Software Requirements Specification

for

Cafeteria Ordering System

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Table of Contents

1. Introduction

1.1 Purpose

This document describes the requirements of the Cafeteria Ordering System, an Internet-based and smartphone-enabled application that will accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated location on the Process Impact campus.

1.2 Document Conventions

The functional requirements for this project are organized by use case within the user class.

1.3 Business Benefits

- Patrons: Save Employee Time (Performance)
- Patrons: Employees Get What They Want (Availability)
- Patrons: More Choices with Local Restaurants (Improved Experience)
- Patrons: Savings from Economies of Scale
- Management: Reduce Food Wastage (Cost)
- Management: Increase Cafeteria Staff Efficiency (Cost)
- Management: Reduce average time employees lose with as-is system (Cost)

1.4 Business Context

Stakeholder	Major Value	Attitudes	Major Interests	Constraints
Corporate Management	Improved employee productivity; cost savings for cafeteria	Strong commitment through release 2; support for release 3 contingent on earlier results	Cost and employee time savings must exceed development and usage costs	None identified
Cafeteria Staff	More efficient use of staff time throughout the day; higher customer satisfaction	Concern about union relationships and possible downsizing; otherwise receptive	Job preservation	Training for staff in Internet usage needed; delivery staff and vehicles needed
Patrons	Better food selection; time savings; convenience	Strong enthusiasm, but might not use it as much as expected because of social value of eating lunches in cafeteria and restaurants	Simplicity of use; reliability of delivery; availability of food choices	Corporate intranet access, Internet access, or a mobile device is needed
Payroll Department	No benefit; needs to set up payroll deduction registration scheme	Not happy about the software work needed, but recognizes the value to the company and employees	Minimal changes in current payroll applications	No resources yet committed to make software changes

Restaurant Managers	Increased sales; marketing exposure to generate new customers	Receptive but cautious	Minimal new technology needed; concern about resources and costs of delivering meals	Might not have staff and capacity to handle order levels; might not have all menus online

1.5   Project Vision and Product Scope

1.5.1   Vision Statement

Cafeteria Ordering System is an Internet-based and smartphone-enabled application that will accept individual or group meal orders, process payments, and trigger delivery of the prepared meals to a designated location on the Process Impact campus. Unlike the current telephone and manual ordering processes, employees who use the Cafeteria Ordering System **will not have to go to the cafeteria to get their meals**, which will save them time and will increase the food choices available to them.

1.5.2   Product Scope

Cafeteria Ordering System is an online food order and delivery application. It will provide an interface that populates updated menu options from Process Impact's corporate cafeteria and other local restaurants. It also provides the ability to make payment, and track delivery progress.

1.5.3   Product Features

FE-1: Order and pay for meals from the cafeteria menu to be picked up or delivered.

FE-2: Create, view, modify, and cancel meal subscriptions for standing or recurring meal orders, or for daily special meals.

FE-3: Create, view, modify, delete, and archive cafeteria menus.

FE-4: View ingredient lists and nutritional information for cafeteria menu items.

FE-5: Provide system access through corporate intranet, smartphone, tablet, and outside Internet access by authorized employees

FE-6: Pay for meals using payroll deduction

FE-7: Pay for meals using all major credits cards (Release 2)

FE-8 : Order and pay for meals from local restaurants to be delivered (Release 2)

FE-9 : Submit menu suggestions, feedback and testimonials (Release 2)

FE-10: Track and Analyze meal purchases, menu suggestions and feedback (Release 2)

FE- 11: Review Patron Testimonials about meals (Release 2)

1.5.4 Limitations and Exclusions

LI-1: The COS shall only offer items on the cafeteria menu that can be delivered.

LI-2: The COS shall be used only for the cafeteria at the Process Impact campus in Clackamas, Oregon.

1.6 References

Existing websites used as models for ideas regarding the functionality documented here include:

https://processimpact.com/

2. Overall Description

2.1 User Classes and Their Use Cases

User Case Chart for Cafeteria Ordering System

Primary Actor	Use Cases
Patron	1. Order a Meal 2. Change Meal Order 3. Cancel Meal Order 4. View Menu 5. View Past Orders 6. View Nutritional Details 7. Update Meal Preferences 8. Register for Payroll Deduction 9. Unregister for Payroll Deduction 10. Pay for Meal 11. Order Meal for another Employee 12. Monitor Spending 13. Manage Meal Subscription 14. Change Delivery Option 15. Check Order Status 16. Track Delivery 17. Confirm Receipt of Meal 18. Rate and Review Meals

	19. Read Ratings and Reviews 20. Send Private Meal Feedback and Menu Suggestions to Menu Manager
Menu Manager	21. Create a Menu 22. Modify a Menu 23. Delete a Menu 24. Archive Menus 25. Define a Meal Special 26. Review Inventory System 27. Review Meal Feedback and Menu Suggestions 28. Add Nutritional Values for Meal 29. Analyze Meal Preferences 30. Monitor Meal Purchases 31. Analyze Meal Purchases
Cafeteria Staff	32. Prepare Meal 33. Review Inventory System 34. Update Inventory System 35. Orders New Supplies 36. Monitor Food Usage and Waste 37. Generate a Payment Request 38. Receive Payment 39. Request Meal Delivery 40. Update Order Progress 41. Generate System Usage Reports
Meal Deliverer	42. View Delivery Instructions 43. Follow GPS from Pickup to Destination 44. Update Order Progress 45. Record Meal Delivery Drop Off
Local Restaurants	46. Generate Payment Request 47. Receive Payment 48. Accept Order Request 49. Prepare Meal 50. Update Order Status 51. Request Meal Delivery 52. Confirm Meal Delivery Pickup 53. Generate System Usage Reports

2.1.1   Patron

A Patron is an employee of Process Impact who orders food via the Cafeteria Ordering System Use cases:

UC-P-1: Order a Meal
UC-P-2: Change Meal Order
UC-P-3: Cancel Meal Order
UC-P-4: View Menu
UC-P-5: View Past Orders
UC-P-6: View Nutritional Details
UC-P-7: Update Meal Preferences
UC-P-8: Register for Payroll Deduction
UC-P-9: Unregister for Payroll Deduction
UC-P-10: Pay for Meal
UC-P-11: Order Meal for another Employee
UC-P-12: Monitor Spending
UC-P-13: Manage Meal Subscription
UC-P-14: Change Delivery Option
UC-P-15: Check Order Status
UC-P-16: Track Delivery
UC-P-17: Confirm Receipt of Meal
UC-P-18: Rate and Review Meals
UC-P-19: Read Ratings and Reviews
UC-P-20: Send Private Meal Feedback and Menu Suggestions to Menu Manager

