



Beauty Craft

Integrated Salon Management System

Project Proposal

CS 30

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The client of the Project:

There is no specific client for the project. The system is expected to suit the general requirements of all Hair and Beauty Salons.

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1. Introduction

Beauty salons are one of the most popular personal care services, with a never-ending demand. Thus, when business expands the organizational work in a salon such as managing reservations, administration of staff & clients and handling financial work becomes inefficient and time consuming. It will eventually end up with disappointment of the customers. But to keep up with the high competitiveness in the industry it's always important to maintain customers satisfaction and loyalty.

The following issues have been identified as the common causes of customer dissatisfaction as well as disappointment of the staff about the working environment.

- When a large number of customers are present, the time of the customer's turn is uncertain and can lead to a considerable waiting time.
- Some customers have a preferred stylist by whom they wish to get their service done. If that employee is not available there is a possibility of the customer leaving without getting the service.
- Placing reservations over the phone is limited to working hours and also customer has to try multiple attempts if the receptionist is busy with another call.
- When placing an appointment over the phone, manually identifying the most convenient available time slot is time consuming and stressful to the receptionist.
- At the end of the month, it is a very tedious task to manually go through all the service logs of each employee to calculate the salaries.

All the above issues can be properly addressed with the use of a salon management system. But it's not the case in reality. Most of salons do not use an automated management system. Even though some salons have their own websites they only provide information on services and contact details. The following have been identified as the reasons for the unwillingness of most salon managements to utilize such a system.

- Doesn't provide all the required functionalities.
- Cannot manage both online and visiting customers simultaneously.
- Do not have a simple and user-friendly interface that could be easily handled by the salon staff.
- The frequently fluctuating prices and changing services cannot be easily modified in the system.

Based on the above identified issues it has been discovered that there's a requirement for a well-designed user-friendly Salon Management System which is not fulfilled by current available systems. As a solution we are proposing an integrated salon management system which caters to requirements of customers, receptionist, employees, managers, owners and the general public who wish to get information about the salon and its services.

2. Project Goal

The main goal of this project is to satisfy both customers and the staff of the salon by managing all the organizational work within our system with minimum user effort and time.

It is achieved by implementing the following key features.

- Allow 24/7 online service reservation to the customers.
- Minimize the customer waiting time inside the salon to get the service.
- Ease the reservation scheduling process for the receptionist by replacing manual method with an automated system.
- Design a system that can handle large number of reservations efficiently.
- Eliminate the day-to-day paperwork by keeping all records within the system.
- Maintaining an employee rating system from customer feedbacks to provide an overview to new customers to choose a stylist for a service.
- Provide a platform for employees to get to know their schedule and workload ahead of time.
- Allow to track the progress of the employees and business by reports generated within the system.
- Eliminate the arithmetic errors of salary calculation by automating the process.

3. Scope of the project

The system will be designed only as a Responsive Web App which can be used in desktop computers and also in mobile devices.

Functionalities of the system is limited to main 5 components.

- Reservation management
- Service management
- Salary management
- Customer, staff management
- Report generation

In scope

- Online reservation management.
- Reservations based on specific services, employees and timeslots.
- Handling a waiting list for already reserved time slots.
- Providing an employee specific view for the upcoming reservations.
- Notification system for confirmations and reminders.
- Employee management with separate leave request handling within the system.
- Automated salary calculation.
- Employee progress tracking.
- Report and payment invoice generating.

Out of scope

- Online payment handling related to reservations.
- Inventory management related to the products used in the salon.

4. Objectives of the project

The main objective of developing the proposed system is to maintain a positive interaction with customers and the salon staff. To achieve the proposed end-result the system shall provide the following functionalities.

Reservation process is made efficient by managing all the reservation records within system itself. Customers can add, edit, cancel reservations on their own using the online reservation system. Receptionist also can add, edit, cancel reservations for walk-in customers and over the phone reservations. The reservations can be placed by selecting the required service then selecting the employee (stylist) relevant to the selected service and lastly, date & time based on their preference and availability.

Each employee is provided with a discrete interface where they get a personalized view of assigned reservations and their status. Leave requests and reservation recall requests can be sent using the same provided interface.

Salary payments of each employee is calculated by the system itself. The owner can set the constraints such as the number of leaves allowed, fixed pay rate and the percentage commission for a service. At the end of each month the salary payment report is generated by the system without any manual effort.

Tracking progress of employees and the overall operations is made easy by providing analytical data and reports by analyzing the service records. Employee ratings and feedbacks are collected from the customer for the service they received.

By providing above functionalities from the system it's targeted to increase the number of services provided within a given time period and by that maximize the profit.

5. Project Feasibility

This section emphasizes on the feasibility study which was carried out to determine the overall feasibility of the project. The conclusion of the study is crucial when deciding whether the product is achievable or not. The following main factors were considered in the analysis and each subsection provides a justification for the related factor.

1. Technical Feasibility
2. Economic Feasibility
3. Operational Feasibility
4. Schedule Feasibility
5. Legal and Ethical Feasibility

5.1. Technical Feasibility

This subsection refers to the analysis of the availability and capability of hardware and software to identify whether it can cater to the technical requirements of the system.

- It is planned to use,
 - HTML, CSS, and JavaScript as the front-end development technologies. The features and functionalities of these technologies can provide the required structure, styles and dynamic behavior required by the front-end of the system.
 - PHP as the back-end technology. Since the proposed system is completely web based, PHP is well suited for the requirement. Scalability and easy maintenance are added advantages.
 - MySQL as the DBMS technology. It provides all the functionality required for the relational database of the proposed system.

All the above technologies are freely and readily available.

- The applications and tools which will be used are Visual Studio Code, Wamp Server, MS Office, GitHub, Trello, Adobe XD, Draw.io are also available for the development team.
- A separate SMS API will be used in order to send the notifications from the system when required.
- All the hardware equipment required to the development are already available.

Therefore, it's evident that all above mentioned technologies, software, tools and hardware are easily accessible and capable of providing the technical requirements of the proposed system. Hence the **project is technically feasible**.

5.2. Economic Feasibility

This subsection refers to the analysis of the cost-effectiveness of the project and which assesses whether it is possible to implement our system.

- Apart from the SMS API all the above-mentioned applications and tools which are used for the development purposes are free and open-source.
- Even though there will be charges for the SMS API which will be used in the system, it will be at a very low cost.
- As the development team will use their own computers and other hardware components there is no additional hardware cost.

Since there are no considerable expenses the total cost of the system is bearable. Hence the **system is economically feasible**.

5.3. Operational Feasibility

This subsection refers to the analysis of how well the proposed solution solves the problems, and satisfies the requirements identified in the requirements gathering phase.

Considering the issues that were identified the proposed system provides multiple subsystems addressing all functionalities required by the salon staff and the customers.

- Reservation management is the main factor catered within the system. Managing reservations can be done by both customer and receptionist using the provided interfaces.
- Employee data and service records are handled from the system. Salary calculation automated to provide a salary report at the end of each month from the system.
- Service and package data are managed through the system and employees related to each service are also managed. The frequent price changes of services and managing services can be done with minimum effort of the manager.
- Report generation provide overall progress analysis of the salon to the management staff of the salon.
- To operate the system, it requires minimum knowledge level in IT and English. Hence the system is manageable by the staff of the salon and operatable by the customers to place reservations
- To operate the system receptionist, manager and owner are expected to have computers while employees and customers are expected to use their own smartphone to access the system.

According to the above facts the system caters to all the requirements identified. And there is no major requirement to operate the system. Hence the **system is Operational Feasible**.

5.4. Scheduling Feasibility

Schedule feasibility is the degree to which a deadline for a strategy plan project or process is realistic and achievable.

The development of “Beauty Craft” integrated salon management system should completed within 10 months. We have decided to follow iterative waterfall methodology for development process.

Requirement gathering phase is completed and all the requirements of system have been clearly identified.

Since there are 4 members in the development team, the available time duration is adequate. Hence **scheduling the project is feasible**.

Gantt chart of the estimated timeline is attached in 1010.

5.5. Legal and Ethical Feasibility

Legal and Ethical Feasibility refers that the project is analyzed and confirmed the legal and ethical requirements. This includes analyzing barriers of legal and ethical implementation of project, data protection acts etc.

- Customers who use the system cannot access personal data of any other customer or staff members within the system.
- The service records collected and stored related to customers will not be exposed to a third party under any circumstances.
- All the staff member accounts are created, managed, and modified by the owner. Therefore, any other member cannot gain access to operations which are not assigned to them by the owner.
- Salary records of the staff members can be accessed and managed only by the owner.

The whole system will be developed using free, and open-source resources, and any external code fragments will be acknowledged and give credits to its rightful owner.

From the customers, the name and the contact number will only be collected. The data will be used only for verification and communication purposes. From the staff members the name, contact number, NIC no, bank account number will be collected for specific purposes such as identification, communication, salary payment.

Although Sri Lanka does not have any consolidated and/or specific laws on data protection yet, in early 2021, the LDD released a final draft version of an Act to Provide for the Regulation of Processing of Personal Data (2021) ('the Draft Bill') The Draft Bill is currently awaiting final approval. According to the section 9 and section 10 of the draft bill collecting and retaining data for specific purposes with prior knowledge is possible.

Hence according to the draft, there are no restrictions on establishing the system in accordance with the rules and regulations relating to data protection.

Since there are neither legal nor ethical conflicts, the project is legally and ethically feasible.

6. Deliverables of the project

In here deliverables refer to the quantifiable processes and services which are within the scope that must be provided upon the completion of a project.

- A fully functional responsive web application with following subsystems.
 - Reservation Management to handle all operations regarding reservations for both receptionist and the customers.
 - Staff Management.
 - Services & Package Management.
 - Salary Management to manage salary payments and view payment logs.
 - Leave Management to manage leave requests and take leaves.
 - Report Generating System to view progress and analytical data.
- System Documentation.
- User guide for the salon staff.

7. Project Constraints and Assumptions

This refers to the defined constraints and assumptions which need to sustain the system in scope, when developing and deploying the system.

7.1. Constraints

- The system should be hard coded since no frameworks are allowed.
- Online payment for reservations is not available and receptionist have to handle the payments manually.
- Maximum reservations can be placed for a date depends on the number of service providers and open hours of the salon.
- Staff accounts can be created only by owners and admin.
- Customers cannot place appointments on closed dates of the salon.
- Salary is calculated only at the end of each month.

7.2. Assumptions

- All the users of the system have the minimum level of required knowledge of English and IT to operate the system.
- Customer have the minimum knowledge for handling the web application.
- The salon staff and the customers have computers/devices and network connection required to operate the system.
- All the reservations which are not confirmed by the customer, will be confirmed by the receptionist through telephone calls one day prior to each reservation.
- Employees, managers and receptionist have terms and conditions to be agreed with.

8. Requirements Analysis

In requirement identification the users of the system have been identified as follows.

- Unregistered customer
- Registered customer
- Receptionist
- Employee
- Manager
- Owner
- System Admin

8.1. Functional Requirements

The following functionalities have been recognized regarding the operations that each actor performs using the system. Each functional requirement is stated under identified actors of the system.

All users (excluding unregistered customer)

- Should be able to login.
- Should be able to logout.
- Shall be able to change password.
- Shall be able to view profile.

Unregistered customer

- Should be able to register.
- Should be able to add reservations.
- Shall be able to edit, cancel, confirm reservations.

Registered customer

- Should be able to add reservations.
- Shall be able to edit, cancel, confirm reservations.
- Shall be able to update, and delete the profile
- Shall be able to view reservation logs and provide feedback and ratings.

Receptionist

- Should be able to add reservations.
- Should be able to edit, cancel, confirm reservations.
- Should be able to close reservations.
- Shall be able to manage waiting list.
- Shall be able to request leaves.
- Shall be able to handle reservation recalls.
- Shall be able to view reservation schedule, customers, services, packages, staff.

Employee

- Should be able to view upcoming reservations.
- Shall be able to view service logs.
- Shall be able to request leaves.
- Shall be able to request for reservation recalls.

Manager

- Should be able to add services and packages to the system.
- Shall be able to view reservations schedule.
- Shall be able to view staff members, customers of the system.
- Shall be able to view services and packages.
- Shall be able to update or remove services and packages.
- Shall be able to accept or reject leave requests of the staff members.
- Shall be able to take leaves.
- Shall be able to view employee, daily and monthly reports of the system.

Owner

- Shall be able to perform all operations relevant to manager.
- Should be able to add staff members to the system.
- Should be able to update or remove staff members of the system.
- Shall be able to remove customers from the system.
- Shall be able to view monthly salary reports and view in detail salary statements person wise.
- Shall be able to view salary payment logs.
- Should be able to change rates.
- Shall be able to close the salon.

Admin

- Shall be able to create and remove user accounts of the system.
- Shall be able to view system logs.
- Shall be able to update profile.

In this section the proposed system is modelled using diagrams to provide abstract overview of the overall system in difference aspects and levels. There are mainly 4 types of diagrams included.

1. **Flow Charts:** Shows the workflow or steps of performing operations in the system.
2. **Use Case Diagram:** Shows a system's functionalities and corresponding parties which are engaged with those functionalities.
3. **Component Diagram:** Shows the organizations and dependencies among a set of components.
4. **Activity Diagrams:** Show the flow of activities involved in a process or in data processing.

8.1.1. Flow Charts

Registration, Login & Password Reset

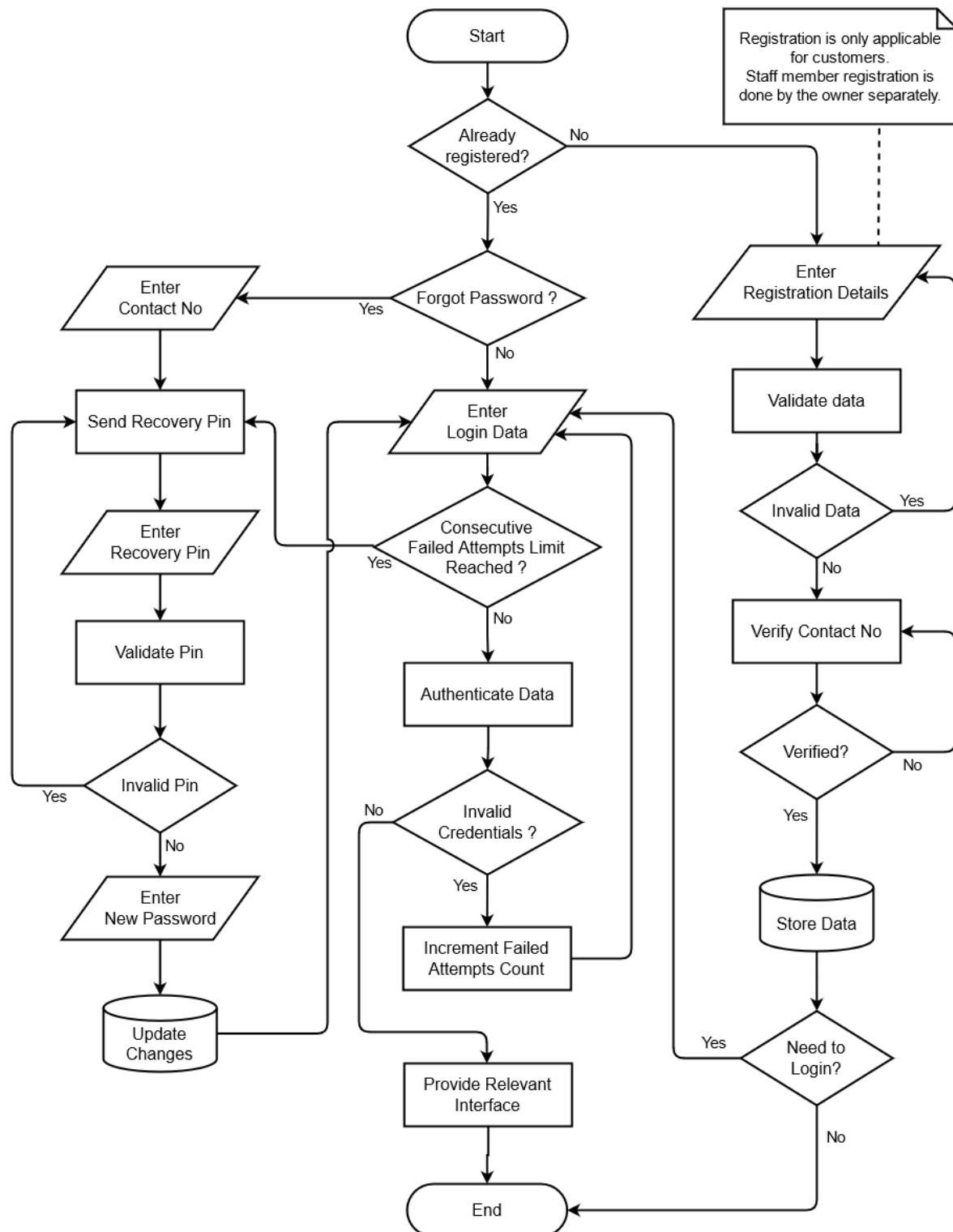


Figure 1: Registration, Login & Password Reset (Flow Chart)

Reservation Management

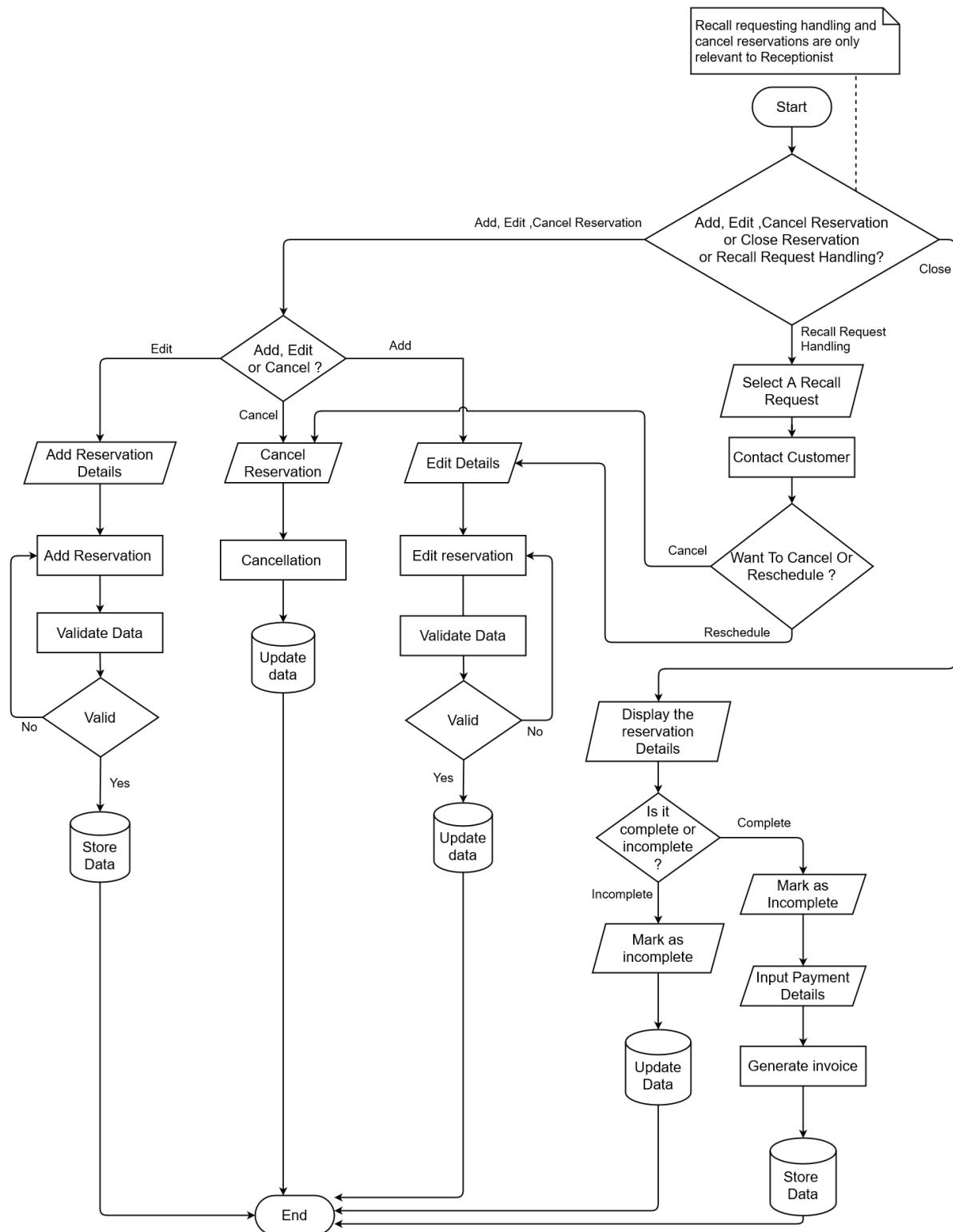


Figure 2: Reservation Management (Flow Chart)

Service & Package Management

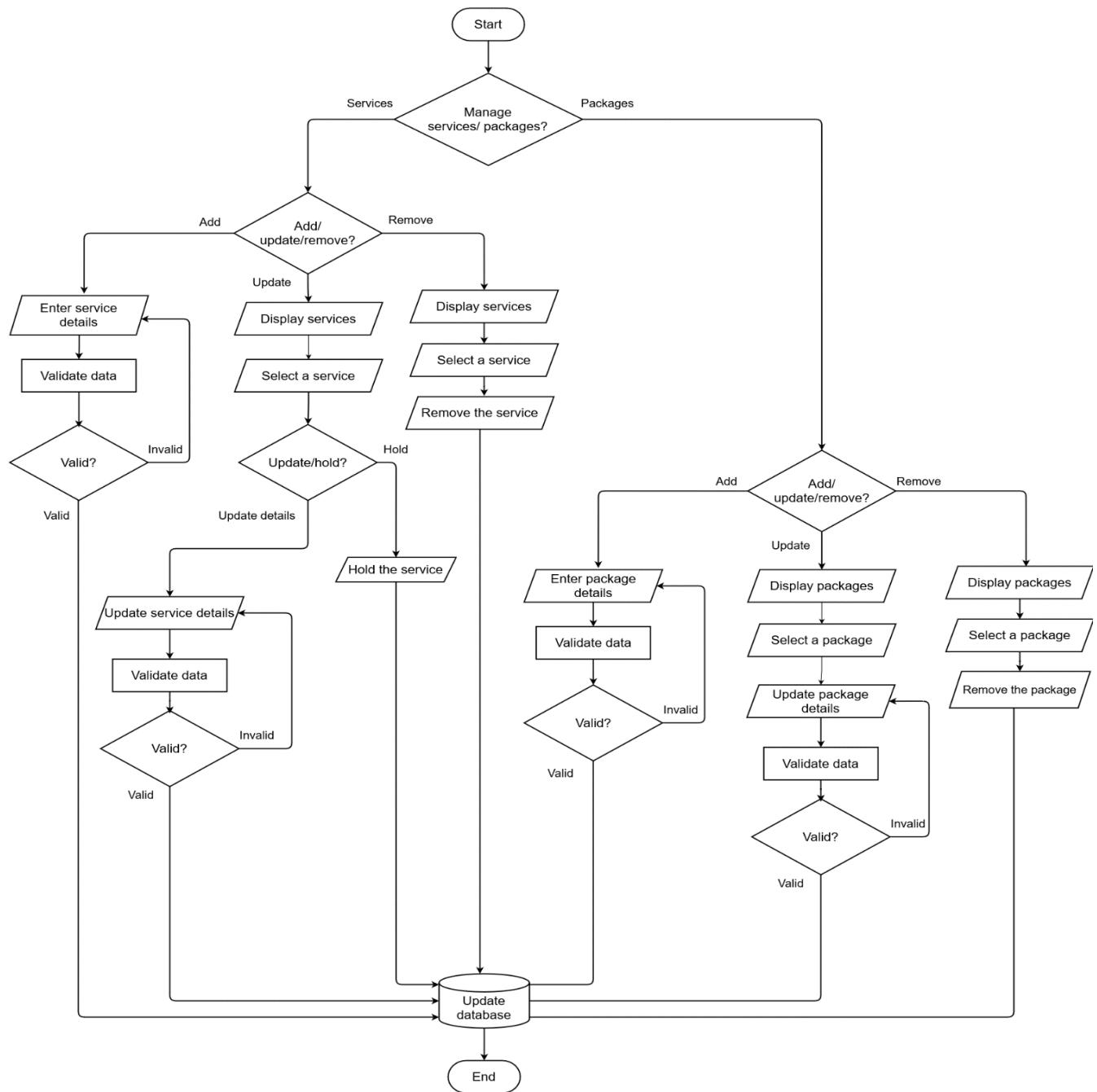


Figure 3: Service & Package Management (Flow Chart)

