

**SCS2202/IS2102 - Group Project I
2020
Project Proposal
FOR**

Hotel Management System

Prepared by CS Group -29

Proposed Project Supervisor (Academic Staff of UCSC):

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Date: 2020/05/22

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Signature of the co-supervisor: nsk

Date: 2020/05/22

The client of the Project (If applicable, otherwise supervisor will be considered as the client)

Name of the client: Mr. Indigahawalage Sudeera

Address of the client: 502 bypass road, Weligama

Contact person at the client:

The contact number of the contact person: +94 76 729 3945

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INTRODUCTION TO PROJECT

The hotel industry plays a vital role in the tourism industry. Technology usage in the hotel industry is advancing. Today Hotel Management system application is essential equipment to improve the business. Our client wants to solve existing problems using a hotel management system.

The client is currently using websites such as booking.com, trip-advisor.com, ahotel.com, agoda.com, and a template from booked.net. Owning an independent website is not a must, but sometimes it may occur some problems. Intermediaries like Corporate websites and travel agencies demand commissions around 20% of the profits. This might not make sense for large scale hotels, but it impacts on medium and small-scale hotels.

A hotel website is a source of information for guests. With their website, hotels control the exact content and images that the hotel wants to use in the market. There are no limits in the number of photos, room types, pages, or length of content. This increases the opportunity to drive more traffic to the website. After location, images are the number one factor that guests consider when choosing a hotel. We can use introductory videos to make guests aware and allow them to imagine themselves at the property. The Owner can display promotional packages. The commission-free direct bookings are financially benefitted to both hotels and customers. Customer can get their queries to solve quickly by directly communicating with the site. All these factors help in building customer loyalty towards the hotel.

When registering walk-in guests, the front desk staff hands over the GRC (Guest Registration Card) to fill the information. The client has to fill it manually if there is no system. Suffice to say this is a quite cumbersome practice. Taking up a lot of space, these documents can be damaged, lost, or misplaced in numerous ways. If or when these details are damaged, they are almost unsalvageable. It is tedious to make changes.; a copy has to be made in making any changes to save the originality. It is very hard to access the file unless it is well organized. This can annoy customers as well as employees. This lowers productivity. Further, manual documentation has much less security than digital documentation.

The system we provide includes a digital documentation solution. This allows us to search and retrieves needed files immediately. By digitalizing documents, it will be completely searchable, and the security of the information is much better. This allows making aware frequent walk-in guests about seasonal offerings and discounts through emails.

Usually, payments are made manually using the invoice book. This may financially problematic If the client is absent. We introduce a payment management system that allows online payments is beneficial in preventing financial irregularities. Most customers prefer online payment as it saves time, and it secure and convenient.

The client and employees do not have high IT literacy. So, the system should be simple, and the website should be easily manageable. We hope to use a simple, user-friendly interface to outcome this.

The client needs to maintain the details of the employees. The system provides the facility too.

PROJECT GOAL

- The main goal of this project is to make a secure online environment for hotel management.
- We are creating a web-based system for our clients in order to maintain good customer relationships.

OBJECTIVES OF THE PROJECT

- To manage the hotel using a computerized system.
- The system should support a multi-user environment.
- Real information on the availability of the room.
- To make efficient and effective use of the hotel system.
- To provide a web site that allows customers to search and reserve a hotel room or cancel his/her reservation over the internet at any time.
- To manage large volumes of data to acquire timely and accurate information

SCOPE OF THE PROJECT

Project scope identification and clear boundaries

1. Customer Registration
 - Details Login or Facebook Login and Google Login

2. Room Reservation System

- Room Cancellation (only Free Cancel Only)

3. Notification System

- Online Customer Reservation: After booking or reserving a surfing package, details are sent to the Owner and receptionist. After confirmation, notification is sent to the guest.
- Walk-in Guest Reservation: Guest and Owner both receive notification after a booking is confirmed.
- Payment
 - Online: Owner, receptionist, and Guest and receive notifications.
 - Cash: Owner and Guest receive notifications.

4. Edit Site System

- Room prices and type can be changed. The Owner can edit discounts for rooms, Surfing Package. The Owner can add or update images on website price can be changed, and discounts can be offered through the website.

5. Manage Employee

- The Owner can add, delete, or change employee details only.

6. Write Feedback

- Only check-out customers can review, and one guest can leave only one review.

Out of Scope

- System Advancement due to the addition of future branches.
- The system can be used only to add, delete, or modify employee details. It can not be used to do any other things, like taking employee mark attendance or assigning short leave.

Clear on assumptions

- No one makes the same reservation at the same time from different websites.
- Every probable Customer has an email address.
- When the receptionist finishes work, the Owner has to take care of the receptionist's work. So the receptionist's use cases should be enrolled to the Owner.

PROJECT FEASIBILITY

Technical Feasibility

- The project can be done by using existing technologies.
- Current technical resources can be upgraded to provide the level of technology necessary for the system.

- The team is equipped with the knowledge and expertise needed to develop the system using current technologies.

Operational Feasibility

- The system is to provide adequate throughput and response time.
- The system allows the receptionist/owner to adapt without any specialized training with no time. This is a user-friendly system that makes it easy for the Customer.
- The report generating feature provides a report accurate and useful formatted information from the system.

Economic Feasibility

- Free and open source technologies are used in developing this system.
- Even though at the beginning domain, hosting and maintenance will need some expense, the benefits from the system outweigh the cost.
- The system is very much affordable.

Schedule Feasibility

- We have planned and scheduled how and when we are going to implement each part of the system.
- We will most certainly be able to implement the system within the estimated period, and it is shown in the Gantt chart shown below.

Legal Feasibility

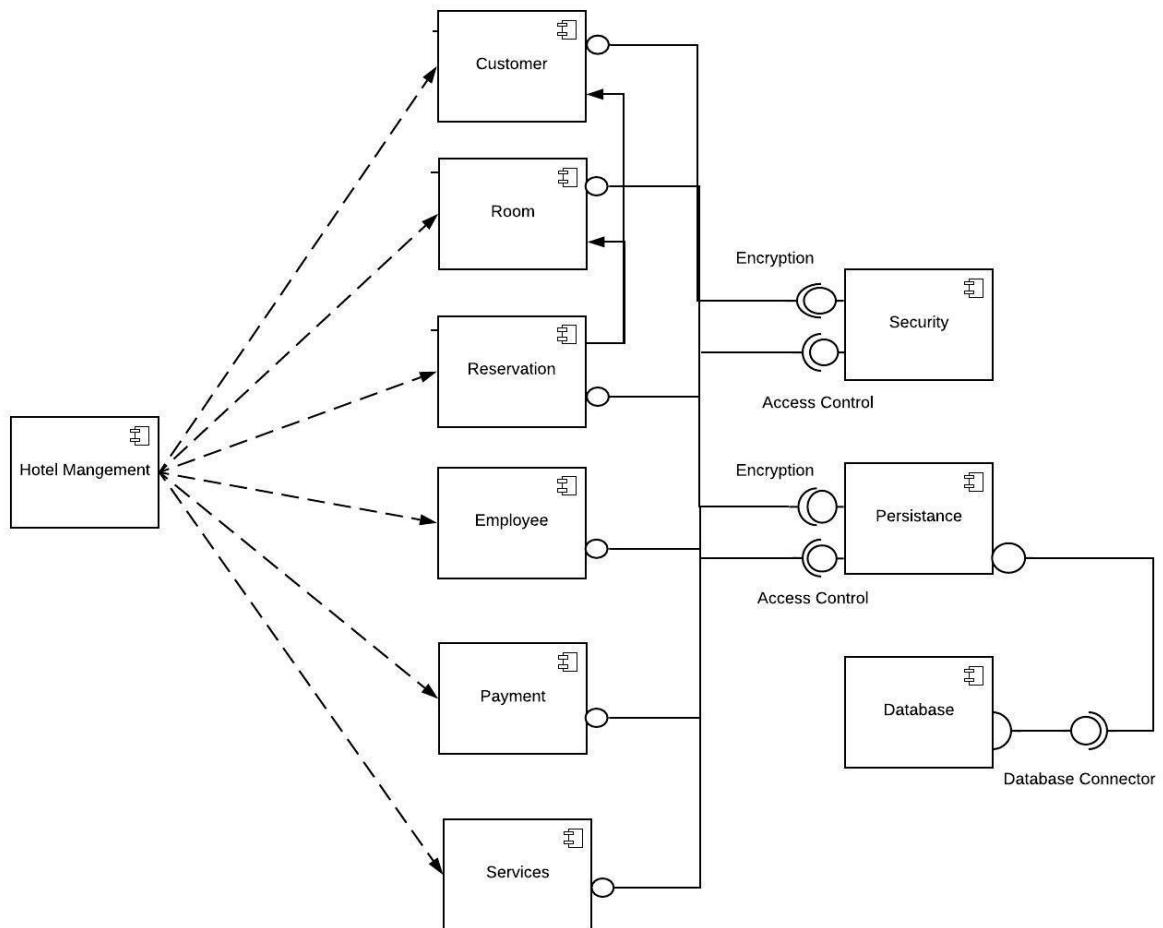
- Most of the technologies used will be free and open source. If not, they will be used with proper copyright.
- The privacy of the information obtained from customers/guests are well kept. They will not be visible or accessible to any unauthorized parties or will not be used for, and advertising purposes with the expressed permission from the Customer.
- A password or any biometric identification will be used to prevent any unauthorized access to the system. Proper user privileges will be set for the groups or individuals
- The team will make sure that the execution of the system does not breach any laws of this country. It will be done with the utmost regard to meet ethical & legal requirements.

