PROJ1B1 - WolfCafe System

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NEW USE CASES

Use Case 11: Real-Time Order Status Tracking (Customer)

Industry best practices on tracking, customer behavior studies and accessibility

- **Preconditions:** Customer is logged in and has placed an order.
- **Main Flow:**
    - Customer navigates to "Track My Order" page or menu.
    - System displays a real-time status progress bar or textual updates: "Preparing," "Ready," "Out for Pickup."
    - The estimated wait/pickup time is shown.
    - System ensures accessibility with screen reader compatibility and color use per guidelines.
- **Subflow:**
    - Customer opts for periodic push notifications or SMS for status updates.
- **Alternative Flow:**
    - Real-time tracking unavailable; system degrades gracefully to text-only status updates with retry option.

Use Case 12: Provide Feedback and Ratings (Customer)

Service quality optimization per customer engagement research.

- **Preconditions:** Order is completed and the customer is logged in.
- **Main Flow:**
    - Customer receives a prompt (in-app or email) to rate their experience (1–5 stars).
    - Customer may also leave a written review or select tags (speed, accuracy, friendliness).
    - System records feedback and updates business analytics.
    - Admin or staff may review reports of feedback for service improvements.
- **Subflow:**
    - Customer accesses order history and provides rating for a past order.
- **Alternative Flow:**
    - Feedback submitted with inappropriate content—system flags and removes it; customer notified.

Use Case 13: Schedule Future Orders (Customer)

Scheduled orders, subscription models, and reminder functionality

- **Preconditions:** Customer is logged in with items in the cart.
- **Main Flow:**
  - Customer chooses "Schedule Order."
  - Selects preferred delivery/pickup date/time within system operating hours.
  - System checks slot availability and confirms scheduling.
  - Customer receives confirmation and reminder notifications prior to the scheduled time.
- **Subflow:**
  - **Modify/Cancel Scheduled Order:**
    - Customer navigates to their scheduled orders list.
    - Selects a scheduled order to modify/cancel.
    - System validates and confirms changes.
    - Customer receives updated confirmation
  - **Recurring Order Setup:**
    - Customer opts to make the scheduled order repeat daily/weekly/monthly.
    - Customer specifies recurrence pattern and end date or occurrences
    - System schedules orders automatically and sends appropriate reminders.
  - **Schedule Slot Unavailability Handling:**
    - System detects full booking for requested slot during scheduling or modification.
    - Suggests nearest available alternative slots or waitlist option.
    - Customer selects alternative or opts into waitlist notifications.
- **Alternative Flow:**
  - Selected slot is not available; the system suggests nearest alternatives or the waitlist option.

Use Case 14: Integrate Third-Party Payment Gateway (Admin)

This use case covers the administrative task of connecting the system to an external payment processor, a critical step for handling financial transactions and complying with tax guidelines.

- **Preconditions**: The user is an Admin with system configuration privileges and is logged into the administrative dashboard.
- **Main Flow**:
  - The Admin navigates to the "Settings" > "Payment Gateways" section.

- The Admin selects to add a new gateway or edit an existing one.
- The Admin securely enters the necessary credentials (e.g., API keys, merchant ID) provided by the third-party payment provider.
- The Admin initiates a "Test Connection" function to verify that the credentials are correct and the gateway is reachable.
- Upon successful connection, the Admin enables the gateway, making it available as a payment option for customers.
- **Subflow**: **Configure Fallback Options.** While in the payment settings, the Admin designates a secondary payment gateway or a system message (e.g., "Credit Card payments are temporarily unavailable") to be used automatically if the primary gateway fails.
- **Alternative Flow**:
  - **Invalid Credentials or API Failure**: The Admin clicks "Test Connection," but the provided API keys are invalid or the gateway is unreachable. The system rejects the configuration and displays an error message: "Connection Failed: Please check your API credentials and try again."

Use Case 15: View Dietary and Allergen Information (Customer)

This use case is based on recommended nutrition-related practices for online food services, ensuring customers can make informed and safe food choices.