Staff and Salary Management

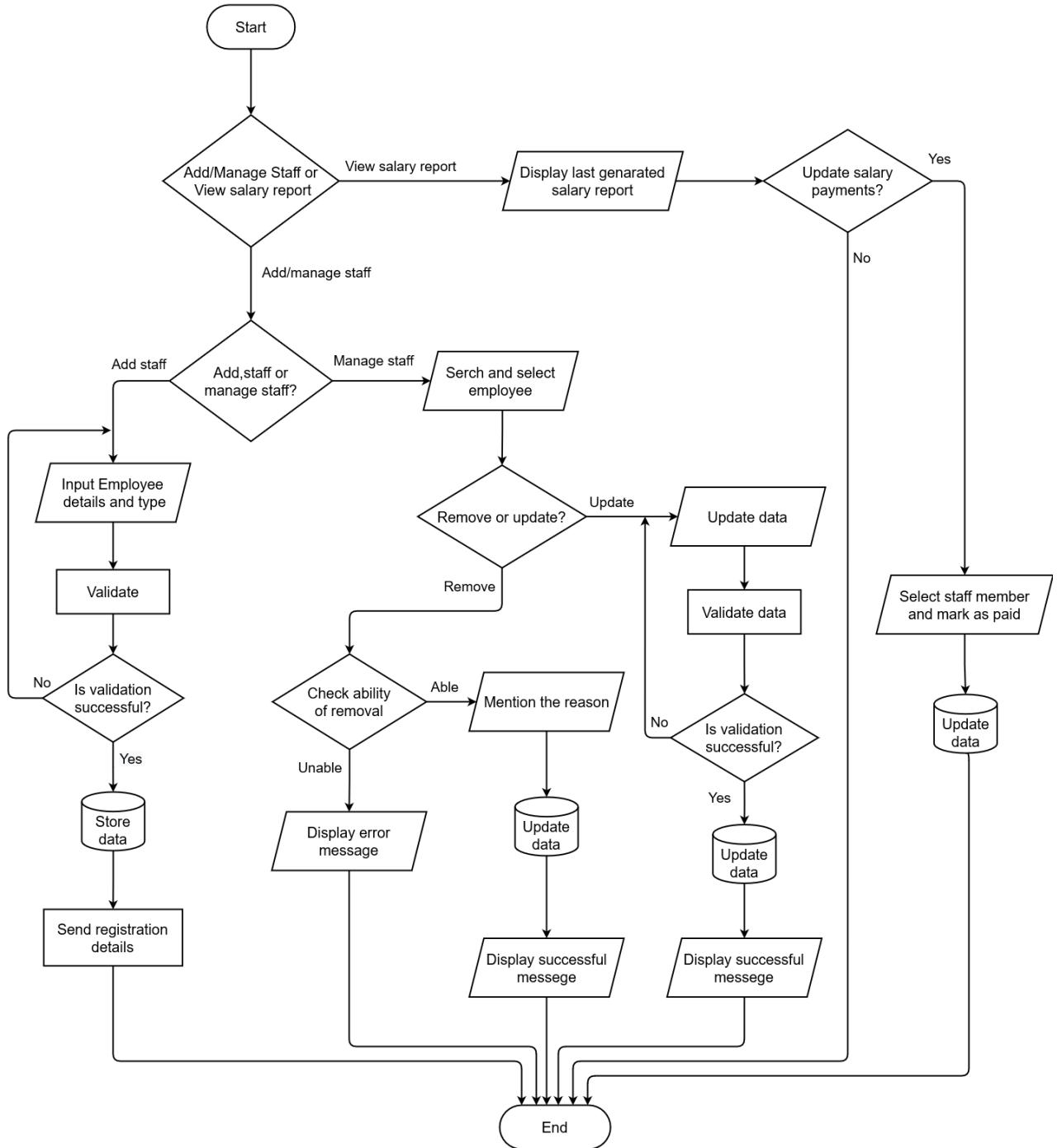


Figure 4: Staff and Salary Management (Flow Chart)

Leave Management

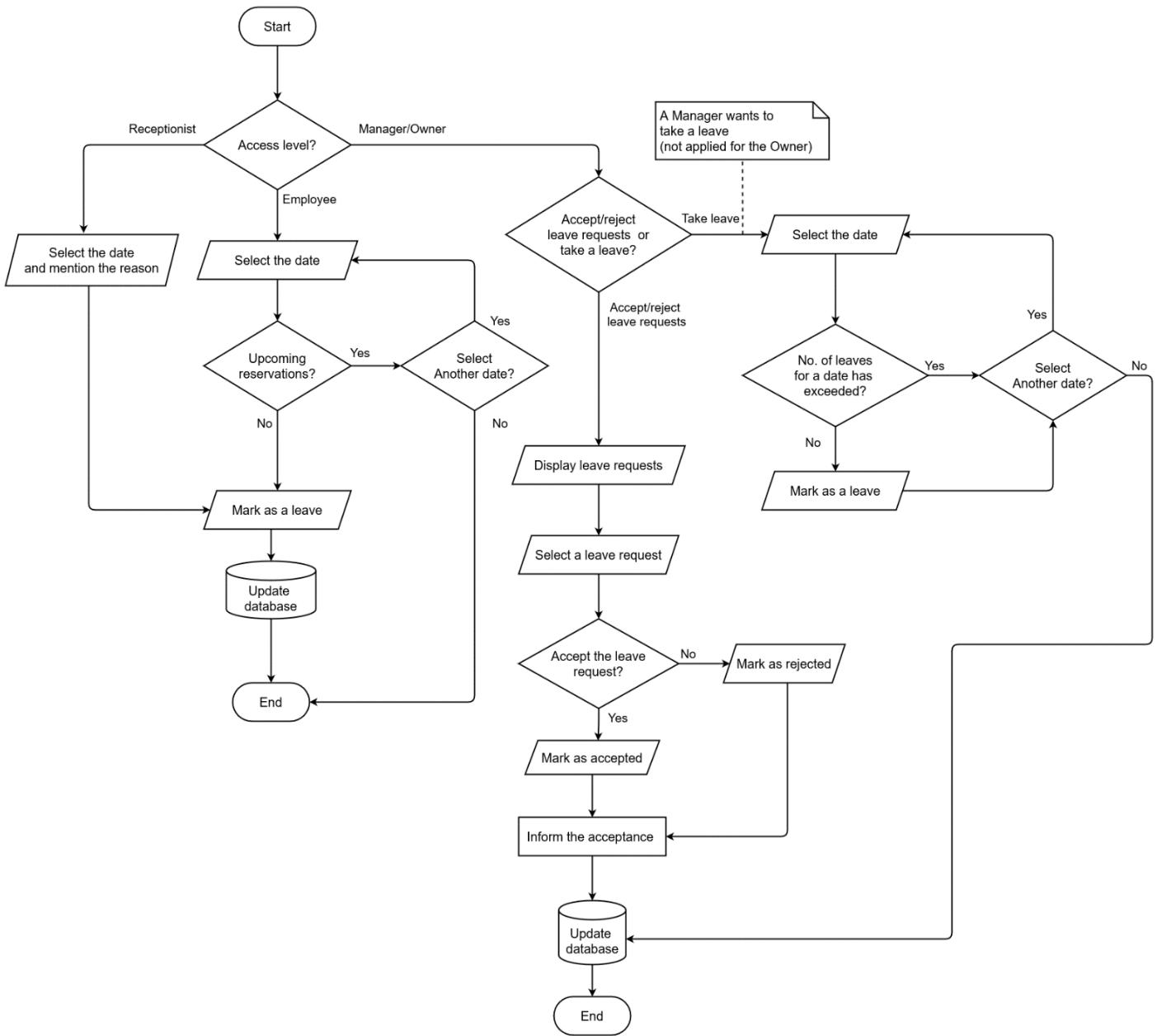


Figure 5: Leave Management (Flow Chart)

8.1.2. Component Diagram

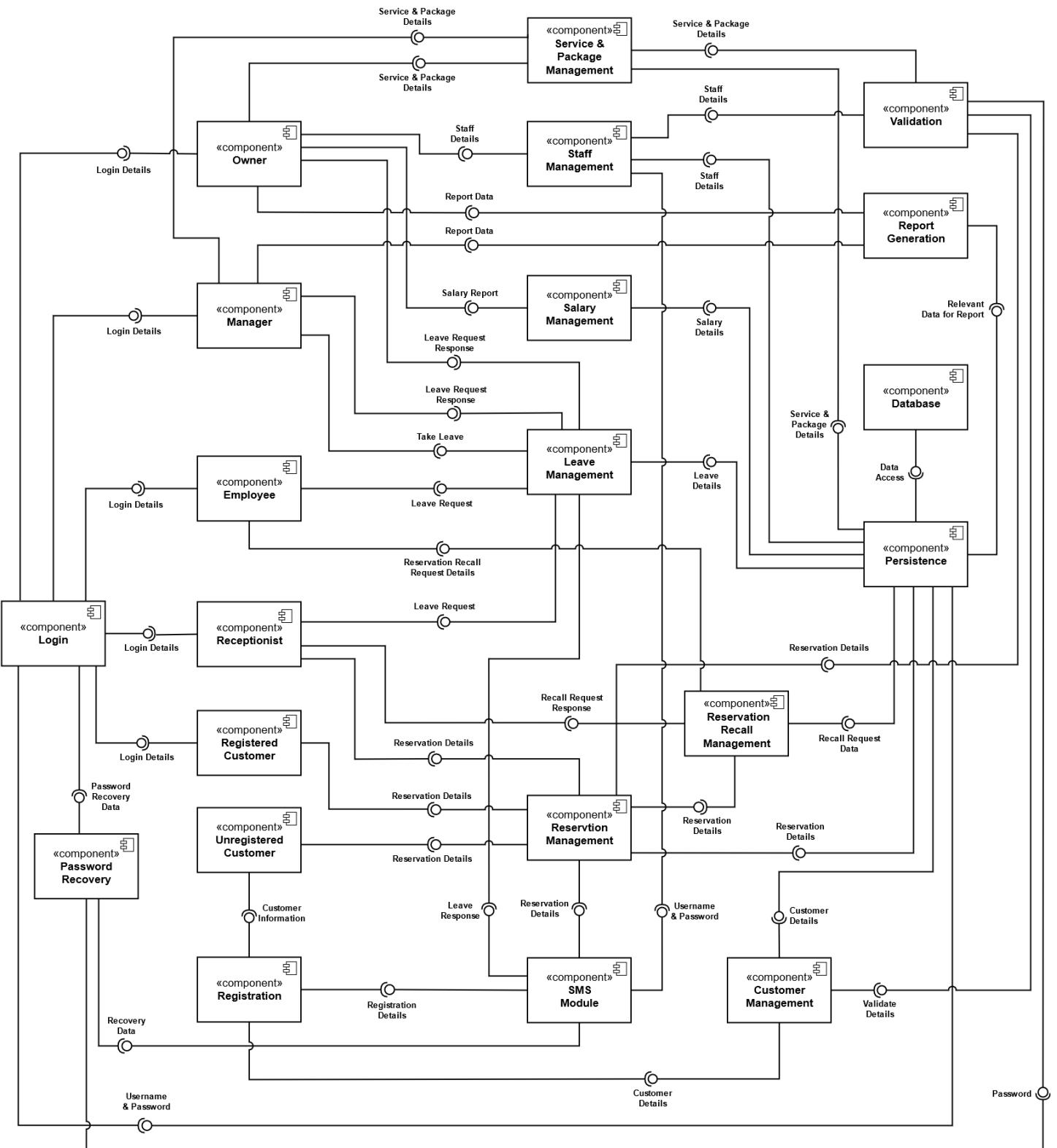


Figure 6: Component Diagram

8.1.3. Use Case Diagram

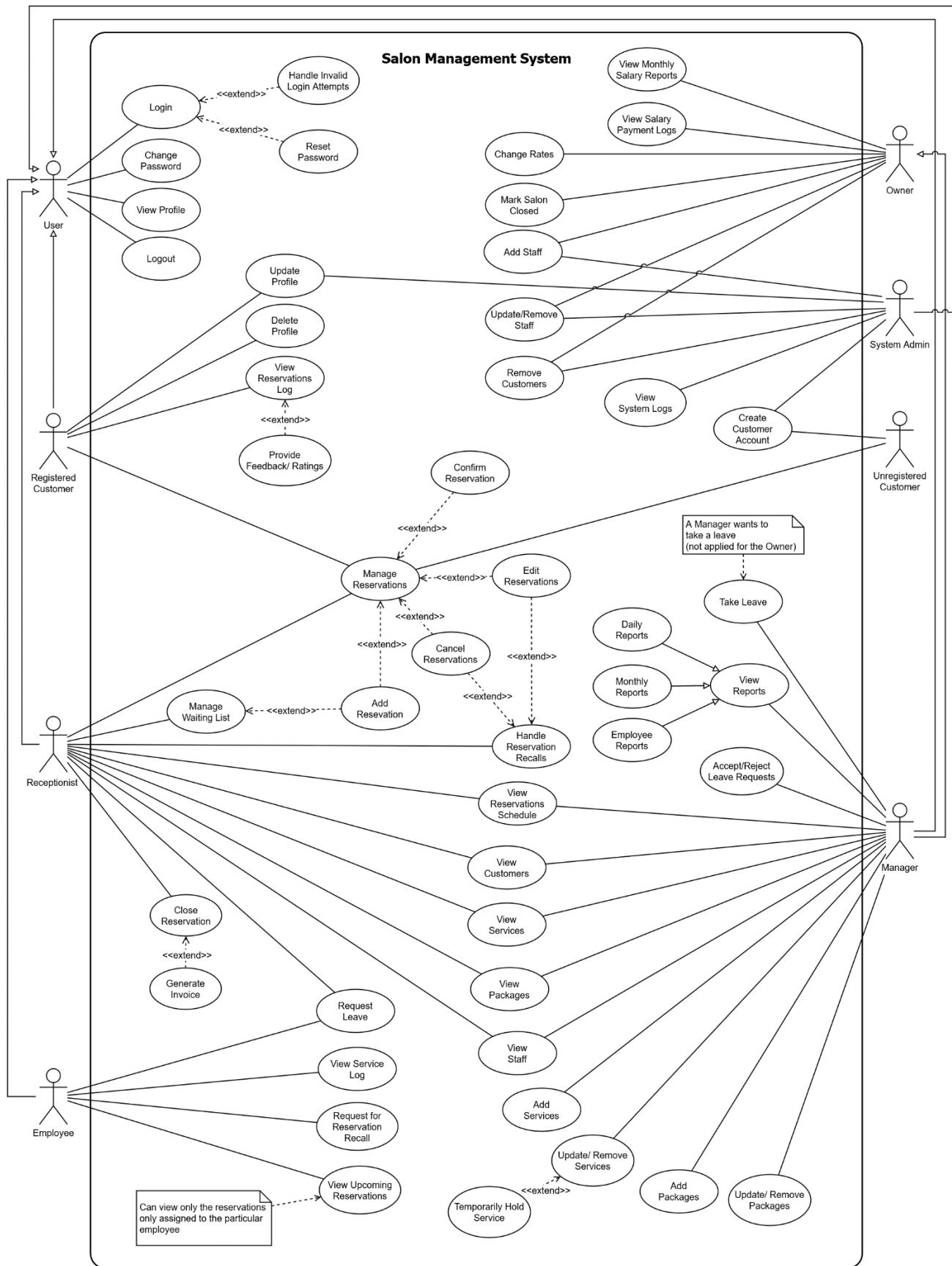


Figure 7: Use Case Diagram

8.1.4. Use Case Descriptions

Use Case	Create Customer Account
Use Case ID	1
Actors	Unregistered Customer, System Admin
Description	Unregistered customers and System Admin can create customer account.
Precondition	Customer is not registered in the system before.
Main Flow	<ol style="list-style-type: none"> 1. Select the “Register” option. 2. Enter registration details. 3. Verify contact number. <p>System updates the database and notifies.</p>
Post Condition	Customer Account created.
Alternative Flows	<p>Entered invalid data</p> <ul style="list-style-type: none"> • System displays an error • Customer can enter data again <p>Incorrect contact no</p> <ul style="list-style-type: none"> • PIN is not received • Customer can enter data again <p>Incorrect PIN</p> <ul style="list-style-type: none"> • PIN verification fails <p>Customer can resend PIN again</p>

Table 1: Registration (Use Case Description)

Use Case	Login
Use Case ID	2
Actors	Registered Customer, Employee, Manager, Owner, Receptionist, System Admin
Description	All users excluding unregistered customers can login to the system.
Precondition	Users should be registered in the system before login.
Main Flow	<ol style="list-style-type: none"> 1. User/System Admin enter their contact number and password. 2. System validates the contact number and password. 3. System display “Login successfully” <p>System provides a relevant interface.</p>
Post Condition	User is logged into the system.
Alternative Flows	<p>Provided contact number or password are invalid</p> <ul style="list-style-type: none"> • Error message is displayed. • User can re-enter credentials or reset password <p>Passwords must be reset when the user enters an invalid password four times consecutively.</p>

Table 2: Login (Use Case Description)

Use Case	Change Password
Use Case ID	3
Actors	Registered Customer, Employee, Manager, Owner, Receptionist, System Admin
Description	User/System Admin can change their current password.
Precondition	Logged in through their accounts.
Main Flow	<ol style="list-style-type: none"> 1. Reg. User/System Admin click the “Change password” option. 2. System asks for the current password. 3. User/System Admin enters the current password. 4. System validates the current password. 5. System asks for the new password two times. 6. System validates and updates the new password. 7. System display “Password Changed Successfully”
Post Condition	Password has been changed.
Alternative Flows	<p>Entered current password is invalid.</p> <ul style="list-style-type: none"> • System displays an error message, and cannot change the password. The user can try again. <p>If the two entries of the new password are not identical an error message is displayed.</p> <ul style="list-style-type: none"> • The user/System Admin can re-enter the new password.

Table 3: Change Password (Use Case Description)

Use Case	View profile
Use Case ID	4
Actors	Registered Customer, Employee, Manager, Owner, Receptionist, System Admin
Description	User/System Admin can view their profiles and check their profile details.
Precondition	Logged in through their accounts.
Main Flow	<ol style="list-style-type: none"> 1. User/System Admin click the “profile” option. 2. System displays their profile details.
Post Condition	None
Alternative Flows	None

Table 4: View Profile (Use Case Description)

Use Case	Logout
Use Case ID	5
Actors	Registered Customer, Employee, Manager, Owner, Receptionist, System Admin
Description	User/System admin can log out their accounts.
Precondition	Logged in through their accounts.
Main Flow	<ol style="list-style-type: none"> 1. User/System admin can click the “Logout” option. 2. User/System Admin logout by the system. 3. Display “Log out successfully”
Post Condition	User/System admin is log out by the system.
Alternative Flows	None

Table 5: Logout (Use Case Description)

Use Case	Update Profile
Use Case ID	6
Actors	Registered Customer, System Admin
Description	Already registered customer/System Admin can update profile details which were entered in the initial registration process
Precondition	Already registered as a customer in the system. Logged in as a registered customer or System Admin.
Main Flow	<ol style="list-style-type: none"> 1. Reg. Customer/Admin selects the “Update Profile” option. 2. Reg. Customer/Admin makes necessary changes and proceeds. 3. System validates the changes. 4. If the contact number is changed it is verified by an SMS pin. System updates the database and notifies.
Post Condition	<ol style="list-style-type: none"> 5. Profile data has been updated.
Alternative Flows	Data entered are invalid <ul style="list-style-type: none"> • Error message is displayed. Reg. Customer/system Admin can re-enter or cancel.

Table 6: Update Profile (Use Case Description)

Use Case	Delete Profile
Use Case ID	7
Actors	Registered Customer
Description	Registered customer can delete their profile
Precondition	Customer is logged in to the system.
Main Flow	<ol style="list-style-type: none"> 1. Reg. Customer selects the “Delete Profile” option. 2. System gets a confirmation from the Reg. Customer. 3. System checks whether the customer does not have any upcoming reservations. 4. If not, Reg. Customer’s password is verified. 5. System updates the database and notifies.
Post Condition	Reg. Customer’s profile is removed.
Alternative Flows	<p>The Customer has upcoming reservations.</p> <ul style="list-style-type: none"> • Error is displayed and the process is aborted. <p>Entered invalid password.</p> <ul style="list-style-type: none"> • Error message is displayed. • Reg. Customer can re-enter or cancel.

Table 7: Delete Profile (Use Case Description)

Use Case	View Reservations Log
Use Case ID	8
Actors	Registered Customer
Description	Registered customer can view their history of reservations.
Precondition	Customer is logged in to the system.
Main Flow	<ol style="list-style-type: none"> 1. Reg. Customer selects the “Reservations Log” option. 2. System retrieves and displays Reg. Customer’s reservations.
Post Condition	List of reservations is displayed.
Alternative Flows	<p>Provide feedback to the salon.</p> <p>Provide ratings for the employee.</p>

Table 8: View Reservations Log (Use Case Description)

Use Case	Add Reservation
Use Case ID	9
Actors	Registered Customer, Unregistered Customer, Receptionist
Description	A reservation is placed to get a service for the customer.
Precondition	a. Logged in as a receptionist/ a registered customer or, b. Not logged in. (Placing reservation as an unregistered customer)
Main Flow	<ol style="list-style-type: none"> 1. Select the “Add Reservation” option. 2. <ol style="list-style-type: none"> 2.1. Receptionist enter customer details or, 2.2. Registered Customer proceeds or, 2.3. Unregistered Customer proceeds 3. Select Category and Service. 4. Select an employee if required. 5. Select Date and Time. 6. If an unregistered customer contact number is verified 7. <ol style="list-style-type: none"> 7.1. If the slot is already reserved, customers can join the waiting list. 7.2. Else the reservation is placed 8. Confirm & proceed.
Post Condition	Reservation is placed and notifications are sent to the customer and employee.
Alternative Flows	If unregistered customers contact no is invalid <ul style="list-style-type: none"> • An error message is displayed and can re-enter again.

Table 9: Add Reservation (Use Case Description)

Use Case	Edit Reservation
Use Case ID	10
Actors	Registered Customer, Unregistered Customer, Receptionist
Description	A previously placed reservation can be edited
Precondition	Logged in as a receptionist/ a registered customer or, Not logged in. (Editing the reservation as an unregistered customer)
Main Flow	<p>Either of the following 3 can be the followed set of activities.</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> 1.1. Receptionist selects a reservation. 1.2. Make changes in the reservation. 1.3. Confirm and proceed. 2. <ol style="list-style-type: none"> 2.1. Reg. Customer selects the reservation from his/her reservation list. 2.2. Make changes in the reservation. 2.3. Confirm and proceed. 3. <ol style="list-style-type: none"> 3.1. Unregistered customer enters ReservationID and contact number to access the reservation. 3.2. Make changes in the reservation. 3.3. Confirm and proceed.
Post Condition	The reservation is modified. Employee is informed about the changes.
Alternative Flows	If unregistered customer enters invalid ReservationID and contact no An error message is displayed and can re-enter again.

Table 10: Edit Reservation (Use Case Description)

Use Case	Cancel Reservation
Use Case ID	11
Actors	Registered Customer, Unregistered Customer, Receptionist
Description	A previously placed reservation is getting cancelled.
Precondition	Logged in as a receptionist/ a registered customer or, Not logged in. (Cancelling reservation as a unregistered customer)
Main Flow	<p>Either of the following 3 can be the followed set of activities.</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> 1.1. Receptionist selects a reservation. 1.2. Mark cancellation. 1.3. Confirm and proceed. 2. <ol style="list-style-type: none"> 2.1. Reg. Customer selects the reservation from his/her reservation list. 2.2. Mark cancellation. 2.3. Confirm and proceed. 3. <ol style="list-style-type: none"> 3.1. Unregistered customer enters ReservationID and contact number to access the reservation. 3.2. Mark cancellation. 3.3. Confirm and proceed.
Post Condition	The reservation is cancelled. The Employee is informed about the cancellation.
Alternative Flows	If unregistered customer enters invalid ReservationID and contact no. <ul style="list-style-type: none"> • An error message is displayed and can re-enter again.

Table 11: Cancel Reservation (Use Case Description)

Use Case	Confirm Reservation
Use Case ID	12
Actors	Registered Customer, Unregistered Customer, Receptionist
Description	Confirmation of reservations which have been placed more than 7 days prior.
Precondition	Logged in as a receptionist or Customer has received the confirmation link
Main Flow	<p>Either of the following 3 can be the followed set of activities.</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> 1.1. Receptionist selects a reservation. 1.2. Customer is contacted. 1.3. Reservation is marked as confirmed or cancelled. 2. <ol style="list-style-type: none"> 2.1. Customer contacts the receptionist. 2.2. Receptionist selects the reservation. 2.3. Reservation is marked as confirmed or cancelled. 3. <ol style="list-style-type: none"> 3.1. Customer selects the received link and visits the site. 3.2. Reservation is marked, confirmed or cancelled by the customer.
Post Condition	Reservation is marked, confirmed or cancelled. The employee is informed if cancelled.
Alternative Flows	None

Table 12: Confirm Reservation (Use Case Description)

Use Case	View Upcoming Reservations
Use Case ID	13
Actors	Employee
Description	Employees can check details of the reservation.
Precondition	Logged in through an employee account.
Main Flow	<ol style="list-style-type: none"> Employees click the “View Upcoming Reservations” option. System displays the upcoming reservation list. Employee can select one for check the In-detail view of the reservation or employees can Cancel the process.
Post Condition	None
Alternative Flows	None

Table 13: View Upcoming Reservations (Use Case Description)

Use Case	View Services Log
Use Case ID	14
Actors	Employee
Description	Employees can view relevant reservation details which were done.
Precondition	Login as employee
Main Flow	<ol style="list-style-type: none"> Employee selects the “View services log ”option. System display Reservation list which was done. Employees can select and check more details of the reservation.
Post Condition	None
Alternative Flows	None

Table 14: View Services Log (Use Case Description)

Use Case	Request for Reservation Recall
Use Case ID	15
Actors	Employee
Description	The employee can request to remove the reservation for any reasonable cause.
Precondition	Must be logged in as an employee. There must be an upcoming reservation for the particular employee.
Main Flow	<ol style="list-style-type: none"> 1. Employees select “Remove reservation”. 2. System displays Upcoming reservations. 3. Employees select the reservation. 4. System retrieves Reservation details and checks the remaining days. 5. If remaining days are greater than two, Employee can mention the reason. 6. System record request details and display “Request sent successfully”
Post Condition	Reservation recall request is sent.
Alternative Flows	Reservation is in less than two days <ul style="list-style-type: none"> • Display “Cannot remove the reservation”

Table 15: Request for Reservation Recall (Use Case Description)

Use Case	Request a leave
Use Case ID	16
Actors	Employee, Receptionist
Description	Employees and receptionists can request leave through the system.
Precondition	Logged in through an Employee or Receptionist Account.
Main Flow	<ol style="list-style-type: none"> 1. Employees/receptionists select “Request leave option”. 2. Employees/receptionists select a date. 3. If an employee, the system checks the ability to request that day. 4. If it is possible to request leave, Employees/Receptionists can mention the reason. 5. System record leaves details. 6. System display “Leave request successfully”
Post Condition	Leave request is sent.
Alternative Flows	Requested day already has reservations. <ul style="list-style-type: none"> • Cannot request that day

Table 16: Request a Leave (Use Case Description)

Use Case	Manage Waiting List
Use Case ID	17
Actors	Receptionist
Description	Waiting list managed by contacting the customer and adding a new reservation or cancelling the entry.
Precondition	Logged in as a receptionist A waiting list entry is required to manage.
Main Flow	<ol style="list-style-type: none"> 1. Receptionist selects a waiting list entry. 2. System retrieves and displays waiting list entry details 3. Customer is contacted by the receptionist. <ol style="list-style-type: none"> 3.1. New Reservation is placed, or. 3.2. Waiting list entry is removed, based on the customer's decision.
Post Condition	Waiting list entry is managed
Alternative Flows	None

Table 17: Manage Waiting List (Use Case Description)

Use Case	Handle Reservation Recall
Use Case ID	18
Actors	Receptionist
Description	Edit or Cancel Reservations depending on the customers response, if the assigned employee has requested for a recall.
Precondition	Logged in as a receptionist. A Reservation Recall has been requested.
Main Flow	<ol style="list-style-type: none"> 1. Receptionist selects a request. 2. System displays the in-detail request made by the employee. 3. Receptionist decides whether to consider. 4. If considered, the receptionist contacts the customer to check his/her decision. 5. Receptionist proceeds with the reservation edit or cancellation.
Post Condition	Recall request response is informed to the employee.
Alternative Flows	<ul style="list-style-type: none"> • Request is rejected if the receptionist decides not to consider.