DELIVERABLES OF THE PROJECT

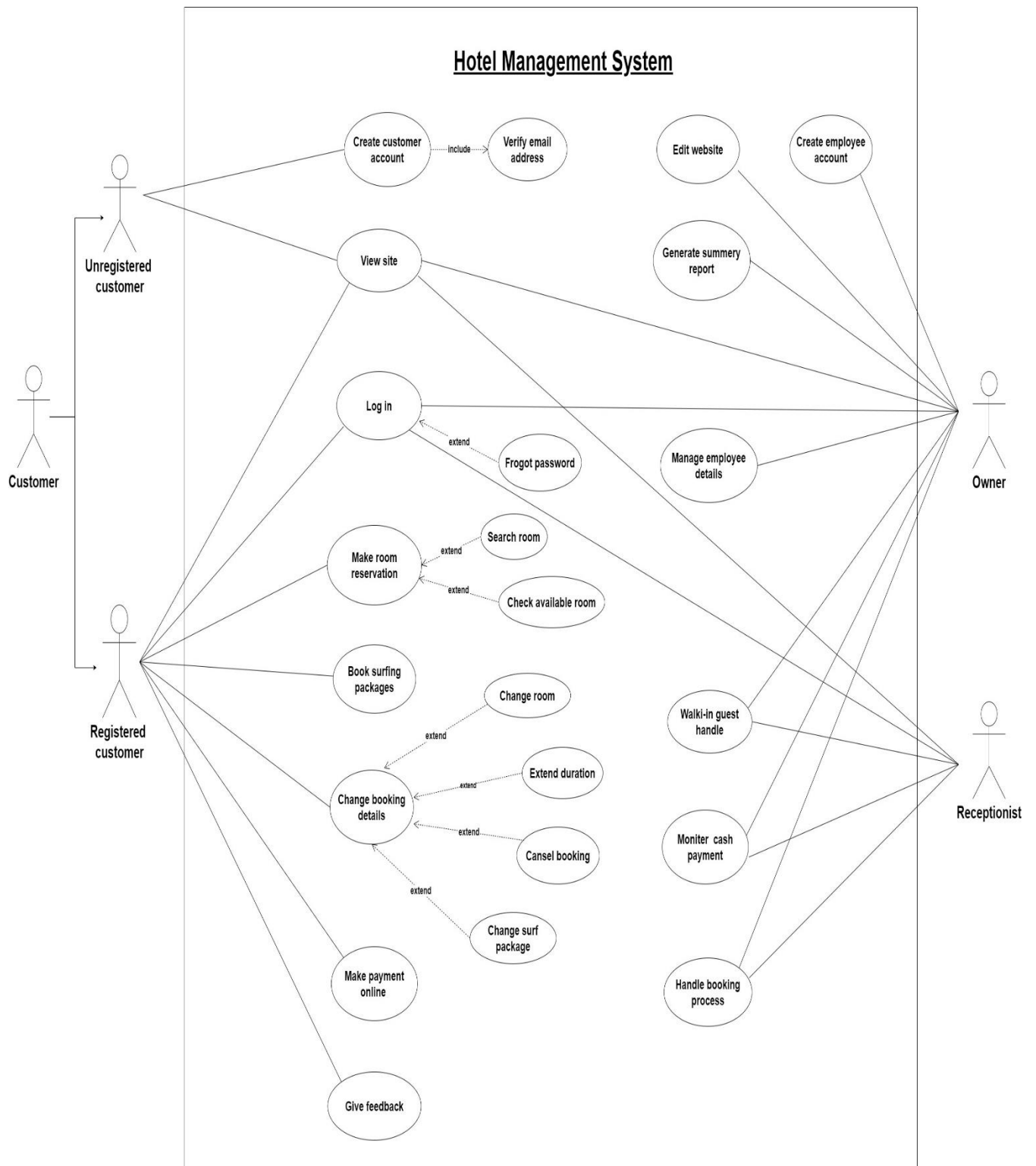
- We deliver a web application responsive to Desktop, Tablet, and smartphones.
- It has an attractive and understandable user-friendly interface.
- We also provide the client with a user manual(documentation) on how to handle the system.

FUNCTIONAL REQUIREMENTS IDENTIFICATION

Component diagram



Use case diagrams



System actors identification

Unregistered Customer

- Create customer account
- It can only access the static web pages on the web application.
 - Home
 - Rooms & suites
 - Dining
 - Surf packages
 - Gallery
 - About us
 - Contact
 - Guest review

Registered Customer

- Log in website
- It can access the static web pages on the web application.
- Reserving room
 - Ability to cancel the booking
 - Ability to change room
 - Ability to extend the reservation period
- Reserving surfing package
 - Ability to change package
- Online payment facilities
- Give feedback

Receptionist

- Log in website
- It can access the static web pages on the web application.
- Handle the walk-in guest
- Monitor the cash payment
- Handle the booking process

Owner

- Log in website
- It can access the static web pages on the web application.
- Handle the walk-in guest
- Monitor the cash payment
- Handle the booking process
- Edit the website
- Manage employee details
- Generate summary reports

Use Case Description

Use case	View site
Summary	The Customer can get more details through the website.
Actor	Unregistered Customer Registered Customer Owner Receptionist
Preconditions	None
Description	Anyone can get more details about the hotel. The website gives the following details. <ol style="list-style-type: none"> 1. Room details. 2. Hotel environment and facilities. 3. Hotel room packages and discounts. 4. Images 5. Surfing packages details. 6. Customer reviews. 7. Restaurant item details.
Exceptions	None
Post Conditions	None

Use case	Create customer account
Summary	User registers with the system.
Actor	Unregistered Customer
Preconditions	Customer clicking sign up button and opening sign up form. Customers must agree with the terms and policies.
Description	The user will create an account entering below details, <ul style="list-style-type: none"> • First name • Last name • Email address • password after that, the Customer submits their data.
Exceptions	Users can't create accounts if users enter invalid or already entered email addresses.

Postconditions	Now users have grant privileges to booking and else.
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Use case	Verify email address
Summary	The process is to verify customers by using an email address.
Actor	Unregistered Customer
Preconditions	The Unregistered Customer must create an account. The Unregistered Customer must have an email address.
Description	Without an account, customers can't make any reservations. Then they create an account, and the entered email address needs to be verified. The Customer gets his verified code, and he can enter it correctly verify the account.
Exceptions	If Unregistered customers entered an invalid email address, they can't get verification code.
Post Conditions	Unregistered customers can create an account.

Use case	Login
Summary	User users the account created by the system to log in to the system.
Actor	Unregistered Customer Registered Customer Owner Receptionist
Preconditions	The user must create an account and give valid account details to access the system.
Description	Users will log in using the ID and the password given during registration.
Exceptions	If the user forgets a password, it can be renewed using a verification code provided by the system.
Postconditions	Users can access the system.

Use case	Forgot Password
Summary	The System provides a method for when the user forgets the user password and doesn't want to create another account.
Actor	Registered Customer Owner Receptionist
Preconditions	The user must be a registered customer/Receptionist/owner
Description	The user forgot their password. The system first verifies the user by sending OTP by System to the user's provided email address. Then user types that OTP code. After that user can change the password.
Exceptions	The user can't get verification code the provided email.
Post Conditions	The user can access the system

Use case	Make room reservation
Summary	Unregistered and registered customers can reserve hotel rooms.
Actor	Registered Customer
Preconditions	Enter the valid check-in and check-out Date/Number of Adults/Number of Rooms and should be a registered customer.
Description	Any Customer can view room details. But only registered Customers can make a reservation. Once accurate details are entered, let them search for a room they prefer.
Exceptions	If Customer can't make a reservation, should create an account first. And also, Customers can't make reservations when rooms are not available at that moment.
Post Conditions	The Customer received room reservation confirmation notification.

Use case	Search Room
Summary	The Customer can find rooms to their preferences from the website(e.g., seaside room)
Actor	Unregistered Customer Registered Customer
Preconditions	The Customer must give their check-in and check-out date /number of adults/number of rooms
Description	The Customer will search for their room category by entering details. 1. Beach-side 2.room type(single/double/king size) 3.room facilities(ac non ac/free wifi)
Exceptions	The Customer can only search while making reservations.
Post Conditions	Customers can continue the reservation process.

Use case	Check Available Room
Summary	The Customer looks for available rooms after entering check-in and check-out details.
Actor	Unregistered Customer Registered Customer
Preconditions	The Customer must give check-in and check-out dates/number of adults
Description	The Customer can make reservations by selecting rooms using a check Available room list.
Exceptions	The Customer can only search while making reservations.
Post Conditions	Customers can make reservations.

Use case	Make online payment
Summary	To pay for the room reservation and surfing packages bills via the website.
Actor	Registered Customer
Preconditions	The system has information about room and surfing packages booked by Customers.
Description	<p>The Customer filled the payment details, such as.</p> <ul style="list-style-type: none"> • Cardholder Name • Card Number • Card Expiration • Security Code (CVV) <p>Then Customer select 'make payment' to continue the transaction on this payment.</p>
Exceptions	Invalid payment information: Customers re-enter correct payment information.
Postconditions	Customer. The owner and receptionist gave the transaction successfully notification.

Use case	Writing Feedback
Summary	The Customer can review the hotel after check-out.
Actor	Registered Customer
Preconditions	The customer must check-out before reviewing.
Description	<p>The registered Customer has to log in.</p> <p>Can add some review about the hotel when check-out.</p>
Exceptions	One user is allowed to leave only one review.
Post Conditions	Display feedback on the website.

Use case	Book Surfing packages
Summary	The registered Customer can book surfing packages via the site.
Actor	Registered Customer

Preconditions	The user must be a registered customer and logged-in and must have made a room reservation.
Description	The Registered Customer will Book surfing packages using him/her verification. Booking Surfing packages using 1.User name 2.Password 3.Surf Package details 4.Surf Package amount
Exceptions	If Customer can't Book Surfing packages, he isn't logged in and didn't make a reservation in the hotel.
Post Conditions	Registered Customer has to wait for the Book Surfing package confirmation message.

Use case	Change Booking Details
Summary	Registered Customers can update reservation details.
Actor	Registered Customers
Preconditions	The Customer must have made a room reservation. When re-allocating rooms or extending stay, the user must search and select available rooms.
Description	Registered Customer can Update room details like Change room, extend the room reserve duration, and cancel the room.
Exceptions	If the login details are invalid, the user is requested to re-enter login details. If there are no available rooms, the user cannot update room details. Some rooms do not support free cancellation. In this case, the Customer is not allowed to cancel the room, which already booked.
Post Conditions	The Customer received an update confirmation notification.

Use case	Change Room
Summary	The Registered Customer can change rooms they booked. The system updates changed details.
Actor	Registered Customer
Preconditions	The Registered Customer must have made a room reservation.
Description	The registered Customer will give room details 1.Check-in date 2.Check-out date After customers can show available rooms that date, then they can select a new Room.
Exceptions	The Customer can't change the room if every room is booked. The Customer can't change the room if he's not logged in.
Post Conditions	The Customer has to wait for a change room reservation confirmation message.

Use case	Extend duration
Summary	The Registered Customer can extend the stay. The system updates changed details.
Actor	Registered Customer
Preconditions	The Registered Customer must have made a reservation.
Description	The registered Customer will give room details 1.Check-in date 2.Check-out date 3.New Check-in date 4.New Check-out date After customers can show available rooms that date, then they can select a new Room.
Exceptions	The Customer can't extend reserved time if he is not logged-in. Customers can't extend reserved time if every room is booked.