- **Preconditions**: The user is a customer, either logged in or browsing the menu as a guest.
- **Main Flow**:
  - The customer navigates to the main menu.
  - The customer clicks on a specific item or recipe to view its details.
  - The system displays a dedicated section on the item's page with comprehensive dietary information, including a list of allergens (e.g., "Contains: Wheat, Soy, Nuts"), dietary labels (e.g., "Vegan," "Gluten-Free"), and nutritional facts.
  - The customer uses filter options at the top of the menu to display only items that match their dietary preferences (e.g., show only "Vegetarian" items).
- **Subflow**: **Personalize Menu View.** The customer navigates to their profile settings and saves their dietary preferences (e.g., "Vegan," "Allergic to Peanuts"). The system will now automatically filter or flag items on the main menu according to these saved preferences during future visits.
- **Alternative Flow**:
  - **Information Unavailable**: The customer views an item for which dietary information has not yet been entered. The system displays a clear disclaimer in the dietary section: "Nutritional and allergen information for this item is not available. Please contact us with any questions."

Use Case 16: Manage Dietary Labels and Allergen Info (Staff/Admin)

This use case is critical for maintaining compliance with food safety and labeling regulations by allowing authorized personnel to manage nutritional data.

- **Preconditions**: The user is a Staff member or Admin with permissions to edit menu items and is logged into the system.
- **Main Flow**:
  - The user navigates to the "Menu Management" dashboard.
  - The user selects an item or recipe to edit.
  - In the item editor, the user navigates to the "Dietary Information" tab.
  - The user adds or updates allergen warnings from a checklist, selects applicable dietary labels (e.g., "Vegetarian," "Vegan"), and enters nutritional data.
  - The system performs basic validation on the entered data (e.g., ensures nutritional values are numeric).
  - The user saves the changes, and the new information is immediately published and visible to customers on the menu.
- **Subflow**: **Upload Verification Documents.** The user uploads a PDF of an ingredient's specification sheet or an official certification (e.g., gluten-free certificate) to the system for internal records and verification.
- **Alternative Flow**:
  - **Input Validation Fails**: The user enters conflicting data (e.g., labels an item as "Vegan" but also lists "Milk" as an allergen). The system prevents saving the changes and displays an error message: "Validation Error: An item cannot be marked 'Vegan' and contain a 'Milk' allergen. Please correct the information."

Use Case 17: Apply a Promotion or Discount Code (Customer)

This use case addresses the common business need for marketing and sales promotions, a feature often detailed in food delivery business plans.

- **Preconditions**: A customer (logged-in or guest) has at least one item in their cart. The system has active promotion codes configured by an administrator. The customer is on the "Cart" or "Checkout" screen.
- **Main Flow**:
  - The customer locates the "Apply Promotion Code" input field on the checkout screen.
  - The customer enters a valid promotion code and clicks "Apply."
  - The system validates the code against its rules (e.g., not expired, meets minimum order value, applicable to items in the cart).
  - The system recalculates the order total, applying the discount.
  - The discount is displayed as a distinct line item in the order summary (e.g., "-$2.00 Promo Discount").

○ The customer proceeds with the updated total.
● **Subflow**: **Removing a Promotion Code.** Before finalizing the order, the customer decides to remove the applied code. They click a "Remove" button next to the discount line item, and the system reverts the order total to its original price.
● **Alternative Flows**:
   ○ **Invalid or Expired Code**: The customer enters a code that is not in the system or is past its expiration date. The system displays an error message such as, "This promotion code is invalid or has expired."
   ○ **Code Requirements Not Met**: The customer enters a valid code, but their cart does not meet the conditions (e.g., order total is below a required minimum). The system displays a message explaining the unmet requirement, such as, "This code requires a minimum purchase of $15.00."
   ○ **Code Already Used**: The customer enters a single-use code that has already been redeemed by their account. The system displays a message: "This code has already been used."

Use Case 18: Manage Personal Data and Privacy Settings (Customer)

This use case is crucial for complying with privacy regulations (like HIPAA for health data, or general data protection principles) and fulfilling the requirements of a system privacy policy.

