Los Tres Locos

Online Restaurant and Delivery Service App
Software Requirements Specification

Version 1.0

Revision History

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Software Requirements Specification

1. Introduction

1.1 Purpose

The purpose of this document is to thoroughly describe the online restaurant and delivery service application. It explains the features of the system, how each user will use each feature, the feasibility of the system, and the requirements needed for the system. This document is intended to be used as a first description of the system being created for the semester-long project for CSc 322.

1.2 Scope

This software system is targeted at restaurants that would prefer to use an online management system. The staff and patrons of the restaurant would then use the services rendered by the application. In turn, this gives the users more streamlined access to the restaurant's services. Moreover, the restaurant that uses this system will reduce its overhead and expenses.

The system allows for a restaurant manager to maintain quality control over the chefs, delivery drivers, and customers. The manager has control over the promotion or demotion of workers and allowing new customers into the system. Potential customers, surfers, may apply to be registered. Registered customers may order meals for delivery, pickup, or to eat within the restaurant. With further requirements, a registered customer may become a VIP customer with added benefits. These customers may also post on a discussion forum and rate their meals and delivery workers. Chefs would be assigned a meal to prepare from the system and delivery workers would be assigned a customer to deliver to. In turn, delivery workers may file a compliment or complaint against a customer.

1.3 Definitions, Acronyms, and Abbreviations

GUI: Graphical User Interface. This is used by the user, it is made up of easy to use features.

Users: A group of people accessing or interacting with the software.

Surfer: a non-registered customer

Registered customer: a surfer who has applied for registration and submitted a deposit

VIP customer: a registered customer who has either ordered over 50 meals or $500 worth of meals

RDBMS: Relational Database Management System

Service: method of retrieving food by delivery, takeout, or dine-in

Customer: A Registered/VIP customer

Active complaint: a complaint that isn't removed from a compliment

Processed: the end result of a use-case

HTML: Hypertext Markup Language

CSS: Cascading Style Sheets

Frontend: the portion of a codebase that models the user interface

Backend: the portion of the codebase that processes requests and stores/manipulate data

1.4 References

What is Use Case Diagram? (n.d.). Retrieved October 20, 2020, from https://www.visual-paradigm.com/guide/uml-unified-modeling-language/what-is-use-case-diagram/

1.5 Overview

The next section, the Overall Description, introduces the use-cases of the system described by this document. The Use-Case Model Survey subsection briefly describes how each feature of the system is to be used by any given user, but not how these features are to be implemented. Furthermore, it heavily references the use-case diagram in Figure 1 of the Appendix. Finally, this section outlines the requirements for this system and analyzes its feasibility.

The third section, the Specific Requirements, describes the specific requirements that are needed to sufficiently design and test this system. The Use-Case Reports subsection details the functional and non-functional requirements necessary for each use-case previously mentioned in the Use-Case Model Survey from the previous section. The Supplementary Requirements subsections encompasses system requirements that are not mentioned in the Use-Case Model Survey.

The Appendix contains the use-case diagram referenced throughout this document. This diagram displays the key features of the system and which users have access to them.

2. Overall Description

2.1 Use-Case Model Survey

2.1.1 First Level Use-Cases

2.1.1.1 Use-Case: Discussion Board

Diagram: Refer to Appendix, Figure 1

Brief Description

Surfers can view discussions on the discussion board. Registered users can view, start, or participate in discussions regarding chefs, delivery people, or dishes. Users can report other users for misbehaving. The manager oversees all discussion board action.

2.1.1.2 Use-Case: Complaint and Compliment System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers can complain about or compliment a chef's meal or delivery person. A delivery person can also complain about or compliment a customer whom they deliver food to.

2.1.1.3 Use-Case: Menu

Diagram: Refer to Appendix, Figure 1

Brief Description

Surfers can view the menu. Customers can view the menu and place an order. VIP customers, a subset of customers, have access to ordering specials. At least 2 chefs are designated to create items for the menu. The manager will oversee the menu.

2.1.1.4 Use-Case: Registration and Quitting System

Diagram: Refer to Appendix, Figure 1

Brief Description

Surfers can register to be customers by signing up with their email, creating a password, and paying a registration deposit. Registered customers can quit the system. The manager will handle all quit requests by clearing deposits and closing the accounts.