Post Conditions	The Customer has to wait to extend the room duration confirmation message.

Use case	Cancel Booking
Summary	The Registered Customer can only cancel reservations within the given conditions. The system updates changed details.
Actor	Registered Customer
Preconditions	The Customer can cancel bookings if only it is allowed. The Registered Customer must have made a reservation.
Description	He or she agreed given conditions they can confirm their cancelation.
Exceptions	The Customer can't cancel a room booking if he is not logged-in. The Customer can't cancel the booking if the booked room is not allowed to be canceled.
Post Conditions	The Customer has to wait for a canceled room booking cancelation message.

Use case	Change Surfing Packages
Summary	The Registered Customer can change surfing packages by updating booking details. The system updates changed details.
Actor	Registered Customer
Preconditions	The Registered Customer must make a reservation in the hotel. The Registered Customer is given Surfing details
Description	The registered Customer will give room details 1.Check-in date 2.Check-out date Showing available packages and customers can select a new package as they wish.

Exceptions	The Customer can't change surf packages if he isn't logged-in. Customers can't change surf packages if every surf package is booked.
Post Conditions	The Customer has to wait to change the surf package confirmation message.

Use case	Monitor a cash payment
Summary	To pay for the room reservation and surfing packages bills to cashier.
Actor	Owner Receptionist
Preconditions	The system has information about room and surfing packages booked by Customer The receptionist should be logged into the system.
Description	The Customer asked the payment details in the receptionist. Then the receptionist asks customer details to search the payment details that Customers using the system. Then the Customer makes payment to the receptionist, and then the receptionist enters that payment details in the system.
Exceptions	Invalid customer details: receptionist ask again and re-enter customer details.
Postconditions	Customer. The owner and receptionist gave successfully make payment notification.

Use case	Walk-in guest handle
Summary	Some guests are coming to the hotel without a web site. They can reserve room and surfing packages at the front desk.
Actor	Owner Receptionist
Preconditions	The receptionist must be log to the system.

Description	Walk-in guests can require about rooms. Receptionist check available rooms and inform the Customer. Get customer details and make customer registration.
Exceptions	If there are no available rooms at that moment, can't make a reservation
Postconditions	The system must give confirmation notification to the Customer and also the receptionist.

Use case	Handling the booking process
Summary	The receptionist can update room details and surfing package details of the hotel through the system.
Actor	Owner Receptionist
Preconditions	The user must be logged in. Booking must be made from another site. The Customer must request to modify the room details.
Description	The user handle rooms and room reservation. When a booking comes from another site, the receptionist or the Owner must close the reserved room or rooms. Users have to handle requests to modify room details or to extend the duration. Users have to handle cancellation requests. 1.Close room 2.Other booking site reservation 3.Walk-in guest reservation
Exceptions	If the receptionist can't handle the booking process, he isn't logged-in. The room expected by the Customer is already booked.
Post Conditions	The web site is updated according to new booking details.

Use case	Create an employee account
Summary	The Owner keeps the details of every employee of the hotel.
Actor	Owner
Preconditions	The Owner must be given employee details.
Description	<p>The Owner will create an employee account with the given details.</p> <p>Create an account using:</p> <ol style="list-style-type: none"> 1. First name 2. Last name 3. Birthday 4. gender 5. Email address 6. Mobile number 7. Emergency contact number 8. Basic salary
Exceptions	If the owner can't create an employee account, he isn't logged-in.
Post Conditions	The system gets employees' details, and the responsible personnel gets access to the system.

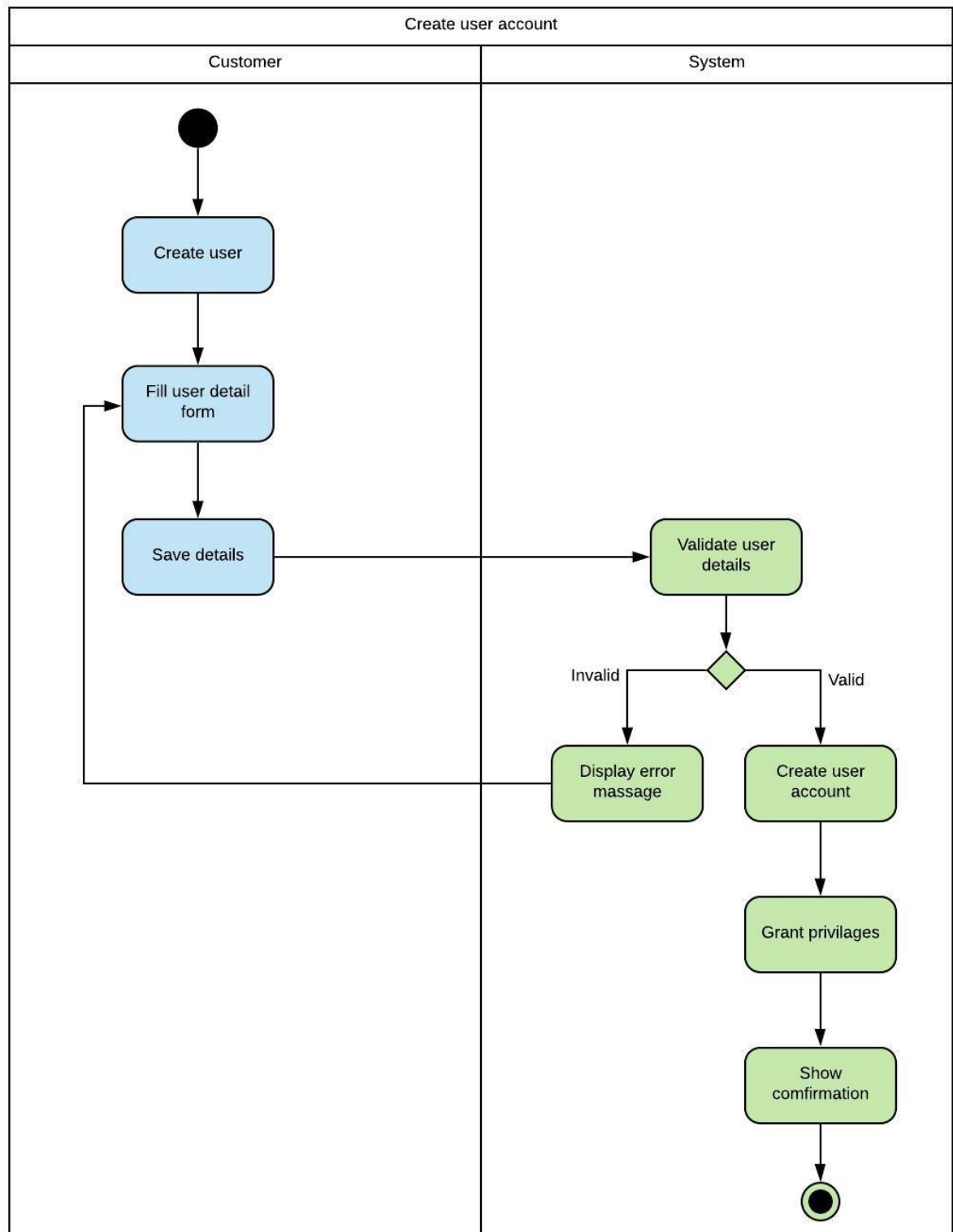
Use case	Manage employees
Summary	The user modifies employee details.
Actor	Owner
Preconditions	User must be logged in as Owner
Description	Users can add, modify, and delete employee details.
Exceptions	If a login error occurs, the user is expected to reenter login details and retry.
Postconditions	The database should be updated.

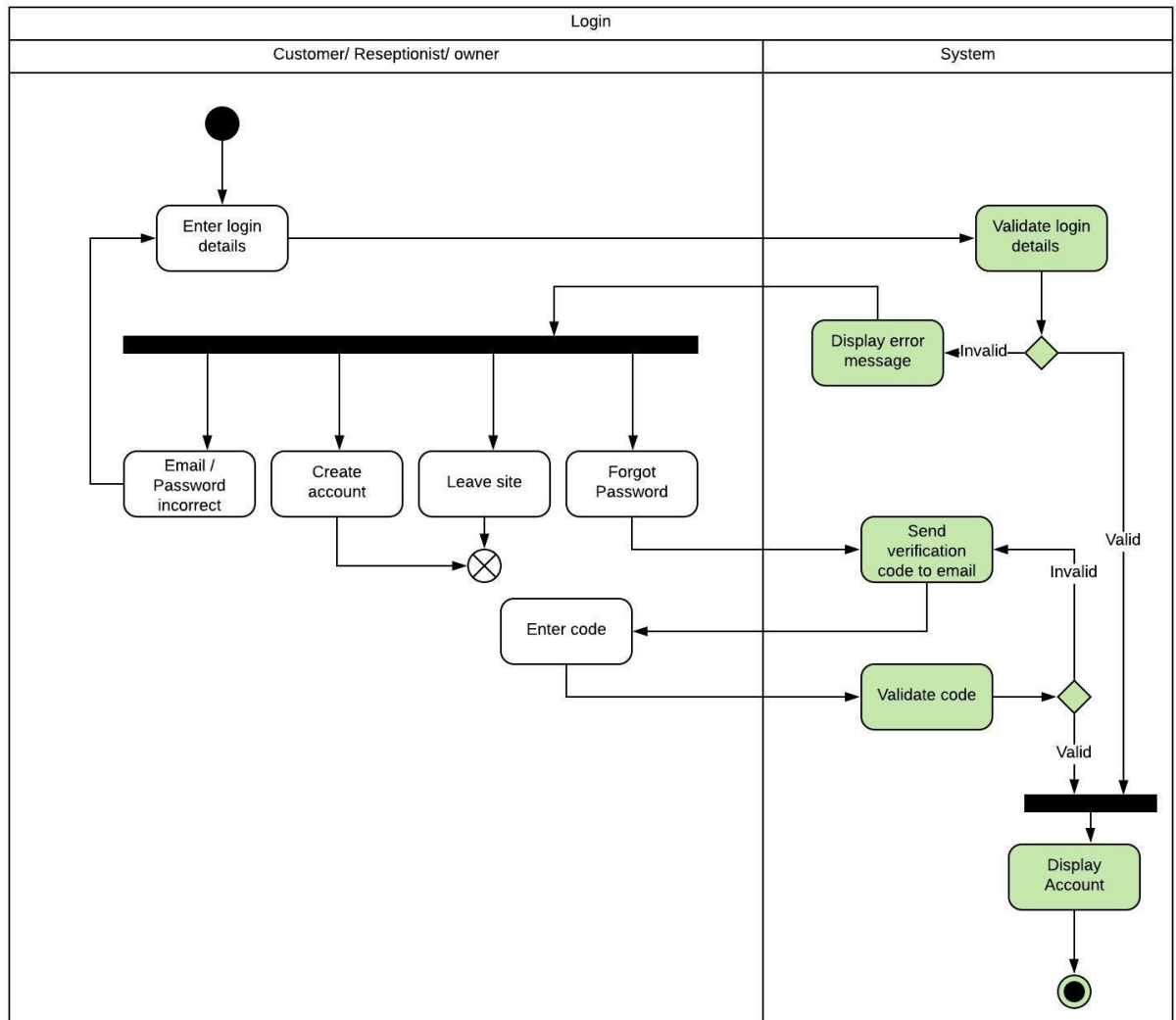
Use case	Edit Website
Summary	The user gets the privilege to edit site details.
Actor	Owner
Preconditions	The user must be logged in as the Owner.
Description	<p>User can modify the following room details.</p> <ol style="list-style-type: none"> 1. Price 2. Discount 3. Images 4. Room type 5. Room facilities <p>User can modify surfing package details.</p>
Exceptions	If a login error occurs, the user must re-enter login details and retry.
Postconditions	<p>The site should be updated.</p> <p>The database also should be updated.</p> <p>A message should be displayed, telling that the site is updated.</p>