2.1.2   Menu Manager

A Menu Manager is someone who creates, modifies and archives menus. Use cases:

UC-MM-1: Create a Menu
UC-MM-2: Modify a Menu
UC-MM-3: Delete a Menu
UC-MM-4: Archive Menus
UC-MM-5: Define a Meal Special
UC-MM-6: Review Inventory System
UC-MM-7: Review Meal Feedback and Menu Suggestions
UC-MM-8: Add Nutritional Values for Meal
UC-MM-9: Analyze Meal Preferences
UC-MM-10: Monitor Meal Purchases
UC-MM-11: Analyze Meal Purchases

2.1.3   Cafeteria Staff

A Cafeteria Staff is someone who prepares meals, generates payment requests, begins the delivery process and creates systems usage reports. Use cases:

UC-CS-1:   Prepare Meal
UC-CS-2:   Review Inventory System
UC-CS-3:   Update Inventory System
UC-CS-4:   Orders New Supplies
UC-CS-5:   Monitor Food Usage and Waste
UC-CS-6:   Generate a Payment Request
UC-CS-7:   Receive Payment
UC-CS-8:   Request Meal Delivery
UC-CS-9:   Update Order Progress
UC-CS-10:   Generate System Usage Reports

2.1.4 Local Restaurant

A Local Restaurant is a local business near Process Impact that prepares meals, generates payment requests, begins the delivery process and creates systems usage reports. Use cases:

UC - LR- 1: Generate Payment Request
UC - LR- 2: Receive Payment
UC - LR- 3: Accept Order Request
UC - LR- 4: Prepare Meal
UC - LR- 5: Update Order Status
UC - LR- 6: Request Meal Delivery
UC - LR- 7: Confirm Meal Delivery Pickup
UC - LR- 8: Generate System Usage Reports

2.1.5 Meal Deliverer

A Meal Deliverer is responsible for delivering food and documenting the delivery

UC-MD-1: View Delivery Instructions
UC-MD-2: Follow GPS from Pickup to Destination

UC-MD-3: Update Order Progress
UC-MD-4: Record Meal Delivery Drop Off

2.2   Operating Environment

COS shall be compatible with standard web browsers on Windows, Mac, and Web-enabled smartphone platforms. Supported browsers are Internet Explorer; Firefox; Opera; Google Chrome.

COS shall ensure cross-device compatibility maintaining a consistent user experience across desktops, laptops, tablets, and smartphones.

2.3   Business Rules and Constraints

ID	Rule Definition	Type of Rule	Static or Dynamic	Source
BR-1	Delivery time windows are 15 minutes, beginning on each quarter hour. Cut off time is 1 PM for delivery of food.	Fact	Dynamic	Cafeteria Manager
BR-2	Deliveries must be completed between 10:00 A.M. and 2:00 P.M. local time, inclusive.	Constraint	Dynamic	Cafeteria Manager
BR-3	All meals in a single order must be delivered to the same location.	Constraint	Static	Cafeteria Manager
BR-4	All meals in a single order must be paid for by using the same payment method.	Constraint	Static	Cafeteria Manager
BR-11	If an order is to be delivered, the patron must pay by payroll deduction.	Constraint	Dynamic	Cafeteria Manager
BR-12	Order price is calculated as the sum of each food item price times the quantity of that food item ordered, plus applicable sales tax, plus a delivery charge if a meal is delivered outside the free delivery zone.	Computation	Dynamic	cafeteria policy; state tax code
BR-24	Only cafeteria employees who are designated as Menu Managers by the Cafeteria Manager can create, modify, or delete cafeteria menus.	Constraint	Static	cafeteria policy
BR-33	Network transmissions that involve financial information or personally identifiable information require 256-bit encryption.	Constraint	Static	corporate security policy

BR-86	Only regular employees can register for payroll deduction for any company purchase.	Constraint	Static	Corporate Accounting Manager
BR-88	An employee can register for payroll deduction payment of cafeteria meals if no more than 40 percent of his gross pay is =>currently being deducted for other reasons. $5000 -$2000=$3000 (Food Cost >$1000) **=> Functional requirement** **1. The system should have the ability to identify and verify, the net pay after all deductions including taxes and loans, which should amount to 60% or more of the pay amount.** **2. < 60% - throw an error message** **3. place the order if >60%**	Constraint	Dynamic	Corporate Accounting Manager

2.4 Business Risks

RI-1: The Cafeteria Employees Union might require that their contract be renegotiated to reflect the new employee roles and cafeteria hours of operation. (Probability = 0.6; Impact = 3)

RI-2: Too few employees might use the system, reducing the return on investment from the system development and the changes in cafeteria operating procedures. (Probability = 0.3; Impact = 9)

RI-3: Local restaurants might not agree to offer delivery, which would reduce employee satisfaction with the system and possibly their usage of it. (Probability = 0.3; Impact = 3)

RI-4: Sufficient delivery capacity might not be available, which means that employees would not always receive their meals on time and could not always request delivery for the desired times. (Probability = 0.5; Impact = 6).

2.5 Business Assumptions and Dependencies

AS-1: Systems with appropriate user interfaces will be available for cafeteria employees to process the expected volume of meals ordered.

AS-2: Cafeteria staff and vehicles will be available to deliver all meals for specified delivery time slots within 15 minutes of the requested delivery time.

DE-1: If a restaurant has its own on-line ordering system, the Cafeteria Ordering System must be able to communicate with it bi-directionally.

3.   Functional Requirements

3.1   Use Cases for Patrons

UC-P-1: Order a Meal

Requirement:
The system shall enable Patrons to place meal orders through the Cafeteria Ordering System.

Trigger:
Initiated when a Patron accesses the ordering interface in the system.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Meal Ordering module within the system.
3. Availability of the menu with item details.

Postconditions:
1. Patrons select desired items, specify quantity, options, and any additional notes.
2. System confirms order placement with an order ID and estimated delivery/pickup time.