2.1.1.5 Use-Case: Service System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers have the option to dine at the restaurant, order the food to go, or have their order delivered to them. The chef has access to the service system to look at orders to make the required dishes. Delivery people have access to the service system to view orders that need to be delivered.

2.1.1.6 Use-Case: Birthday Coupons (Tentative Creative Feature)

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers have the option to claim coupons that are automatically given to them on their birthday.

2.1.1.7 Use-Case: Deposit System

Diagram: Refer to Appendix, Figure 1

Brief Description

Surfers have the option to make a registration deposit to become a customer. Customers have the option to deposit money into their account to place more orders. The manager handles deposits when customers choose to quit.

2.1.2 Second Level Use-Cases

2.1.2.1 Use-Case: View Discussion

Diagram: Refer to Appendix, Figure 1

Brief Description

Surfers and customers can view discussions on the discussion boards by navigating to the discussion board in the restaurant application.

2.1.2.2 Use-Case: Starting and Participating in Discussions

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers can start or participate in discussions about chefs, dishes, or delivery people by navigating to the discussion board and choosing to make a post.

2.1.2.3 Use-Case: Reporting System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers can report each other for improper conduct on the discussion boards. The manager will process these reports.

2.1.2.4 Use-Case: Complaints

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers can complain about a chef who prepared their order or a delivery person who delivered their order. Delivery people can complain about the customers they deliver dishes to.

2.1.2.5 Use-Case: Compliments

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers can compliment a chef who cooks their order or a delivery person who delivers their order. Delivery people can compliment customers who they deliver orders to. The manager can view compliments to process them for chefs and delivery people.

2.1.2.6 Use-Case: Disputing Complaints

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers, chefs, or delivery people who receive complaints have the option to dispute the complaint(s) made against them. The manager makes the final decision in processing complaints.

2.1.2.7 Use-Case: Promoting and Demoting

Diagram: Refer to Appendix, Figure 1

Brief Description

The manager has the ability to promote chefs or delivery people in the system after they receive three compliments. He/she can also promote a chef if their dish receives high ratings. The manager has the ability to demote chefs or delivery people after they receive three complaints. He/she can also demote a chef if their dish receives low ratings.

2.1.2.8 Use-Case: Firing

Diagram: Refer to Appendix, Figure 1

Brief Description

The manager has the ability to fire chefs or delivery people who have been demoted twice.

2.1.2.9 Use-Case: Warning System

Diagram: Refer to Appendix, Figure 1

Brief Description

The manager has the ability to issue a warning to a customer, delivery person, or chef if a complaint is not dismissed or kept as a complaint.

2.1.2.10 Use-Case: Seating System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers have access to the seating system when they are looking to reserve a table for dining in.

2.1.2.11 Use-Case: Delivery System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers place an order to be delivered to their house. Chefs view what orders have been placed so they can prepare the necessary dishes. Delivery people view the orders to be delivered.

2.1.2.12 Use-Case: Takeout System

Diagram: Refer to Appendix, Figure 1

Brief Description

Customers place an order to be picked up at the restaurant. Chefs view what orders have been placed so they can prepare the necessary dishes.

2.2 Assumptions and Dependencies

The overall system will be designed as a web application to be viewed on the browser. The presentation and designs will be shown on the frontend which will involve the use of HTML, CSS, and JavaScript. The user will interact with the frontend and send requests to the backend. The backend server will run on the Python framework Django with a database utilizing SQLite. The server will handle the processing of requests and record any information necessary in the database. This system would thus prove to be feasible for this project as it allows for a fully functioning codebase that may save state and allow for smooth user interactions.

3. Specific Requirements

3.1 Use-Case Reports

3.1.1 Use-Case: Discussion Board Post

Cross-reference(s): Section 2.1.1.1 Discussion Board

Precondition

The user must be registered and logged in to the application.

Flow

1. A Registered/VIP user may start a new discussion through a “Compose New” button.
2. The user chooses a subject for the post from a dropdown menu of subjects.
3. The user writes a body for the post with a minimum of 100 characters and a maximum of 5000 characters.
    a. Taboo words are replaced with *** and messages with more than 3 taboo words are automatically blocked. Refer to Section 3.1.1.2 Complaint, Compliment, and Warning System for consequences.
4. The user clicks the “Post” button and the post is submitted and added to the database.
5. Another Registered/VIP user may comment on this post and/or report the post or other comments.
    a. Refer to the Compliment/Complaint system
6. Any user can view posts and comments.