● **Preconditions**: The user is a customer and is logged into their WolfCafe account.
● **Main Flow**:
   ○ The customer navigates to their "Account" or "Profile" page.
   ○ The customer selects the "Privacy & Data" section.
   ○ The system displays options, including "Download My Data" and "Communication Preferences."
   ○ The customer selects "Communication Preferences" and toggles options for receiving promotional emails or SMS notifications.
   ○ The customer saves their changes, and the system provides a confirmation message.
● **Subflow**: **Request Account Deletion.** The customer selects an option to permanently delete their account. The system presents a confirmation dialog explaining that this action is irreversible and will erase their order history and saved information. The customer re-enters their password to confirm, and the system queues the account for deletion.
● **Alternative Flows**:
   ○ **Data Download Fails**: The customer requests to download their data, but a system error occurs. The system displays a message: "We were unable to process your data request at this time. Please try again later or contact support."
   ○ **Invalid Input**: The customer attempts to change their contact email within the privacy settings to an invalid format. The system displays a validation error message prompting for a valid email address.

Use Case 19: Manage Item Availability and Visibility (Staff/Admin)

This use case focuses on the daily operational need for staff to manage the menu in real-time based on inventory that might not be tracked granularly (e.g., a batch of soup runs out).

- **Preconditions**: The user is a Staff member or Admin and is logged into the system with permissions to manage the menu.
- **Main Flow**:
    - The user navigates to the "Menu Management" or "Inventory" dashboard.
    - The system displays a list of all available items and recipes.
    - The user identifies an item that is temporarily unavailable (e.g., "Sold Out for Today").
    - The user clicks a toggle or selects an option to change the item's status from "Available" to "Sold Out."
    - The system confirms the change. The item immediately becomes un-orderable on the customer-facing menu, possibly showing a "Sold Out" label.
- **Subflow**: **Marking an Item as a "Daily Special."** The user selects an item and flags it as a "Daily Special." The system highlights this item on the customer menu, perhaps moving it to a featured section at the top of the page.
- **Alternative Flows**:
    - **Conflicting Inventory Levels**: The user tries to mark an item as "Available," but the system's underlying inventory tracking shows that a critical ingredient is at zero. The system prevents the action and displays a notification: "Cannot make available. Required ingredient 'Espresso Beans' is out of stock."
    - **Concurrent Modification**: Another staff member simultaneously changes the status of the same item. The system detects the conflict and alerts the user: "This item was just updated by another user. Please refresh the page."

Use Case 20: Place an Anonymous Order (Guest User)

This use case directly addresses the "Anonymous Orders" optional requirement, providing a streamlined flow for users who do not wish to create an account.

- **Preconditions**: The user is a guest (not logged in) and is browsing the WolfCafe menu.
- **Main Flow**:
    - The guest adds one or more items to their cart.
    - The guest proceeds to checkout.
    - The system prompts the user to "Log In," "Create Account," or "Continue as Guest." The user selects "Continue as Guest."
    - The system presents a form for required information: Name (for pickup) and Email (for receipt).

- ○ The guest enters their payment information. Saved payment methods are not available.
- ○ The guest confirms the order details, including tax and an optional tip, and places the order.
- ○ The system processes the payment and displays a confirmation page with an order number and pickup instructions. An email receipt is sent to the provided address.
- **Subflow**: **Post-Order Account Creation.** After a successful guest order, the confirmation page includes an option to "Create an account to save your details for next time." If the user opts in, the system uses the email and name they provided to pre-fill the account creation form.
- **Alternative Flows**:
  - ○ **Invalid Contact Information**: The guest enters an email address in an invalid format. The system prevents submission and highlights the field with a validation error.
  - ○ **Abandoned Checkout**: The guest closes the browser or navigates away from the page before completing the payment. The system clears the guest cart after a short, predefined session timeout.

Use Case 21: Submit a Support Ticket for an Order Issue (Customer)

This provides a formal mechanism for problem resolution, improving customer service and creating a log of issues for management review.