Acceptance Criteria:
1. Patrons can efficiently navigate the menu and customize orders.
2. System provides confirmation of order placement with necessary details.

UC-P-2: Change Meal Order

Requirement:
The system shall allow Patrons to modify or change their meal orders after initial placement.

Trigger:
Initiated when a Patron requests modifications to an existing order.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Order Modification module within the system.
3. Order modification requested before the cut-off time.

Postconditions:
1. Patrons successfully edit items, quantities, or delivery details.
2. System updates the order status and provides confirmation of changes made.

Acceptance Criteria:
1. Patrons can make necessary changes to placed orders.
2. System acknowledges and confirms changes made to the order.

UC-P-3: Cancel Meal Order

Requirement:
The system shall permit Patrons to cancel placed meal orders within a specified time frame.

Trigger:
Initiated when a Patron requests order cancellation.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Order Cancellation module within the system.
3. Order cancellation requested before the predefined deadline.

Postconditions:
1. Patrons successfully request order cancellation.
2. System initiates refund or credit to the Patron's account for canceled orders.

Acceptance Criteria:
1. Patrons can cancel orders within the stipulated time frame.
2. System executes refunds or credits for canceled orders accordingly.

UC-P-4: View Menu

Requirement:
The system shall display an interactive menu accessible to Patrons.

Trigger:
Initiated when a Patron accesses the menu interface in the system.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Menu Display module within the system.

Postconditions:
1. The menu categorizes items with descriptions, prices, and dietary information.
2. Patrons can filter items based on dietary preferences or special requirements.

Acceptance Criteria:
1. Patrons can easily navigate through the menu sections.
2. System categorizes and filters items based on different criteria for Patron convenience.

UC-P-5: View Past Orders

Requirement:

The system shall provide Patrons access to their order history.

Trigger:
Initiated when a Patron accesses the order history section in the system.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Order History module within the system.

Postconditions:
1. Patrons can view past orders with details like order date, items ordered, and order status.
2. The system enables Patrons to easily reorder previous meals.

Acceptance Criteria:
1. Patrons can efficiently browse through their order history.
2. System facilitates quick reordering of previous meals for Patrons.

UC-P-6: View Nutritional Details

Requirement:
The system shall display nutritional information for menu items.

Trigger:
Initiated when a Patron accesses detailed item information.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Nutritional Information module within the system.

Postconditions:
1. Nutritional details (calories, ingredients, allergens) available for each menu item.
2. Patrons can access comprehensive nutritional breakdowns for informed choices.

Acceptance Criteria:
1. Patrons can easily access nutritional information for menu items.
2. System provides detailed nutritional breakdowns for informed meal selections.

UC-P-7: Update Meal Preferences

Requirement:
The system shall allow Patrons to manage their dietary preferences and restrictions.

Trigger:
Initiated when a Patron updates preferences in the system.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Preference Management module within the system.

Postconditions:
1. Patrons set preferences for dietary restrictions, allergies, or meal customization options.
2. System considers these preferences while suggesting or displaying menu items.

Acceptance Criteria:
1. Patrons can efficiently manage and update their dietary preferences.
2. System incorporates updated preferences into menu suggestions or displays.

UC-P-8: Register for Payroll Deduction

Requirement:
The system shall enable Patrons to register for meal payment via payroll deduction.

Trigger:
Initiated when a Patron enrolls in the payroll deduction program.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Payroll Deduction Enrollment module within the system.
3. Provision of necessary authorization and payment details.

Postconditions:
1. Patrons successfully enroll in the payroll deduction program.
2. System confirms successful enrollment and initiates deductions per policy.

Acceptance Criteria:
1. Patrons can efficiently enroll in the payroll deduction program.
2. System initiates payroll deductions following successful enrollment.

UC-P-9: Unregister for Payroll Deduction

Requirement:
The system shall allow Patrons to opt-out or unregister from the payroll deduction program.

Trigger:
Initiated when a Patron requests to discontinue payroll deductions.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Payroll Deduction Unregistration module within the system.

Postconditions:
1. Patrons successfully request to discontinue payroll deductions.
2. System ceases payroll deductions and confirms successful unregistration.

Acceptance Criteria:
1. Patrons can efficiently opt-out of the payroll deduction program.

2. System stops payroll deductions following successful unregistration.

UC-P-10: Pay for Meal

Requirement:
The system shall offer multiple payment options for Patrons to pay for their meals.

Trigger:
Initiated when a Patron selects a payment method during checkout.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Payment Processing module within the system.
3. Availability of various payment methods (credit card, cash, payroll deduction).

Postconditions:
1. Patrons select preferred payment methods and complete transactions securely.
2. System processes payments and provides transaction receipts.

Acceptance Criteria:
1. Patrons can smoothly select and complete payment using preferred methods.
2. System securely processes payments and issues transaction receipts.

UC-P-11: Order Meal for another Employee

Requirement:
The system shall allow Patrons to order meals on behalf of other authorized employees.

Trigger:
Initiated when a Patron selects the option to place an order for another employee.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Order Placement for Other Employees module within the system.
3. List of authorized employees available for selection.

Postconditions:
1. Patrons successfully select another employee from the list of authorized individuals to place orders for them.
2. The system records the meal order under the designated employee's account.

Acceptance Criteria:
1. Patrons can efficiently choose and place meal orders for other authorized employees.
2. System correctly logs and associates the meal order with the designated employee's account.

UC-P-12: Monitor Spending

Requirement:
The system shall provide Patrons with access to their spending and transaction history related to meal purchases.

Trigger:
Initiated when a Patron accesses the spending and transaction history section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Spending and Transaction History module within the system.

Postconditions:
1. Patrons can view spending records including total expenses, deductions, and payment details related to meal purchases.
2. The system categorizes and displays spending by time period or meal type for easy monitoring.

Acceptance Criteria:
1. Patrons can efficiently access and review their spending related to meal purchases.
2. System categorizes and presents spending records for better monitoring and analysis.

UC-P-13: Manage Meal Subscription

Requirement:
The system shall allow Patrons to manage meal subscription plans, if available.

Trigger:
Initiated when a Patron accesses the meal subscription management section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Meal Subscription Management module within the system.
3. Availability of meal subscription plans for selection and management.

Postconditions:
1. Patrons can subscribe, modify, or cancel meal subscription plans through the system.
2. The system tracks subscription status, renewal dates, and payment schedules accurately.