Table 18: Handle Reservation Recall (Use Case Description)

Use Case	Close Reservation
Use Case ID	19
Actors	Receptionist
Description	Reservation is marked as closed. It can be completed or incomplete.
Precondition	Logged in as a receptionist A Reservation is required to be closed.
Main Flow	<ol style="list-style-type: none"> 1. Receptionist selects the reservation. 2. System retrieves and displays the reservation information 3. <ol style="list-style-type: none"> 3.1. Mark as incomplete. 3.2. Mark as complete. 4. Invoice is generated if marked as complete.
Post Condition	Reservation is closed and marked as completed or incomplete.
Alternative Flows	None

Table 19: Close Reservation (Use Case Description)

Use Case	View Reservation Schedule
Use Case ID	20
Actors	Manager/Owner/Receptionist
Description	Manager/Owner/Receptionist can view reservation schedule of the system
Precondition	Logged into the system through Manager/Owner/Receptionist account
Main Flow	<ol style="list-style-type: none"> 1. Select the “View Reservation Schedules” option. 2. Display reservation schedule. 3. If the Manager/Owner/Receptionist selects the “View Cancelled Reservations”. <ol style="list-style-type: none"> 3.1. Display cancelled reservation schedule 3.2. Select a cancelled reservation 3.3. Display cancelled reservation details 4. Else the Manager/Owner/Receptionist selects the “View Rescheduled Reservations”. <ol style="list-style-type: none"> 4.1. Display rescheduled reservation schedule 4.2. Select a rescheduled reservation 4.3. Display rescheduled reservation details 5. If the Manager/Owner/Receptionist wants to view details of the reservation. <ol style="list-style-type: none"> 5.1. Select a reservation 5.2. Display in detail view
Post Condition	None
Alternative Flows	None

Table 20: View Reservation Schedule (Use Case Description)

Use Case	View Customer
Use Case ID	21
Actors	Manager/Owner/Receptionist
Description	Manager/Owner/Receptionist can view customers of the system
Precondition	Logged into the system through Manager/Owner/Receptionist account
Main Flow	<ol style="list-style-type: none"> Select the “View Customer” option. Search and select the customer. Display customer records.
Post Condition	None
Alternative Flows	None

Table 21: View Customer (Use Case Description)

Use Case	View Staff
Use Case ID	22
Actors	Manager/Owner/Receptionist
Description	Manager/Owner/Receptionist can view the staff of the system
Precondition	Logged into the system through Manager/Owner/Receptionist account
Main Flow	<ol style="list-style-type: none"> Select the “View Staff” option. Search and select the staff member. Display staff member records.
Post Condition	None
Alternative Flows	None

Table 22: View Staff (Use Case Description)

Use Case	View Services
Use Case ID	23
Actors	Manager/Owner/Receptionist
Description	Manager/Owner/Receptionist can view services of the system
Precondition	Logged into the system through Manager/Owner/Receptionist account
Main Flow	<ol style="list-style-type: none"> Select the “View Services” option. Search and select the service. Display service records.
Post Condition	None
Alternative Flows	None

Table 23: View Services (Use Case Description)

Use Case	View Packages
Use Case ID	24
Actors	Manager/Owner/Receptionist
Description	Manager/Owner/Receptionist can view packages of the system
Precondition	Logged into the system through Manager/Owner/Receptionist account
Main Flow	<ol style="list-style-type: none"> 1. Select the “View Packages” option. 2. Search and select the package. 3. Display package records.
Post Condition	None
Alternative Flows	None

Table 24: View Packages (Use Case Description)

Use Case	Accept/Reject Leave Requests
Use Case ID	25
Actors	Manager/Owner
Description	Manager/Owner can grant leave of the staff members
Precondition	Employee has requested leave. The Manager/Owner should log into the system through their accounts.
Main Flow	<ol style="list-style-type: none"> 1. Select the “Accept/Reject Leave Request” option. 2. Display requested leaves. 3. Select a leave request. 4. Display leaves records. 5. If Employee has got leaves more than the limit <ol style="list-style-type: none"> 5.1. Display “Leave limit has exceeded” 6. Else Employee has got leaves less than the limit <ol style="list-style-type: none"> 6.1. Display no of remaining leaves 7. Manager/Owner accept or reject the leave and mark as an accepted or rejected leave. 8. Update leave records.
Post Condition	Update the leave records of the system.
Alternative Flows	None

Table 25: Accept/Reject Leave Requests (Use Case Description)

Use Case	View Reports
Use Case ID	26
Actors	Manager/Owner
Description	Manager/Owner can generate reports of the system.
Precondition	Manager/Owner wants to take a report. Manager/Owner should log into the system through their accounts.
Main Flow	<ol style="list-style-type: none"> Select the “View Reports” option. Select the type of the report that the Manager/Owner wants. Display the report details.
Post Condition	None
Alternative Flows	None

Table 26: View Reports (Use Case Description)

Use Case	Employee Report, Parent 26-S7
Use Case ID	27
Actors	Manager/Owner
Description	Manager/Owner can generate employee reports of the system.
Precondition	Manager/Owner wants to take an employee report. Manager/Owner should log into the system through their accounts.
Main Flow	<ol style="list-style-type: none"> Select the “Employee Reports” option. Select the employee. Display employee reports.
Post Condition	None
Alternative Flows	None

Table 27: Employee Report (Use Case Description)

Use Case	Daily Report, Parent 26-S7
Use Case ID	28
Actors	Manager/Owner
Description	Manager/Owner can generate daily reports of the system.
Precondition	Manager/Owner wants to take a daily report. Manager/Owner should log into the system through their accounts.
Main Flow	<ol style="list-style-type: none"> Select the “Daily Reports” option. Select the date. Display the daily report.
Post Condition	None
Alternative Flows	None

Table 28: Daily Report (Use Case Description)

Use Case	Monthly Report, Parent 26-S7
Use Case ID	29
Actors	Manager/Owner
Description	Manager/Owner can generate monthly reports of the system.
Precondition	Manager/Owner wants to take a monthly report. Manager/Owner should log into the system through their accounts.
Main Flow	<ol style="list-style-type: none"> 1. Select the “Monthly Reports” option. 2. Select the month. 3. Display the monthly report.
Post Condition	None
Alternative Flows	None

Table 29: Monthly Report (Use Case Description)

Use Case	Add Services
Use Case ID	30
Actors	Manager/Owner
Description	Manager/Owner can add services to the system
Precondition	Logged into the system through Manager/Owner account
Main Flow	<ol style="list-style-type: none"> 1. Select the “Add services” option. 2. Add service name, category, rates, other details and add employees. 3. Validate entered data. 4. Add the service to the system.
Post Condition	New service is added to the system.
Alternative Flows	Invalid details are added <ul style="list-style-type: none"> • Display an error message • Give a chance to reenter the details.

Table 30: Add Services (Use Case Description)

Use Case	Update/Remove Services
Use Case ID	31
Actors	Manager/Owner
Description	Manager/Owner can update and remove services of the system
Precondition	Logged into the system through Manager/Owner account
Main Flow	<ol style="list-style-type: none"> 1. Select the “Update/Remove Services” option. 2. Select the service. 3. If the manager/owner selects the “Update/Hold Service” option. <ol style="list-style-type: none"> 3.1. If select the “Update Service” option <ol style="list-style-type: none"> 3.1.1. Update the selected service details. 3.1.2. Validate updated details. 3.1.3. Update the system. 3.2. Else select the “Hold Service” option. <ol style="list-style-type: none"> 3.2.1. Hold the service from the system. 4. Else the manager/owner selects the “Remove Service” option. <ol style="list-style-type: none"> 4.1. Update the system.
Post Condition	Update the system after update/removal.
Alternative Flows	<p>Invalid modification is done</p> <ul style="list-style-type: none"> • Display an error message • Give a chance to update the details.

Table 31: Update/ Remove Services (Use Case Description)

Use Case	Add Packages
Use Case ID	32
Actors	Manager/Owner
Description	Manager/Owner can add packages to the system
Precondition	Logged into the system through Manager/Owner account
Main Flow	<ol style="list-style-type: none"> 1. Select the “Add Packages” option. 2. Enter package details and add services to the package. 3. Enter package discount rate and other details. 4. Calculate the package price. 5. Validate entered data. 6. Add the package to the system.
Post Condition	New package is added to the system.
Alternative Flows	<p>Invalid details are added</p> <ul style="list-style-type: none"> • Display an error message. • Give a chance to reenter the details.

Table 32: Add Packages (Use Case Description)

Use Case	Update/Remove Packages
Use Case ID	33
Actors	Manager/Owner
Description	Manager/Owner can update and remove packages from the system
Precondition	Logged into the system through Manager/Owner account
Main Flow	<ol style="list-style-type: none"> 1. Select the “Update/Remove Packages” option. 2. Select the package. 3. If the manager/owner selects the “Update Package” option. <ol style="list-style-type: none"> 3.1 Update the selected package details. 3.2 Validate updated details. 3.3 Update the system. 4. Else the manager/owner selects the “Remove Package” option. <ol style="list-style-type: none"> 4.1. Update the system.
Post Condition	Update the system after update/removal.
Alternative Flows	<p>Invalid modification is done</p> <ul style="list-style-type: none"> • Display an error message • Give a chance to update the details.

Table 33: Update/Remove Packages (Use Case Description)

Use Case	Take Leave
Use Case ID	34
Actors	Manager
Description	Manager can take leaves from the system
Precondition	<p>Manager wants to take a leave. The Manager/Owner should log into the system through their accounts.</p>
Main Flow	<ol style="list-style-type: none"> 1. Select the “Take Leave” option. 2. Display leaves records. 3. If Employee has got leaves more than the limit <ol style="list-style-type: none"> 3.1. Display “Leave limit has exceeded” 2. Else Employee has got leaves less than the limit <ol style="list-style-type: none"> 2.1. Display no of remaining leaves 3. Select the date. 4. If the leave limit of that date is exceeded <ol style="list-style-type: none"> 4.1. Display “Leave limit has exceeded for the date” 5. Else the leave limit of that date is not exceeded <ol style="list-style-type: none"> 5.1. Display no of remaining leaves in the date 5.2. Mark as a leave. 5.3. Update the no of leaves.
Post Condition	Update the leave records in the system.
Alternative Flows	None

Table 34: Take Leave (Use Case Description)

Use Case	Add staff
Use Case ID	35
Actors	Owner, System Admin
Description	Adding new staff members
Precondition	Logged into the system as owner or System Admin.
Main Flow	<ol style="list-style-type: none"> 1. Select “Add staff” option. 2. Enter staff details and type. 3. Add Staff. 4. Issue the Staff-Id and password.
Post Condition	New staff members were added successfully.
Alternative Flows	<p>Entered invalid data</p> <ul style="list-style-type: none"> • Display an error message • Can enter again

Table 35: Add Staff (Use Case Description)

Use Case	Update/Remove Staff
Use Case ID	36
Actors	Owner, System Admin
Description	Update staff members details, remove staff members.
Precondition	Logged into the system as owner or System Admin
Main Flow	<ol style="list-style-type: none"> 1. Select “Update/Remove Staff members”. 2. Search and select the staff member. 3. If Updating <ol style="list-style-type: none"> 3.1. make changes. 3.2. System validates changes. 3.3. System updates database. 4. Else if removing, <ol style="list-style-type: none"> 4.1. If the staff member is an employee <ol style="list-style-type: none"> 4.1.1.If the employee has upcoming reservation denied the request to delete. 4.1.2.Else delete the employee. 4.2. Else delete the staff member.
Post Condition	Updated/ removed staff successfully or viewed the monthly salary reports.
Alternative Flows	If there are pending works reject the delete request

Table 36: Update/ Remove Staff (Use Case Description)

Use Case	Remove Customer
Use Case ID	37
Actors	Owner, System Admin
Description	Owner and System Admin can remove or view customers.
Precondition	Logged into the system as owner or System Admin.
Main Flow	<ol style="list-style-type: none"> 1. Select Remove Customer option. 2. Search & select the customer. 3. Check whether the customer have upcoming reservations. 4. If the customer has upcoming reservation denied the request to delete the customer. 5. Else delete the customer.
Post Condition	Deleted or viewed the customer.
Alternative Flows	<p>Entered invalid data</p> <ul style="list-style-type: none"> • Customer deleting/ viewing failed • Re-enter the details

Table 37: Remove Customer (Use Case Description)

Use Case	View Monthly salary Reports
Use Case ID	38
Actors	Owner
Description	Generating salary reports of the employees
Precondition	Logged into the system as owner
Main Flow	<ol style="list-style-type: none"> 1. Select “View Monthly Salary Report” option. 2. Owner can view last generated salary report. 3. Owner can update salary payment logs and view a in detail salary statement.
Post Condition	Viewed monthly salary reports.
Alternative Flows	None

Table 38: View Monthly Salary Reports (Use Case Description)

Use Case	View salary payment Logs
Use Case ID	39
Actors	Owner
Description	View staff members' salary logs.
Precondition	Logged into the system as owner
Main Flow	<ol style="list-style-type: none"> 1. Select the “View salary payment logs” option. 2. The Owner can view or print a report of salary payment logs.
Post Condition	Owner viewed Salary payment logs
Alternative Flows	None

Table 39: View Salary Payment Logs (Use Case Description)

Use Case	Change Rates
Use Case ID	40
Actors	Owner
Description	Change the salary rates, leave rates.
Precondition	Logged into the system as owner
Main Flow	<ol style="list-style-type: none"> 1. Select the “change rate” option. 2. Select the rate to change. 3. Change the rates. 4. Update.
Post Condition	Changed rates successfully
Alternative Flows	Input incorrect rates <ul style="list-style-type: none"> • Cancel the current process • Reenter details

Table 40: Change Rates (Use Case Description)

Use Case	Salon Close
Use Case ID	41
Actors	Owner
Description	Close the salon
Precondition	Log in
Main Flow	<ol style="list-style-type: none"> 1. Select the close salon option. 2. Select the date. 3. Owner can cancel the decision by considering the number of reservation or depending on any other reasons. 4. Owner can postpone the date or close the salon and recall the already placed appointments on that date.
Post Condition	Salon closed for a specific date.
Alternative Flows	Regarding the number of appointments on that period cancel or postpone the closing date.

Table 41: Salon Close (Use Case Description)

Use Case	View System Logs
Use Case ID	42
Actors	System Admin
Description	System Admin can check system logs.
Precondition	Logged into the system as System Admin.
Main Flow	<ol style="list-style-type: none"> 1. Select “View System log” option. 2. Display System logs
Post Condition	None
Alternative Flows	None

Table 42: View System Logs (Use Case Description)

8.1.5. Activity Diagrams

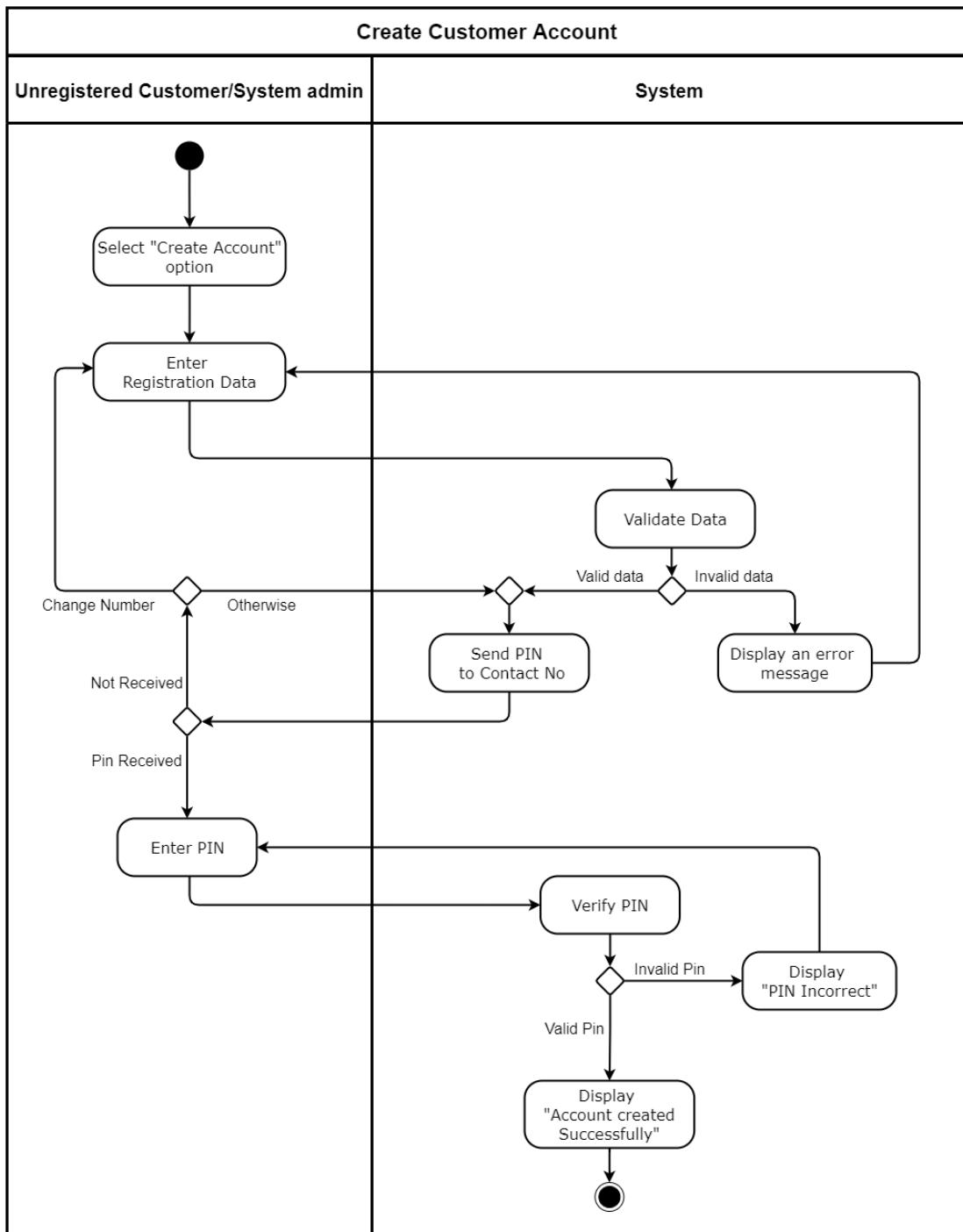


Figure 8: Create Customer Account (Activity Diagram)

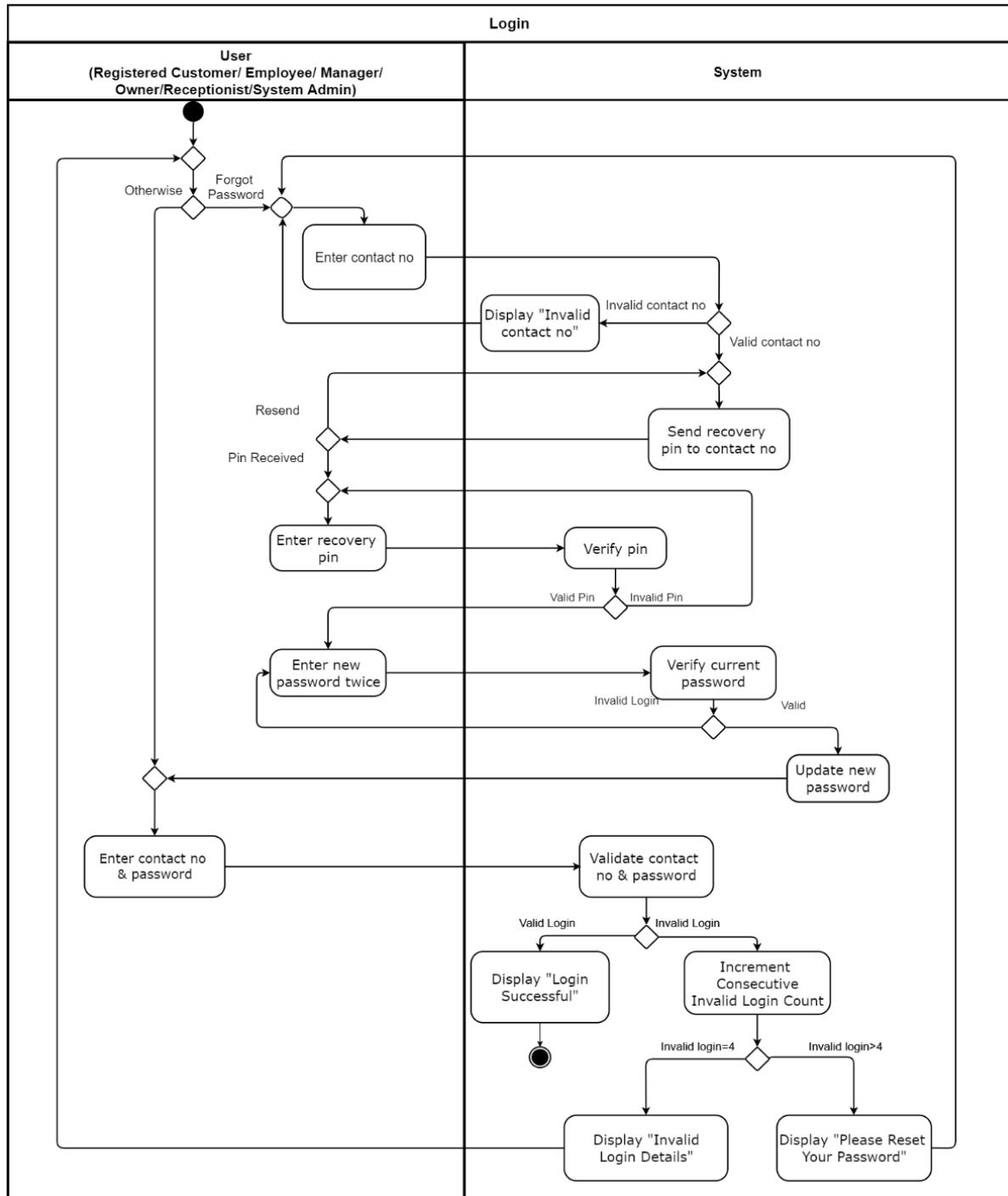


Figure 9: Login (Activity Diagram)