- **Preconditions**: A customer is logged into their account. The order they have an issue with exists in their "Order History."
- **Main Flow**:
  - ○ The customer navigates to their "Order History."
  - ○ The customer selects the specific order that has an issue.
  - ○ The customer clicks a "Report an Issue" or "Get Help" button associated with that order.
  - ○ A support form appears, pre-populated with the order ID.
  - ○ The customer selects a reason for the ticket from a dropdown menu (e.g., "Incorrect item received," "Item was missing," "Quality concern," "Billing error").
  - ○ The customer provides a brief text description of the problem.
  - ○ The customer submits the form. The system creates a support ticket, assigns it a unique ID, and sends a confirmation email to the customer and a notification to the system administrator or staff.
- **Subflow**: **Attach a Photo.** The support form includes an option to upload an image. The customer takes a photo of the incorrect or poor-quality item and attaches it to the support ticket before submitting.
- **Alternative Flows**:

- **Form Submission Fails**: Due to a network error, the ticket fails to submit. The system saves the entered information locally and displays a message: "Submission failed. Please check your connection and try again."
- **Required Fields Missing**: The customer clicks "Submit" without selecting a reason or providing a description. The system highlights the required fields and displays a message: "Please select a reason and describe your issue."

Use Case 22: Dynamic Menu Personalization (Customer)

System offers personalized recommendations to the customer based on the customer's past orders, preferences and dietary filters.

- **Preconditions:** Customer is logged in; Customer has past orders or saved dietary preferences.
- **Main Flow:**
    - Customer opens the menu page.
    - System analyzes past orders and dietary preferences.
    - System highlights suggested items under "Recommended for you."
    - Customer can click items to add to cart.
- **Subflows:**
    - **Dietary filters:** Add dietary preferences using dietary filters available in the system
    - **Update preferences:** Customer updates dietary preferences and system immediately updates recommendations.
- **Alternative Flows:**
    - **No past order history**: system displays popular items and new arrivals.
    - **Recommendation engine error**: system displays standard menu without personalization.

Use Case 23: Order Modification Before Preparation (Customer)

Customer modify an order before it enters food preparation stage.

- **Preconditions:** Customer is logged in; Customer has an active order that is not yet in preparation.
- **Main Flow:**
    - Customer navigates to "My orders."
    - Selects active orders and clicks "Modify order."
    - Customer adds/ removes items or changes quantities.
    - System recalculates total and updates order details.
    - Customer confirms modifications.

- **Subflows:**
  - **Item Unavailability Check:** System alerts if requested item is unavailable and suggests alternatives.
  - **Price Update Notification:** System shows updated total after modifications.
  - **Refund initiation** (UC 26) or **payment** (UC 6): based on updated order.
- **Alternative Flows:**
  - **Order already in preparation**: System blocks modification and displays message: "Order cannot be changed at this stage."
  - **Network issue during modification**: System saves current state and prompts retry.

Use Case 24: Staff Shift & Task Scheduling (Admin/ Staff)

Admin schedules staff shifts and tasks, staff can view and request changes.

- **Preconditions:** Admin is logged in with scheduling permissions; Staff users are registered in the system.
- **Main Flow:**
  - Admin navigates to "Shift management" dashboard.
  - Creates/ edits shifts with role assignments (example: barista, cashier, cook).
  - Staff logs in and views assigned shifts and tasks.
- **Subflows:**
  - **Shift Swap Requests:** Staff can request to swap shifts and admin approves or rejects.
  - **Automated Reminders:** System sends shift reminders to staff before start time.
- **Alternative Flows:**
  - **Conflicting schedules:** System highlights conflicts for admin to resolve.
  - **Staff unavailable:** Admin marks substitute and system notifies relevant staff.

Use Case 25: Daily Specials & Promotions Management (Admin)

Admin manages daily specials and time-limited promotions.