Acceptance Criteria:
1. Patrons can efficiently manage meal subscription plans based on their preferences.
2. System maintains accurate subscription data and handles modifications effectively.

UC-P-14: Change Delivery Option

Requirement:
The system shall enable Patrons to change the meal delivery method or location.

Trigger:
Initiated when a Patron chooses to modify the delivery details for an existing order.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Delivery Options Modification module within the system.
3. Modification requested before the order processing stage.

Postconditions:
1. Patrons can switch between delivery, pickup, or alternate delivery addresses for the meal order.
2. The system updates order details accordingly and confirms the change to the Patron.

Acceptance Criteria:
1. Patrons can efficiently modify delivery options for their meal orders.
2. System accurately reflects changes made to the delivery method or location for the order.

UC-P-15: Check Order Status

Requirement:
The system shall provide Patrons with real-time updates on their order status.

Trigger:
Initiated when a Patron accesses the order status tracking section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Order Status Tracking module within the system.

Postconditions:
1. Patrons can check the current status of their meal orders (e.g., confirmed, in preparation, out for delivery).
2. The system updates the status as the order progresses and notifies Patrons of any changes.

Acceptance Criteria:
1. Patrons can efficiently track the real-time status of their meal orders.
2. System provides timely updates on order status changes to keep Patrons informed.

UC-P-16: Track Delivery

Requirement:
The system shall allow Patrons to track the live location of their meal delivery.

Trigger:
Initiated when a Patron accesses the live delivery tracking feature.

Preconditions:

1. Valid authentication and authorization as a Patron.
2. Access granted to the Live Delivery Tracking module within the system.

Postconditions:
1. Patrons can access a map view displaying the delivery route and real-time location of the delivery person.
2. The system continuously updates the delivery status and estimated arrival time.

Acceptance Criteria:
1. Patrons can effectively monitor the live location of their meal delivery.
2. System provides continuous updates on delivery status and estimated arrival time.

UC-P-17: Confirm Receipt of Meal

Requirement:
The system shall prompt Patrons to confirm successful receipt of the delivered meal.

Trigger:
Initiated when a Patron receives the delivered meal.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Meal Receipt Confirmation module within the system.

Postconditions:
1. Patrons confirm the receipt of the meal via the system upon delivery.
2. The system updates the order status to "delivered and confirmed" upon Patron confirmation.

Acceptance Criteria:
1. Patrons can promptly confirm successful receipt of the delivered meal.
2. System updates the order status after Patron confirmation for accurate record-keeping.

UC-P-18: Rate and Review Meals

Requirement:
The system shall enable Patrons to rate and provide feedback for the meals they have received.

Trigger:
Initiated when a Patron accesses the meal rating and feedback submission section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Meal Rating and Feedback Submission module within the system.

Postconditions:

1. Patrons assign ratings and leave comments or reviews for the quality and satisfaction of meals.
2. The system aggregates and displays meal ratings and reviews for future reference.

Acceptance Criteria:
1. Patrons can efficiently provide ratings and feedback for meals.
2. System aggregates and displays meal ratings and reviews accurately for reference and improvement.

UC-P-19: Read Ratings and Reviews

Requirement:
The system shall display meal ratings and reviews for Patrons to read and consider.

Trigger:
Initiated when a Patron accesses the meal ratings and reviews section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Meal Ratings and Reviews Display module within the system.

Postconditions:
1. Patrons can access ratings and reviews provided by other users for menu items.
2. The system presents this information alongside menu items for informed decision-making.

Acceptance Criteria:
1. Patrons can effectively access and review meal ratings and reviews.
2. System presents ratings and reviews alongside menu items for informed decision-making by Patrons.

UC-P-20: Send Private Meal Feedback and Menu Suggestions to Menu Manager

Requirement:
The system shall allow Patrons to send private feedback and suggestions regarding meals to the Menu Manager.

Trigger:
Initiated when a Patron accesses the private feedback and suggestion submission section.

Preconditions:
1. Valid authentication and authorization as a Patron.
2. Access granted to the Private Feedback Submission module within the system.

Postconditions:
1. Patrons can submit feedback or suggestions privately to the Menu Manager regarding meal quality or menu enhancements.

2. The system securely forwards the feedback to the designated Menu Manager for consideration.

Acceptance Criteria:
1. Patrons can securely submit private feedback and suggestions for meal improvements.
2. System securely forwards feedback to the Menu Manager for consideration and potential action.

Additional Considerations:

User Authentication: Implement secure authentication mechanisms to ensure authorized access and protection of user data.

Data Privacy: Ensure compliance with data privacy regulations to protect user information and transaction details.

Scalability: Design the system to handle a growing number of users, orders, and transactions effectively.

3.2   Use Cases for Menu Managers

UC-MM-1: Create a Menu

Requirement: The system shall allow Menu Managers to create new menus within the Cafeteria Ordering System

Trigger: Initiation by Menu Manager through the system's Menu Creation interface.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access to the Menu Creation module within the system.

Postconditions:
1. Successful creation of a new menu within the system.
2. Menu items categorized and defined with respective pricing.
3. Menu details accurately entered into the system's database.

Acceptance Criteria
1. Menu Managers should be able to add new menu items.
2. The system must categorize menu items effectively.
3. Pricing for each menu item must be definable.
4. The system should verify that entered menu names are unique.

5. Accurate entry of menu details must be ensured by the system's validation checks.

UC-MM-2: Modify a Menu

Requirement: The system is required to facilitate Menu Managers in modifying menus already existing within the Cafeteria Ordering System

Trigger: Initiated when a Menu Manager accesses the system's Menu Modification feature.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Menu Modification module within the system.
3. Existence of the menu intended for modification within the system.

Postconditions:

1. Successful implementation of modifications to the selected menu.
2. Menu item details (prices, descriptions, categories) updated as per changes made.
3. All alterations to the menu are accurately logged in the system for audit purposes.

Acceptance Criteria:

1. Menu Managers must be able to edit details related to menu items (prices, descriptions, categories).
2. The system should maintain an audit trail to record and track changes made to menus for accountability and review purposes.

UC-MM-3: Delete a Menu

Requirement:
The system is mandated to empower Menu Managers with the capability to delete menus that are obsolete or no longer in use from the Cafeteria Ordering System

Trigger:
Activated when a Menu Manager initiates the deletion process for a menu.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Menu Deletion module within the system.
3. Existence of the menu intended for deletion within the system.