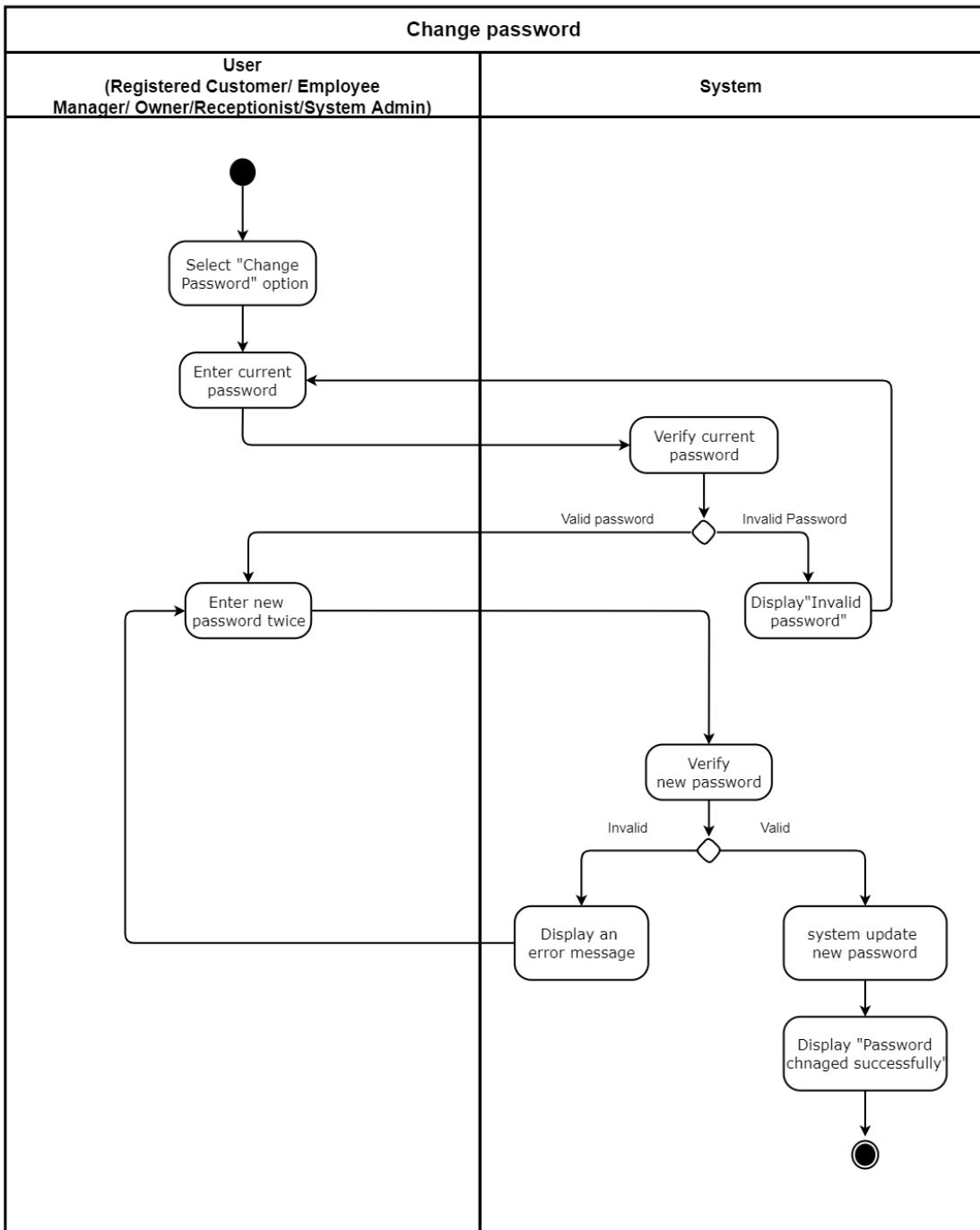


Figure 10: Change Password (Activity Diagram)

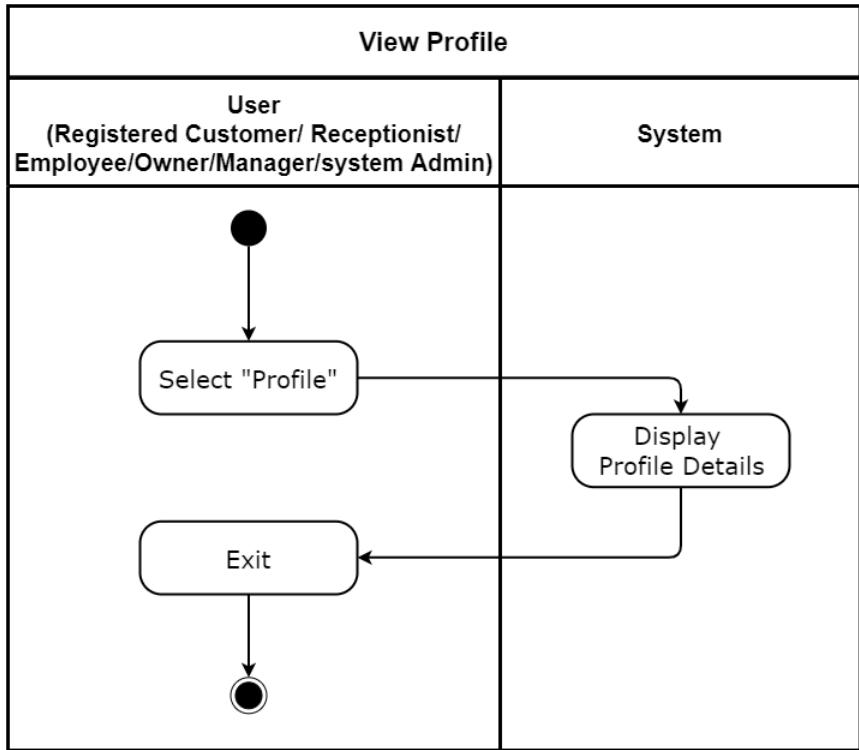


Figure 11: View Profile (Activity Diagram)

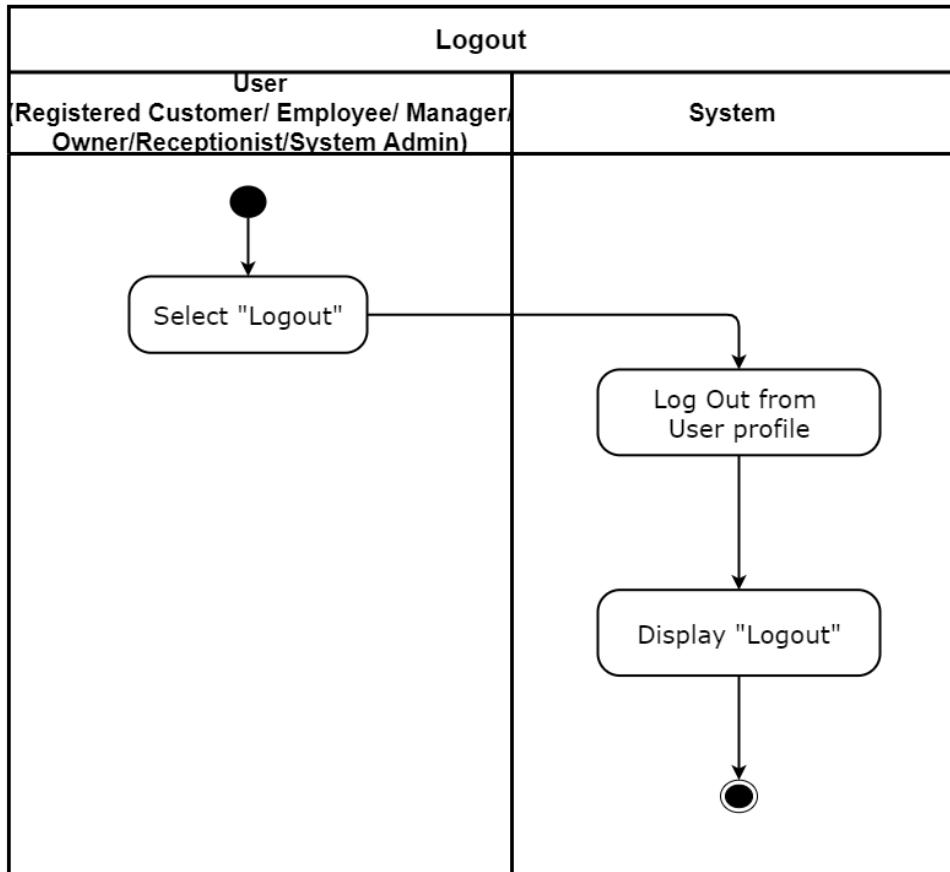


Figure 12:Logout (Activity Diagram)

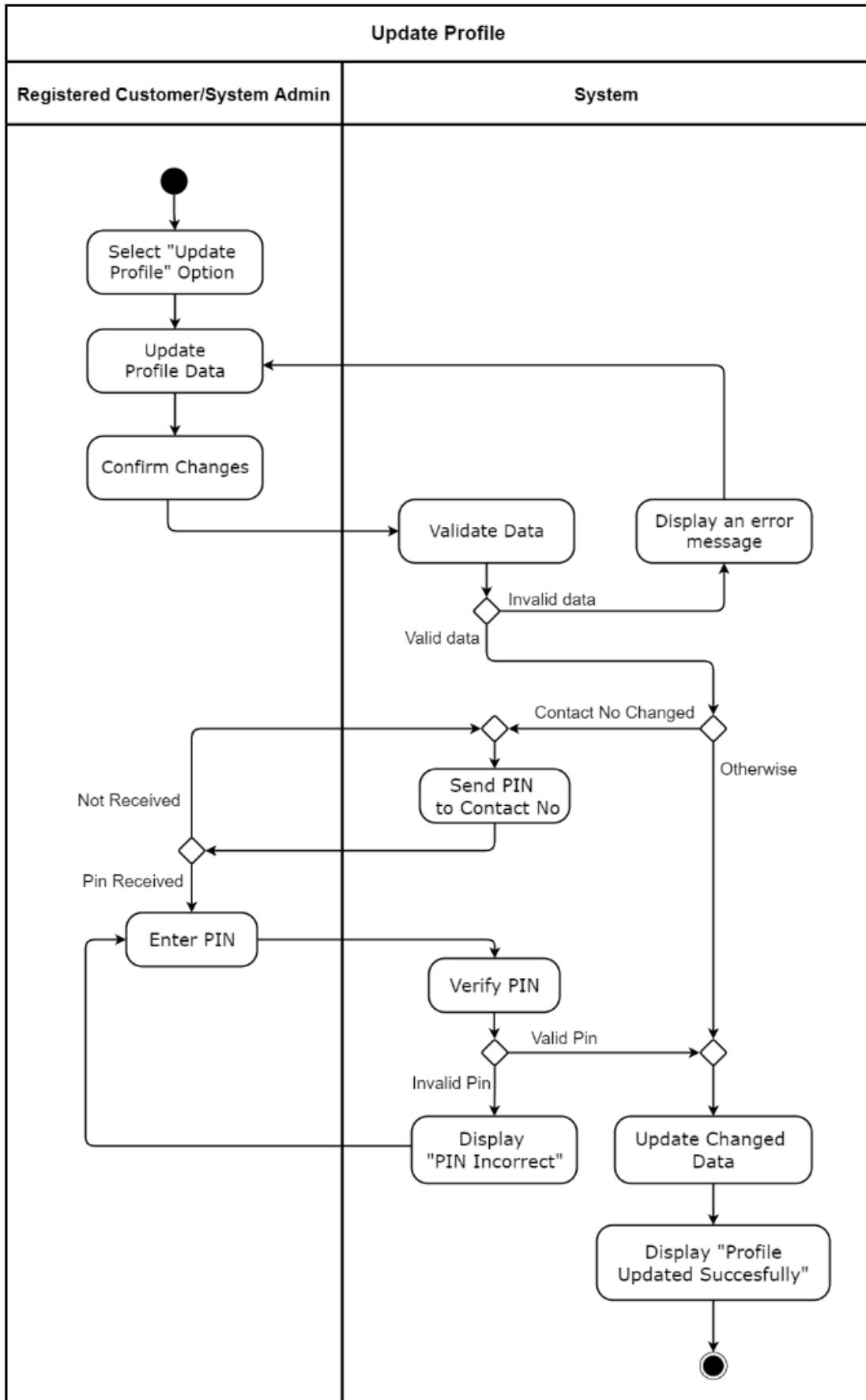


Figure 13: Update Profile (Activity Diagram)

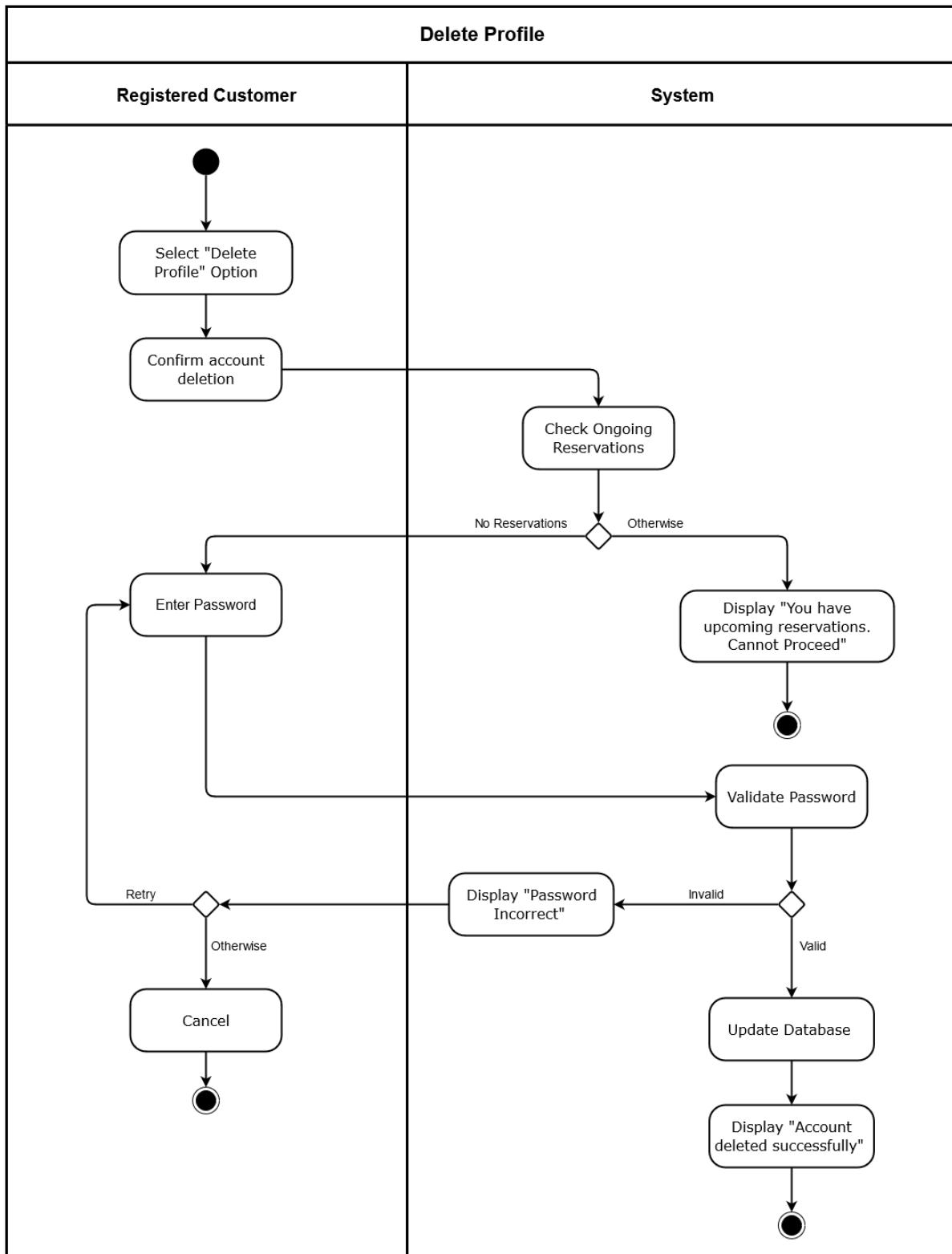


Figure 14: Delete Profile (Activity Diagram)

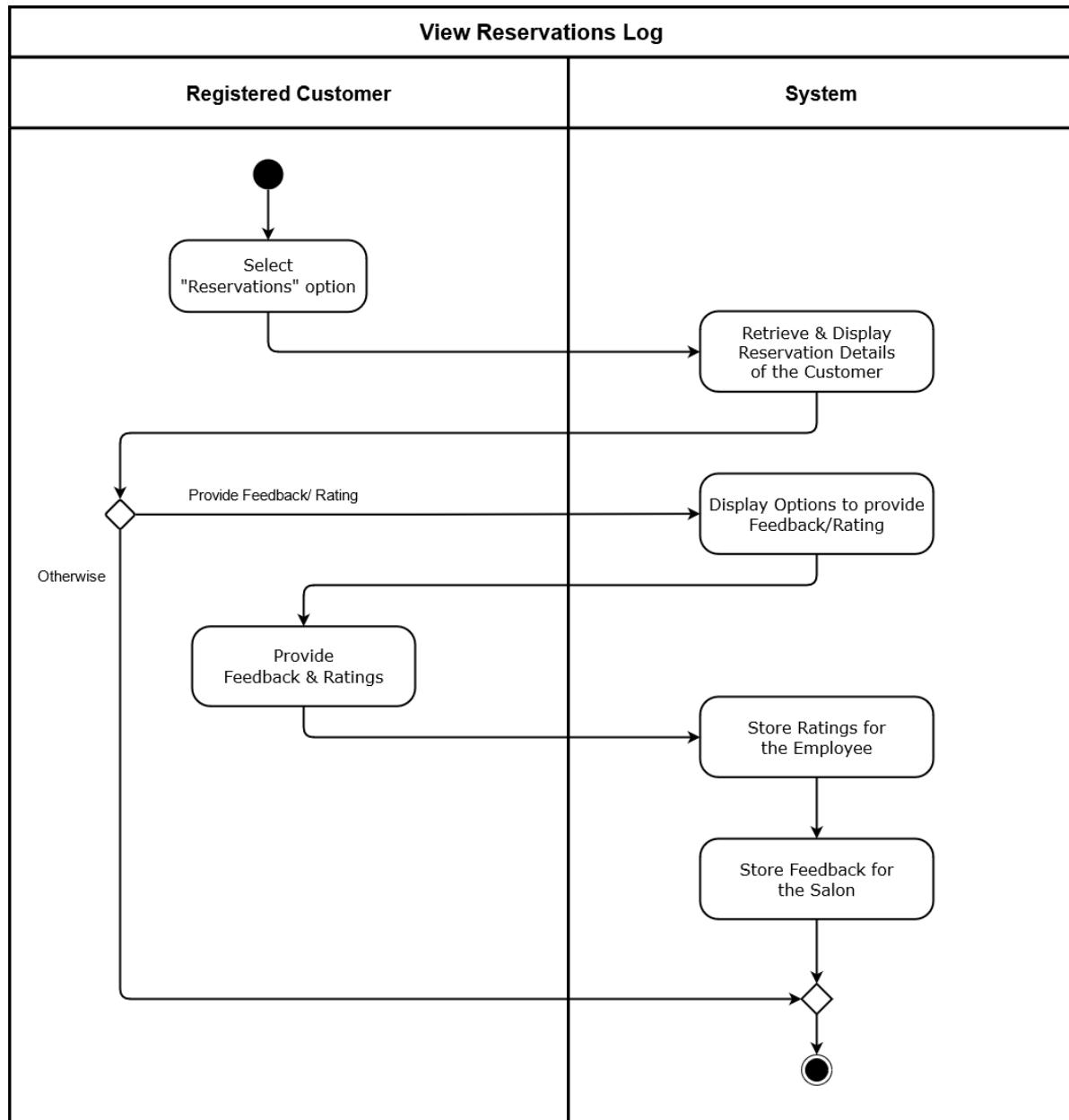


Figure 15: View Reservations Log (Activity Diagram)

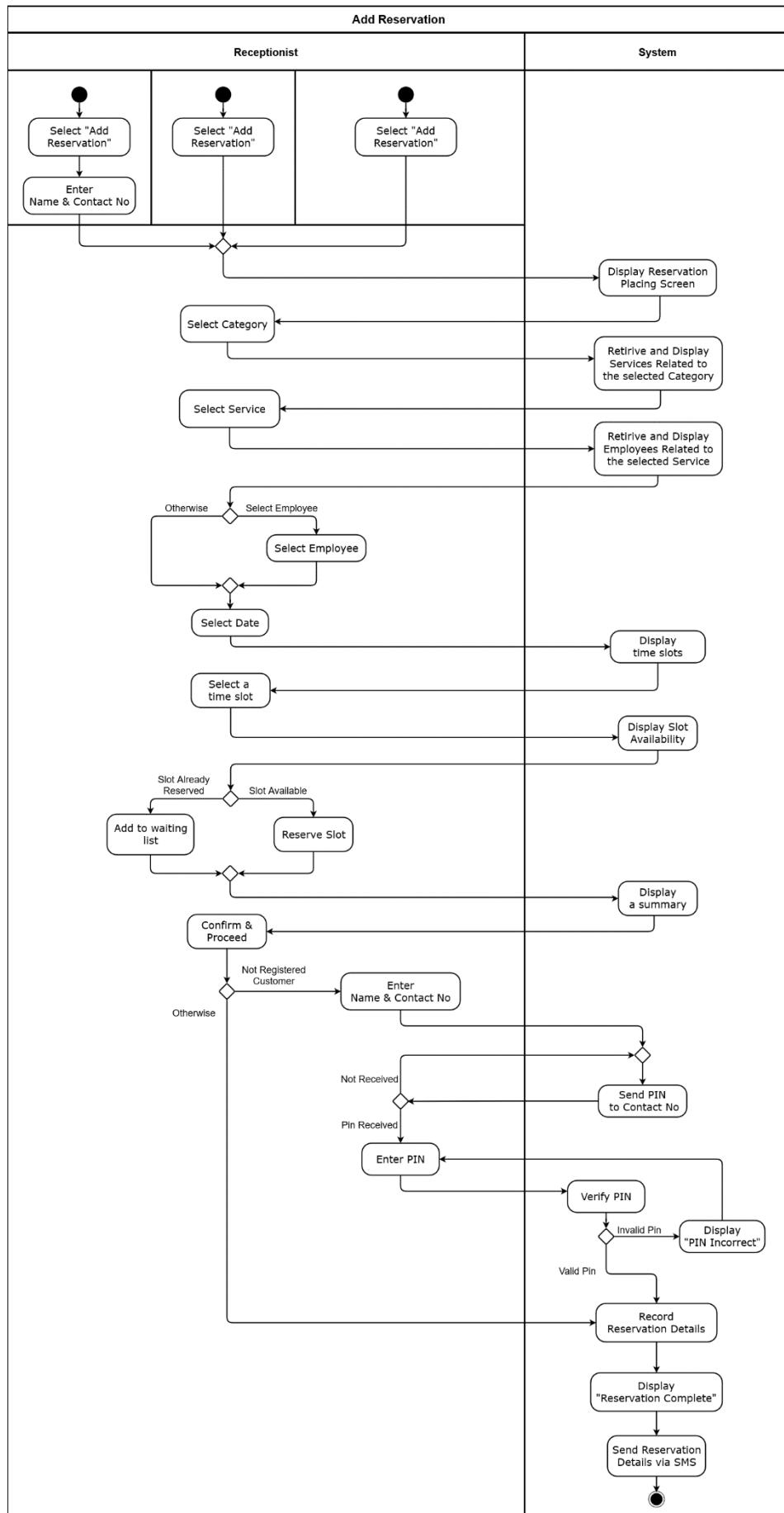


Figure 16: Add Reservation (Activity Diagram)

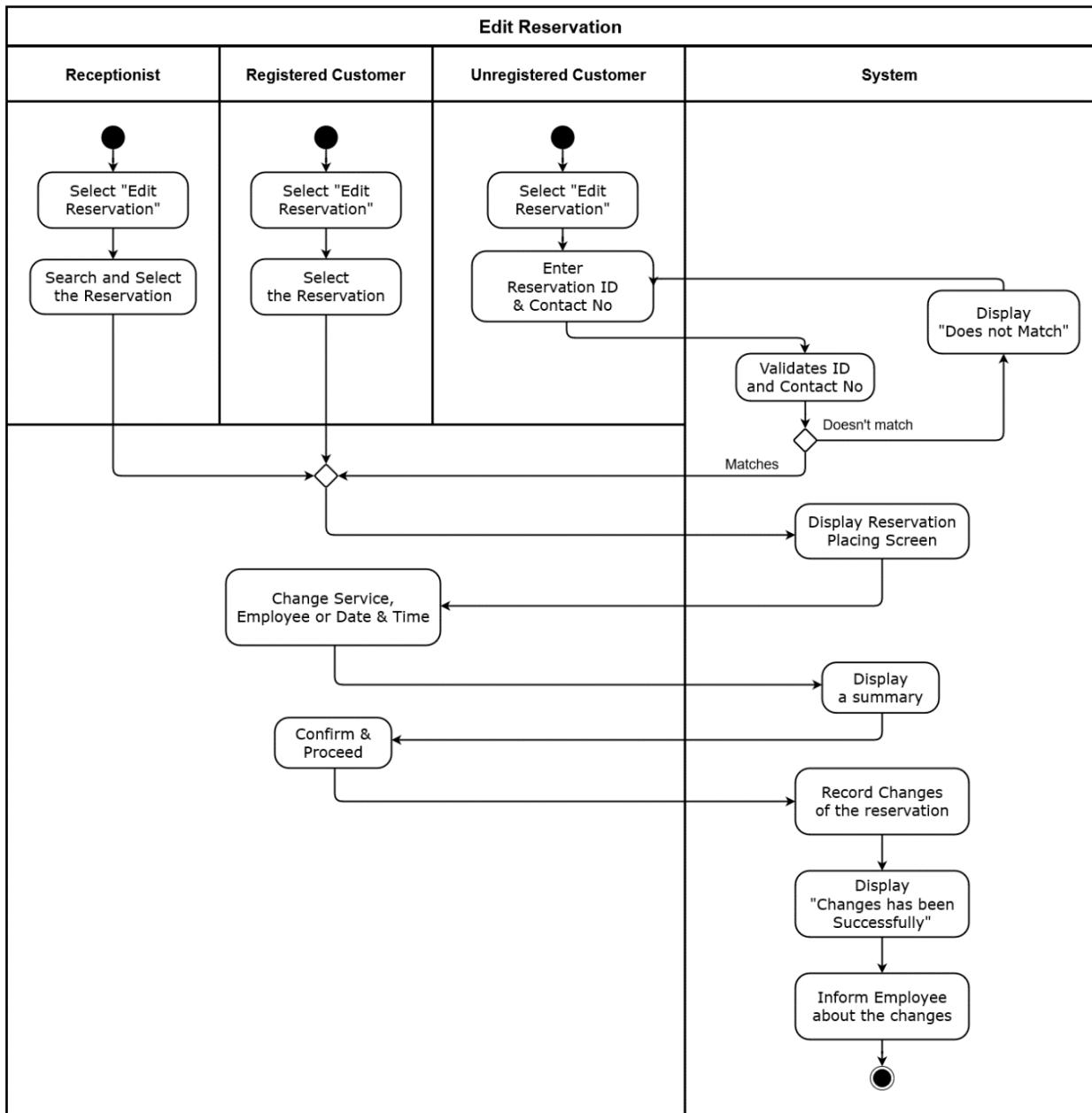


Figure 17: Edit Reservation (Activity Diagram)