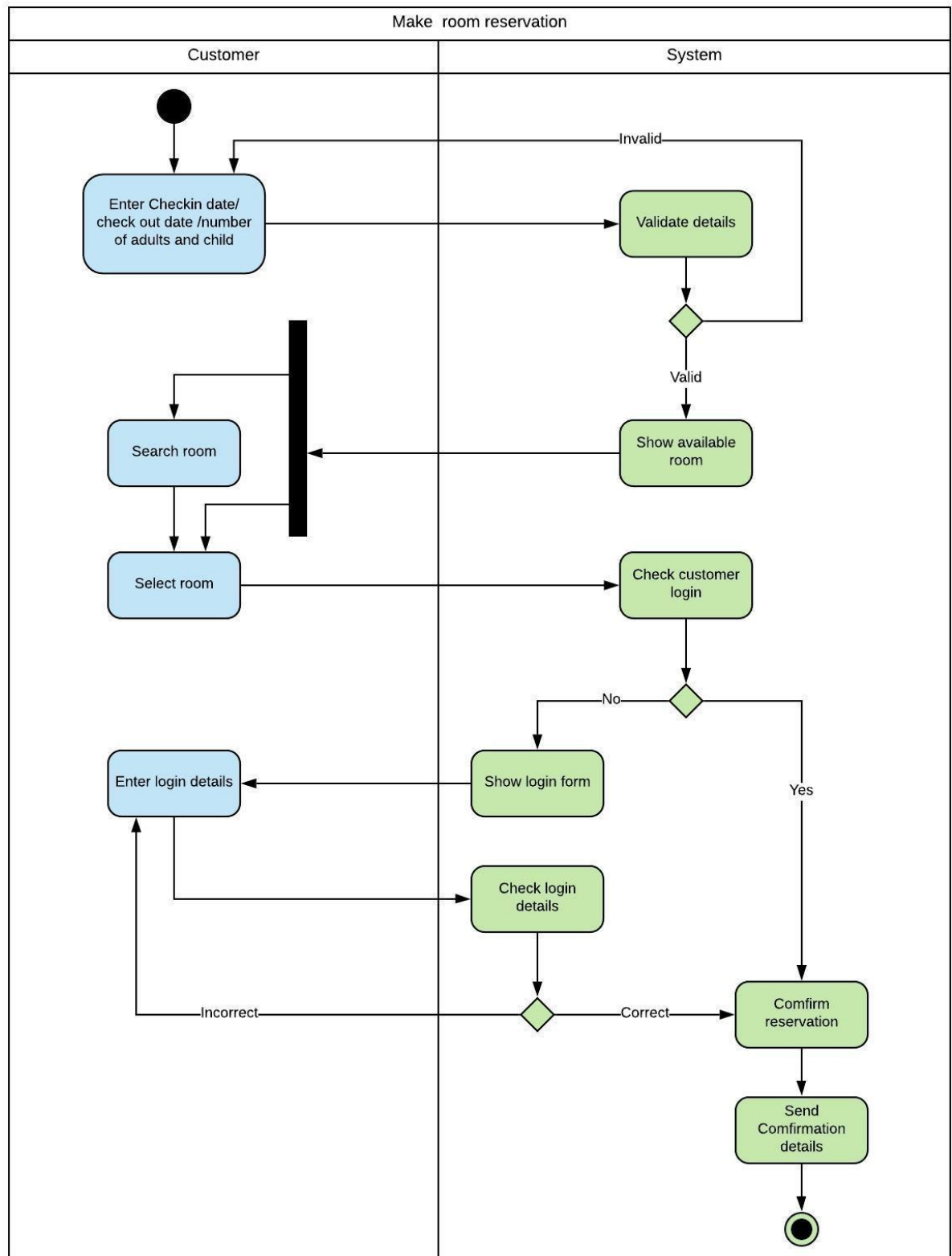
Use case	Generate a summary report
Summary	<p>The owner may want a report on the overall performance of the system between a specific period.</p> <p>So the Owner can get reports through the system.</p>
Actor	Owner
Preconditions	The owner must be login to the system and is allowed to access the database.
Description	<p>The owner gets access to the database.</p> <p>Selects information to generate the report</p> <ol style="list-style-type: none"> 1. customer details 2. room details 3. employee details 4. booking progress 5. income
Exceptions	none

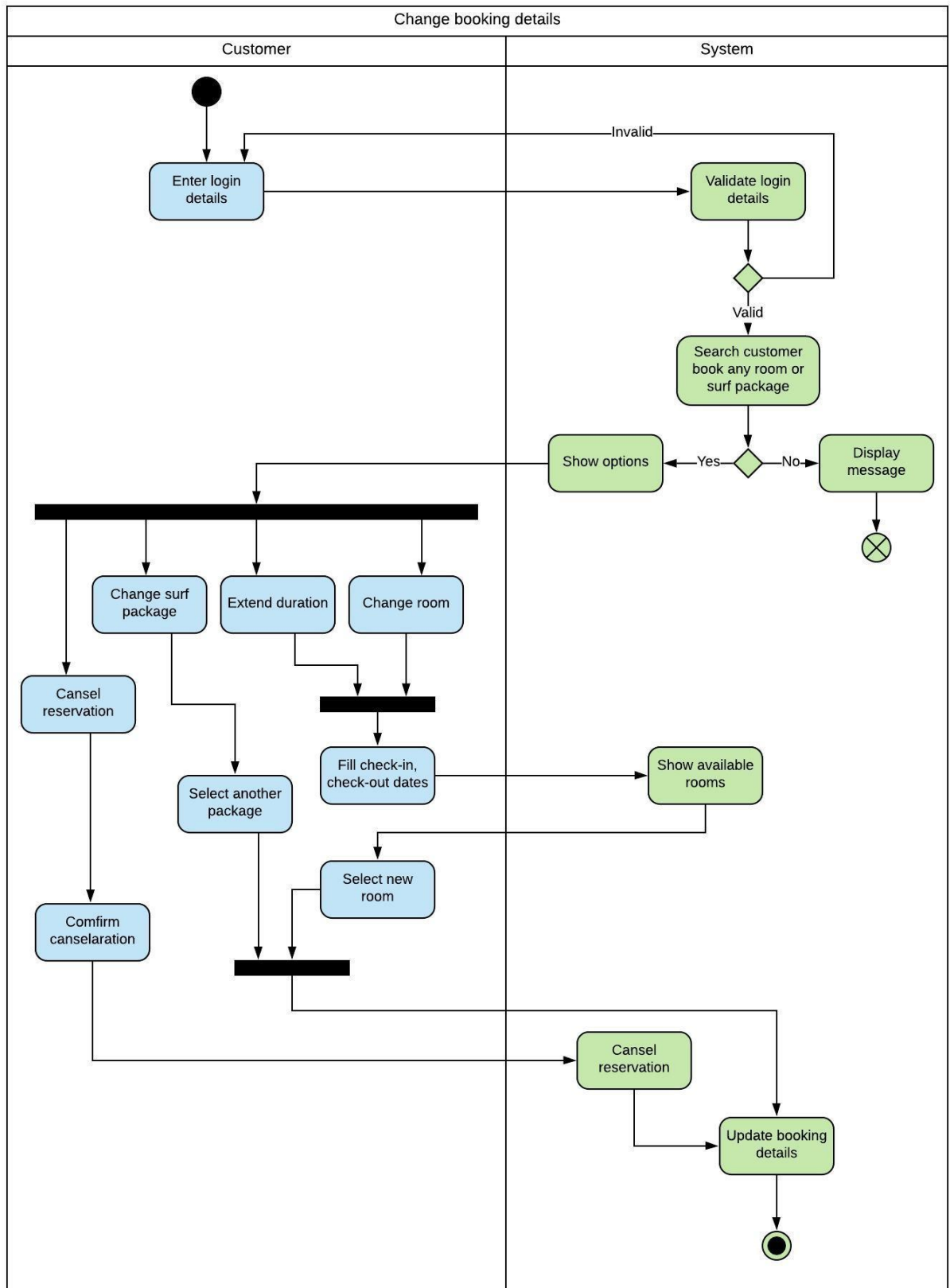
Postconditions	Summary report from the database is generated, Then Owner can view it.
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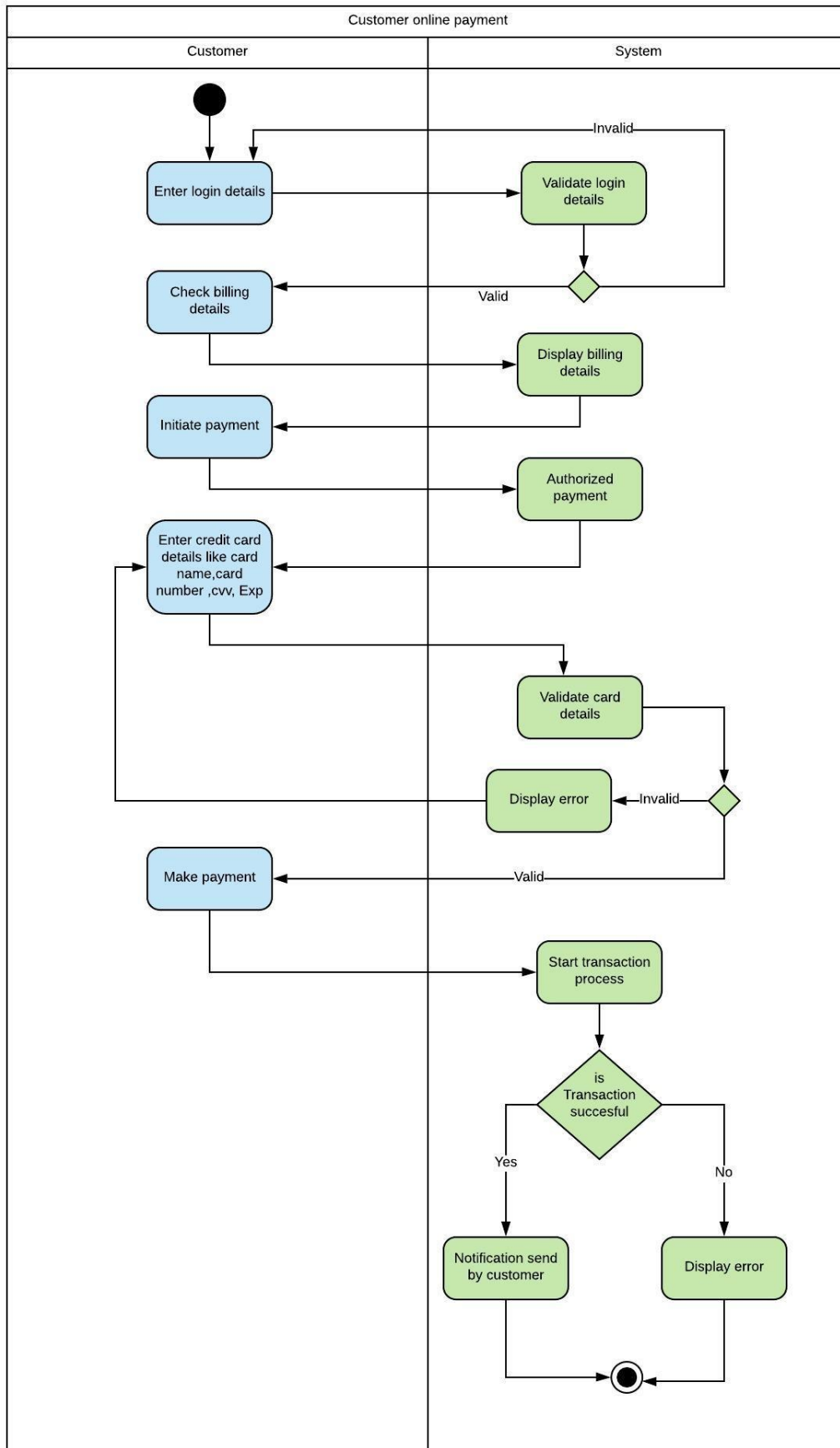
Activity Diagram

