Daffodil International University

# Software Documentation

## Restaurant Project (FoodKhabi)


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# Introduction

**Project Overview:**

In a world where the online presence of businesses is paramount, our restaurant website project **(FoodKhabi)** aims to elevate the dining experience for both patrons and owners. By seamlessly blending aesthetics, functionality, and user accessibility, we are crafting a digital platform that not only showcases the unique flavors of our restaurant but also provides a convenient and engaging space for our customers.

**Objectives:**

I. **Digital Representation:** Create a visually appealing and responsive website that accurately reflects the essence and identity of our restaurant.
II. **User-Friendly Interface:** Design an intuitive and easy-to-navigate interface to enhance the user experience, allowing visitors to explore our menu, place orders, and obtain information effortlessly.
III. **Ordering System:** Implement a robust online ordering system that streamlines the process for customers and integrates seamlessly with our internal operations.
IV. **Reservation System:** Integrate a reservation system to facilitate table bookings, enhancing customer convenience and optimizing restaurant seating.
V. **Mobile Responsiveness:** Ensure the website functions seamlessly across various devices, prioritizing mobile responsiveness to capture the growing mobile user base.
VI. **Menu Management:** Develop a flexible and dynamic menu management system that enables easy updates, additions, and removals of dishes, ensuring the menu is always current.

This documentation serves as a comprehensive resource, guiding the development team through the intricacies of the project and empowering stakeholders with a deeper understanding of the technological and design choices made. Together, we aim to create a digital hub that not only meets but exceeds the expectations of our patrons, enhancing their overall dining experience. The development of a dynamic and user-friendly restaurant website is crucial. This documentation serves as a guide for developers, designers, and stakeholders involved in the creation and maintenance of this digital culinary experience.

# Motivation

The motivation behind creating detailed and comprehensive software documentation for the restaurant website project is rooted in the recognition of its pivotal role in ensuring the success, sustainability, and growth of our digital presence. The documentation serves as a valuable resource for various stakeholders, providing clarity, guidance, and a roadmap for effective collaboration and future enhancements. Here are key motivations for undertaking this documentation effort:

I. **Digital Presence and Branding:** Establishing an online presence is crucial in today's digital era. A well-designed website serves as a digital storefront, enhancing the restaurant's visibility and brand image.
II. **Accessibility and Convenience:** Provide current and potential customers with a convenient way to access information about the restaurant, including the menu, opening hours, location, and special events, from the comfort of their homes or on the go.
III. **Online Ordering and Delivery:** Tap into the growing trend of online food ordering and delivery. A restaurant website with an integrated ordering system enables customers to place orders effortlessly, expanding the customer base and revenue streams.
IV. **Enhanced Customer Experience:** Improve the overall customer experience by offering a user-friendly interface that allows patrons to explore the menu, make reservations, and interact with the restaurant digitally. A positive online experience often translates to increased customer satisfaction.
V. **Competitive Advantage:** Stay competitive within the industry by adopting technology to enhance the customer experience. A well-executed website sets the restaurant apart, especially if competitors have yet to embrace similar digital strategies.
VI. **Marketing and Promotion:** Leverage the website as a powerful marketing tool. Promote special offers, events, and new menu items to a broader audience. Implementing search engine optimization (SEO) strategies can also improve the restaurant's visibility on online platforms.
VII. **Data Collection and Analysis:** Gather valuable customer data through the website, such as preferences, order history, and feedback. Analyzing this data provides insights that can be used to tailor offerings, improve services, and make data-driven business decisions.
VIII. **Adaptability to Trends:** Stay adaptable to industry trends and changing consumer behaviors. A website allows the restaurant to quickly update menus, showcase seasonal offerings, and respond to market demands in real-time.
IX. **Customer Engagement and Loyalty:** Foster customer loyalty by engaging with patrons through the website. Implement features such as newsletters, loyalty programs, or personalized recommendations to build a stronger connection with the customer base.
X. **Operational Efficiency:** Streamline internal processes through features like online reservations and order management. This not only enhances the customer experience but also improves operational efficiency for the restaurant staff.

XI. **Community Building:** Create a digital community around the restaurant. Engage with customers through social media integration, blogs, and forums, fostering a sense of belonging and encouraging repeat visits.

XII. **Adaptation to Changing Circumstances:** Especially relevant in times of unforeseen circumstances, such as global events or health crises. An online presence allows for quick communication of changes to operations, safety protocols, and alternative services like takeout or delivery.

XIII. **Maintainability and Future Development:** Enhance the maintainability of the codebase by documenting the rationale behind design decisions, coding standards, and best practices. Provide a foundation for future development and updates, making it easier for the team to build upon existing features or introduce new functionalities.

XIV. **Global Visibility:** In an increasingly digital world, a restaurant website provides a global platform, making information about the restaurant easily accessible to potential customers from anywhere at any time.

XV. **Brand Building and Marketing:** The website becomes a powerful tool for brand building and marketing. It enables the restaurant to communicate its unique identity, share updates, and run promotional campaigns to attract new customers and retain existing ones.

XVI. **Adaptability to Customer Preferences**: A website allows the restaurant to adapt to changing customer preferences and behaviors. For example, if there's a growing demand for plant-based options, the menu can be easily updated and communicated through the website.

In essence, building a restaurant website is motivated by the desire to adapt to the digital age, enhance customer experiences, and capitalize on the myriad opportunities technology presents in the restaurant industry. It's a strategic move that not only meets the expectations of today's tech-savvy consumers but also positions the restaurant for sustained success in the future.