Postconditions:

1. Successful removal or archiving of the selected menu from the system's active display.

2. Ensured invisibility of the deleted menu to Patrons or any other users accessing the system.

3. Prompt for confirmation before the permanent deletion of the menu from the system's database.

Acceptance Criteria:

1. Menu Managers must have the ability to either archive or delete menus.

2. The system should request confirmation before permanently removing a menu, ensuring deliberate actions to avoid accidental deletion.

UC-MM-4: Archive Menus

Requirement:

The system must incorporate an option enabling Menu Managers to archive menus for future reference within the Cafeteria Ordering System

Trigger:

Initiated when a Menu Manager selects the "Archive" option for a specific menu.

Preconditions:

1. Valid authentication and authorization as a Menu Manager.

2. Access granted to the Menu Archival module within the system.

3. Existence of the menu intended for archiving within the system.

Postconditions:

1. Successful marking of the menu as archived, relocating it to a designated historical records section.

2. Accessibility to archived menus for review purposes or potential reactivation.

Acceptance Criteria:

1. Menu Managers should be able to label menus as archived.

2. The system must segregate archived menus into a separate section for historical reference.

3. Archived menus should remain accessible for potential review or reactivation.

UC-MM-5: Define a Meal Special

Requirement:
The system is required to allow Menu Managers to designate meal specials or featured items within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager designates a menu item as a "Special" or "Featured" item.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Meal Specials module within the system.

Postconditions:
1. Successful marking of specific menu items as meal specials or featured items.
2. Display of meal specials prominently within the menu interface accessible to Patrons.

Acceptance Criteria:
1. Menu Managers must be able to mark specific menu items as meal specials.
2. The system should visibly display meal specials within the menu interface for Patrons.

UC-MM-6: Review Inventory System

Requirement:
The system must grant Menu Managers access to review the current inventory status associated with menu items within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Inventory Review module.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Inventory Review module within the system.

Postconditions:
1. Accessibility to inventory reports displaying stock levels of ingredients or items linked to the menu.
2. Display of low stock alerts or notifications for items approaching depletion.

Acceptance Criteria:
1. Menu Managers should access inventory reports to review stock levels of linked items.
2. The system must provide alerts for items nearing depletion or having low stock levels.

UC-MM-7: Review Meal Feedback and Menu Suggestions

Requirement:
The system should allow Menu Managers to access and review feedback and suggestions received for meals and menu items within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Feedback and Suggestions module.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Feedback and Suggestions module within the system.

Postconditions:
1. Accessibility to meal feedback provided by Patrons for analysis and consideration.
2. Categorization and summarization of feedback for further analysis and potential menu adjustments.

Acceptance Criteria:
1. Menu Managers should access and review Patron-provided meal feedback and suggestions.
2. The system must categorize and summarize feedback for analysis purposes and potential menu enhancements.

UC-MM-8: Add Nutritional Values for Meal

Requirement:
The system must provide Menu Managers with the ability to input and update accurate nutritional information for menu items within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Nutritional Information input interface for a specific menu item.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Nutritional Information module within the system.
3. Existence of the menu item intended for nutritional information input within the system.

Postconditions:
1. Successful addition or update of nutritional values (calories, macros, allergens) for the specified menu item.
2. Display of this nutritional information to Patrons considering dietary preferences or restrictions.

Acceptance Criteria:
1. Menu Managers must input accurate nutritional values for each menu item.
2. The system should visibly display nutritional information to aid Patrons with dietary considerations.

UC-MM-9: Analyze Meal Preferences

Requirement:
The system should equip Menu Managers with tools to analyze and comprehend Patron meal preferences within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Meal Preference Analysis tools or reports.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Meal Preference Analysis module within the system.

Postconditions:
1. Accessibility to reports or analytics detailing popular menu items, categories, or trends based on Patron preferences.
2. Generation of insights on Patron preferences aiding in menu planning and adjustments.

Acceptance Criteria:
1. Menu Managers should access reports detailing popular menu items, categories, or trends.
2. The system should provide insights into Patron preferences for better menu planning and adjustments.

UC-MM-10: Monitor Meal Purchases

Requirement:

The system shall enable Menu Managers to monitor and track meal purchases made by Patrons within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Meal Purchase Monitoring reports or tools.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Meal Purchase Monitoring module within the system.

Postconditions:
1. Visibility to reports on meal purchases, including sales volumes, revenue, and order frequency.
2. Provision of graphical representations aiding in the interpretation of purchase data.

Acceptance Criteria:
1. Menu Managers must view reports detailing meal purchases, sales volumes, revenue, and order frequency.
2. The system should offer graphical representations for easier interpretation of purchase data.

UC-MM-11: Analyze Meal Purchases

Requirement:
The system must empower Menu Managers to conduct comprehensive analysis of meal purchases within the Cafeteria Ordering System

Trigger:
Initiated when a Menu Manager accesses the Detailed Meal Purchase Analysis tools or reports.

Preconditions:
1. Valid authentication and authorization as a Menu Manager.
2. Access granted to the Detailed Meal Purchase Analysis module within the system.

Postconditions:
1. Capability to perform in-depth analysis, such as identifying peak hours, popular items, or seasonal trends in meal purchases.
2. Availability of data visualization tools for comprehensive analysis and informed decision-making.

Acceptance Criteria:
1. Menu Managers should conduct detailed analysis identifying peak hours, popular items, or seasonal trends in meal purchases.
2. The system should offer data visualization tools for thorough analysis and decision-making.

Additional Considerations:

Security Access Levels: Implement role-based access control to ensure Menu Managers have appropriate access to menu management functions.

Data Integrity: Ensure accuracy and consistency of menu data and nutritional information entered by Menu Managers.

Integration: Ensure seamless integration with inventory systems to maintain accurate stock data for menu items.

3.3   Use Cases for Cafeteria Staff

UC-CS-1: Prepare Meal

Requirement:
The system must enable Cafeteria Staff to prepare meals as per received orders within the Cafeteria Ordering System.

Trigger:
Initiated when a Cafeteria Staff member accesses the meal preparation interface for a specific order.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Meal Preparation module within the system.
3. Existence of an order with associated items intended for meal preparation.