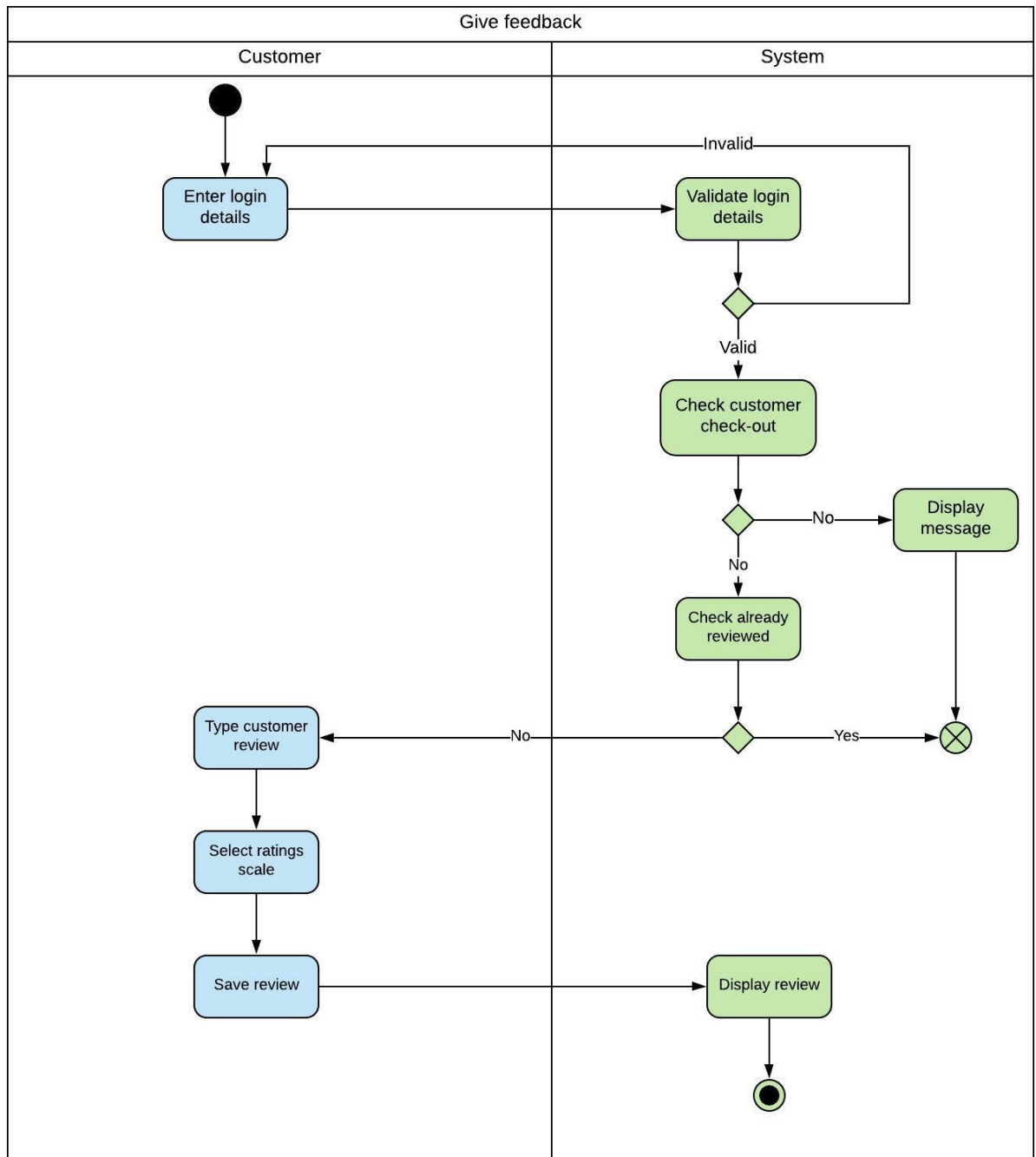


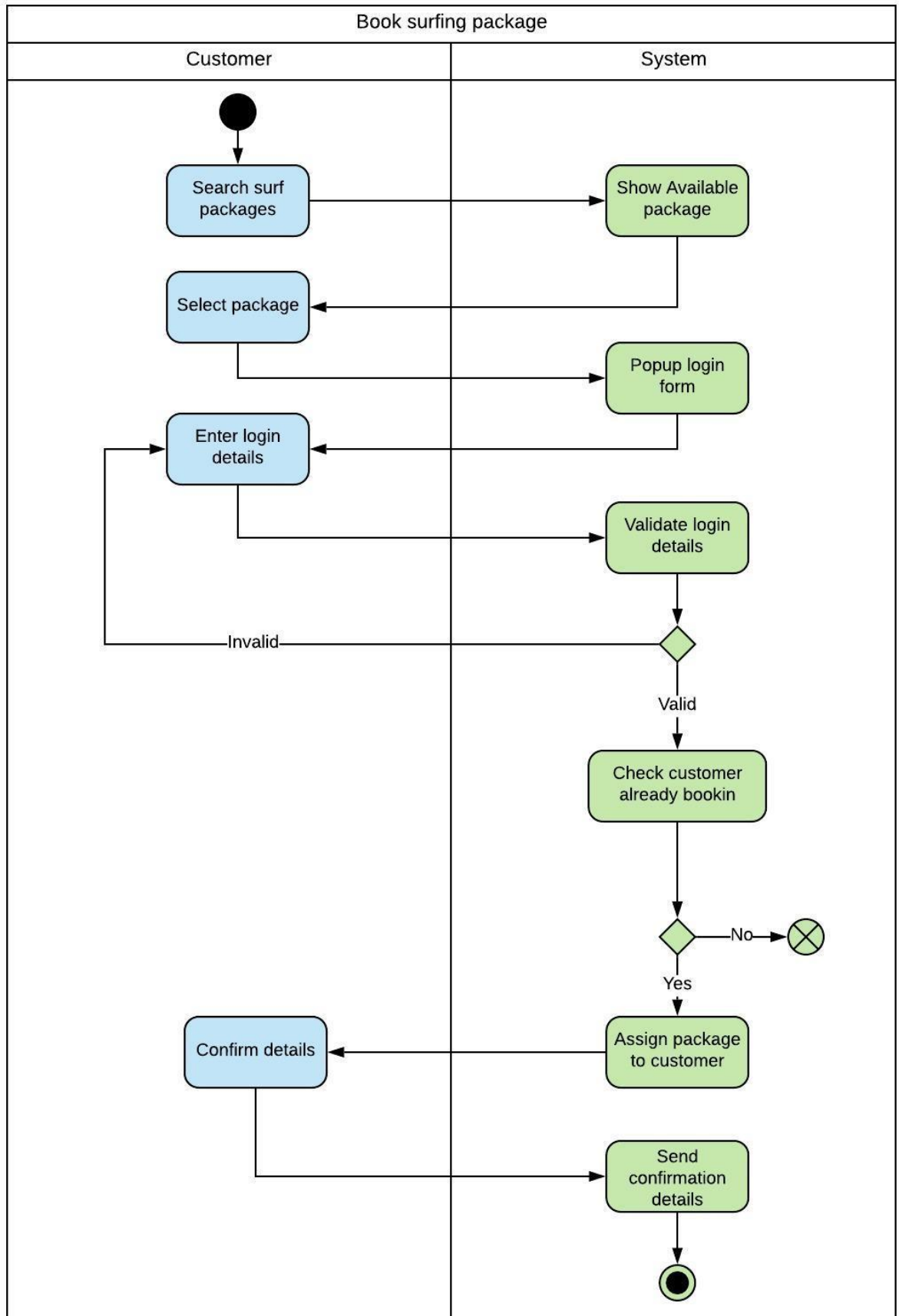


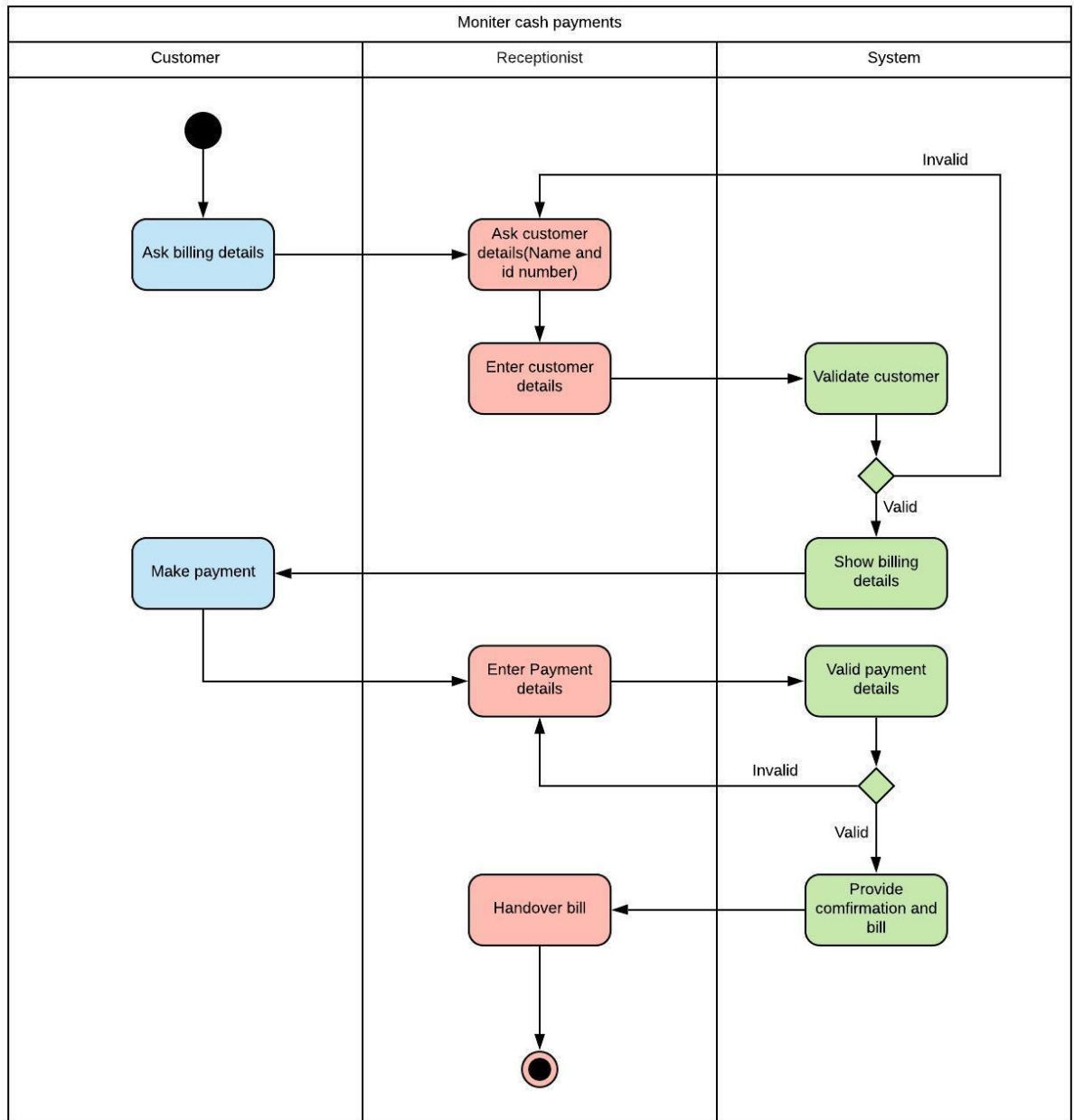


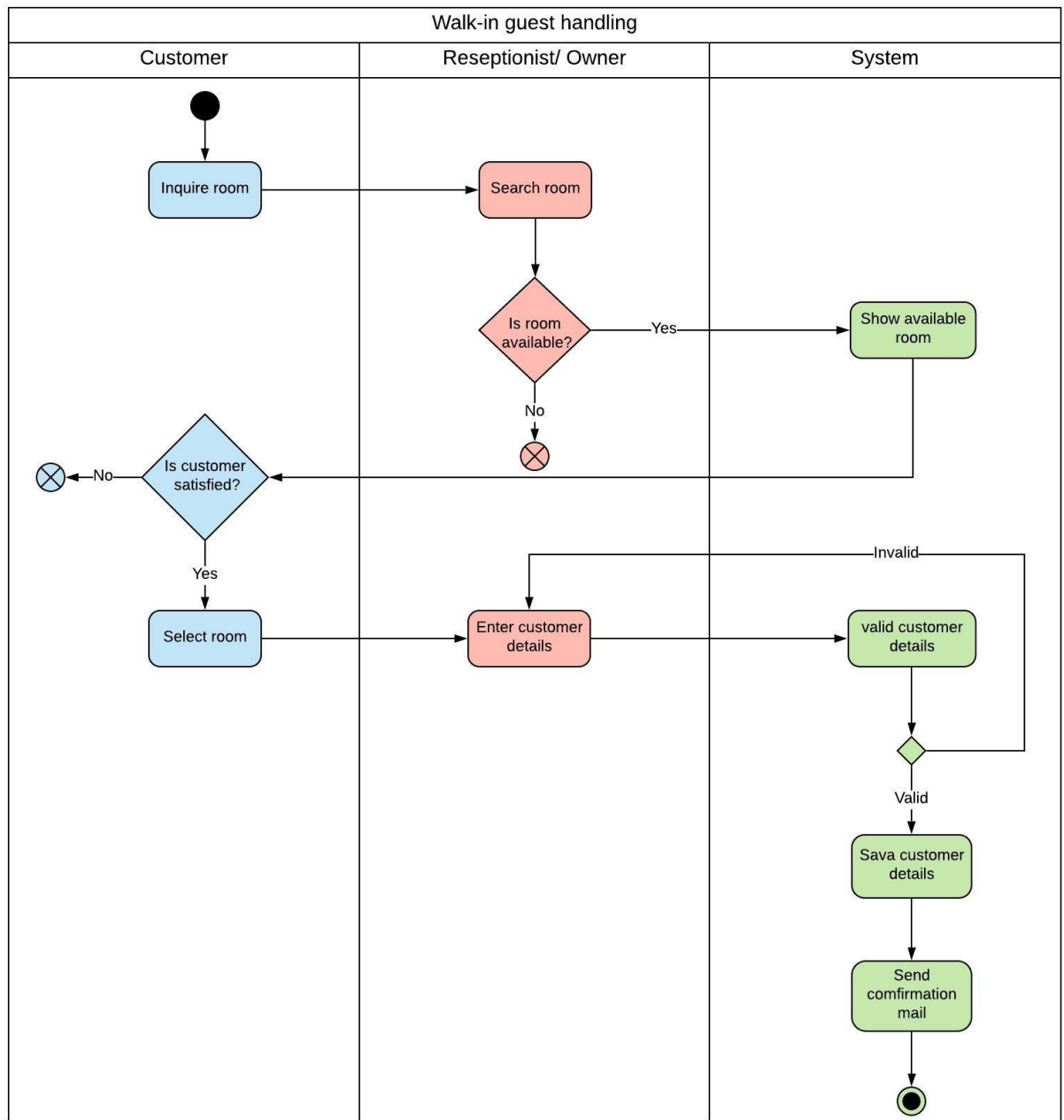


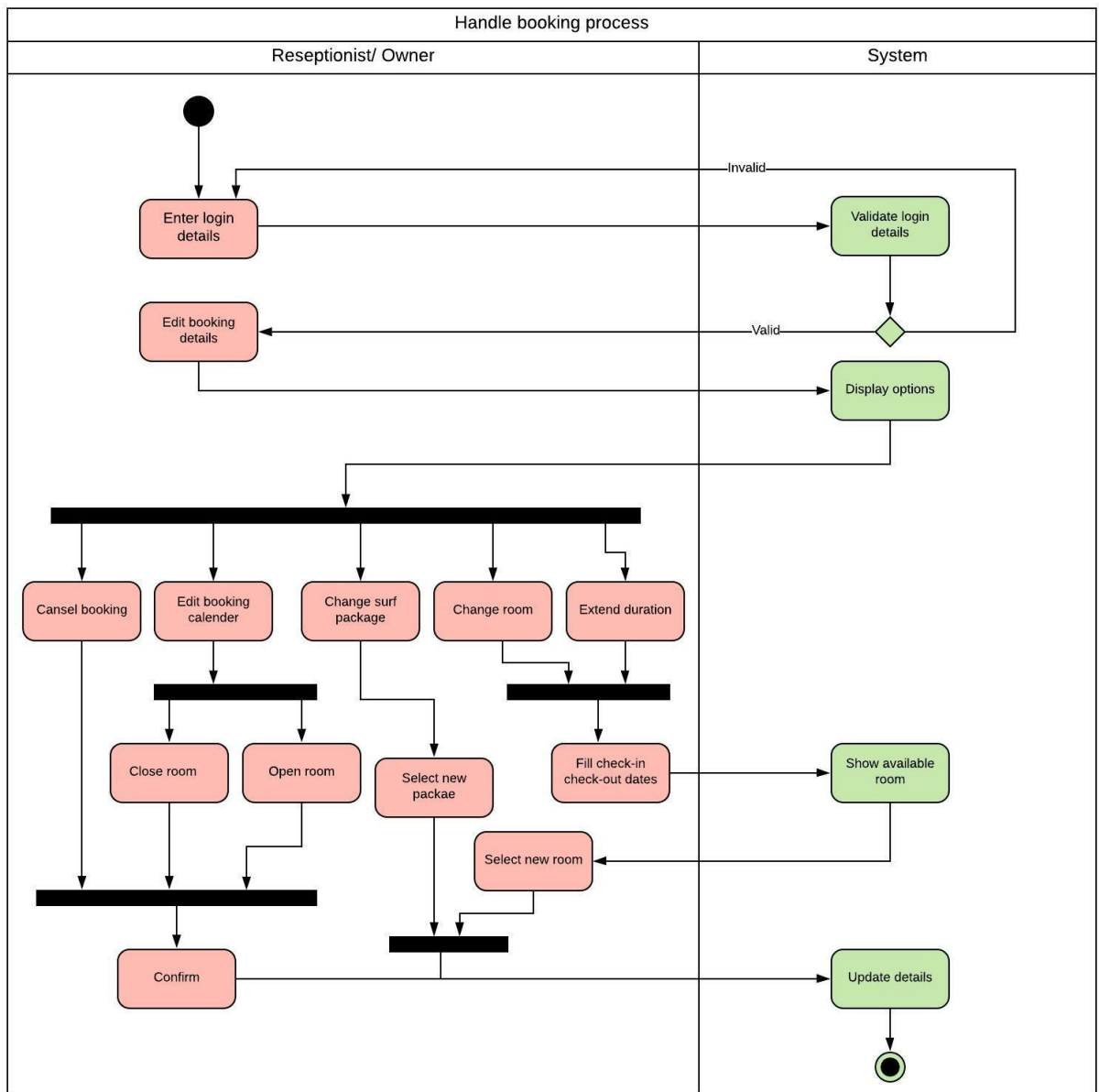


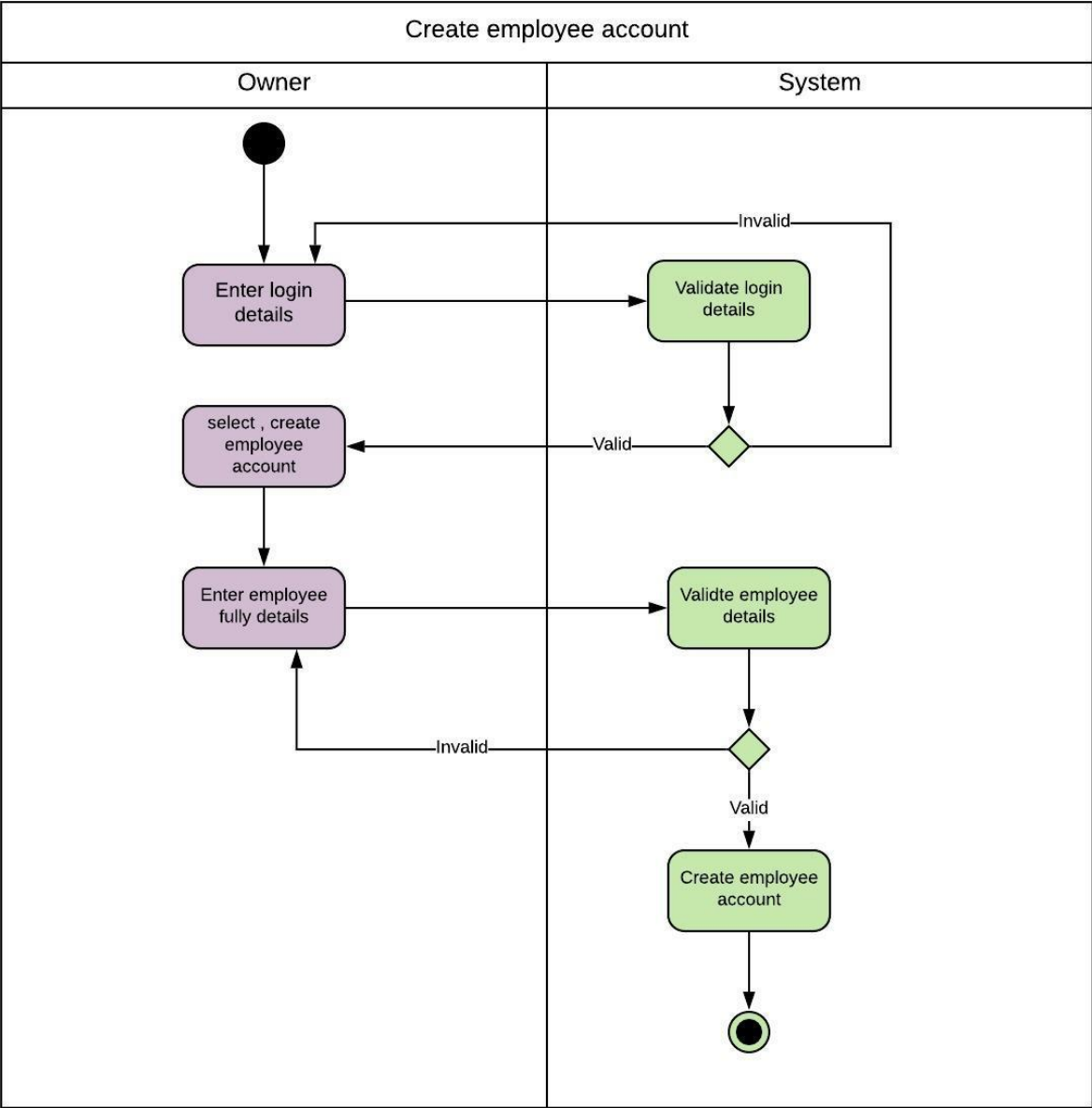


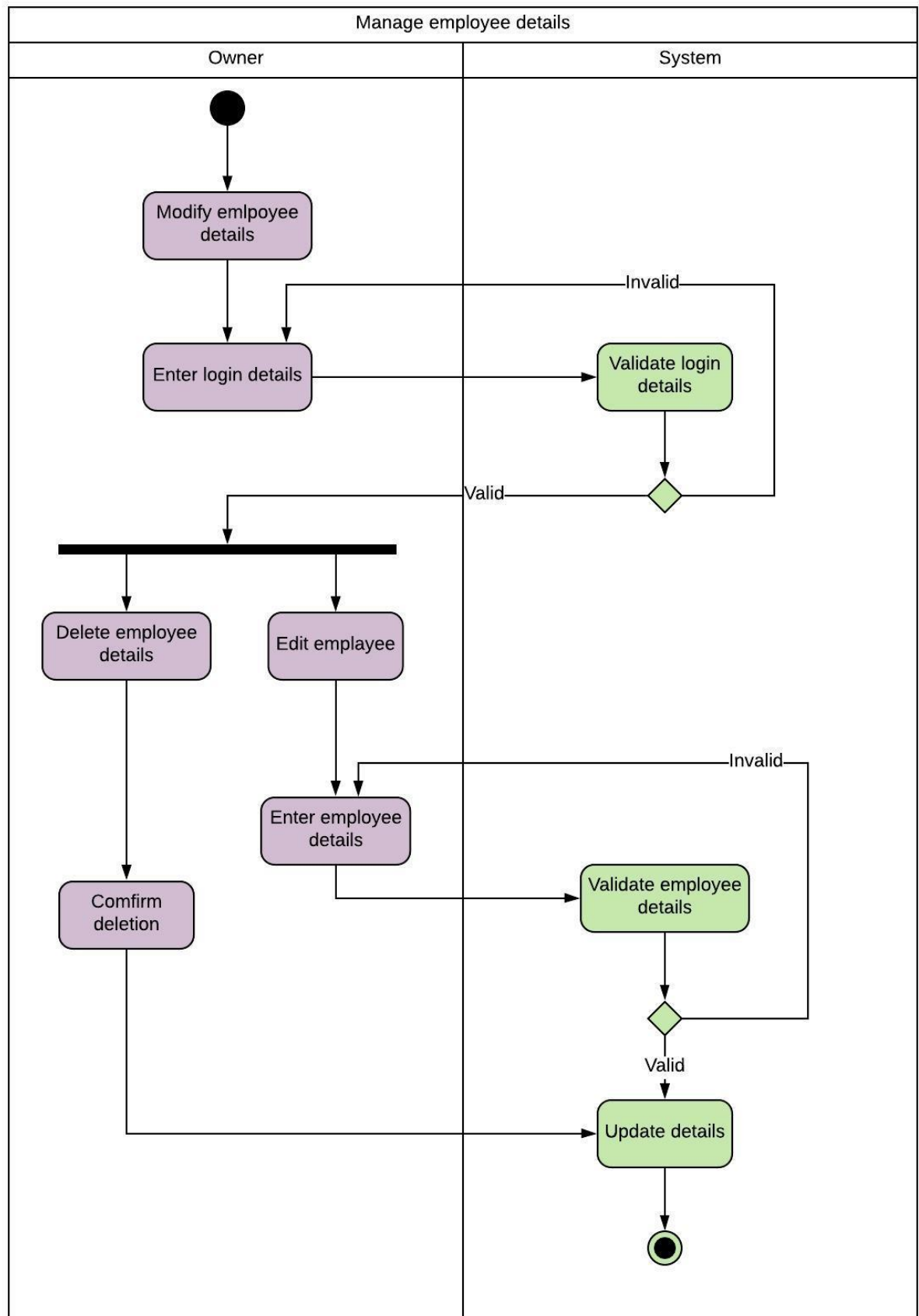


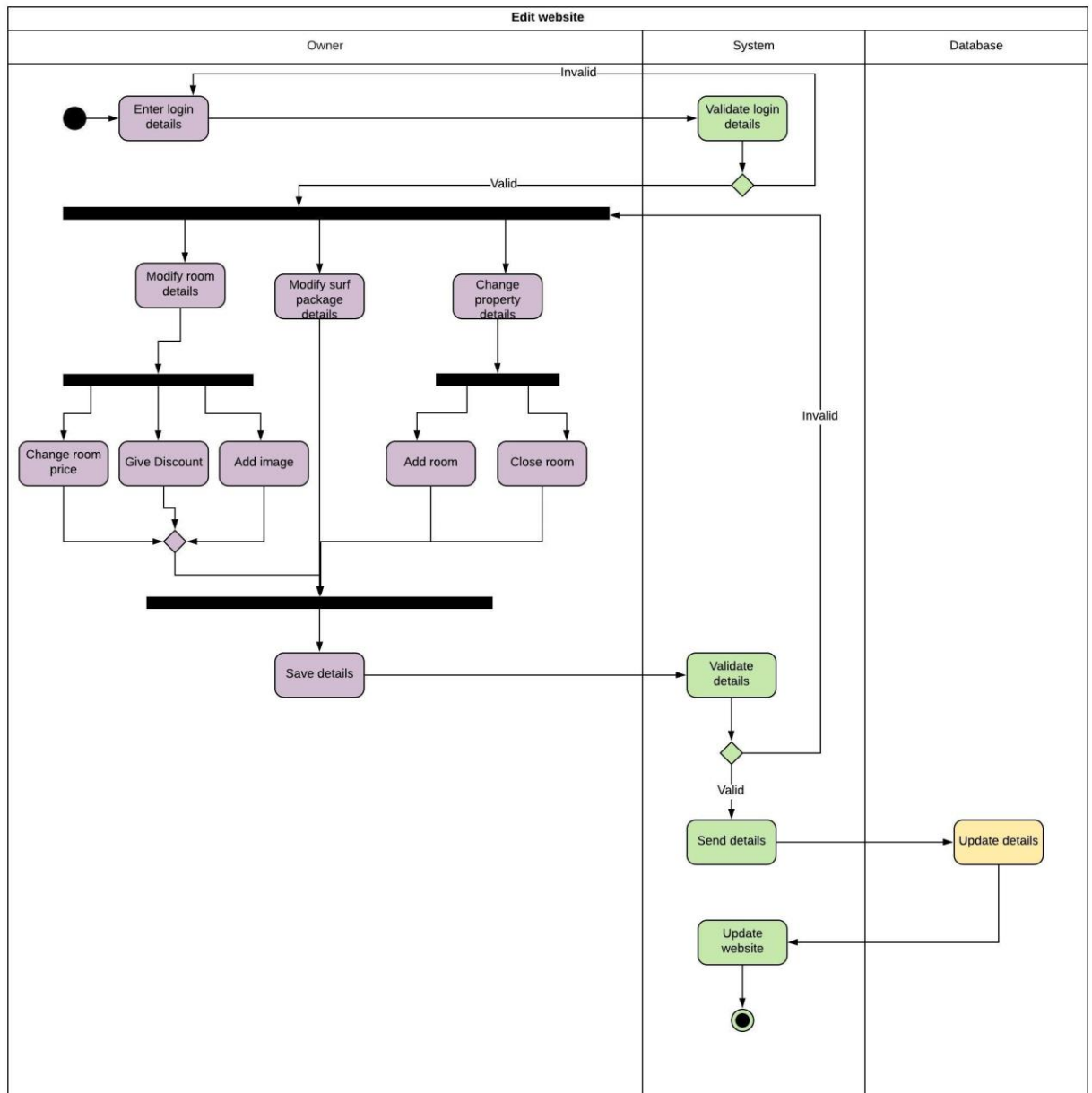


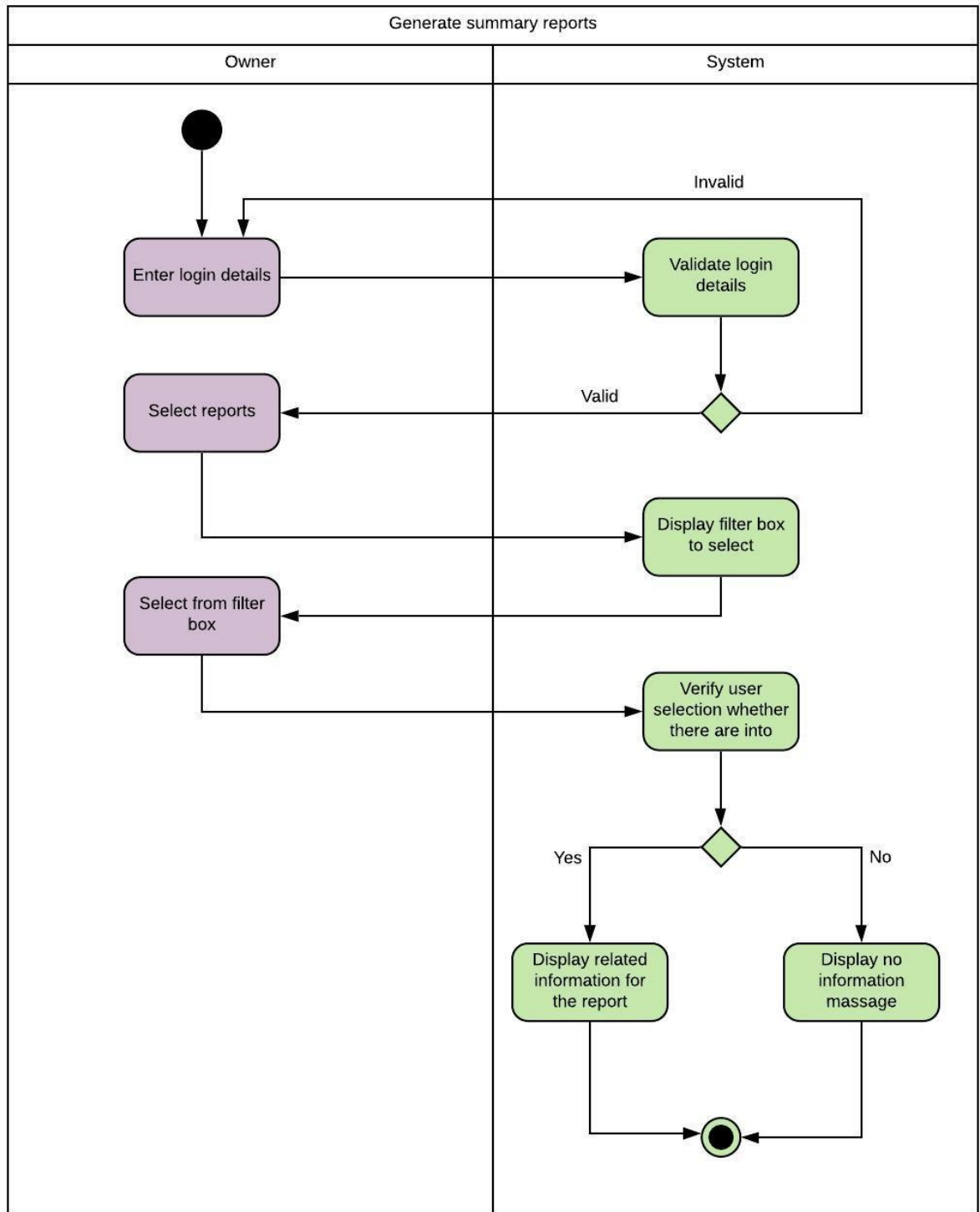












QUALITY ATTRIBUTE IDENTIFICATION

Identification of Quality Attribute

- Security& Privacy
- Portability
- Availability
- Usability
- Reliability

Suggestions to achieve Quality Attribute

1. Security& Privacy