# Software Requirement Specification (SRS)

| | |
|---|---|
| **Project Sponsor** | FoodPanda, Uber Eats. |
| **Business Needs** | • **Enhanced Digital Presence:** Develop a modern and visually appealing website to establish a strong online presence for the restaurant.<br>• **Online Ordering and Delivery:** Implement an online ordering system to cater to the growing trend of food delivery services and increase revenue streams.<br>• **Improved Customer Engagement:** Enhance customer engagement through a user-friendly website, featuring interactive menus, promotions, and social media integration.<br>• **Operational Efficiency:** Streamline internal processes with features like online reservations and order management, improving overall operational efficiency.<br>• **Competitive Edge:** Stay competitive by offering a convenient and efficient online experience, differentiating the restaurant from competitors in the local market. |
| **Business Requirements** | • **User-Friendly Interface:** The website should have an intuitive and visually appealing interface, ensuring a positive user experience for both desktop and mobile users.<br>• **Online Ordering System:** Implement a secure and efficient online ordering system with options for customization, special requests, and real-time order tracking.<br>• **Reservation System:** Develop a reservation system allowing customers to book tables online, with features for managing reservations and optimizing seating arrangements.<br>• **Menu Management:** Create a dynamic menu management system to easily update menu items, prices, and descriptions, reflecting real-time changes in offerings.<br>• **Mobile Responsiveness:** Ensure the website is fully responsive, providing a seamless experience across various devices, particularly prioritizing mobile usability.<br>• **Data Security and Privacy:** Implement robust security measures to protect customer data, ensuring compliance with data protection regulations and building trust among users. |

| | |
|---|---|
| **Business Values** | • **Customer Satisfaction:** Prioritize features and design elements that contribute to a positive customer experience, ultimately increasing customer satisfaction and loyalty.<br>• **Revenue Growth:** Utilize the website as a revenue-generating tool by promoting online orders, reservations, and special promotions to drive sales.<br>• **Brand Image:** Enhance and maintain the restaurant's brand image through a visually appealing and consistent online presence that aligns with the restaurant's identity.<br>• **Functional Effectiveness:** Improve internal processes to reduce manual workloads, minimize errors, and increase the efficiency of day-to-day operations. |
| **Special Issues & Constraints** | • **Budget Constraints:** Adhere to a predefined budget, optimizing resource utilization and avoiding unnecessary expenses.<br>• **Timeline Constraints:** Deliver the project within a specified timeline to meet business objectives and capitalize on market opportunities.<br>• **Integration Challenges:** Address potential challenges related to integrating the website with existing internal systems, such as point-of-sale systems and inventory management.<br>• **Compliance Requirements:** Ensure compliance with relevant regulations, including data protection laws and accessibility standards.<br>• **Limited In-House Expertise:** Mitigate challenges associated with limited in-house technical expertise by potentially seeking external support or training. |

By clearly defining the project sponsor, business needs, requirements, values, and addressing special issues and constraints, the restaurant website project can be strategically aligned with the overarching goals of the business. This comprehensive overview provides a foundation for successful project planning, execution, and delivery.

# System Requirement

Welcome to the System Requirements section of the Software Requirements Specification (SRS) for the restaurant. This section plays a pivotal role in defining the detailed specifications that govern the behavior, performance, and constraints of the software system. By delving into the specifics of the system, we aim to provide a comprehensive understanding of how the software will function and interact within its environment. Within this section, we delineate the specific features, functionalities, and constraints that fall within the purview of the software system. This includes explicit details about the intended user interactions, system behavior, and the overall capabilities of the software.

**Functional Requirements:** Detailed functional requirements articulate the specific actions and responses expected from the software system. These requirements outline the features that users can interact with, ensuring a clear roadmap for development.

I. **User Management:**
- Registration and Login: Users (customers and staff) should be able to create accounts and log in securely.
- User Roles: Define different roles (customer, staff, admin) with specific permissions and access levels.

II. **Menu Management:**
- Dynamic Menu: Enable easy addition, modification, and removal of menu items with details such as prices, descriptions, and images.
- Categorization: Allow categorization of menu items (appetizers, mains, desserts) for easy navigation.

III. **Online Ordering:**
- Shopping Cart: Implement a user-friendly shopping cart for customers to review and modify their orders.
- Customization: Provide options for customization, special requests, and dietary preferences.
- Checkout and Payment: Facilitate a secure checkout process with multiple payment options.

IV. **Reservation System:**
- Real-time Availability: Show real-time table availability for customers making reservations.
- Confirmation: Send confirmation notifications to users after successful reservation.

V. **User Reviews and Ratings:**
- Review Submission: Allow users to submit reviews and ratings for dishes and overall dining experience.
- Moderation: Implement moderation tools to manage and respond to user reviews.

VI. **Mobile Responsiveness:**

- Responsive Design: Ensure the website functions seamlessly across various devices, with a particular emphasis on mobile responsiveness.

VII. **Admin Dashboard:**

- Order Management: Provide tools for managing orders, tracking deliveries, and monitoring reservations.
- Menu Administration: Enable administrators to easily update and manage the menu.
- User Management: Admins should be able to manage user accounts, roles, and permissions.

**Non-Functional requirements**: Beyond functionality, non-functional requirements encompass aspects such as performance, security, usability, and scalability. These criteria provide a holistic view of how the system should perform and the quality attributes it must exhibit.

