gmail.com | **Contact Number:** 09385736287

Education:



Developing an Efficient Resort Management System: Integrating real-time tracking and Automated Reports

Bachelor of Science in Information Technology

University Enrolled:

Technological University of the Philippines - Taguig | **Expected Graduation: 2027**