Postconditions:
1. Cafeteria Staff access the list of ordered items and instructions to assemble meals accurately.
2. Items marked as "in preparation" with status updates upon completion.

Acceptance Criteria:
1. Cafeteria Staff should access ordered items and assembly instructions.
2. The system should update item status from preparation to completion.

UC-CS-2: Review Inventory System

Requirement:
The system should provide Cafeteria Staff with access to review the current inventory status within the Cafeteria Ordering System

Trigger:
Initiated when a Cafeteria Staff member accesses the Inventory Review module.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Inventory Review module within the system.

Postconditions:
1. Cafeteria Staff views inventory levels, item details, and low stock alerts.
2. Inventory reports presented in an intuitive and understandable format.

Acceptance Criteria:
1. Cafeteria Staff should view inventory levels, item details, and alerts.
2. Reports should be easily understandable for intuitive interpretation.

UC-CS-3: Update Inventory System

Requirement:
The system shall allow Cafeteria Staff to update inventory records post-usage or restocking within the Cafeteria Ordering System

Trigger:
Initiated when a Cafeteria Staff member accesses the Inventory Update interface.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Inventory Update module within the system.

Postconditions:
1. Cafeteria Staff records used items, marks new deliveries, or updates quantities manually.
2. Accurate validation and update of inventory levels.

Acceptance Criteria:
1. Cafeteria Staff can record used items, deliveries, or manual quantity updates.
2. System updates inventory levels accurately.

UC-CS-4: Order New Supplies

Requirement:
The system shall enable Cafeteria Staff to request new supplies when inventory reaches a predefined threshold within the Cafeteria Ordering System

Trigger:

Initiated when a Cafeteria Staff member accesses the Supply Ordering interface.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Supply Ordering module within the system.
3. Inventory reaching a predefined threshold.

Postconditions:
1. Cafeteria Staff creates supply orders specifying items, quantities, and urgency.
2. Alerts management or designated personnel about pending supply requests.

Acceptance Criteria:
1. Cafeteria Staff can create supply orders with specified details.
2. The system alerts designated personnel about pending supply requests.

UC-CS-5: Monitor Food Usage and Waste

Requirement:
The system must provide tools for Cafeteria Staff to monitor food usage and minimize waste within the Cafeteria Ordering System.

Trigger:
Initiated when a Cafeteria Staff member accesses the Food Usage and Waste Monitoring tools.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Food Usage and Waste Monitoring module within the system.

Postconditions:
1. Cafeteria Staff tracks food consumption, identifies overstocked or underutilized items, and works to reduce waste.
2. System-generated reports highlighting usage patterns and waste reduction opportunities.

Acceptance Criteria:
1. Cafeteria Staff monitors food consumption and identifies underutilized items.
2. The system generates reports highlighting usage patterns and areas for waste reduction.

UC-CS-6: Generate a Payment Request

Requirement:
The system shall allow Cafeteria Staff to create payment requests for completed orders within the Cafeteria Ordering System.

Trigger:
Initiated when a Cafeteria Staff member accesses the Payment Request Creation interface.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.

2. Access granted to the Payment Request Creation module within the system.
3. Completion of an order.

Postconditions:
1. Cafeteria Staff generates payment requests with detailed order summaries for Patrons or Payment Processing.
2. System verifies payment details for accuracy and completeness before submission.

Acceptance Criteria:
1. Cafeteria Staff creates payment requests with detailed order summaries.
2. The system verifies payment details before submission.

UC-CS-7: Receive Payment

Requirement:
The system shall facilitate payment processing for orders received by Cafeteria Staff within the Cafeteria Ordering System.

Trigger:
Initiated when a Cafeteria Staff member confirms and processes received payments.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Payment Processing module within the system.

Postconditions:
1. Cafeteria Staff confirms and processes received payments through designated payment methods.
2. Order statuses updated upon successful payment confirmation.

Acceptance Criteria:
1. Cafeteria Staff confirms and processes received payments through specified methods.
2. The system updates order statuses upon successful payment confirmation.

UC-CS-8: Request Meal Delivery

Requirement:
The system shall allow Cafeteria Staff to request meal deliveries for completed orders within the Cafeteria Ordering System

Trigger:
Initiated when a Cafeteria Staff member triggers the delivery process for a completed order.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Meal Delivery Request module within the system.
3. Completion of an order ready for delivery.

Postconditions:
1. Cafeteria Staff triggers meal delivery, specifying pickup and delivery details.
2. System initiates the delivery order and updates the delivery status.

Acceptance Criteria:
1. Cafeteria Staff triggers meal delivery with pickup and delivery details.
2. The system updates the delivery status accordingly.

UC-CS-9: Update Order Progress

Requirement:
The system shall permit Cafeteria Staff to update order progress status during meal preparation and delivery within the Cafeteria Ordering System

Trigger:
Initiated when a Cafeteria Staff member updates the order status.

Preconditions:
1. Valid authentication and authorization as Cafeteria Staff.
2. Access granted to the Order Progress Update module within the system.

Postconditions:
1. Cafeteria Staff updates order status (e.g., "in preparation," "out for delivery," or "delivered").
2. Real-time updates reflect on order tracking for stakeholders.

Acceptance Criteria:
1. Cafeteria Staff updates order status during preparation and delivery.
2. Real-time updates visible in the order tracking system.

UC-CS-10: Generate System Usage Reports

Requirement:
The system shall generate usage reports to track Cafeteria Staff activities within the Cafeteria Ordering System.

Trigger:
Initiated when management or administrative personnel accesses the System Usage Reports.

Preconditions:
1. Valid authentication and authorization for management or administrative personnel.
2. Access granted to the System Usage Reports within the system.

Postconditions:
1. Compiled reports detailing staff activities, such as meal preparation, inventory updates, and payment processing.
2. Accessibility of reports for management or administrative purposes.

Acceptance Criteria:
1. System generates reports detailing staff activities.
2. Reports accessible for management or administrative review.

Additional Considerations:

User Interface:
Design an intuitive interface for Cafeteria Staff with clear navigation and easy access to functionalities.

Security Measures:
Implement user authentication and access control to prevent unauthorized access to sensitive data.

3.4   Use Cases for Local Restaurant

UC-LR-1: Generate Payment Request

Requirement:
The system must enable the Local Restaurant to create payment requests for completed orders.

Trigger:
Initiated when the Local Restaurant accesses the Payment Request Generation interface.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Payment Request Generation module within the system.
3. Completion of an order.