I. **Performance:**

- Response Time: Ensure fast response times for actions such as menu navigation, order placement, and reservation requests.
- Scalability: Design the system to scale effectively as the user base grows.

II. **Security:**

- Data Encryption: Implement secure data transmission and storage, including encryption for sensitive information.
- Authentication and Authorization: Ensure robust user authentication and authorization mechanisms to protect user accounts and data.

III. **Reliability:**

- System Availability: Aim for high system availability to prevent disruptions to online ordering and reservation services.
- Backup and Recovery: Implement regular data backups and a robust recovery mechanism in case of system failures.

IV. **Compliance:**

- Data Protection: Adhere to data protection laws and regulations governing the handling of customer information.
- Accessibility: Ensure the website is accessible to users with disabilities, complying with accessibility standards.

V. **Technology Stack:**

- Frontend: Specify the technologies for the frontend (e.g., HTML, CSS, JavaScript, React).
- Backend: Define the backend technologies (e.g., Node.js, Django, Ruby on Rails) and the database system (e.g., MySQL, PostgreSQL).
- Hosting and Deployment: Choose a suitable hosting platform (e.g., AWS, Azure, Heroku) and define deployment procedures.

# Use Case Diagram (Scenario)

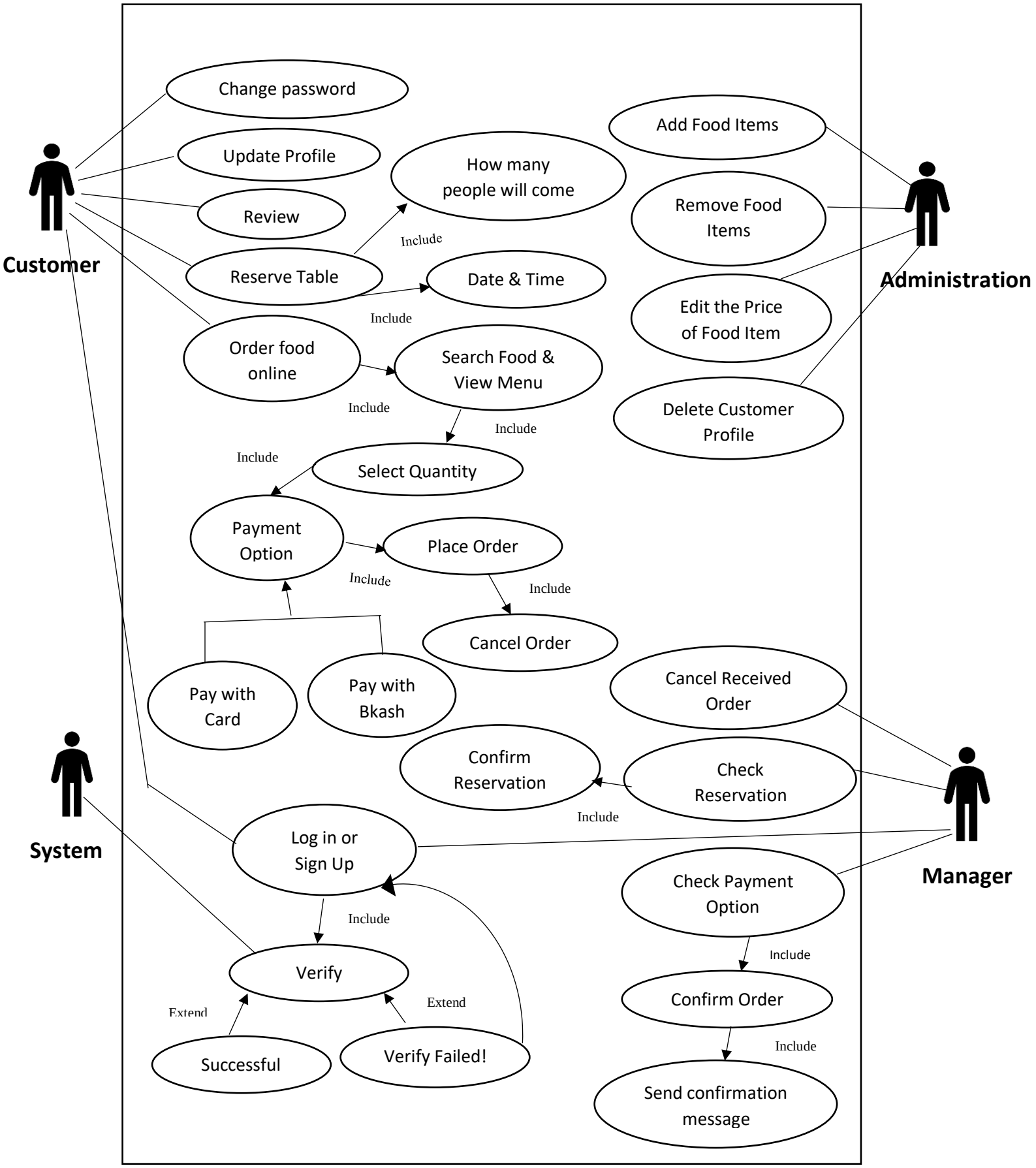
This is a restaurant website for order food and reserve a table. The goal is to the customer can place an online order or make a reservation through the restaurant website. The scenario –

- Customers can sign in or sign up into their accounts.
- Customer can change their password if they forget.
- Customer can update their profiles.
- Customer can give a review.
- System verifies the log in process.
- Customer can choose either reserve table or online food order.
- Customer can choose how many people will come.
- Customer can choose date & time.
- Manager checks and confirms the reservation table.
- Customer search their favorite food and view menu.
- Customer select the quantity of the food item.
- Customer choose their payment options.
- Customer place their orders.
- Customer can also cancel their orders.
- Manager log in and checks their orders.
- Manager checks the payment method.
- Manager confirm their orders.
- Manager sends confirmation to the customers.
- Manager can also cancel orders.
- Administration can add any food items.
- Administration can remove any food items.
- Administration can edit the price of food items.
- Administration can delete a customer profile.