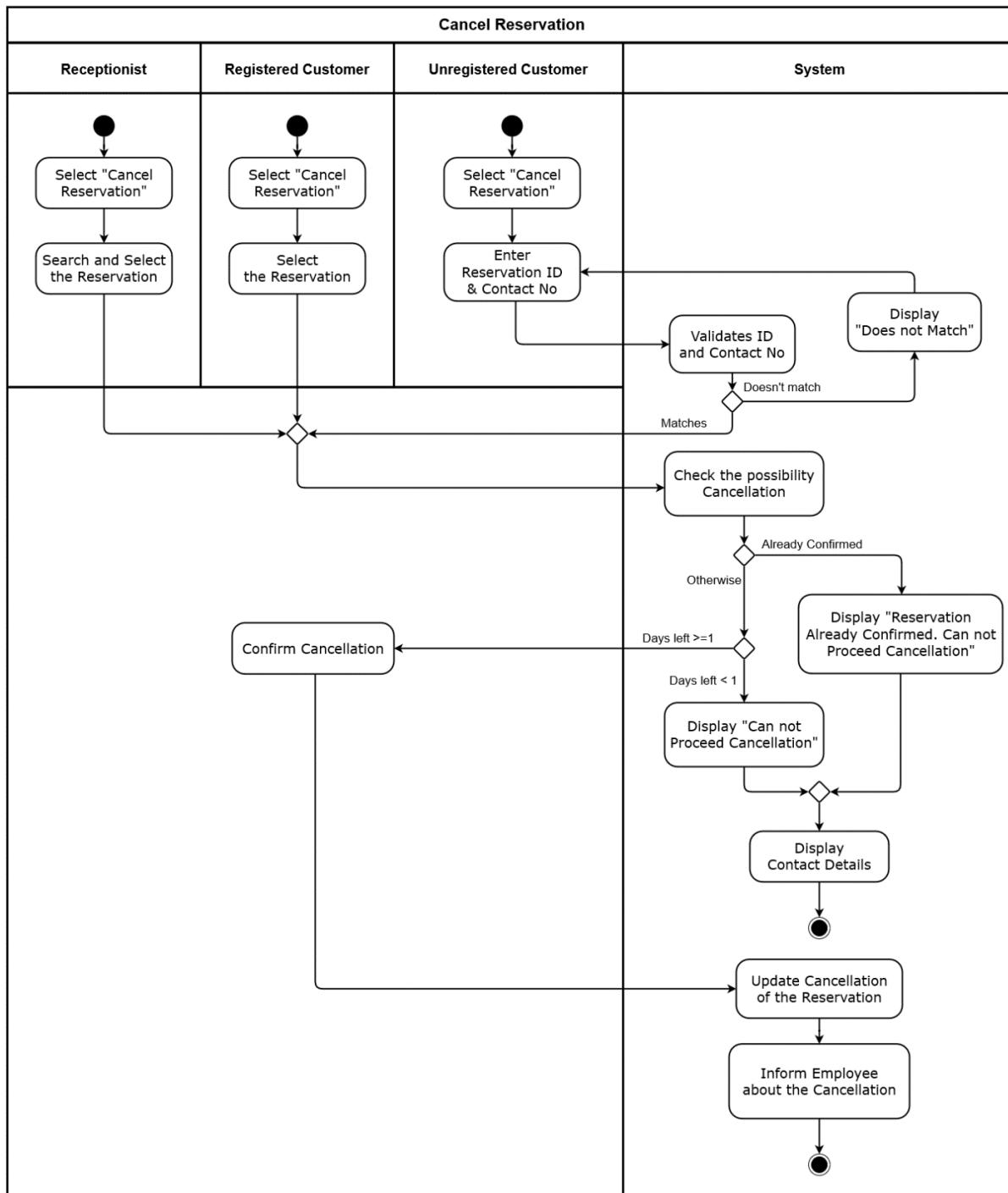


Figure 18: Cancel Reservation (Activity Diagram)

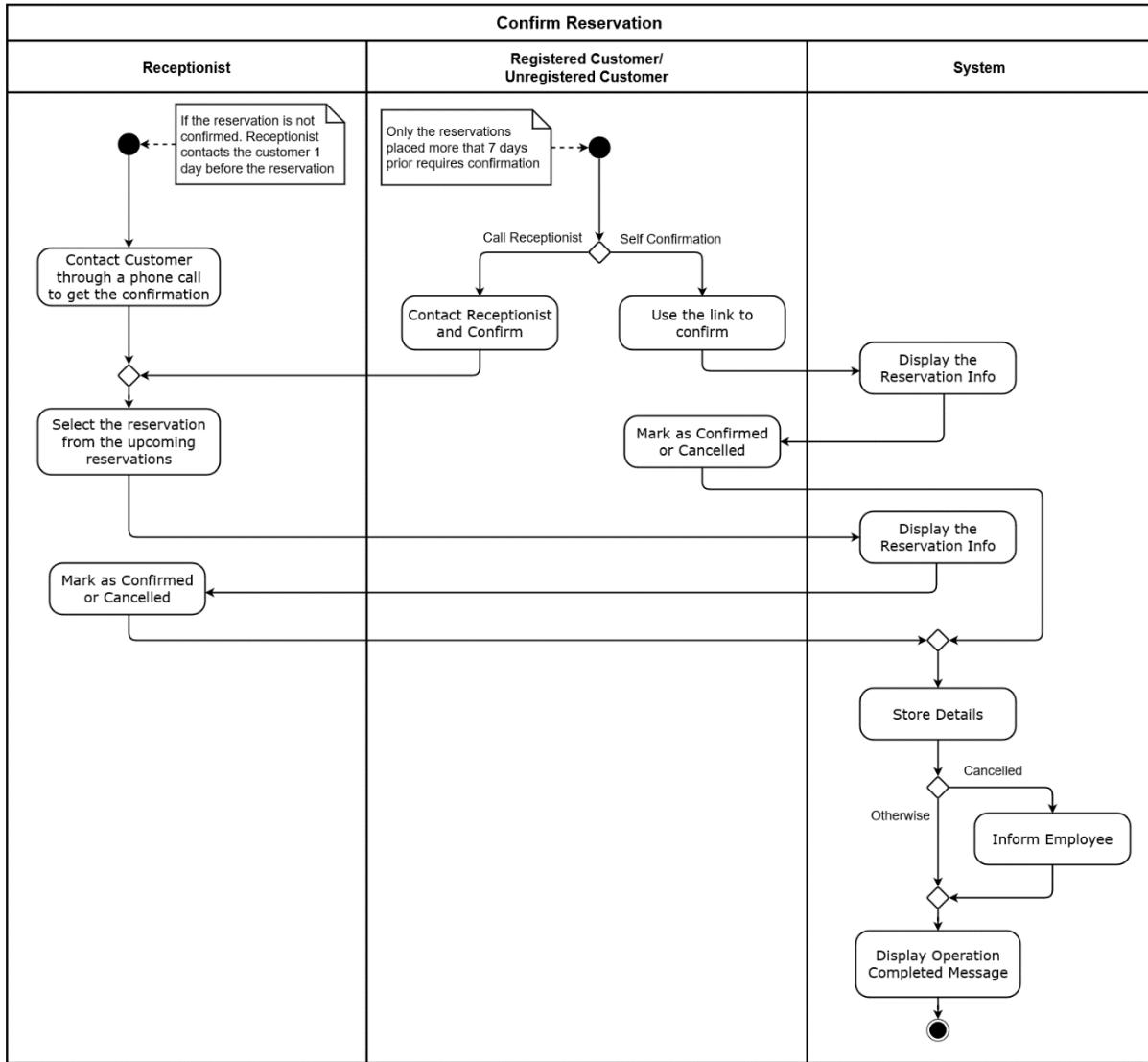


Figure 19: Confirm Reservation (Activity Diagram)

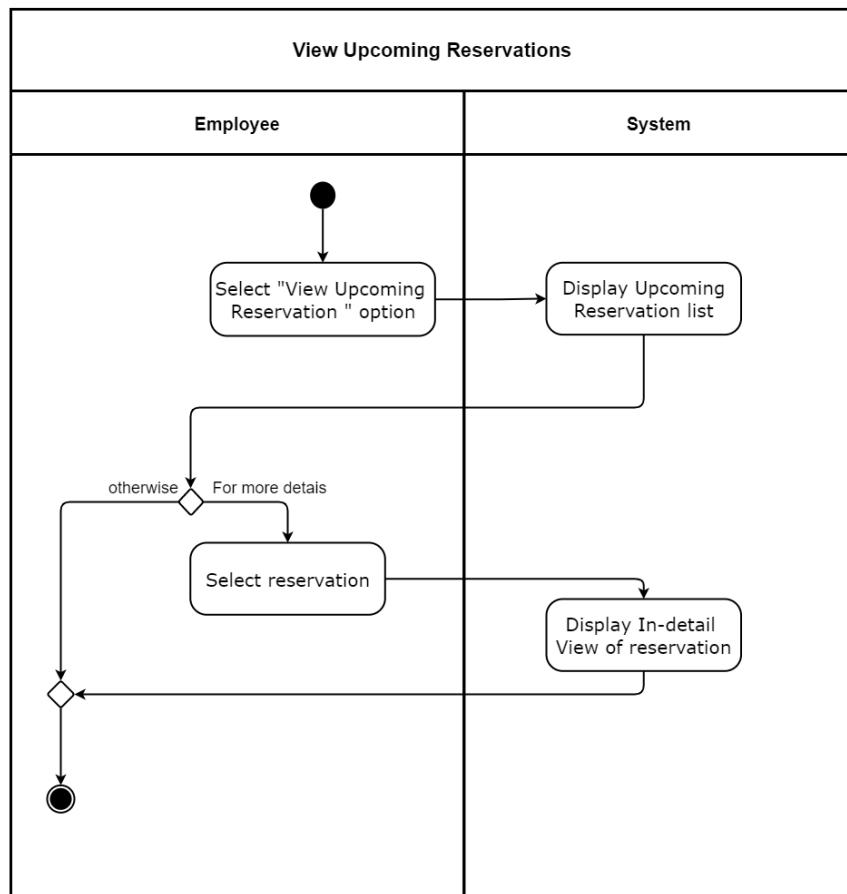


Figure 20: View Upcoming Reservations (Activity Diagram)

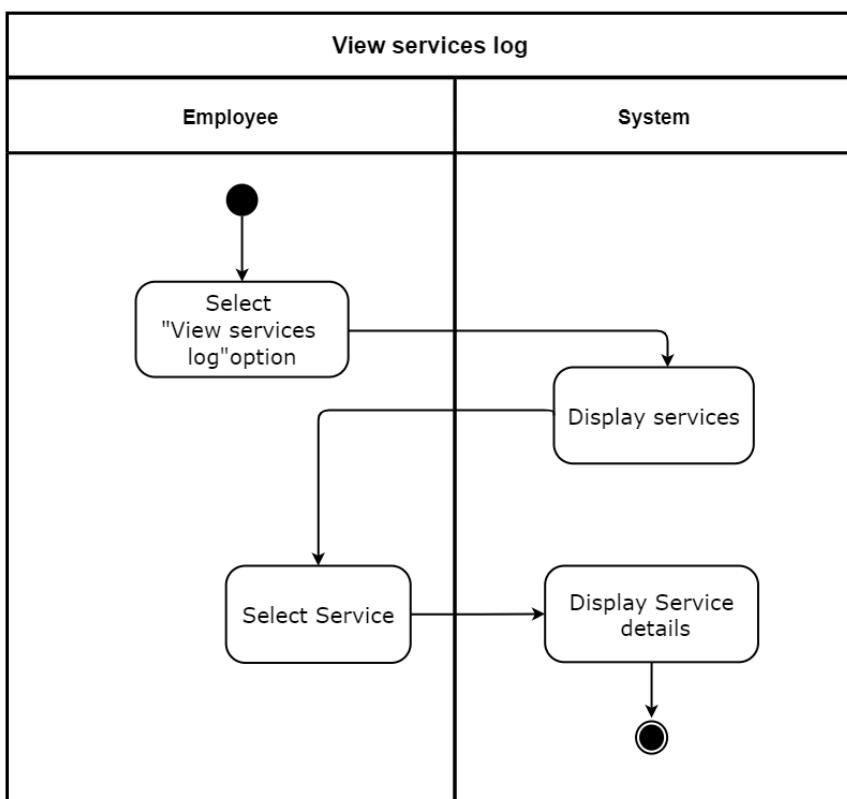


Figure 21: View Services Log (Activity Diagram)

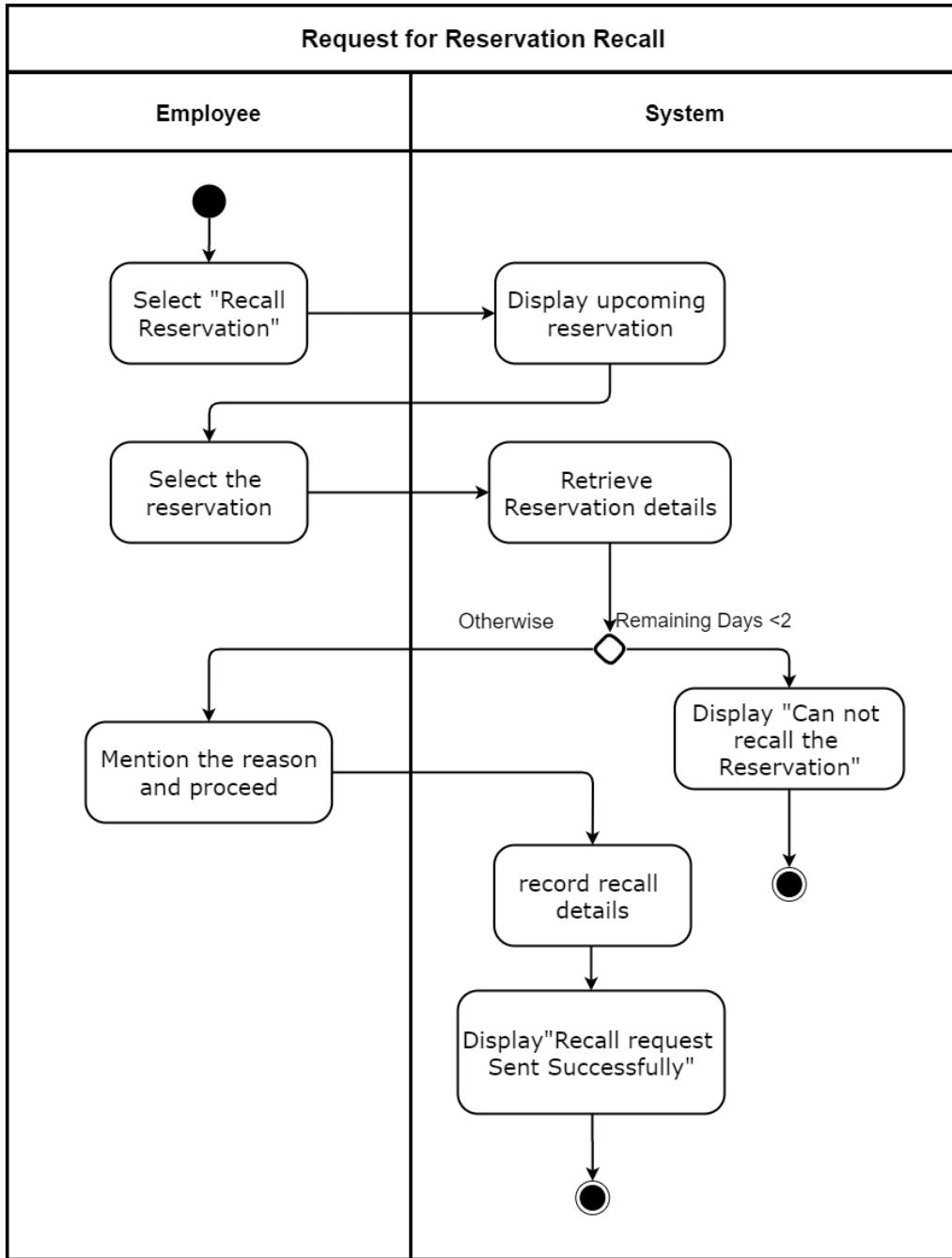


Figure 22: Request Reservation Recall (Activity Diagram)

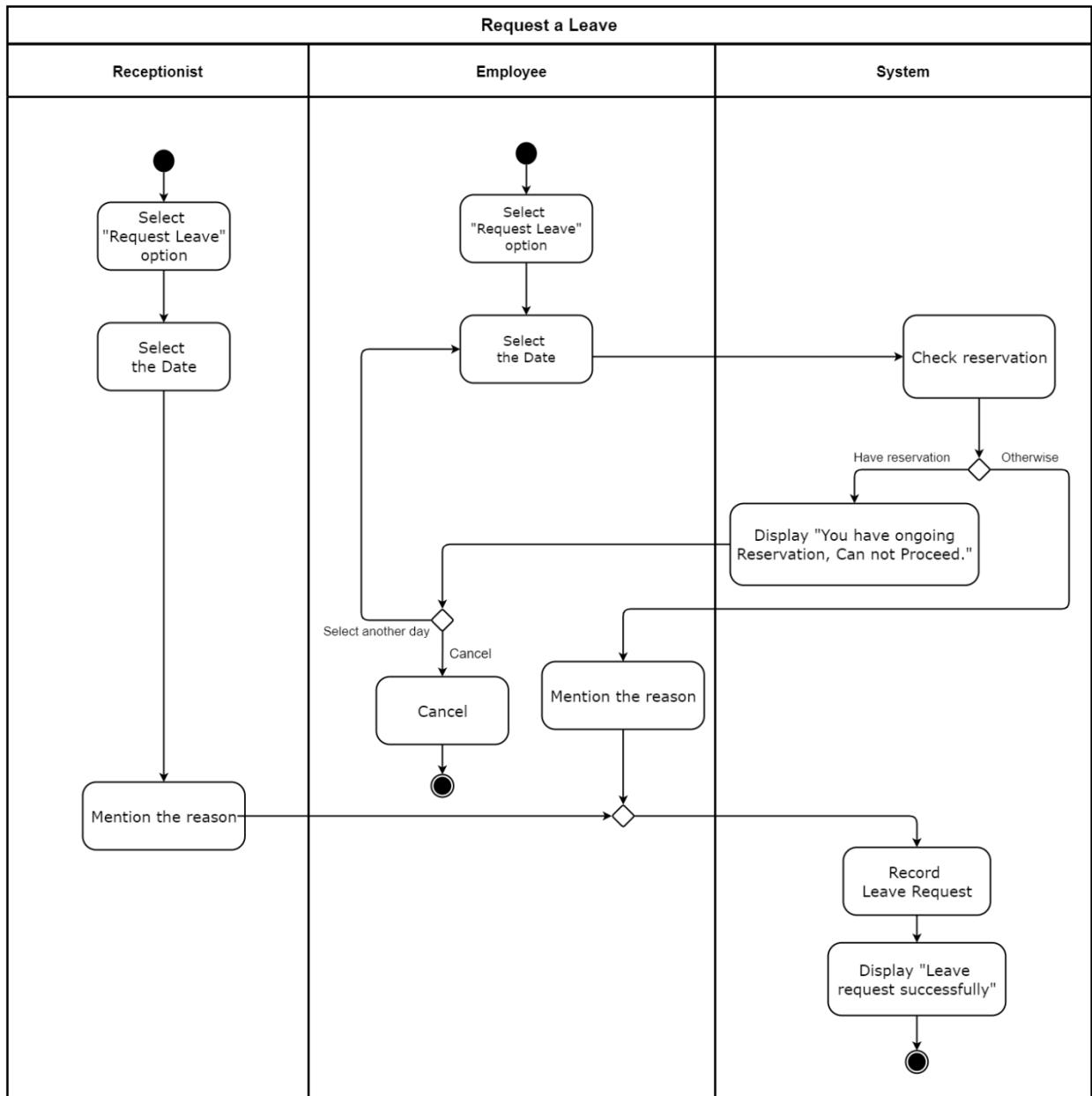


Figure 23: Request Leave (Activity Diagram)

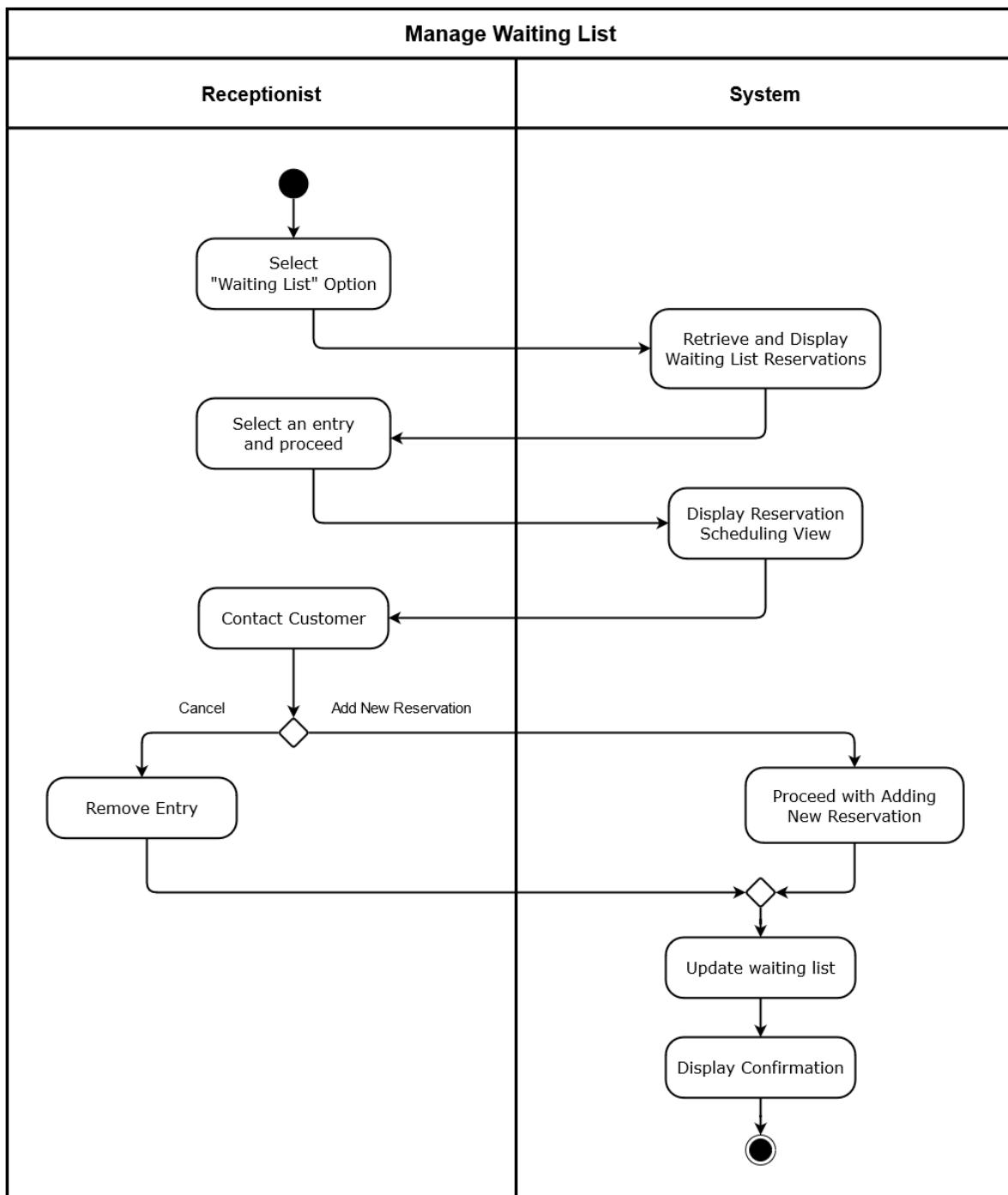


Figure 24: Manage Waiting List (Activity Diagram)