Postconditions:
1. The Local Restaurant generates payment requests with detailed order summaries.
2. System verifies payment details for accuracy and completeness before submission.

Acceptance Criteria:
1. The Local Restaurant generates payment requests with detailed order summaries.
2. The system ensures accuracy and completeness of payment details before submission.

UC-LR-2: Receive Payment

Requirement:
The system shall facilitate payment processing for orders received by the Local Restaurant.

Trigger:

Initiated when the Local Restaurant confirms and processes received payments.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Payment Processing module within the system.

Postconditions:
1. The Local Restaurant confirms and processes received payments through designated methods.
2. Order statuses updated upon successful payment confirmation.

Acceptance Criteria:
1. The Local Restaurant confirms and processes received payments.
2. The system updates order statuses upon successful payment confirmation.

UC-LR-3: Accept Order Request

Requirement:
The system shall enable the Local Restaurant to accept incoming order requests from Process Impact or Patrons.

Trigger:
Initiated when the Local Restaurant accesses the Order Request Acceptance interface.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Order Acceptance module within the system.
3. Incoming order requests from Process Impact or Patrons.

Postconditions:
1. The Local Restaurant views and accepts order requests via the system interface.
2. System confirms order acceptance and proceeds to meal preparation.

Acceptance Criteria:
1. The Local Restaurant views and accepts incoming order requests.
2. The system confirms order acceptance and initiates meal preparation.

UC-LR-4: Prepare Meal

Requirement:
The system shall allow the Local Restaurant to prepare meals according to received orders.

Trigger:
Initiated when the Local Restaurant accesses the Meal Preparation interface for a specific order.

Preconditions:

1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Meal Preparation module within the system.
3. Existence of an order with associated items intended for meal preparation.

Postconditions:
1. The Local Restaurant accesses ordered items and instructions to assemble meals accurately.
2. Items marked as "in preparation" with status updates upon completion.

Acceptance Criteria:
1. The Local Restaurant accesses ordered items and assembly instructions.
2. The system updates item status from preparation to completion.

UC-LR-5: Update Order Status

Requirement:
The system shall permit the Local Restaurant to update order status during meal preparation and delivery.

Trigger:
Initiated when the Local Restaurant updates the order status.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Order Status Update module within the system.

Postconditions:
1. The Local Restaurant marks order status updates such as "in preparation," "out for delivery," or "delivered."
2. Real-time updates reflect on order tracking for Process Impact or Patrons.

Acceptance Criteria:
1. The Local Restaurant updates order status during preparation and delivery.
2. Real-time updates visible in the order tracking system.

UC-LR-6: Request Meal Delivery

Requirement:
The system shall allow the Local Restaurant to request meal deliveries for completed orders.

Trigger:
Initiated when the Local Restaurant triggers the delivery process for a completed order.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Meal Delivery Request module within the system.
3. Completion of an order ready for delivery.

Postconditions:
1. The Local Restaurant triggers meal delivery, specifying pickup and delivery details.
2. The system initiates the delivery order and updates the delivery status.

Acceptance Criteria:
1. The Local Restaurant triggers meal delivery with pickup and delivery details.
2. The system updates the delivery status accordingly.

UC-LR-7: Confirm Meal Delivery Pickup

Requirement:
The system shall enable the Local Restaurant to confirm meal delivery pickups by delivery personnel.

Trigger:
Initiated when the Local Restaurant confirms meal handovers to delivery personnel upon pickup.

Preconditions:
1. Valid authentication and authorization as Local Restaurant personnel.
2. Access granted to the Delivery Pickup Confirmation module within the system.

Postconditions:
1. The Local Restaurant confirms meal handovers to delivery personnel upon pickup.
2. The system updates the delivery status to "out for delivery" upon confirmation.

Acceptance Criteria:
1. The Local Restaurant confirms meal handovers to delivery personnel upon pickup.
2. The system updates the delivery status accordingly.

UC-LR-8: Generate System Usage Reports

Requirement:
The system shall generate usage reports to track Local Restaurant activities within the system.

Trigger:
Initiated when administrative personnel access the System Usage Reports.

Preconditions:
1. Valid authentication and authorization for administrative personnel.
2. Access granted to the System Usage Reports within the system.

Postconditions:
1. Compiled reports detailing restaurant activities, including order processing, meal preparation, and delivery.
2. Accessibility of reports for administrative review.

Acceptance Criteria:
1. The system generates reports detailing restaurant activities.
2. Reports accessible for administrative review.

Additional Considerations:

Order Management:
Implement a streamlined process for managing incoming orders, including accepting, preparing, and updating status.

Delivery Integration:
Establish interfaces or integrations for seamless communication with delivery personnel or third-party delivery services.

Performance Metrics:
Include metrics in the system usage reports that help analyze restaurant performance and efficiency. Use Cases for Meal Deliverers

3.5 Use Cases for Meal Deliverer

UC-MD-1: View Delivery Instructions

Requirement:
The system shall display detailed delivery instructions to the Meal Deliverer upon accepting the delivery request.

Trigger: Initiated when the Meal Deliverer accepts the delivery request in the app.

Preconditions:

1. Valid authentication and authorization as a Meal Deliverer.
2. Access granted to the Delivery Instructions module within the system.

Postconditions:
1. The Meal Deliverer accesses detailed delivery instructions including the customer's address, contact information, special notes, and specific directions.
2. Delivery instructions are easily accessible through the delivery app interface.

Acceptance Criteria:
1. The instructions should contain comprehensive details required for successful delivery.
2. Delivery instructions must be conveniently accessible within the delivery app interface.

UC-MD-2: Follow GPS from Pickup to Destination

Requirement:
The system shall integrate GPS functionality to provide real-time navigation from the pickup location to the delivery destination for the Meal Deliverer.

Trigger:
Initiated when the Meal Deliverer starts the delivery journey.

Preconditions:
1. Valid authentication and authorization as a Meal Deliverer.
2. Access granted to the GPS Navigation module within the system.

Postconditions:
1. The system provides turn-by-turn directions and estimated time of arrival (ETA) based on current traffic conditions.
2. Continuous route updates considering changes in traffic or alternate routes.

Acceptance Criteria:
1. The system should provide accurate navigation instructions and ETA.
2. Route adjustments based on real-time traffic updates must be available.