# Use Case Diagram

| | |
|---|---|
| **Use Case Name:** | Order food and manage order from "Food Khabi". |
| **Use Case ID:** | UC-01 |
| **Priority:** | High |
| **Goal:** | Customer can successfully place their online order. |
| **Primary Actor:** | Customer |
| **Secondary Actor:** | Manager, System, Administration |
| **Description:** | This use case describes how a customer can place or cancel an order, reserve a table and how a manager can manage it. |
| **Triger:** | Customer decides to make an order of food because he or she is hungry. |
| **Triger Type:** | Internal |
| **Exceptions:** | System message – "Verify Failed" |
| **Pre-condition:** | **1.** The customer has access to the internet and a compatible device.<br>**2.** Have to give the correct present address.<br>**3.** Can not create two accounts with same email or phone number. |
| **Post-condition:** | **1.** Customers successfully log in or create their accounts.<br>**2.** Customers successfully place their orders. |
| **Basic Flow:** | **1.** Customers can sign in or sign up into their accounts.<br>**2.** Customer can change their password if they forget.<br>**3.** Customer can update their profiles.<br>**4.** Customer can give a review.<br>**5.** System verifies the log in process.<br>**6.** Customer can choose either reserve table or online food order.<br>**For Reserve Table –**<br>**7.** Customer can choose how many people will come.<br>**8.** Customer can choose date & time.<br>**9.** Manager checks and confirms the reservation table.<br>**For Online Food Order –**<br>**10.** Customer search their favorite food and view menu.<br>**11.** Customer select the quantity of the food item.<br>**12.** Customer choose their payment options.<br>**13.** Customer place their orders.<br>**14.** Customer can also cancel their orders.<br>**15.** Manager log in and checks their orders.<br>**16.** Manager checks the payment method.<br>**17.** Manager confirm their orders.<br>**18.** Manager sends confirmation to the customers.<br>**19.** Manager can also cancel orders.<br>**For Administration –**<br>**20.** Administration can add any food items.<br>**21.** Administration can remove any food items.<br>**22.** Administration can edit the price of food items.<br>**23.** Administration can delete a customer profile. |

# Use Case Diagram (FoodKhabi)



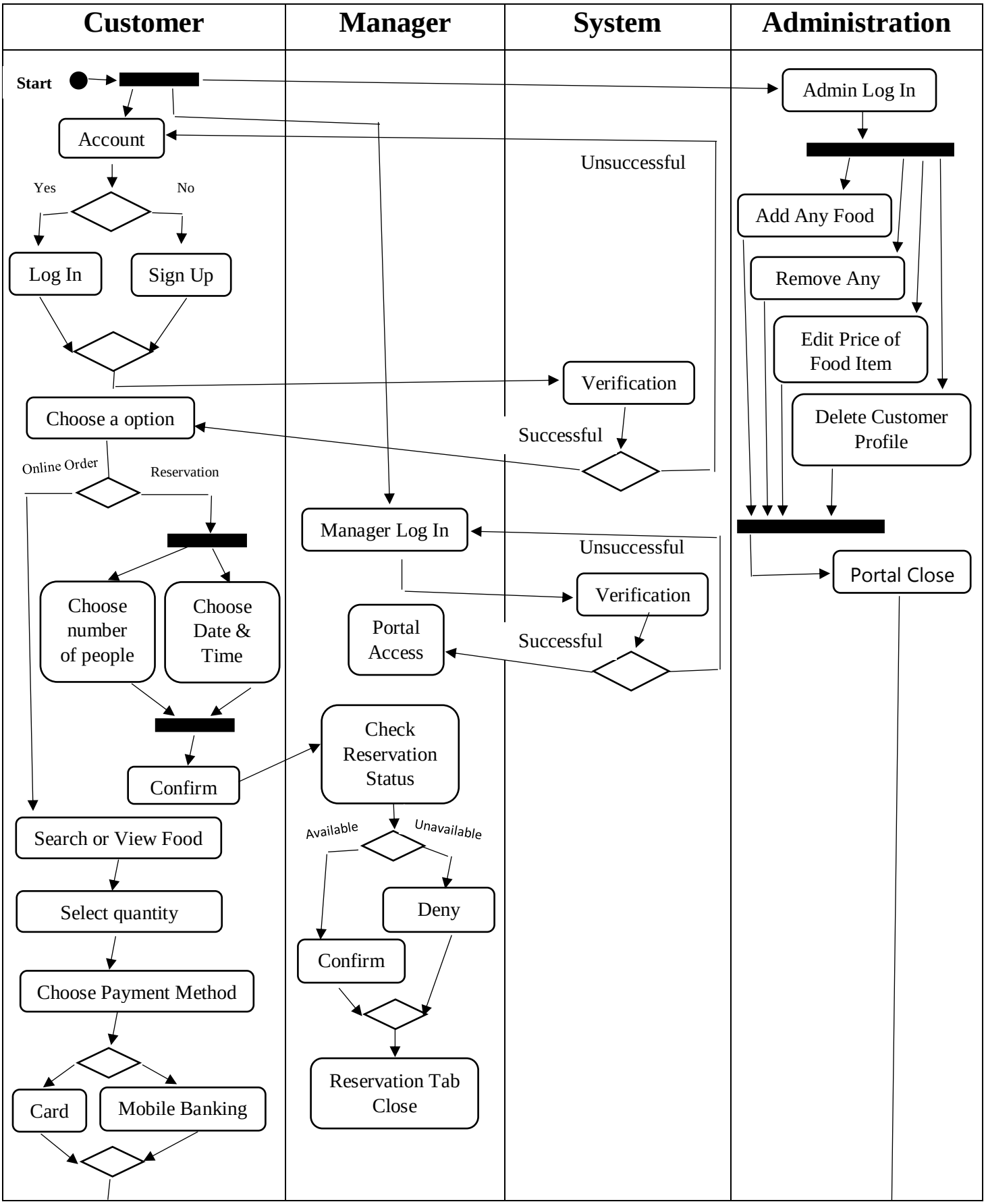
# Swimlane Diagram (Scenario)