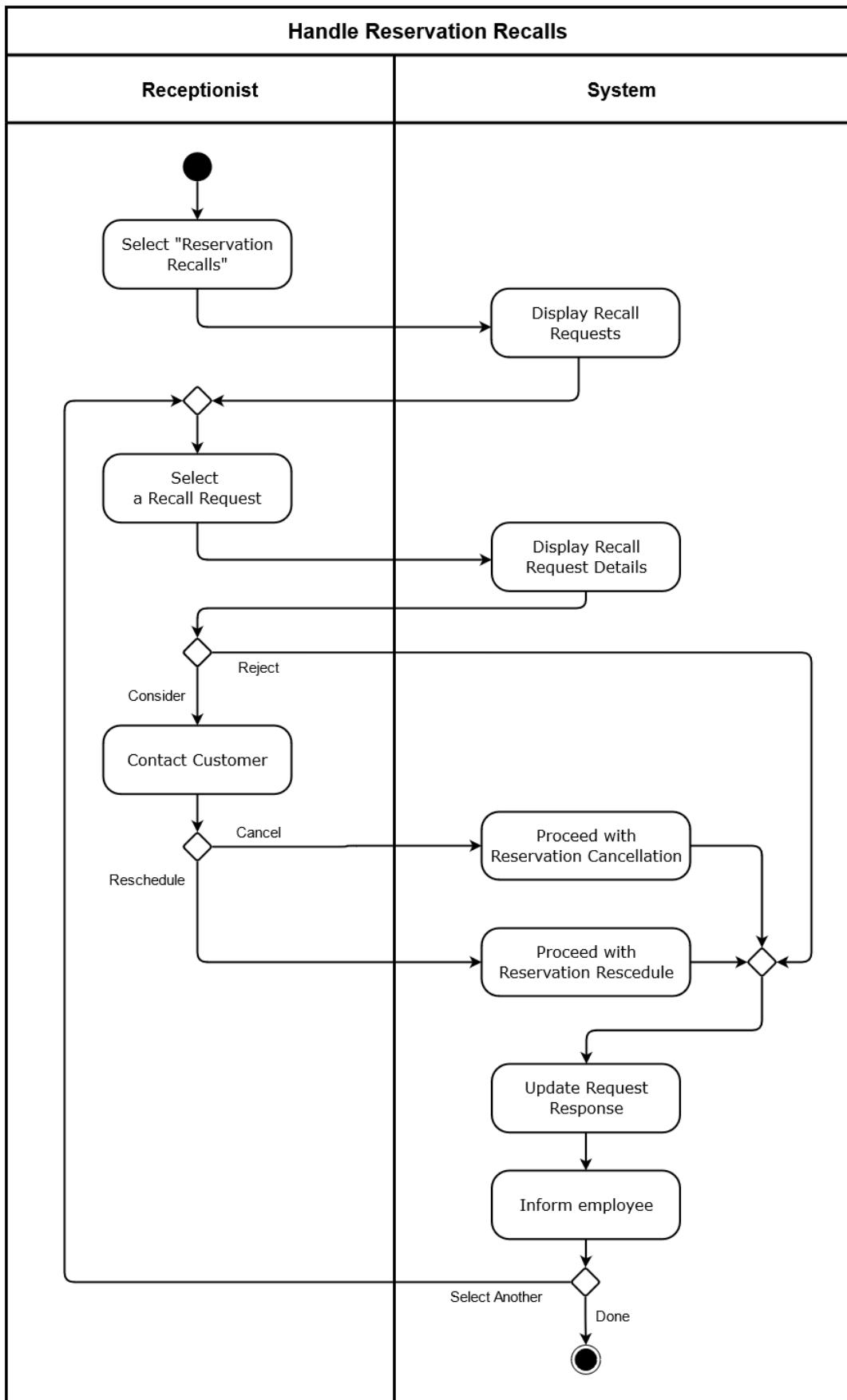


Figure 25: Handle Reservation Recalls (Activity Diagram)

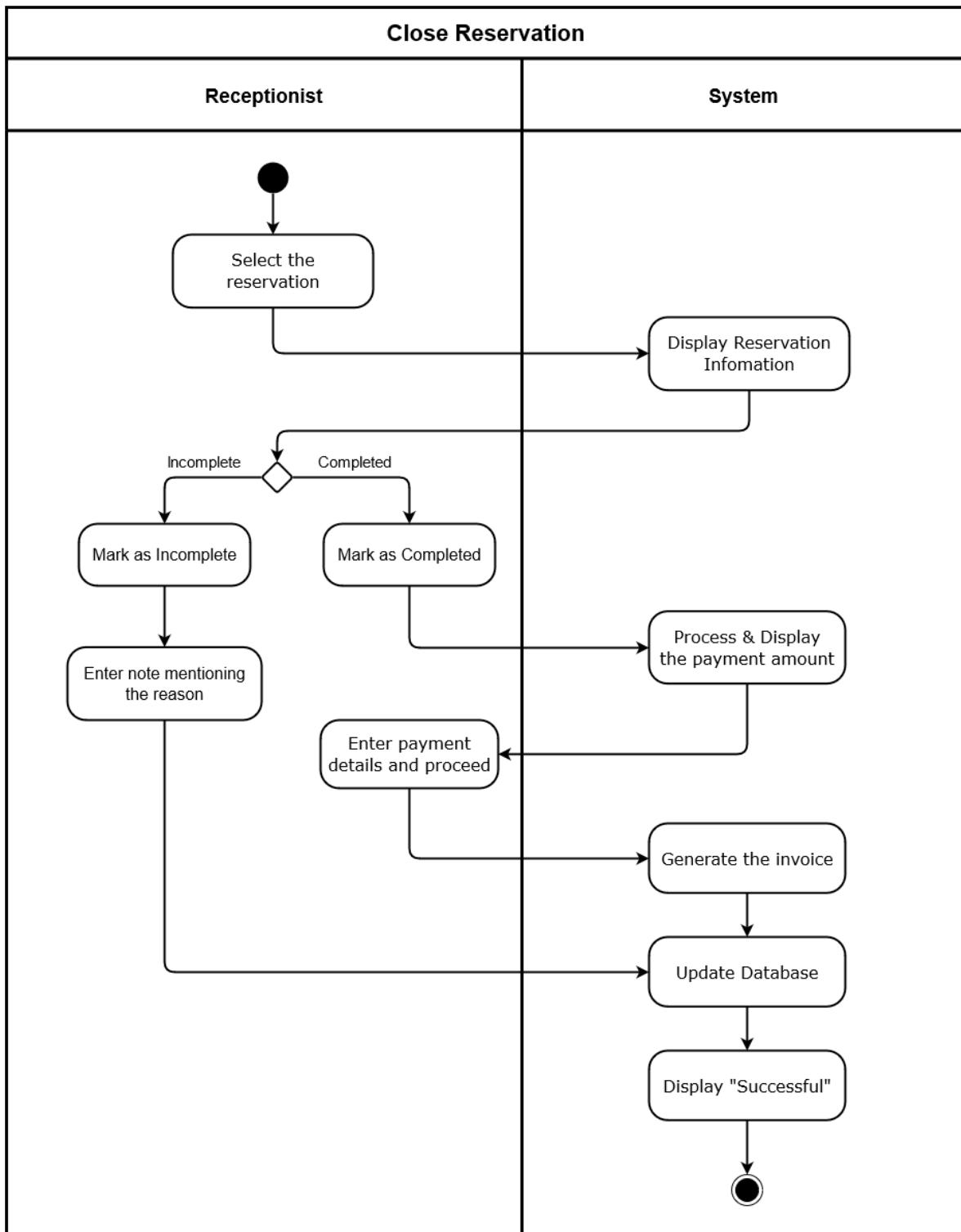


Figure 26: Close Reservation (Activity Diagram)

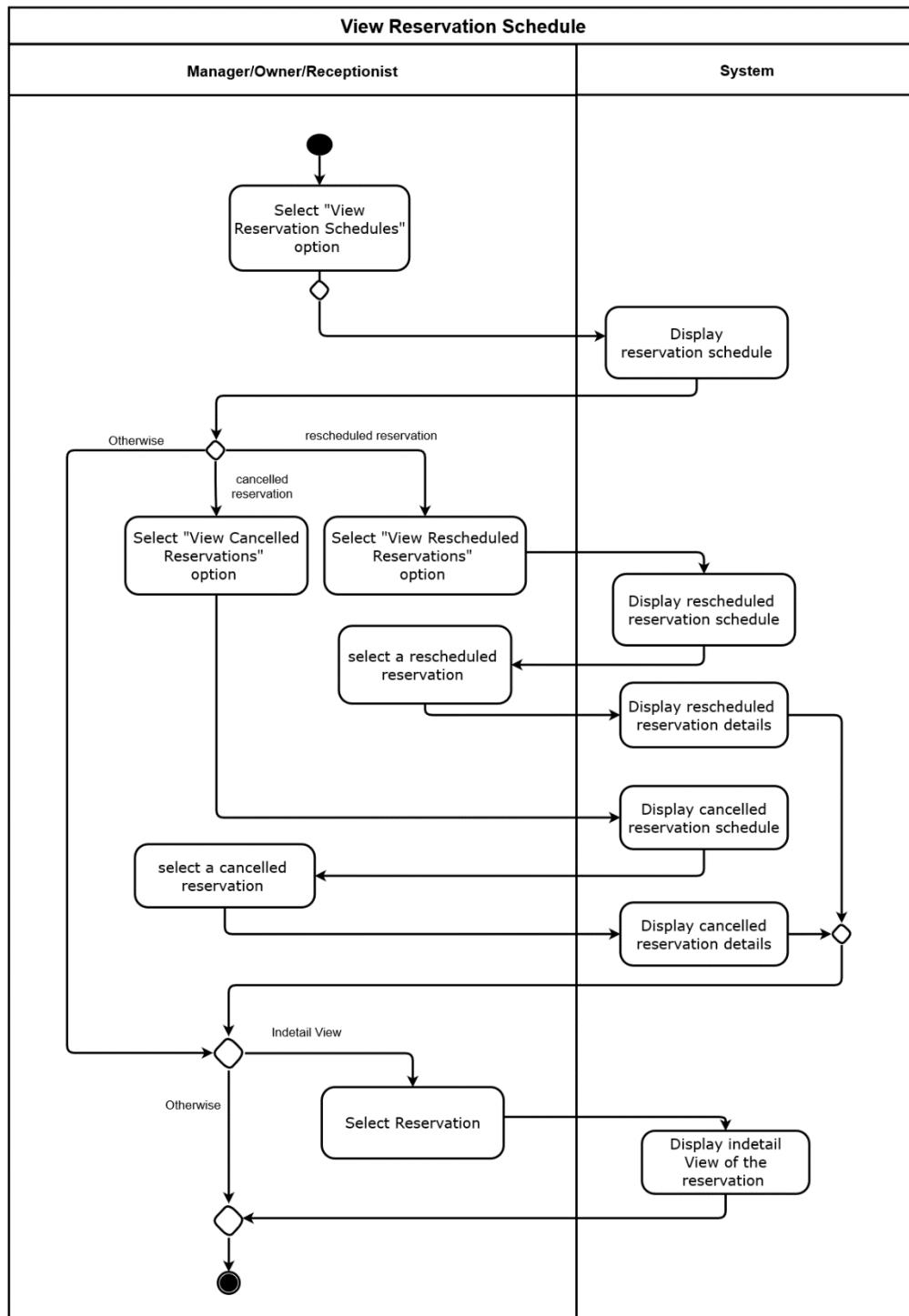


Figure 27: View Reservation Schedule (Activity Diagram)

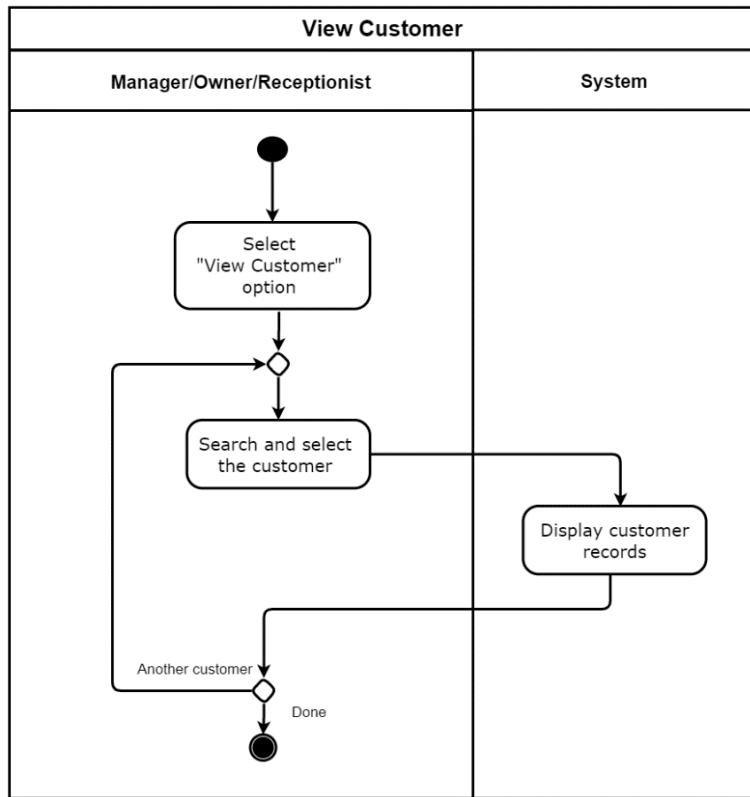


Figure 28: View Customer (Activity Diagram)

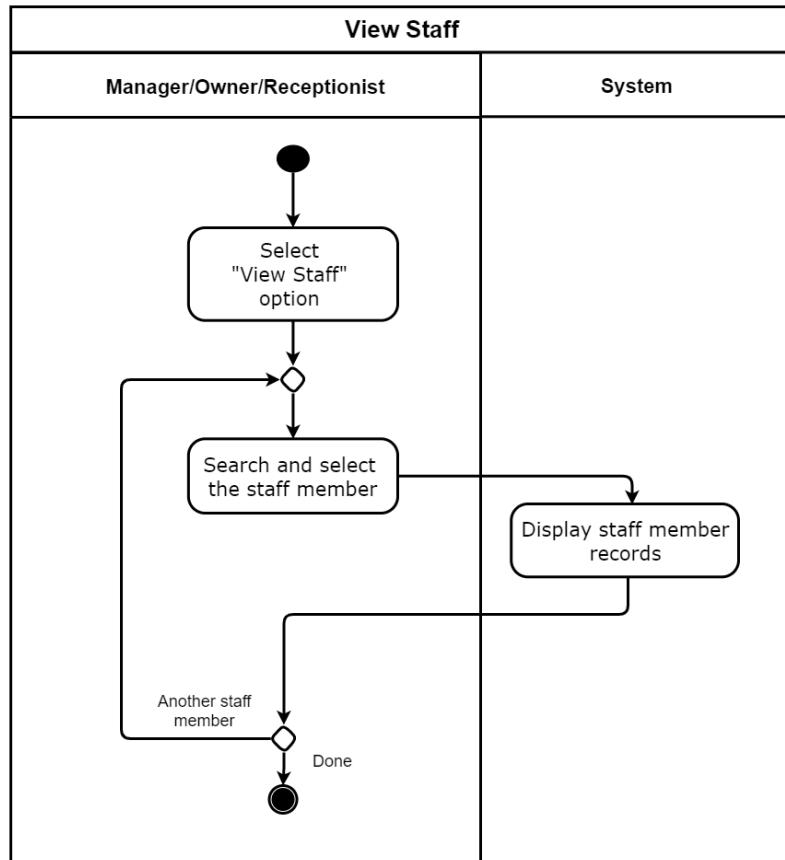


Figure 29: View Staff (Activity Diagram)

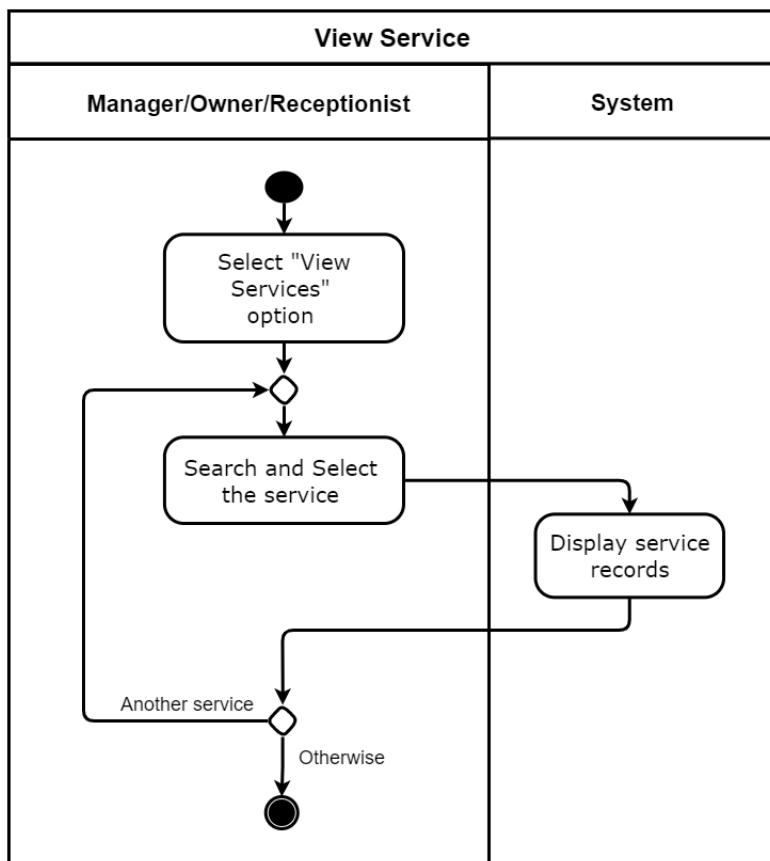


Figure 30: View Service (Activity Diagram)

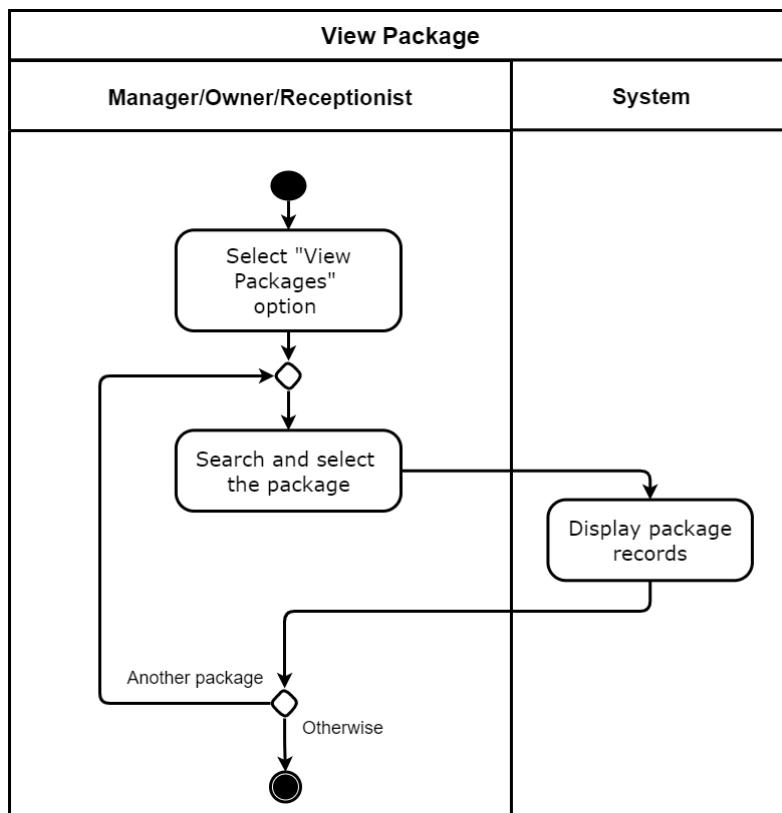


Figure 31: View Package (Activity Diagram)

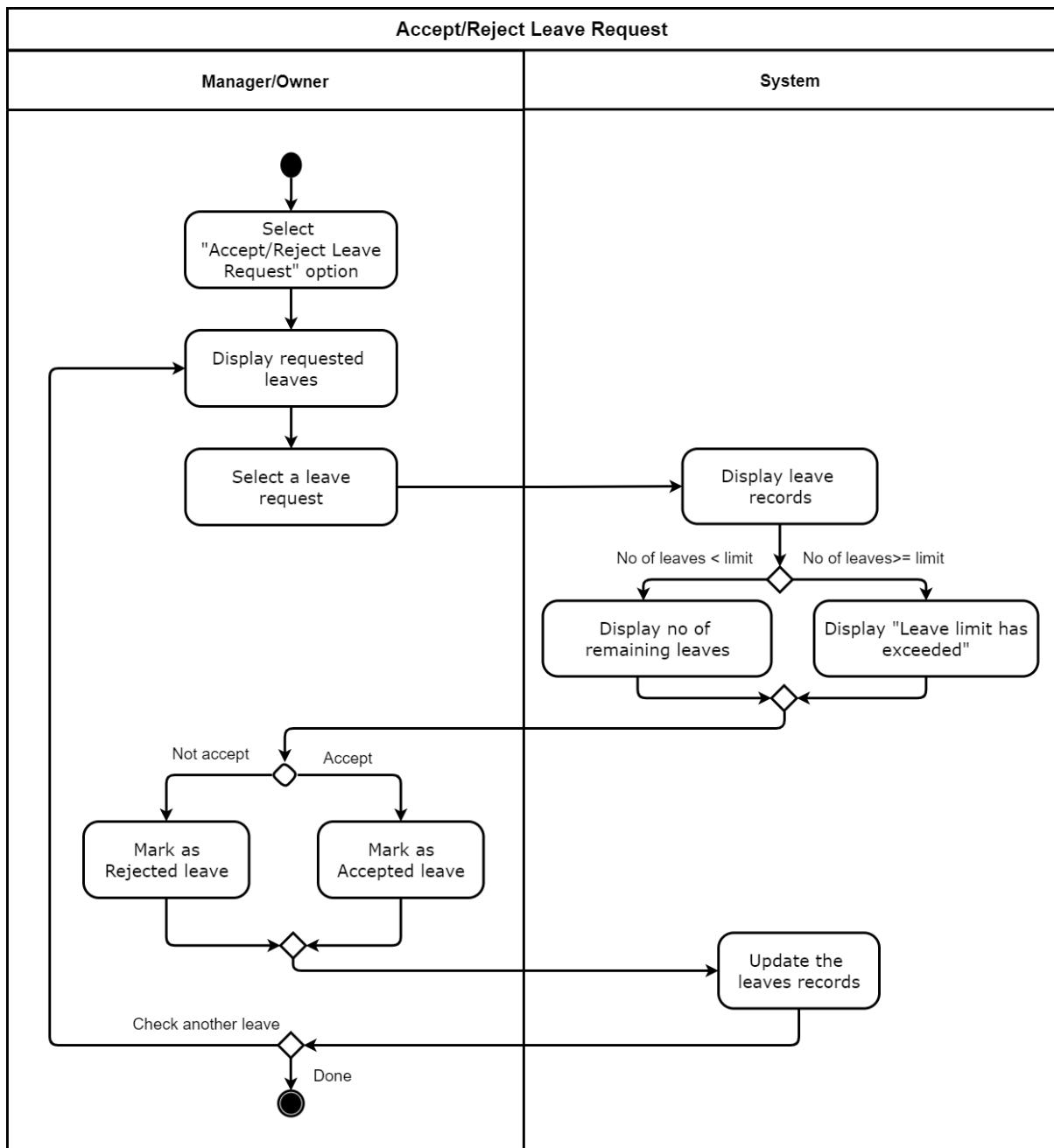


Figure 32: Accept/ Reject Leave Request (Activity Diagram)

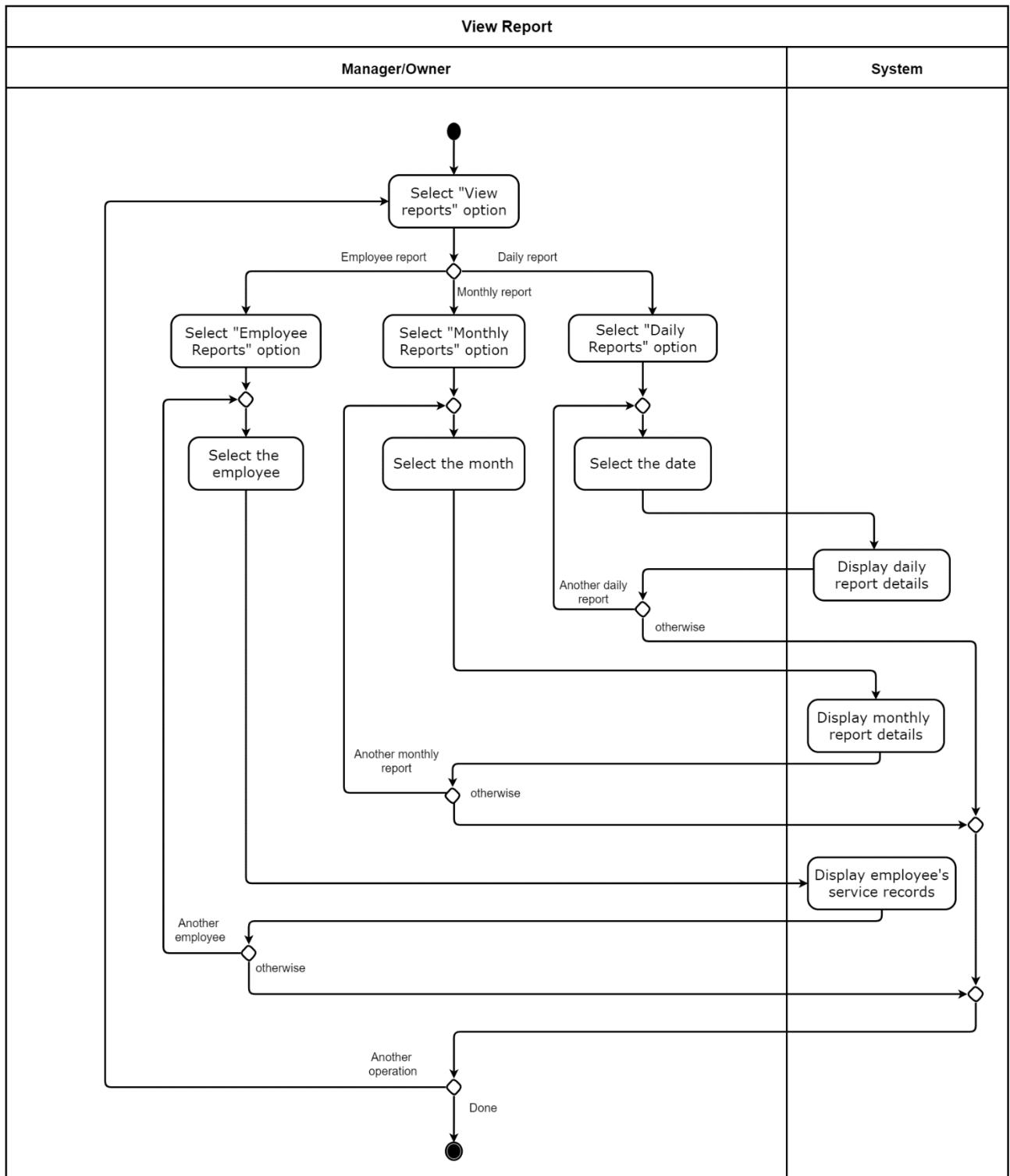


Figure 33: View Reports (Activity Diagram)