- **Preconditions:** Admin is logged in with management permissions.
- **Main Flow:**
  - Admin navigates to "Daily specials" or "Promotions" section.
  - Selects items to highlight as daily specials.
  - Adds start/ end times for specials or promotion codes.
  - System gets updated.
- **Subflows:**

- ○ **Automatic Removal:** System auto-removes items marked as specials once promotion period ends.
- ● **Alternative Flows:**
  - ○ **Invalid promotion period**: System prompts correction.
  - ○ **Item runs out:** System removes from special section and notifies admin.

Use Case 26: Refund or Compensation Handling (Admin)

Admin processes refunds or compensations for customers reporting order issues.

- ● **Preconditions:** Admin/ is logged in; Customer has submitted a valid support ticket.
- ● **Main Flow:**
  - ○ Admin reviews customer support ticket.
  - ○ Admin selects "Issue refund/ provide compensation."
  - ○ Admin processes refund via original payment method or provides coupon.
  - ○ System confirms refund or coupon issuance and notifies customer.
- ● **Subflows:**
  - ○ **Partial Refund:** System allows partial refund for part of the order.
  - ○ **Coupon Issuance:** System generates unique coupon code for compensation.
- ● **Alternative Flows:**
  - ○ **Refund fails** due to payment gateway: System logs error and alerts admin.
  - ○ **Ticket invalid** (example: duplicate, resolved): System notifies admin to review before processing.

Use Case 27: Perform End-of-Day Financial Reconciliation (Admin)

This is a critical daily operational task for any food service business, ensuring financial integrity and accountability. It directly serves the **Admin** and supports the **CEO/Product Owner** by providing accurate financial data.

- ● **Preconditions**: The user is an Admin with financial permissions. The cafe's operational hours for the day have concluded.
- ● **Main Flow**:
  1. The Admin navigates to the "Financial" section and selects "Daily Close-Out."
  2. The system automatically aggregates all transaction data for the day, categorizing sales by payment type (credit/debit, campus meal plan, cash, gift card).
  3. The system displays a summary: total revenue, total taxes collected, total tips, and the number of transactions.
  4. The Admin is prompted to enter the physical cash counted from the register.

5. The system compares the entered cash amount with the recorded cash sales and flags any discrepancy (over/short).
6. The Admin confirms the close-out, which finalizes the day's transactions, archives the data, and generates a "Z-Report" PDF for accounting records.

- **Subflow**: **Discrepancy Notes**. If the cash amount is over or short, the system requires the Admin to enter a note explaining the potential reason before the close-out can be finalized.
- **Alternative Flow**: **Active Orders Preventing Close-Out**. The Admin attempts to close out the day while an order is still marked as "In Progress." The system prevents the action and displays a notification with the active order numbers that must be fulfilled or canceled first.

Use Case 28: Broadcast Targeted Announcements to Customers (Admin)

This use case provides a direct communication channel for marketing and operational updates, a crucial feature for customer engagement found in modern service apps.

- **Preconditions**: The user is an Admin with marketing permissions.
- **Main Flow**:
    1. The Admin navigates to the "Customer Engagement" module and selects "Create Announcement."
    2. The Admin writes a message title and body (e.g., "Holiday Hours Update," "We will be closing at 3 PM on Friday for a staff event.").
    3. The Admin chooses the delivery method: in-app banner, push notification, or both.
    4. The Admin defines the target audience using filters. Options include "All Customers" or dynamic segments like "Customers who purchased in the last 30 days" or "Customers who have previously ordered a specific item."
    5. The Admin schedules the announcement to be sent immediately or at a future date and time.
- **Subflow**: **A/B Testing a Promotion**. The Admin creates two versions of a promotional announcement (e.g., "10% Off" vs. "Free Drink with Purchase"). They target each version to a random 50% of a customer segment to measure which offer generates more sales.
- **Alternative Flow**: **Invalid Audience Segment**. The Admin creates a set of filters that results in zero customers (e.g., customers who ordered coffee AND have a nut allergy AND joined last week). The system shows a warning: "This audience is empty. Please adjust your filters."

Use Case 29: Monitor System Health and Performance (IT Support)

This use case directly serves the **IT Support** stakeholder and addresses the critical, real-world need for maintaining application stability and performance.