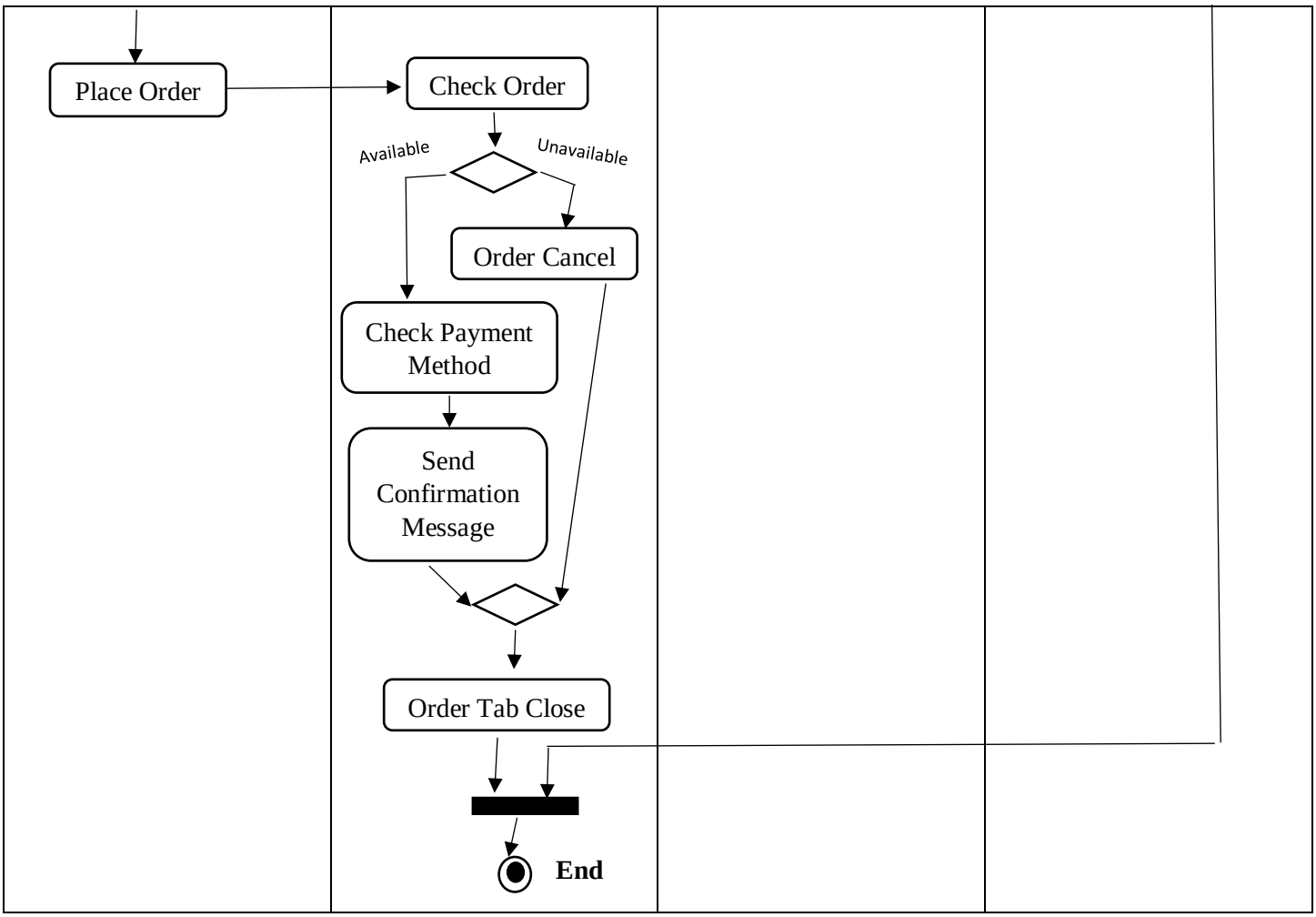
In the swimlane diagram, all the activities are divided by the actors. In this system the customer first sign in to their account. The system will verify the log in process. Without sign in customer can also order food or book a table. Then customer can choose online order or reservation depending their preferences. If customer chooses online order, he or she will go to view food page. Then he or she will choose the food and select quantity. After selecting quantity, he or she will go to payment page. Customer will choose a payment option (card or mobile banking), after confirming he or she will place the order. In the meanwhile, manager will sign in to his portal & check order. If the food is available, manager will check the payment method. If payment is clear, then the manager will send confirmation message to the customer by email him. If the food is not available, manager will cancel the order.