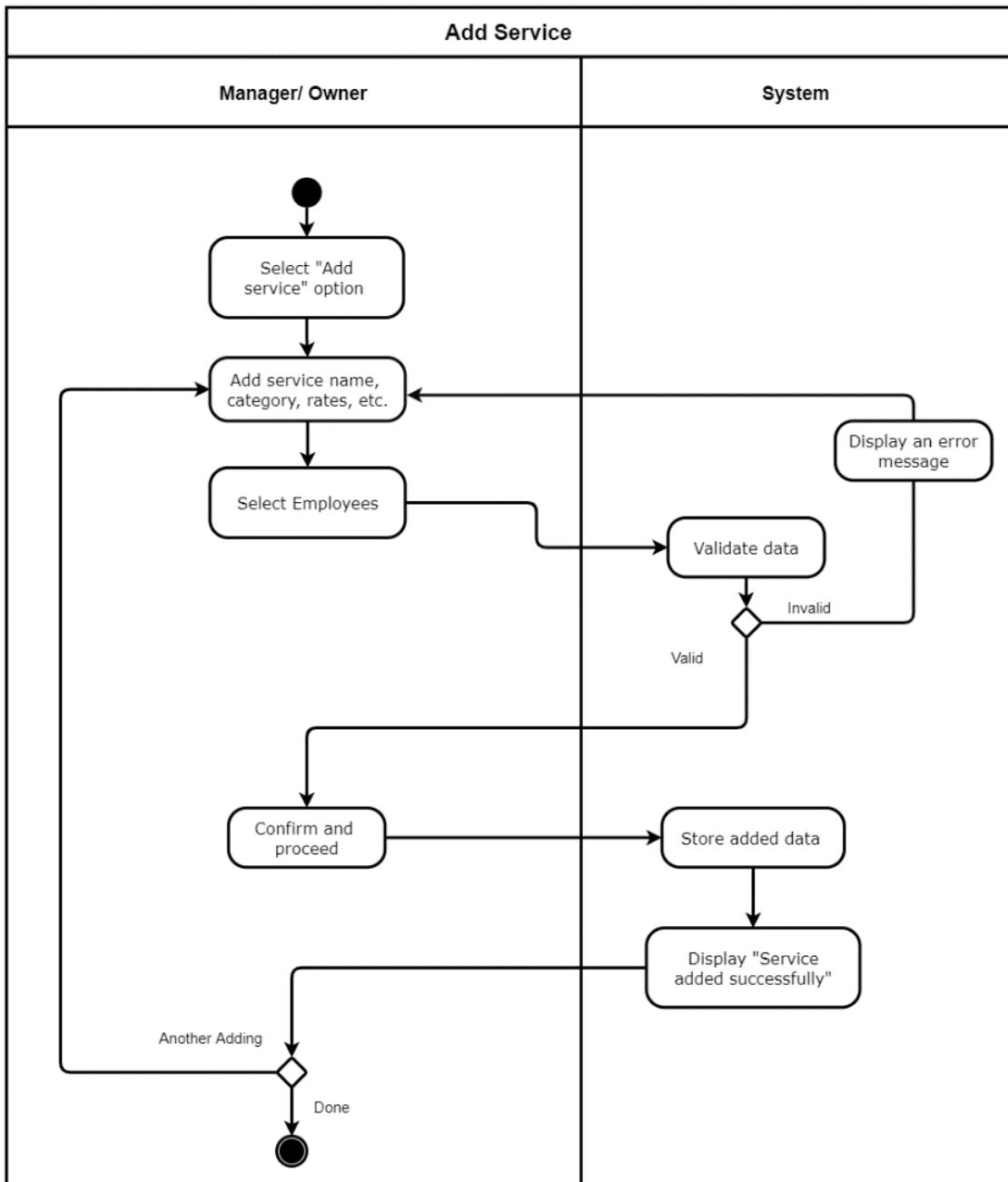


Figure 34: Add Service (Activity Diagram)

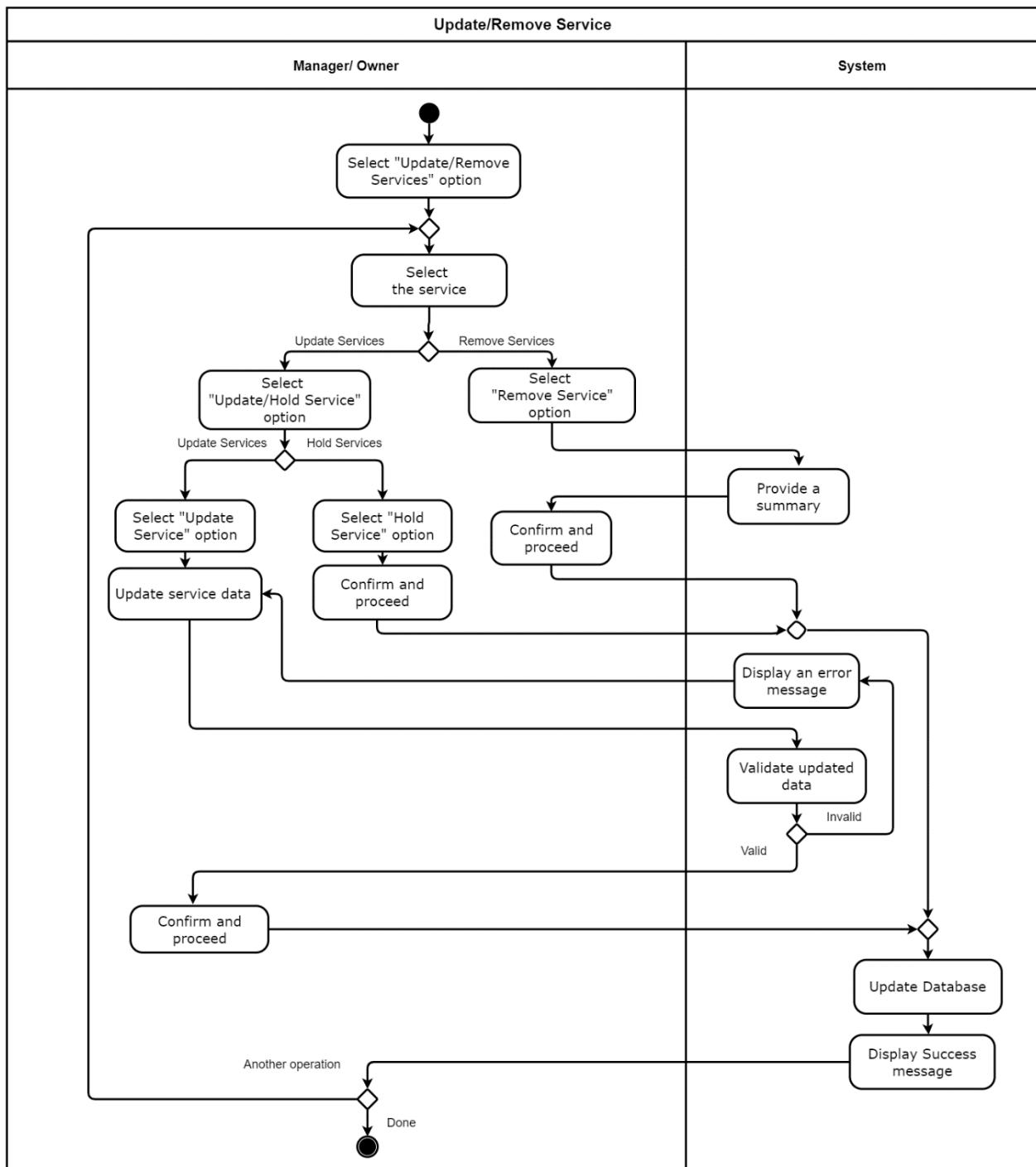


Figure 35: Update/ Remove Service (Activity Diagram)

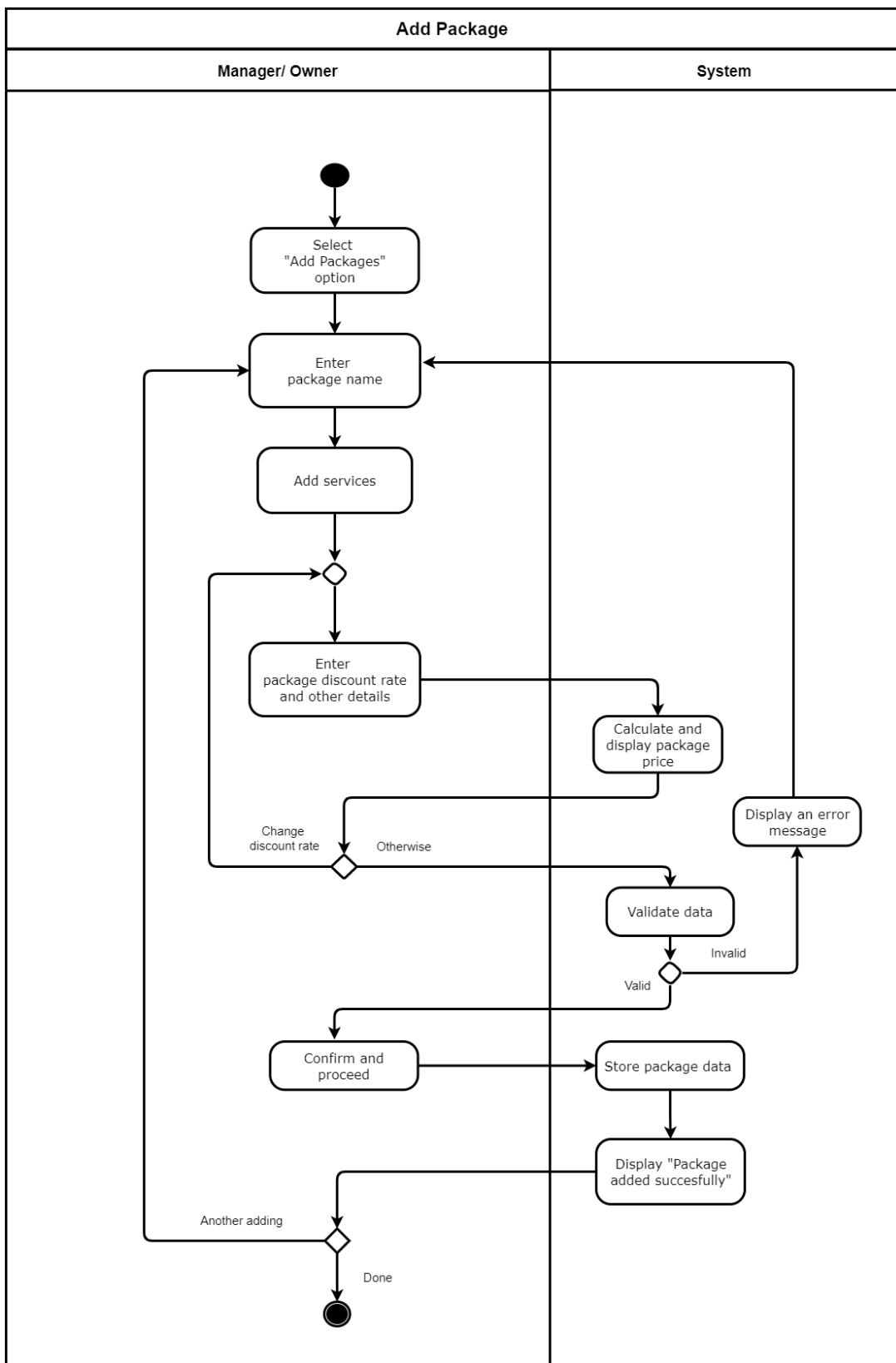


Figure 36: Add Package (Activity Diagram)

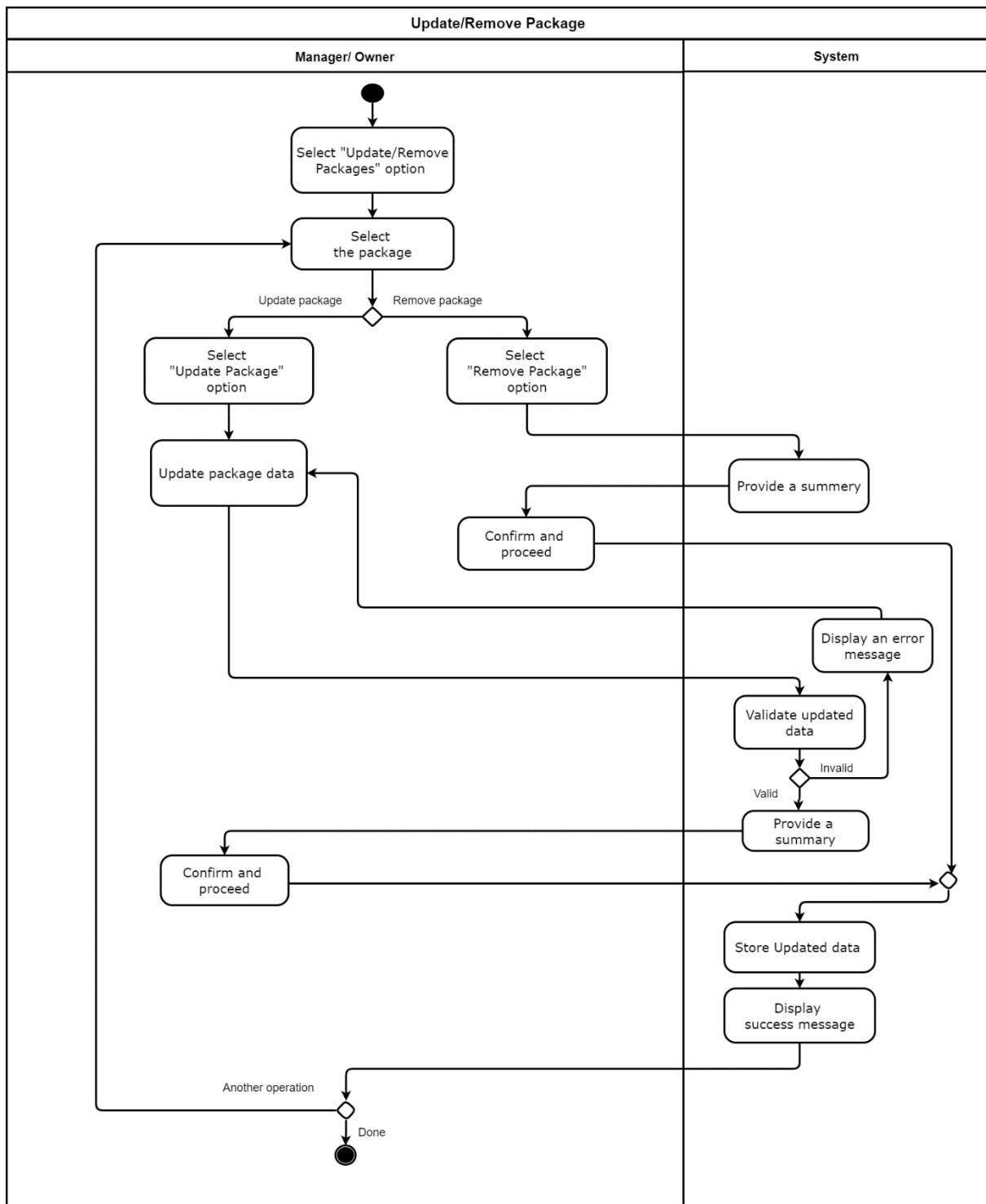


Figure 37: Update/ Remove Package (Activity Diagram)

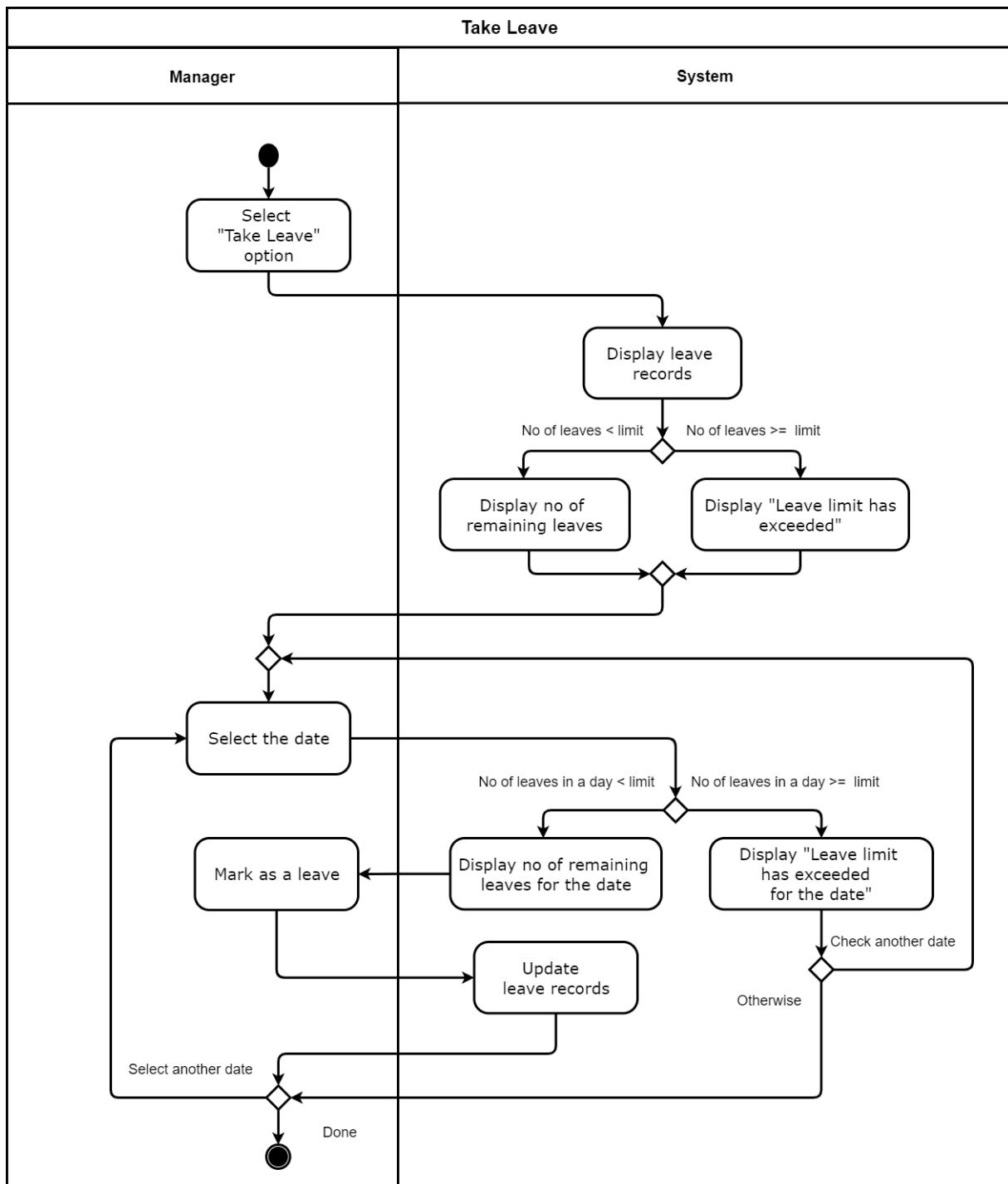


Figure 38: Take Leave (Activity Diagram)

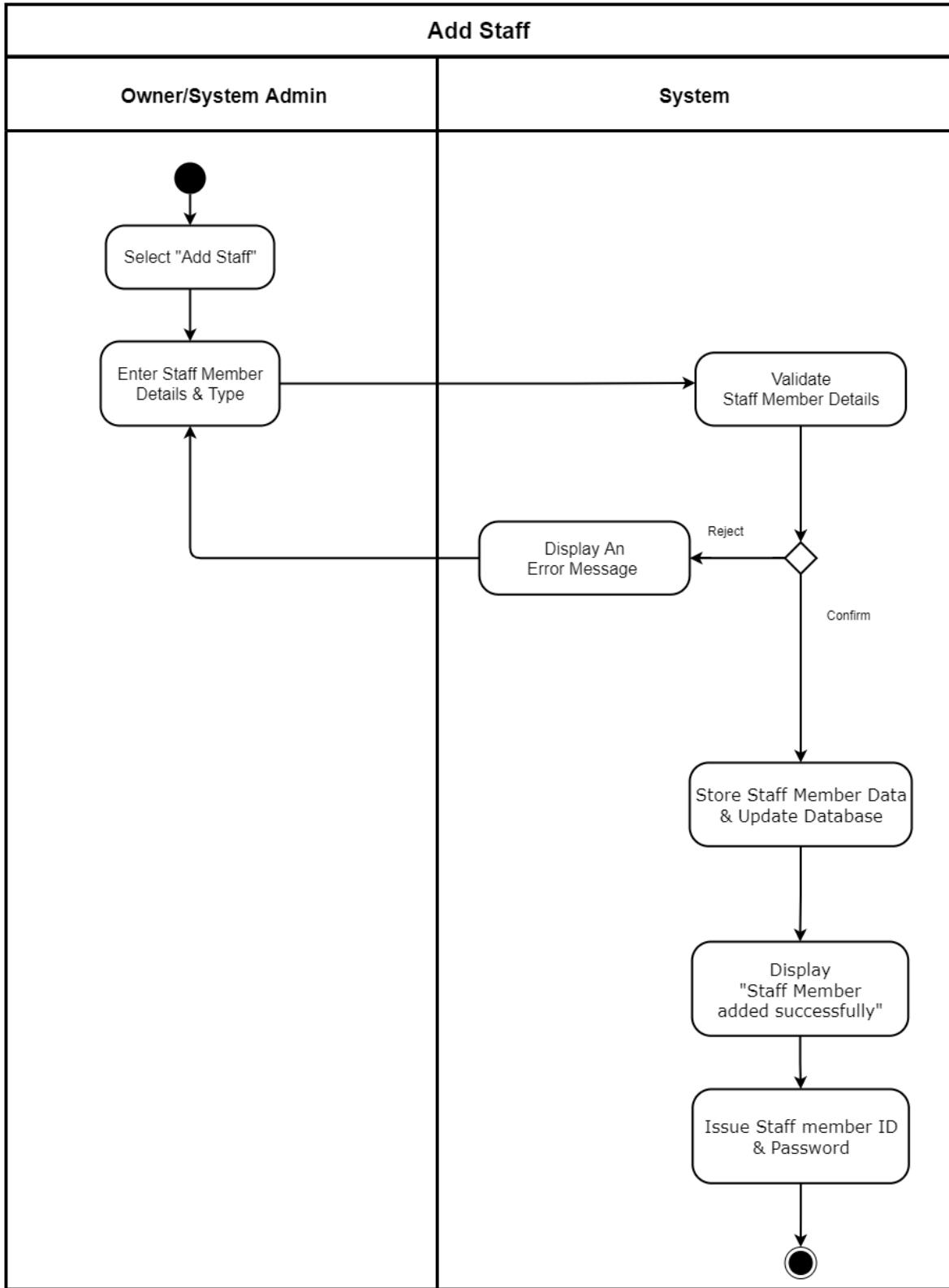


Figure 39: Add Staff (Activity Diagram)