Postcondition

A discussion post is uploaded to the discussion board.

3.1.2 Use-Case: Complaints and Compliments

Cross-reference(s): Section 2.1.1.2 Complaint and Compliment System, Section 2.1.2.3 Reporting System, Section 2.1.2.4 Complaints, Section 2.1.2.5 Compliments, Section 2.1.2.6 Disputing Complaints, and Section 2.1.2.9 Warning System

Precondition

The user must be registered and logged in to the application to file a complaint or compliment or, in the case of the manager, view and handle compliments and complaints.

Flow

Filing a complaint (Customer)

1. A customer clicks the “Report” button on a post or comment.
2. The customer may report a delivery driver by clicking “Report” in the main menu and give reasoning.
3. The customer must give a reasoning for the complaint and then clicks “Report”.
4. The complained person receives their pending complaint.

Giving a compliment (Customer)

1. The customer clicks “Compliment” next to their meal order.
2. If the customer chose the delivery option, they are given a choice of complimenting their delivery driver or their chef.
3. The customer may optionally include a message to the person they are complimenting.

4. The person complimented will receive a compliment message. If a VIP gave the compliment, then the person receives two compliments.

Filing a complaint (Delivery driver)

1. The delivery driver clicks “Report” on the customer they delivered to in the main menu next to their previous orders.
2. The delivery driver must give a reason for the complaint and clicks “Report”.
3. The complained customer receives their pending complaint.

Giving a compliment (Delivery driver)

1. The driver clicks “Compliment” next to one of their previous delivered orders.
2. The driver may optionally include a message to the customer they are complimenting.
3. The customer complimented will receive a compliment message.

Disputing a complaint (Customer/Delivery driver/Chef)

1. User will click a “Dispute” button next to the pending complaint.
2. The user must give a reason for their dispute.
3. The user then submits their dispute through the “Dispute” button.

Adjudicating a complaint (Manager)

1. The manager receives a complaint from a customer/delivery driver.
2. The manager clicks on “Review” to retrieve an overview of the complaint and possible dispute.
3. The manager looks over the messages and determines if the complaint is well-founded and either clicks “Sustained” to accept the complaint or “Deny” to deny the complaint.
4. If the complaint is sustained, then the complained person will receive a warning. If the complainant is a VIP customer then 2 warnings are given.
5. If the complaint is rejected, the complainant will receive a warning.

Postcondition

A complaint or compliment is processed.

3.1.3 Use-Case: Menu

Cross-reference(s): Section 2.1.1.3 Menu

Precondition

The user must be connected to the application.

Flow

Viewing the Menu

1. The user clicks the “Menu” button.
2. The name, price, rating, description, picture, and tags of the dishes are displayed to the user by overarching categories (appetizers, sides, seafood, etc.).

Creating the Menu

1. The designated chefs can click the “Add Item” button.
2. Upon clicking, they click on “Upload Picture” to upload a picture of the dish, type a description in the description box, choose a category (e.g. seafood, salad, etc.) in the category box, add tags in the tag box, and add a price in the price box.
3. The designated chefs can click “Submit” to add the dish to the menu.

Rating a Dish

1. The customer clicks the “Rate” button next to the dish.
2. The customer then clicks on the number of stars they want to rate the dish from 1 to 5.
3. The user clicks “Submit” to send the rating.

Postcondition

The menu is shown. In the case of a designated chef, an item is added.

3.1.4 Use-Case: Registration and Quitting System

Cross-reference(s): Section 2.1.1.4 Registration and Quitting System

Precondition

The user must be connected to the application.

Flow

Registration (Surfer)

1. The user clicks “Create an account”
2. The user is brought to multiple field names. The user must enter in their first name, last name, email, address, and zip code. Then the user presses “Next”.
3. The user then inputs billing information: card number, CVV, and billing address. The user then presses “Submit”.
4. The system charges the entered card for a minimum untouchable $50 deposit. If the transaction fails, prompt the user to resubmit a valid card. If the transaction is successful, the application is sent to the manager.

Registration (Manager)

1. The manager receives a notification of a new registration application.
2. The manager may open the application and view the details of the person registering.
3. If the manager accepts the application, they will click “Accept” and the user who submitted the application will receive a notification of their acceptance and they are now registered. If the manager clicks “Deny”, the application is closed and the deposit is sent back to the user who submitted the application..