Except for a process in the system such as sending unique package information or summary report generation personal data of the users and employees such as email addresses, telephone numbers are not used in any manner.

All the information is encrypted to prevent the misuse of sensitive data.

2. Portability

The software can be run in any environment or any machine.

3. Availability

The site is accessible 24 /7 and 365 days. We are using shared hosting sites such as Namecheap, GoDaddy, digital Ocean.

4. Usability

The system should be easy to use for all users. Icons and images used in the system should be visible and discernible regardless of the device used.

5. Reliability

Testing for reliability is not straightforward. It is challenging to state if a system does or does not meet reliability requirements. We hope to conduct many tests to guarantee the reliability of the system before and after the turnover.

TECHNOLOGIES TO BE USED

Front-end

- HTML 5
- CSS 3
- JavaScript

Back-end

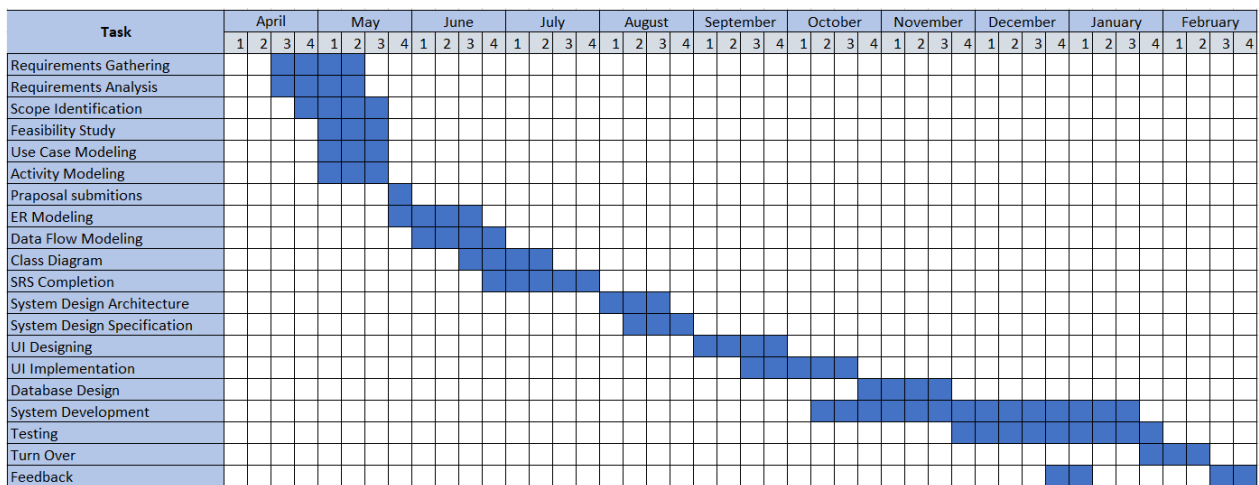
- PHP
- MySQL

Other technologies

- Adobe photoshop
- Adobe premiere pro
- GitHub
- Trello
- Git

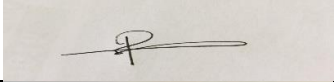
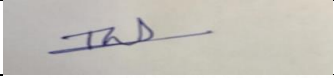
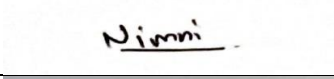
PROJECT TIMELINE

We are able to implement the solution within the allocated period, and it is shown in the Gantt chart shown below. We are hoping to complete the implementation and testing phases within one year.



DECLARATION

We as members of the project titled "Hotel Management System". Certify that we will carry out this project according to the guidelines provided by the coordinators and supervisors of the course as well as we will not incorporate, without acknowledgment, any material previously submitted for a degree or diploma in any university. To the best of our knowledge and brief, the project work will not contain any material previously published or written by another person or ourselves except where due reference is made in the text of appropriate places.

Index Number	Name of the Student	Signature
18001327	R.P.Ranaweera	
18000576	W.T.Gihan	
18001823	G.G.N.N.Wanigasekara	
18001696	H.M.D.Thathsara	