For reservation, customer will choose how many people will come, the arrival date & time. Then he or she will confirm the reservation. The manager will check reservation status. If the table is available in that particular date & time, he will confirm it. Otherwise, manager will deny it.

Admin can log in to their portal for adding any food item, remove any food item, can edit the price of food item or can delete any customer profile.

# Swimlane Diagram (FoodKhabi)




Place Order
Check Order
Available
Unavailable
Order Cancel
Check Payment Method
Send Confirmation Message
Order Tab Close
End

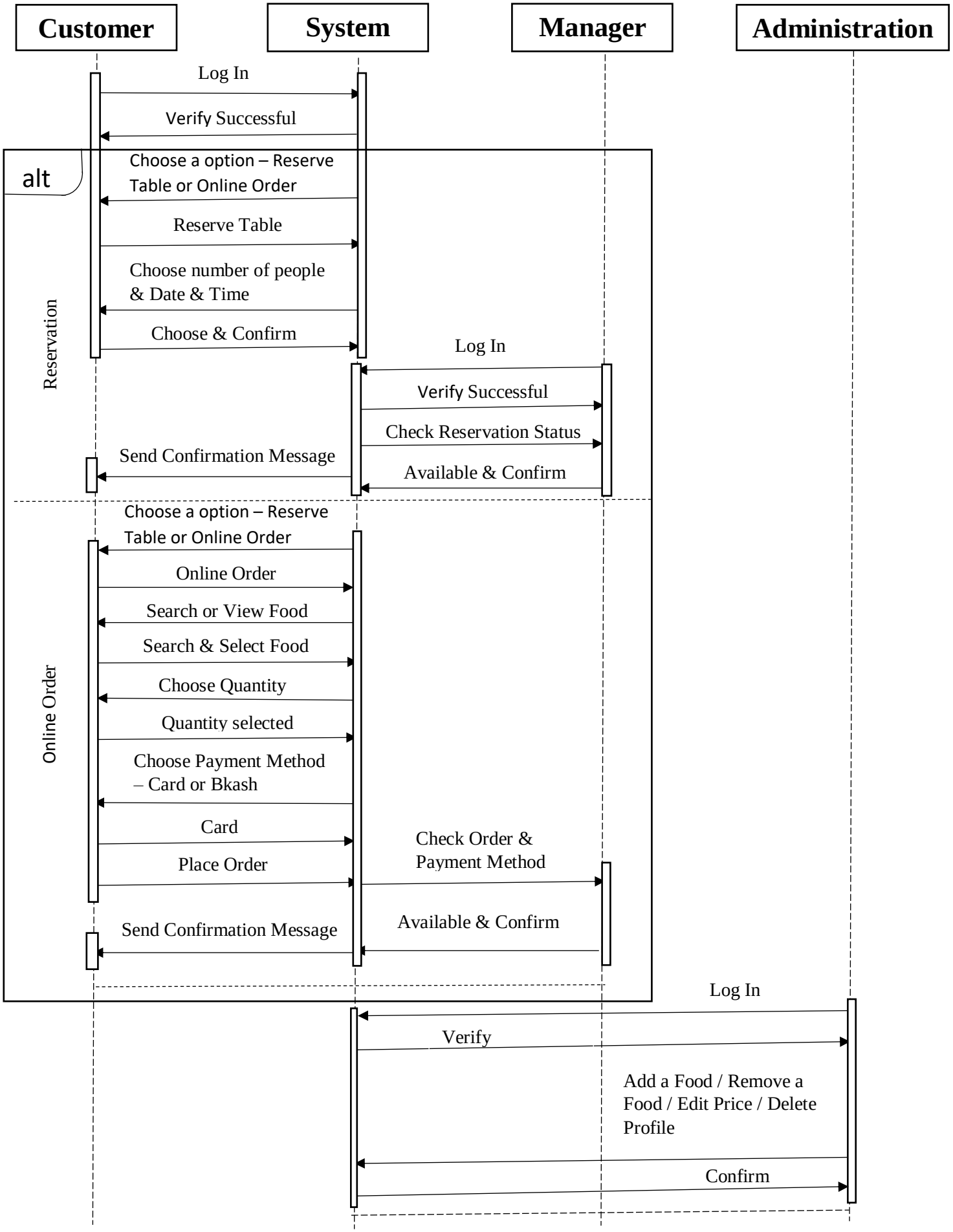
# Sequence Diagram (Scenario)

Sequence Diagram is an interaction diagram that details how operations are carried out. In sequence diagram, the activities are displayed in sequentially. In this scenario, the customer first sign in to their account. The system will verify the log in process. Then the customer will choose a option reserve table or online order. Suppose, the customer chooses reserve table. Then the reservation form will provide by the system. The customer will input how many people will come, the arrival date & time. Then he or she will confirm the reservation. Then the system will send the response to manager. In the meanwhile, the manager will log in to his or her account. The system will provide reservation status. The manager will check it & confirm it. Then the system will send confirmation message through email to the customer.

If, the customer chooses online order, the system will provide the food item list. Customer will select the food item with its quantity. The system will ask about the payment method. Customer will have two options (card or mobile banking). Then the customer will choose the payment option & place the order. The system will forward the response to the manager. Manager will check order & payment option. If the food item is available, the manager will confirm it. Then the system will send confirmation message through email to the customer.