UC-MD-3: Update Order Progress

Requirement:
The system shall allow the Meal Deliverer to update the order progress at different stages of the delivery process.

Trigger:
Initiated when the Meal Deliverer reaches specific milestones during the delivery.

Preconditions:
1. Valid authentication and authorization as a Meal Deliverer.
2. Access granted to the Order Progress Update module within the system.

Postconditions:
1. The Meal Deliverer marks various status updates such as "Picked Up," "En Route," and "Arrived at Destination."
2. Timestamped updates along with optional notes or comments if necessary.

Acceptance Criteria:
1. The Meal Deliverer can update the order progress with different delivery stages.
2. Timestamped updates should be available alongside any additional notes.

UC-MD-4: Record Meal Delivery Drop Off

Requirement:
The system shall enable the Meal Deliverer to record the successful delivery drop-off.

Trigger:
Initiated when the Meal Deliverer reaches the delivery destination.

Preconditions:
1. Valid authentication and authorization as a Meal Deliverer.
2. Access granted to the Delivery Drop-Off Recording module within the system.

Postconditions:
1. The Meal Deliverer confirms the successful delivery by marking it as "Delivered" in the system.
2. Capture of timestamp, location, and optional additional notes provided by the Meal Deliverer.

Acceptance Criteria:
1. The Meal Deliverer confirms the successful delivery status in the system.
2. System records timestamp, location, and any additional notes for the delivery drop-off.

Additional Considerations:

Security:
Ensure secure handling of sensitive customer information accessible only to authorized Meal Deliverers.

User Authentication:
Implement robust user authentication mechanisms to control access to delivery information.

Error Handling:
Provide error messages and alerts to guide Meal Deliverers in scenarios like network issues, incorrect addresses, or system malfunctions.

4. Software Interfaces Requirements

4.1 User Interface (UI) for Patrons to:

- Place meal orders
- Update preferences

- View order history
- Make payments
- User Interface (UI) for Cafeteria Staff:

4.2   User Interface (UI) for Cafeteria Staff to:

- Prepare meals
- Manage inventory
- Generate payment requests
- Update order statuses
- User Interface (UI) for Menu Managers:

4.3   User Interface (UI) for Menu Managers to:

- Create and modify menus
- Review feedback and suggestions
- Analyze meal preferences and purchase patterns
- User Interface (UI) for Meal Deliverers:

4.4   User Interface (UI) for Meal Deliverers to:

- View assigned deliveries
- Track delivery routes
- Update delivery statuses

4.5 User Interface (UI) for Local Restaurants:

- Accept and manage order requests
- Prepare meals
- Generate payment requests

4.6   Relational Database Interface:

- An interface for the COS to interact with the relational database:
- Store transactional data (orders, payments, etc.)
- Retrieve and update data for various functionalities
- NoSQL Database Interface:

4.7   Interface for the COS to interact with the NoSQL database:

- Store and manage user session data
- Handle concurrent user interactions and session management

4.8   Payment Gateway Interfaces:

- Interfaces to connect with payment gateway providers for:
- Processing payments securely
- Verifying transactions and updating payment statuses

4.9   Third-party API Integrations:

Integrations with external services for:
- Geolocation services for delivery tracking
- Inventory management systems for updating stock levels
- Integration with Company Payroll Website for staff payments
- Integration with Menu Order System for order management
- Interaction with COS Inventory System for inventory updates
- Connectivity with Delivery Software for tracking and managing deliveries
- Interaction with Ratings Software for meal ratings and reviews
- Integration with Survey Software for customer feedback
- Connectivity with Customer Service platform for issue resolution and support

4.10   Reporting and Analytics Interfaces:

Interfaces to generate and access system usage reports:
- Export data in various formats (PDF, CSV, XLSX)
- Provide analytics dashboards for administrators and stakeholders

5.   Other Nonfunctional Requirements

Performance Requirements

Response Time

PE-1: COS shall fully load within an average response time of 3 seconds or less over a broadband (DSL or cable) Internet connection.

Scalability

PE-2: The system should be scalable to handle a 20% increase in concurrent users during peak hours without exceeding an average response time of 4 seconds for critical functionalities like generating payment requests and updating order progress.

Security Requirements

Data Encryption

SE-1: COS shall use a 256-bit encryption protocol for transmitting and storing sensitive information, such as Patron's personal identification, financial data, and location details.

Access Control

SE-2: COS shall mandate Multi-Factor Authentication for user sign-in, ensuring an added layer of security to control access to functionalities and sensitive data.

Extensibility Requirements

Relational Database Integration

EX-1: COS shall be extensible to seamlessly integrate a relational database for storing and managing transactional data, ensuring data integrity and scalability.

NoSQL Database Integration

EX-2: COS shall support the integration of a NoSQL database for efficiently storing and managing user session data to accommodate increased user interaction without compromising system performance.

Availability (Reliability) Requirements

System Uptime

RE-1: The system shall maintain an uptime of at least 99.9% to ensure consistent availability during operational hours without frequent service disruptions.

Data Backup

RE-2: Automated backups should occur daily to safeguard against data loss and enable rapid recovery in case of system failure or data corruption.

Usability Requirements

User Interface Consistency

US-1: COS shall maintain a consistent user interface design across all modules, ensuring uniformity and ease of navigation for all stakeholders.

Accessibility

US-2: The system should adhere to WCAG 2.1 accessibility standards, ensuring features like screen reader compatibility and keyboard navigation for users with disabilities.

Compatibility

Browser Compatibility

CO-1: The system should be compatible with the latest versions of major browsers (Chrome, Firefox, Safari, Edge) to ensure a consistent and error-free user experience across different platforms.

Mobile Responsiveness

CO-2: The system interface should be responsive and optimized for various mobile devices, ensuring easy access and usage for Meal Deliverers and Patrons.

Compliance and Reporting

Compliance Standards

CR-1: The system shall comply with relevant data protection regulations (e.g., GDPR, HIPAA) and industry-specific standards (e.g., PCI-DSS for payment processing) to ensure data security and legal compliance.

Reporting Formats

CR-2: System usage reports should be generated in PDF and CSV formats for easy accessibility and comprehensive analysis by administrators and stakeholders.

Appendix: User Flow Chart

Cafeteria Ordering System (COS)
User Flow Chart . V2
By Monica Grant, Phd