Quitting (Registered/VIP customer)

1. The customer clicks on their “Account Info”. Here they click “Delete Account”.
2. The user is asked if they are sure they want to delete their account. If they choose “Yes” then their account is sent to the manager.
3. The user gets the notification that their account closure is under review.

Quitting (Manager)

1. The manager retrieves the request for account deletion from a customer.
2. The manager determines whether or not to keep the initial account deposit. This depends on the standing of the customer.
3. If the customer’s deposit is given back, they are notified their deposit is being processed back into their account. If the deposit is kept by the manager, then the customer is notified their deposit was withheld.

Postcondition

The user is either registered or removed from the system.

3.1.5 Use-Case: Service System

Cross-reference(s): Section 2.1.1.5 Service System, Section 2.1.2.10 Seating System, Section 2.1.2.11 Delivery System, and Section 2.1.2.12 Takeout System

Precondition

The user must be a registered customer or employee.

Flow

Ordering (Registered/VIP Customer)

1. The user navigates to the menu and views the food of their choice.
2. The user clicks on the food item to view additional information: ingredients, ratings, etc.
3. The user will specify the quantity of the food item they would like i.e. 1, 2, etc.

4. The user then clicks “Add to cart” if they would like this food item.
5. The user may repeat steps 1-4 for as many food items they would like
6. The user then chooses either dine-in, takeout, or delivery for their choice of service. Reference the below use cases.

Dine-in (Registered/VIP Customer)

1. For dine-in, the user must specify how many people will be attending at what time and day.
2. The entered time will be sent to the system for processing. The system will check if there are enough tables for that time frame and number of seats. Each table has 4 seats but the whole table is reserved for up to 4 patrons, so a party with n members would require ceiling(n / 4) tables.
3. If the user’s request is available at a specified time, the system will reserve that time for that user. If not, the system will tell the user to pick a different time. The system will also send back a list of available times near that time and day.
4. Once the user has sent an available time, the user will click “Order” and submit their order. If the account does not have a sufficient deposit for the meal order, the order is rejected and the user must deposit more money to the account. If the order is accepted, the total amount of the meal cost is removed from the account and the user is given a confirmation screen.

Takeout (Registered/VIP Customer)

1. The requested meal is sent to the server for processing.
2. If the account does not have a sufficient deposit for the meal order, the order is rejected and the user must deposit more money to the account. If the order is accepted, the total amount of the meal cost is removed from the account and the user is given a confirmation screen with an estimated time at which the food will be ready to be picked up.

Delivery (Registered/VIP Customer)

1. For delivery, the user must specify an address and zip code to send the order to.
2. The request is then sent to the server for processing.
3. If the account does not have a sufficient deposit for the meal order, the order is rejected and the user must deposit more money to the account. If the order is accepted, the total amount of the meal cost is removed from the account and the user is given a confirmation screen with an estimated time at which the food will arrive.

Viewing Orders (Chefs/Delivery People)

1. The chef or delivery person navigates to the list of orders.
2. In the case of the delivery person, can see the address to which they must deliver the order to if the given order is to be delivered.

Payment Options

1. The customer can choose to either use money from their account balance or to use a birthday coupon.

Postcondition

An order is placed for the customer or displayed for an employee.

3.1.6 Use-Case: Birthday Coupons (Tentative Creative Feature)

Cross-reference(s): Section 2.1.1.6 Birthday Coupons

Precondition

The user must be a registered customer.

Flow

Birthday Setting (Customers)

1. Registered customers click the “Set Birthday” option.
2. The customer fills in their birthday and clicks “Submit.”

Distributing the Coupons

1. The system automatically sends the digital coupon to customers on their birthday.
2. The manager confirms the usage of a coupon.

Postcondition

The user receives a digital coupon to receive a discount on an order of their choice.

3.1.7 Use-Case: Deposit System

Cross-reference(s): Section 2.1.1.7 Deposit System

Precondition

The user must be logged in to the application.

Flow

Depositing Money into the Account

1. The user clicks on the “Deposit” option.
2. The user can choose whether they want to make a deposit using credit, debit, or a gift card.
3. The user clicks submit.

Clearing Deposits (Manager)

1. When a user quits or is unregistered, the manager receives a notification.
2. The manager then clicks “Clear Account Balance.”

Postcondition

A deposit is placed.

3.1.8 Use-Case: Warning and Rating System

Cross-reference(s): Section 2.1.2.7 Promoting and Demoting, Section 2.1.2.8 Firing, and Section 2.1.2.9 Warning System

Precondition

The user must be a registered member.