Admin can log in to their portal, The system will verify the log in. The admin can add any food item, remove any food item, can edit the price of food item or can delete any customer profile. Then the system will confirm the changes.

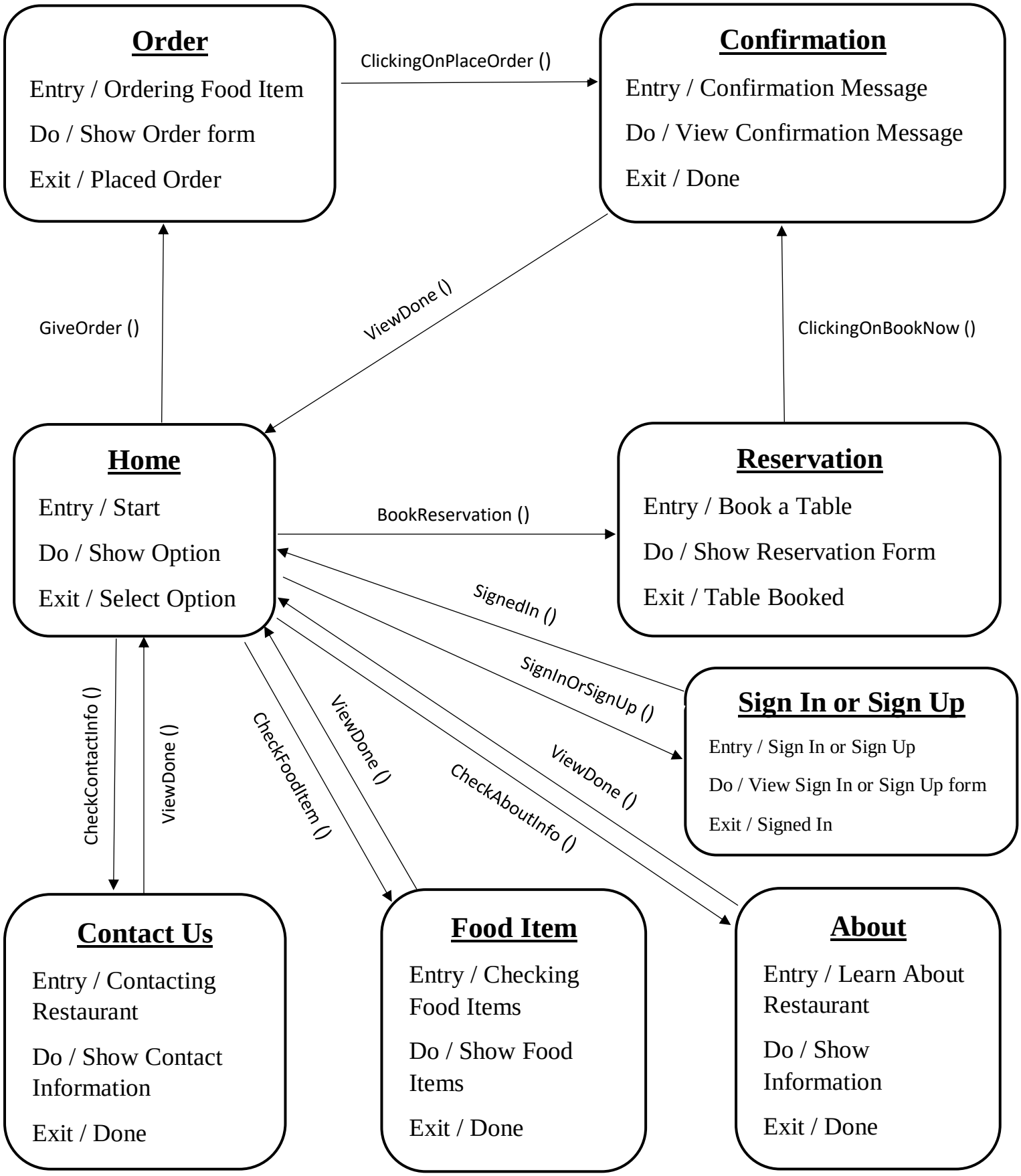
# Sequence Diagram (FoodKhabi)



# State Machine Diagram (Scenario)

State machine diagram typically are used to describe state-dependent behavior for an object. An object responds differently to the same event depending on what state it is in. In this scenario, there are eight states. All are connected to the home state. Customer will start form home state. In home state, he or she will have options. The exit of this state is select option. Then the customer can go to various state like sign in, order, reservation, about, contact us, food item. In sign in state, the customer will sign in into his or her account. In order state, the customer will place the order of food items. In food item state, customer can see the menu of food items. In reservation state, customer can book a table. In about state, customer can learn about the restaurant. In contact us state, customer can know about the contact information. These are all about entry points of the states. If the process is completed, the customer will leave that state. There will be additional state named confirmation. After placed order or table booked, this state will appear. In this state, there will be a confirmation message.