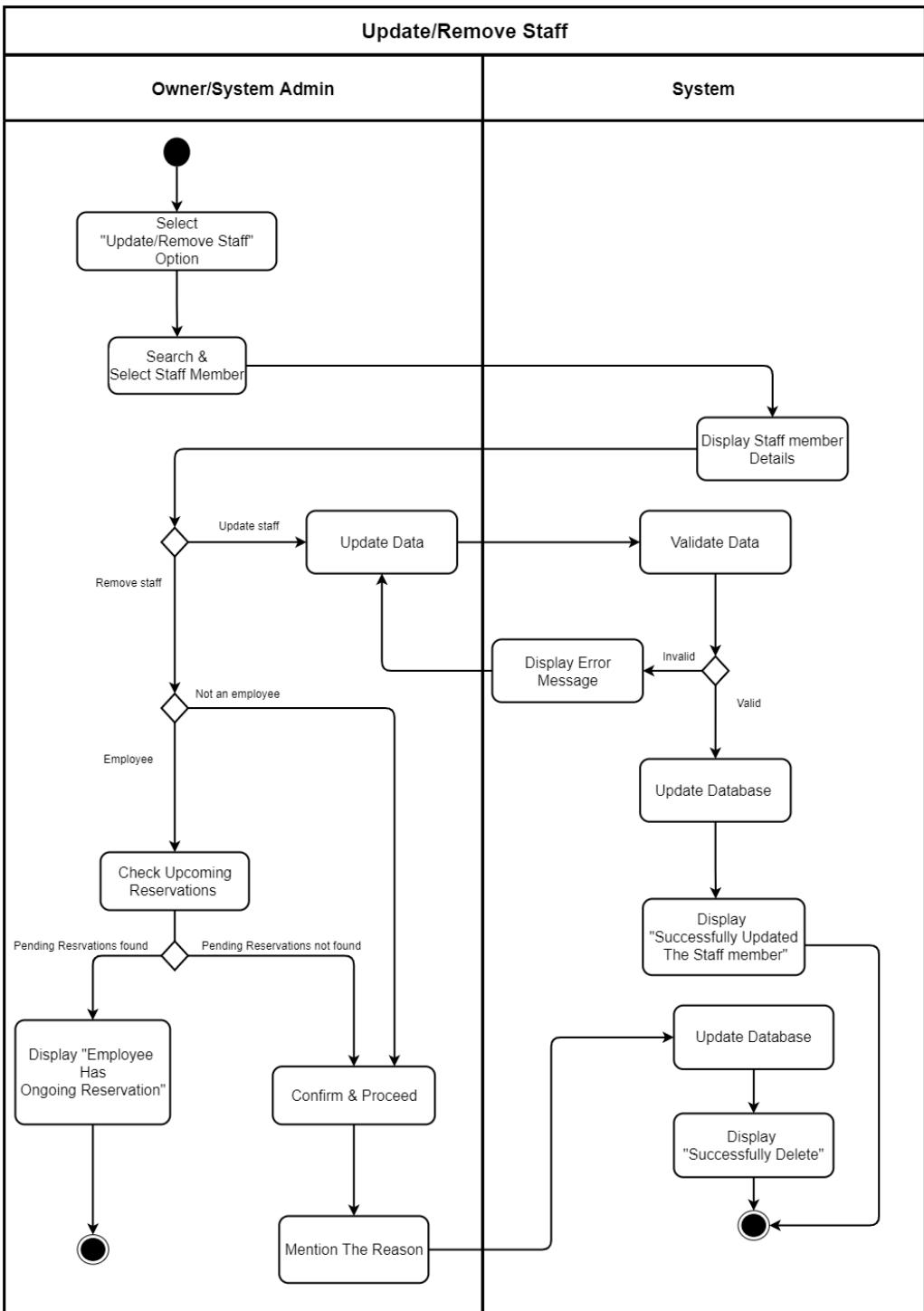


Figure 40: Update/Remove Staff (Activity Diagram)

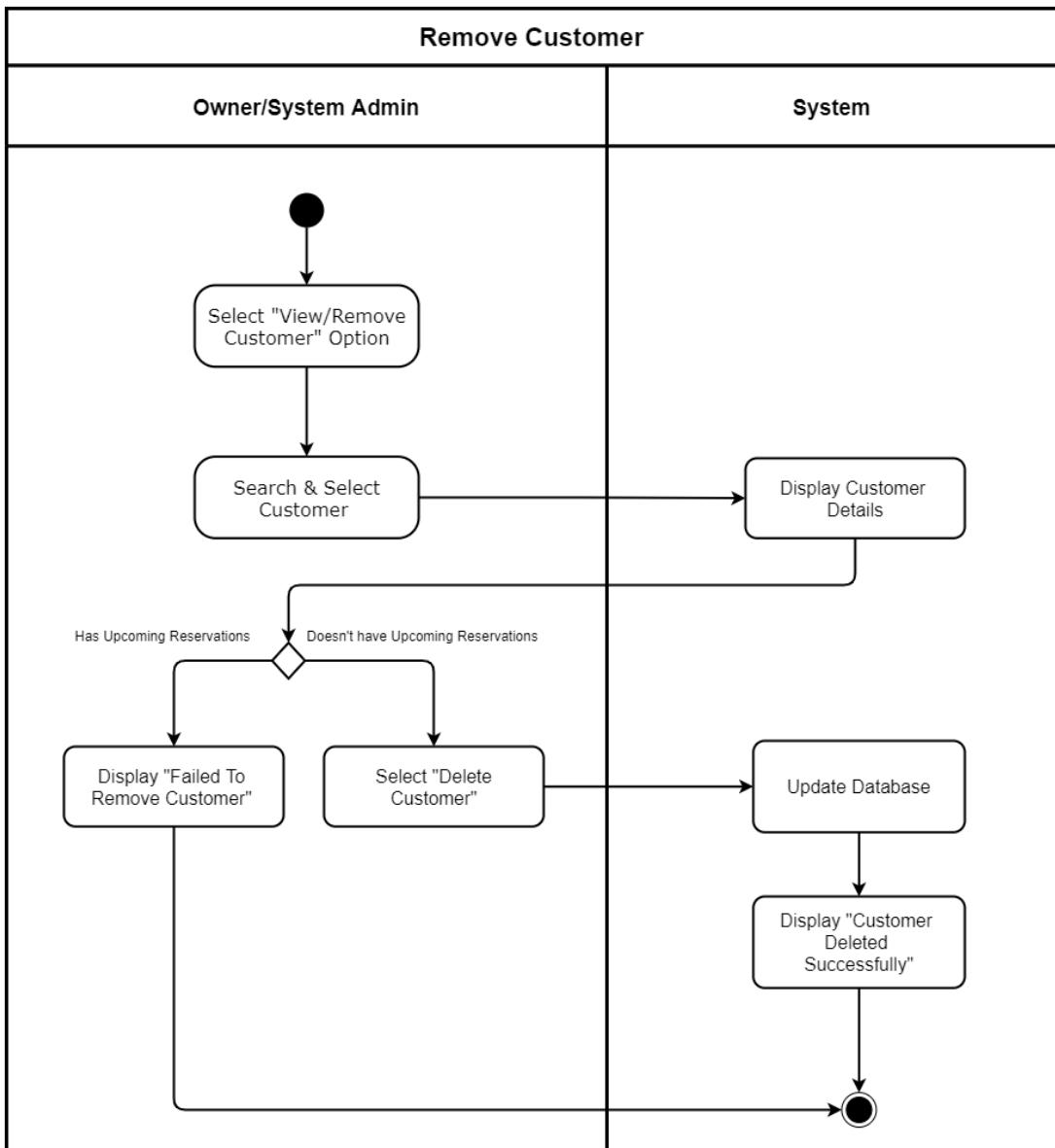


Figure 41: Remove Customer (Activity Diagram)

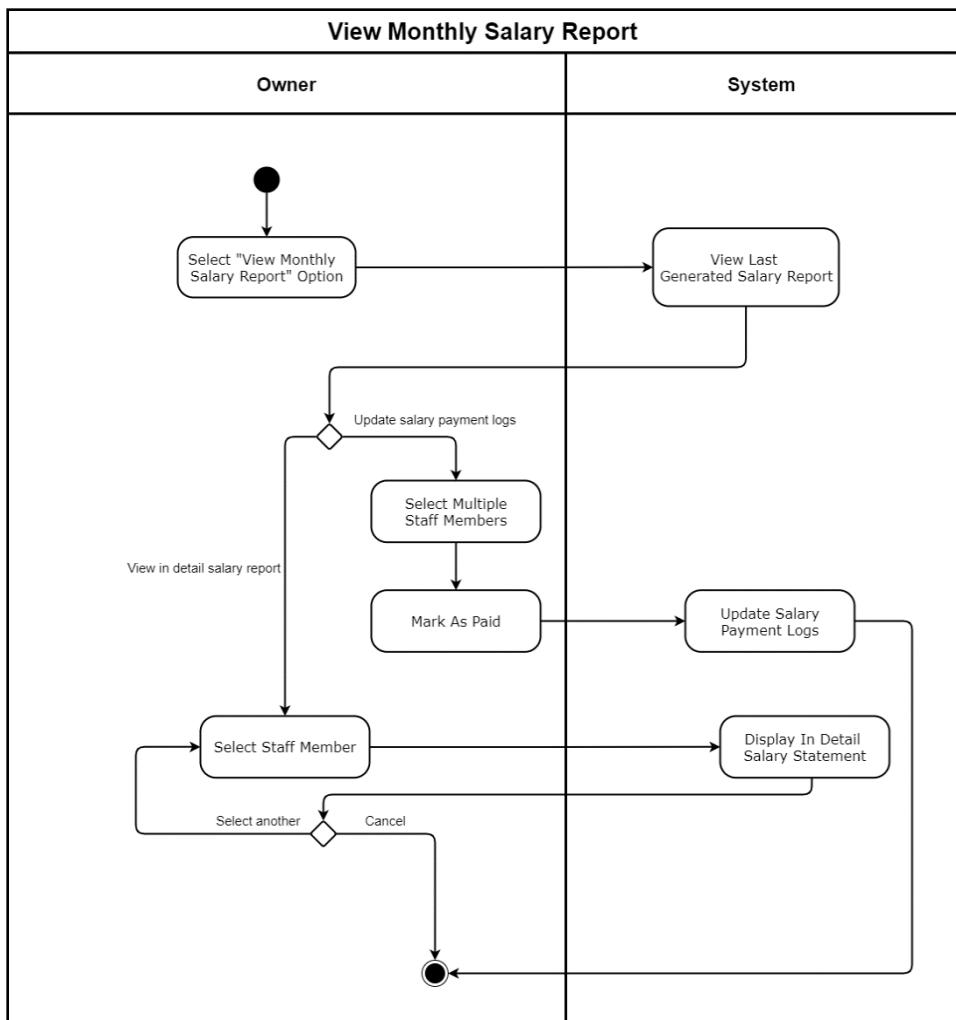


Figure 42: View Monthly Salary Report (Activity Diagram)

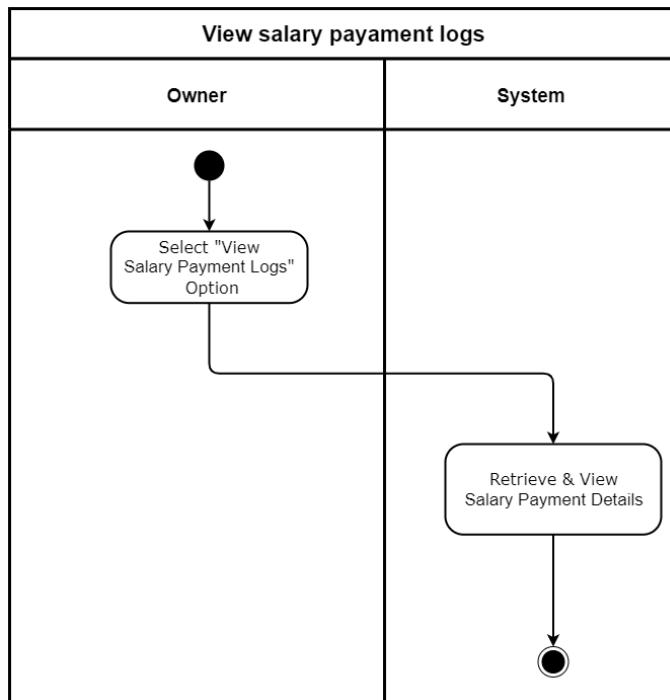


Figure 43: View Salary Payment Logs (Activity Diagram)

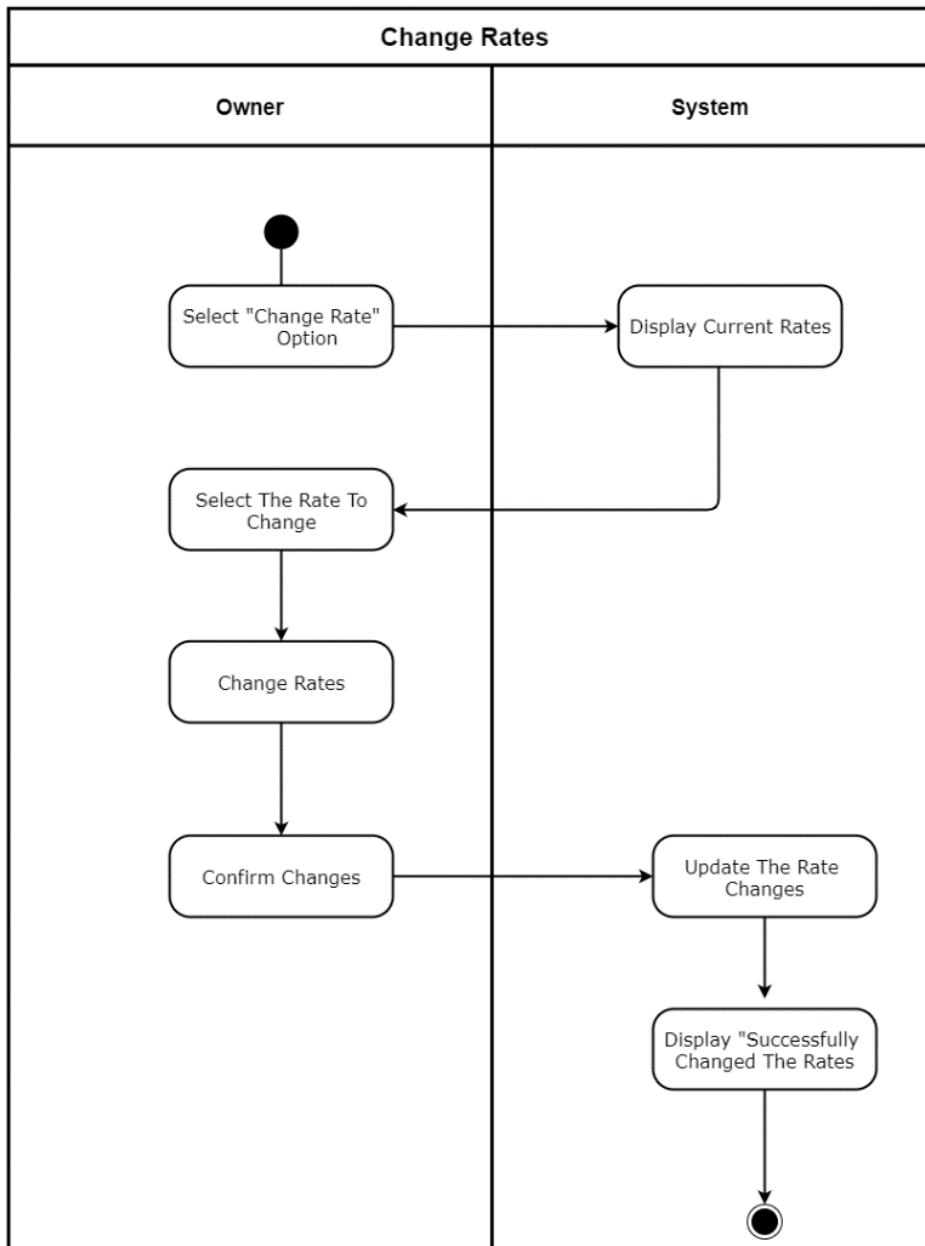


Figure 44: Change Rates (Activity Diagram)

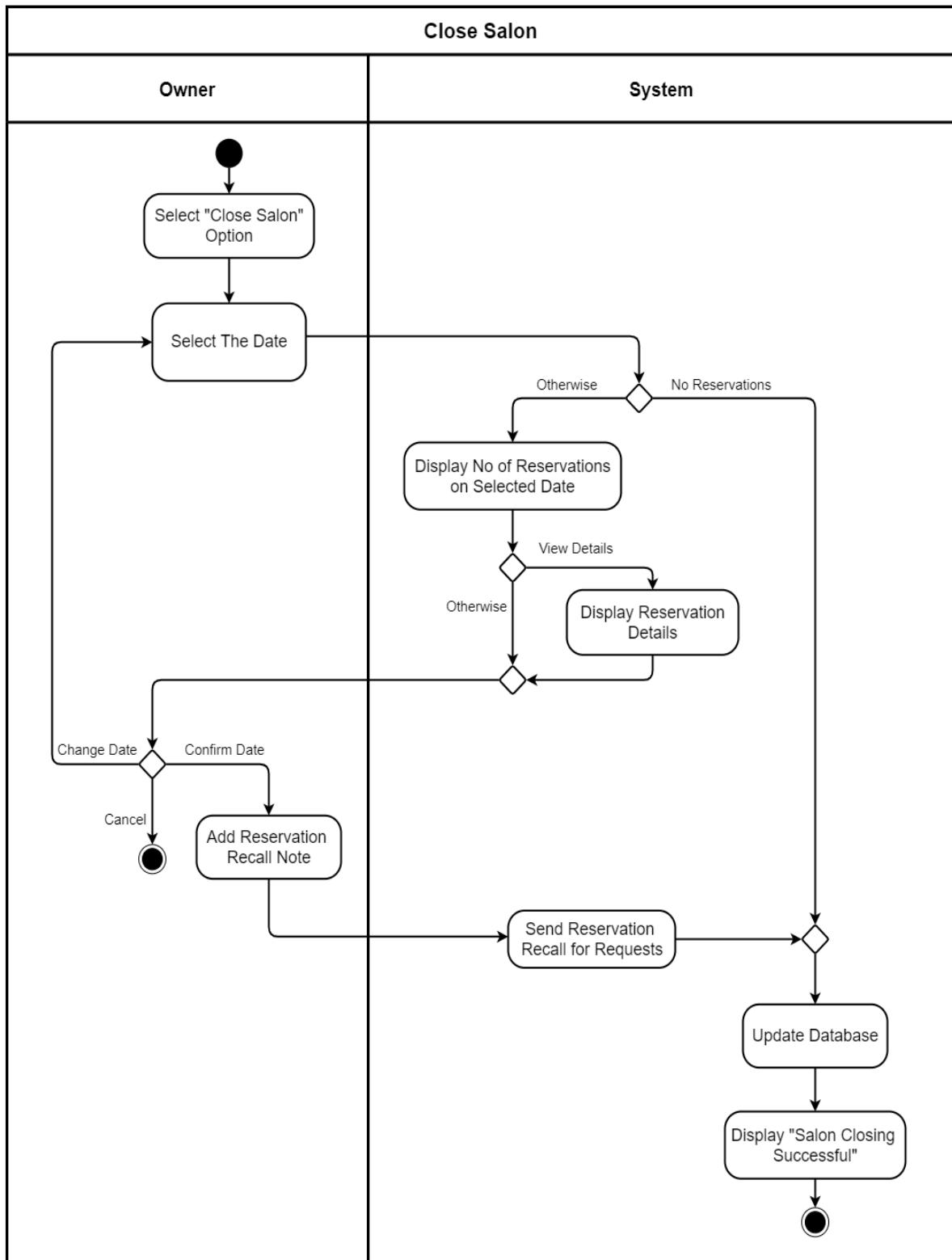


Figure 45: Close Salon (Activity Diagram)

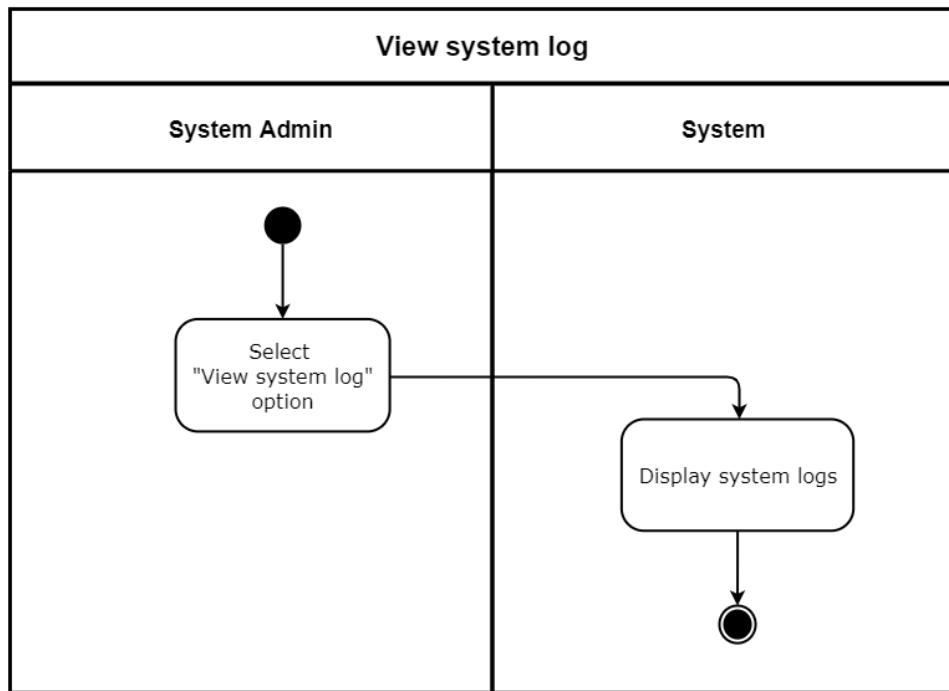


Figure 46: View System Log (Activity Diagram)

8.2. Quality Attributes

The following are the identified quality attributes of the system that shall be achieved.

- **User-friendliness**

System shall be able to use easily by the users without requiring high level of knowledge to understand the operations.

The proposed system shall be used by its users comfortably. The provided should be easily accessible and navigable.

- System shall require minimum level of IT and English knowledge to operate.
- System shall have user interfaces with minimal but clear design.
- Confirmation and pop-up messages shall provide clear idea of the actions that user performs.

- **Modifiability**

The system may require updates and modifications time to time. So, the system must be flexible to change and update at any time.

- Designing the system as components and have minimum dependencies shall provide the required modularity to accommodate changes easily with less modifications.
- Thus, system shall be modified to add new components (e.g.: adding an inventory system) with minimum effort.

- **Security**

The system should ensure the security of data collected and stored within the system from unauthorized access.

- System is designed with a proper hierarchy that separates the accessibility of each user level, it shall restrict access to unauthorized operations and data access.
- Every login is processed with authentication of credentials.
- Passwords are stored using encryption to secure login details if any unauthorized access occurs.

- **Performance**

System should response to the events without any significant delay that may affect the overall usability of the system.

- System shall be tested for its efficiency of response and improve it by using optimized scheduling algorithms.
- Database shall be normalized to reduce data redundancy and by that it shall allow to retrieve data efficiently by minimizing the delay

- **Testability**

System shall be easily testable to ensure functionality or to identify issues.

- Since system is designed into separate components it can be tested separately and debugging process will be easier.

- **Availability**

System shall be able to use with less interruptions and accessible easily.

- Since system is accessible over the internet, to its users it can be easily accessible for its users regardless of the location.
- Reservations can be placed regardless of the salon working hours through the online system.
- System logs of the important events are taken in order to allow the system to recover quickly in an event of system failure.

9. Technologies to be used

The following software tools and technologies will be used during the development of the proposed system.

- Front-End
 - HTML
 - CSS
 - JavaScript
- Back-End
 - PHP
- Database
 - MySQL
- Code Editors
 - Visual Studio Code
- Version Controlling
 - GitHub
- Diagrams
 - Draw.io
- Documentation
 - Microsoft Office 365
- Collaboration tools:
 - Trello
 - Zoom meetings
- Cloud Storage
 - Microsoft OneDrive
 - Google Drive
- Local Hosting
 - WampServer

10. Project timeline

Below is the Gantt chart for the project timeline. Since it's contains tentative timeframes, it may slightly vary during the development.

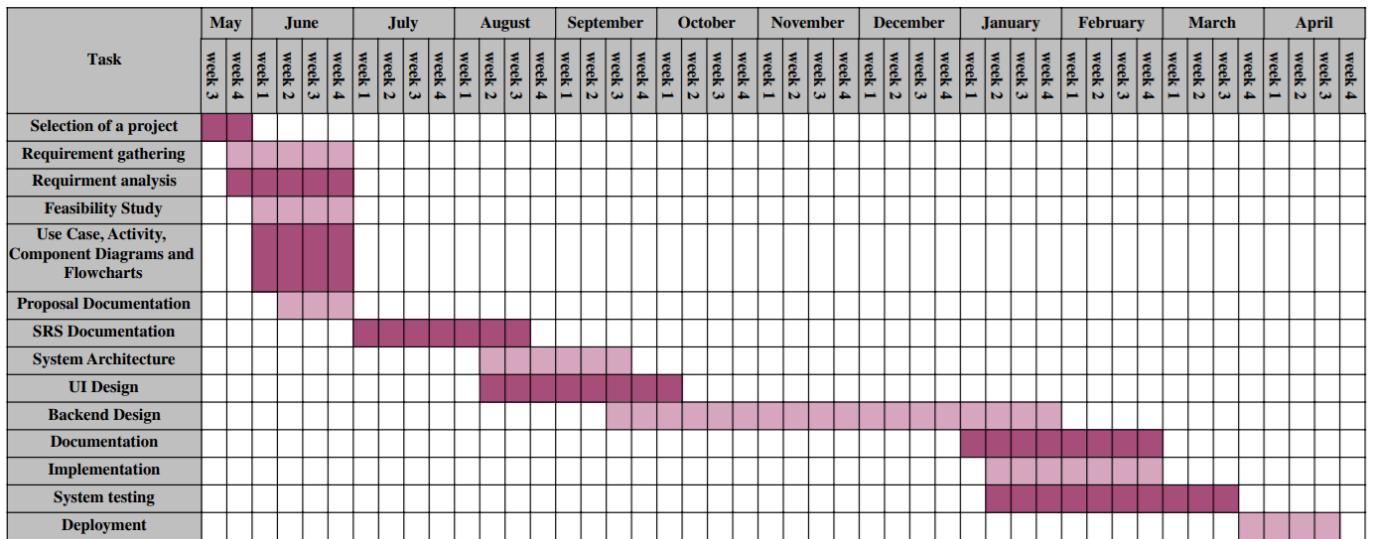
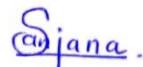


Figure 47: Project Timeline

11. Declaration

We as members of the project titled ‘Beauty Craft’, 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 acknowledgement, 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
19000413	N.D.Dissanayake	
19001274	R.M.N.T.S.Rajapaksha	
19000812	K.P.R.L.Madhubhashana	
19001029	H.D.R.M.Munasinghe	