Flow

Complaint removal (Customer/Chef/Delivery driver)

1. If given a compliment and the person complimented has a complaint, that complaint is removed

Demotion (VIP customer)

1. If a VIP customer has two active complaints, the customer is demoted to a registered customer.
2. The newly demoted customer is notified of the demotion.

Unregister (Registered customer/Manager)

1. If a registered customer has three active complaints, the customer’s account is deleted.
2. The manager is notified of the account deletion.
3. The manager may choose to give the former customer back their deposit or keep it.

Promotion (Chef/Delivery driver)

1. If a chef or delivery driver has 3 compliments, they are promoted.
2. The salary of the chef or driver increases by 10%.
3. The chef or delivery driver is notified of the promotion.

Demotion (Chef/Delivery driver)

1. If a chef or delivery driver has 3 complaints, they are demoted.
2. The salary of the chef or driver decreases by 10%.
3. The chef or delivery driver is notified of the demotion.

Promotion (Chef)

1. If a chef's dish on the menu receives consistently high ratings, he/she receives a promotion.
2. The manager updates the promotion status for the given chef in the system.

Demotion (Chef)

1. If a chef's dish on the menu receives consistent low ratings, he/she receives a promotion.
2. The manager updates the demotion status for the given chef in the system.

Firing (Chef/Delivery driver/Manager)

1. If a chef or delivery driver is demoted twice, they are fired.
2. Their account is closed and the manager is notified.

Postcondition

A warning is processed.

3.2 Supplementary Requirements

The external requirements for this system are a working Internet connection, an up-to-date web browser, and a basic understanding of navigating the web application.