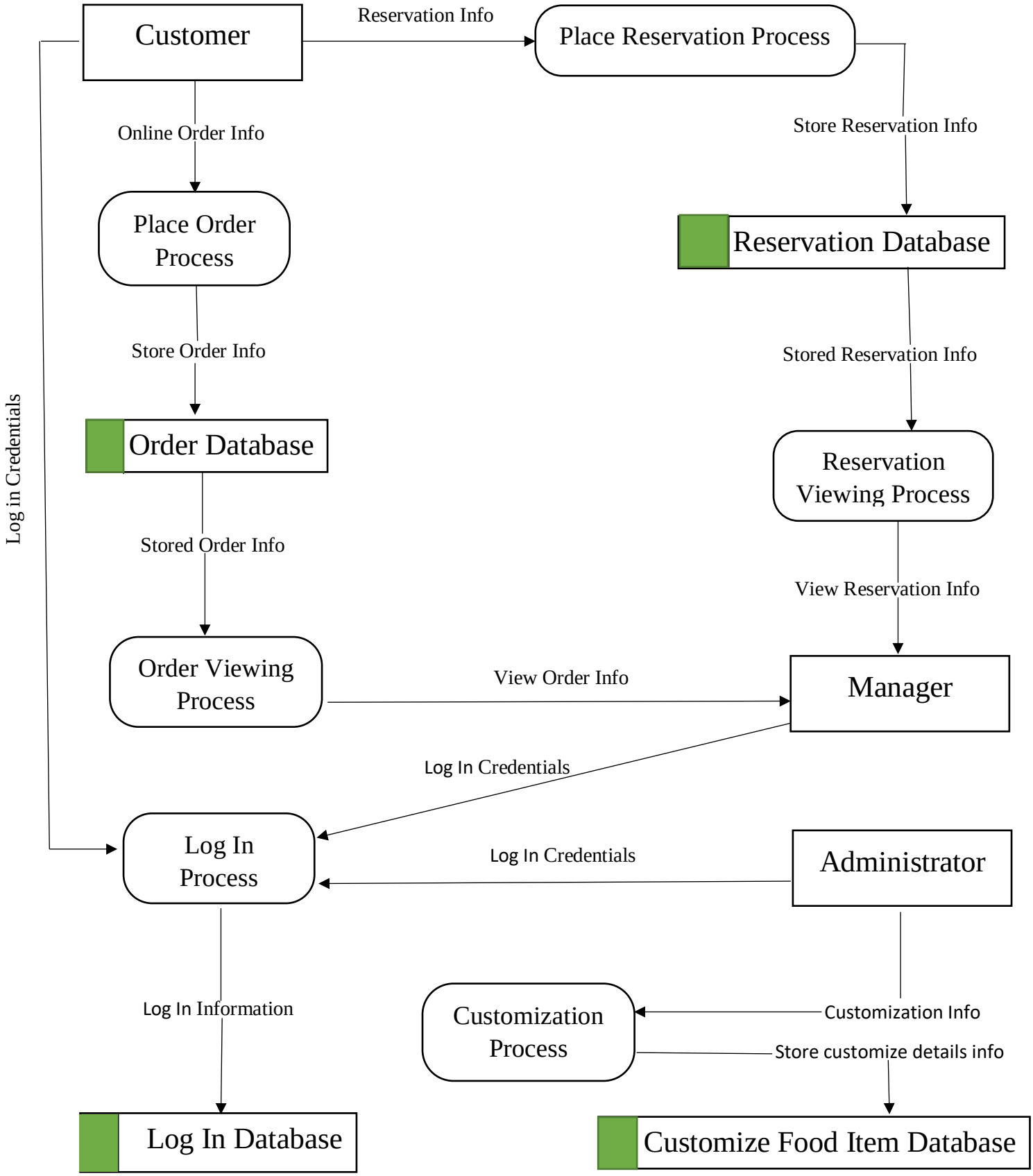
# State Machine Diagram (FoodKhabi)



# Data Flow Diagram (Scenario)

A data flow diagram maps out the flow of information for any process or system. In this scenario, customer, manager & admin can log in to their accounts. They have to input their login information, that will be save in the log in database. Customer can input order details for online order, that will save in the order database. From the order database, the data will forward to the manager portal. Customer can also input reservation information for book a table. This information will save in the reservation database. From this database, the information will forward to the manager portal for further execution. Admin can customize the food items. Admin can add or remove or change the price of any food item. The details information of customization will save in the customization food item database.

# Data Flow Diagram (FoodKhabi)



# Summary & Conclusion

In conclusion, the development of the restaurant website project has been a journey marked by strategic planning, creative design, and meticulous implementation. From the initial concept to the final product, the project has aimed to enhance the overall dining experience for our patrons while providing operational efficiency for the restaurant staff. The website stands as a digital representation of our brand, seamlessly blending aesthetics with functionality to create a user-friendly interface.

Key components of the project include a dynamic menu management system, an intuitive online ordering platform, and a seamless reservation system. These features not only cater to the evolving preferences of our tech-savvy customers but also position our restaurant at the forefront of the industry.

The mobile responsiveness of the website ensures accessibility across various devices, reflecting our commitment to meeting customers wherever they are. The integration of user reviews and ratings fosters a sense of community, allowing for valuable feedback and engagement.

As we look back on the project's journey, we acknowledge the collaborative effort of the development team, designers, stakeholders, and the unwavering support of our patrons. The successful implementation of the restaurant website aligns with our commitment to innovation, customer satisfaction, and adaptability to the ever-changing landscape of the culinary industry.

The restaurant website project represents not just a digital presence but a strategic investment in our brand's future. It is a testament to our dedication to providing a seamless and delightful experience for our customers, whether they're exploring our menu, placing an order, or making a reservation.

As we launch this website, we recognize that it is not the end but a new beginning. Continuous monitoring, feedback collection, and adaptation to emerging trends will be essential for keeping the website dynamic and relevant. We commit to ongoing support and improvements to ensure that our digital platform remains a valuable asset for both our customers and the restaurant.