4. Supporting Information

4.1 Appendix A:

Figure 1: Simplified Use-Case Model Diagram of Online Restaurant System

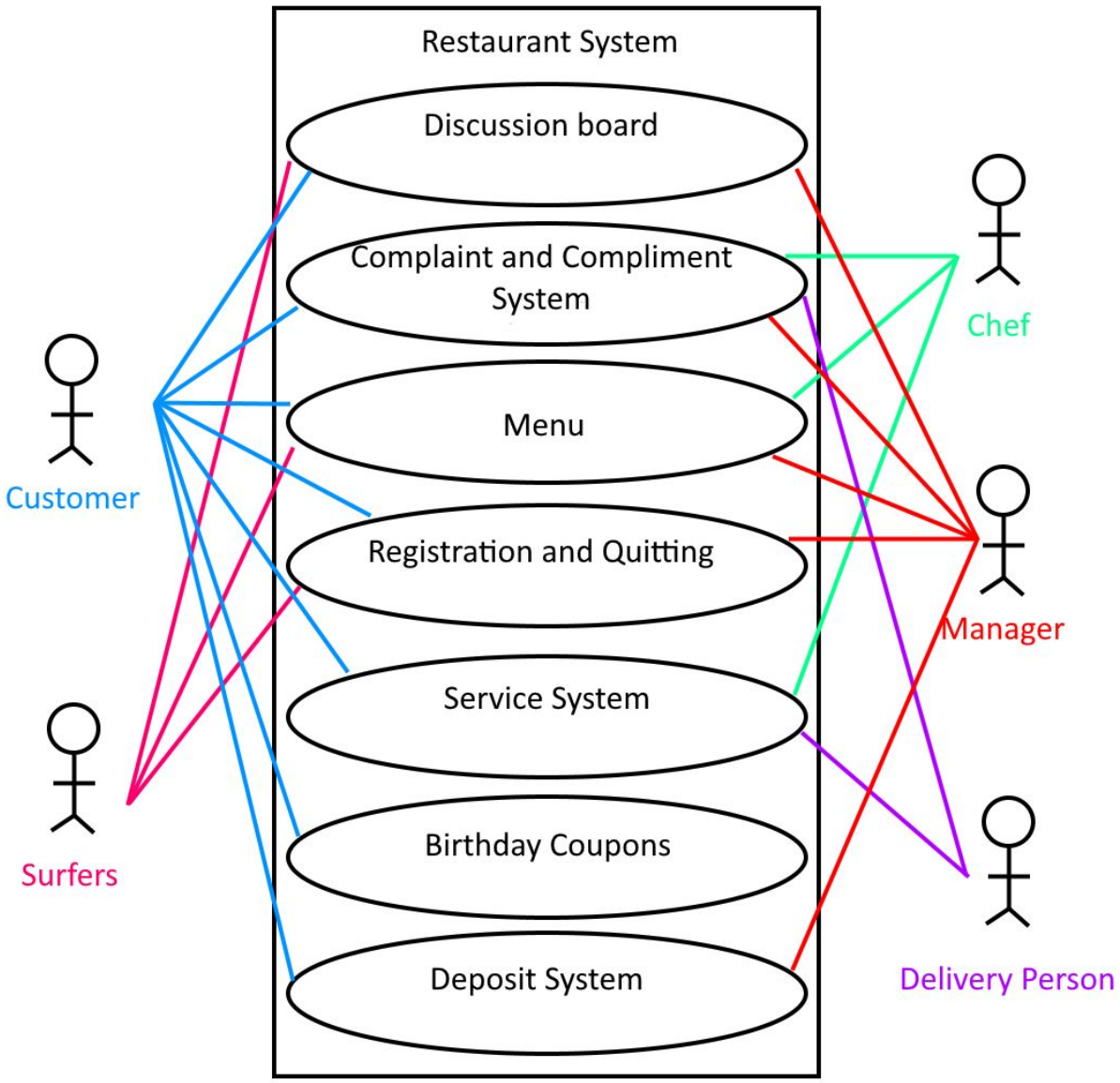
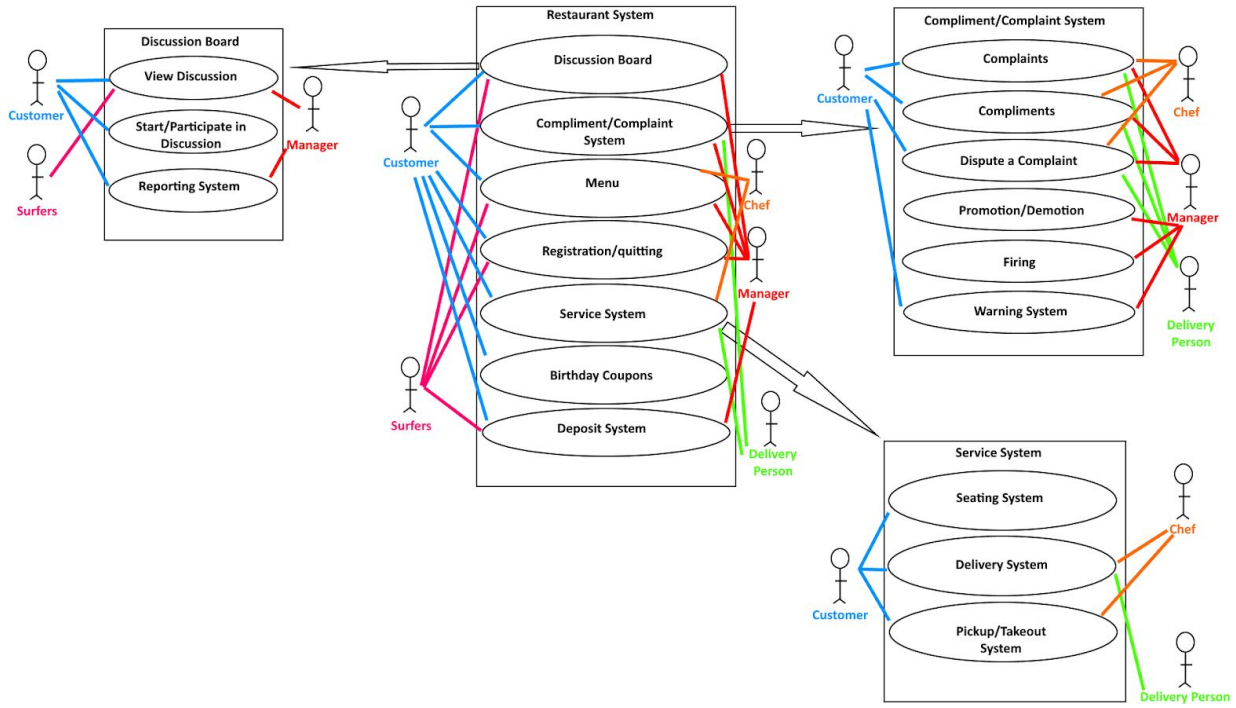


Figure 2: Use-Case Model Diagram of Online Restaurant System



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