- **Preconditions**: The user is logged in with IT Support-level privileges.
- **Main Flow**:
    1. The user accesses the "System Health Dashboard."
    2. The dashboard displays real-time and historical data visualizations for key performance indicators (KPIs):
        - **API Response Time**: Average latency for critical functions like placing an order or loading the menu.
        - **Error Rate**: Percentage of requests that result in a server error (e.g., 5xx codes).
        - **System Resources**: CPU, memory, and storage usage for the application servers and databases.
        - **Third-Party Service Status**: A status indicator (green/yellow/red) for integrations like the payment gateway and university authentication system.
    3. The user can adjust the time frame of the graphs (e.g., last hour, last 24 hours).
- **Subflow**: **Configure Alerts**. The IT Support user configures automated alerts. For example, if the API error rate exceeds 2% for more than 5 minutes, the system will automatically send an email and a Slack message to the on-call support team.
- **Alternative Flow**: **Third-Party Outage**. The dashboard shows that the primary payment gateway is down. The system automatically enables a pre-configured fallback payment option or displays a "Card payments are temporarily unavailable" message to customers at checkout.

Use Case 30: Manage Catering and Bulk Orders (Admin/Customer)

This use case expands the cafe's business model to serve larger events and groups, which involves a different workflow than standard individual orders.

- **Preconditions**:
    1. (Customer) The user is a logged-in customer.
    2. (Admin) The user is an Admin with permissions to manage catering.
- **Main Flow**:
    1. A customer navigates to the "Catering" section of the application.
    2. They browse a specialized catering menu (e.g., coffee carafes, boxes of pastries, sandwich platters).
    3. The customer fills out a request form with their desired items, quantity, event date, pickup time, and number of attendees.
    4. The system sends this request to the Admin dashboard as a "Pending Catering Quote."

5. The Admin reviews the request, verifies kitchen capacity, adjusts pricing for the bulk order, and sends a formal quote back to the customer.
6. The customer receives the quote and can accept it and pay a deposit through the system to confirm the order.

- **Subflow**: **Automated Reminders**. Once a catering order is confirmed, the system automatically schedules and sends reminder notifications to both the customer and the kitchen staff 72 hours and 24 hours before the scheduled pickup time.
- **Alternative Flow**: **Kitchen Capacity Conflict**. An Admin receives a catering request for a date and time when the kitchen is already at maximum scheduled capacity. The system displays a conflict warning, prompting the Admin to either reject the request or propose an alternative pickup time to the customer.

Aspects missing in proj1a1 deliverables

LLMs identified the following missing information about use cases:
1. Use case identifier, actor (primary, secondary), goal and post conditions.
2. Role clarity and actor interactions are missing.
3. Exception/ edge case handling is missing. Non-functional aspects of the system are not addressed.
   Example: Alternate flows for "System crash or downtime during order creation/payment" are missing.
4. Use cases related to risk analysis are missing.
   Example: regulatory (tax disputes) and cybersecurity risks (payment fraud, data leaks).

Differences in what the models suggest we are missing from proj1a1:
- Google Gemini Pro
  - "the most significant missing areas revolve around the customer's post-order experience, staff's day-to-day operational controls, and key business marketing features."
- ChatGPT 5
  - "Your system is missing authentication & access control, customer account management, notifications & communication, inventory forecasting & automation, customer experience features, security/audit/compliance, kitchen staff workflow, and multi-device/point-of-sale (POS) support."

Reflecting on the responses given by LLM

LLM responses have a sense of depth and address all the aspects of a scenario (technical, non-technical). The scope it defines has been distinct as well. Our responses lack the completeness LLMs offer. A variety of alternatives/ exceptions were also taken care of. LLMs offer structured outputs that would prove to be useful for professional documentation of a system.

From different prompt structuring, we noticed these different results while comparing **zero-shot prompting** vs. **careful prompting:**

- Zero-shot prompting generated more broad and less relevant use-cases
- Zero-shot prompting would give less detailed and worse formatted use-cases
- Zero-shot prompting was faster to get results but most results had to be disregarded
- Careful prompting allowed us to get use-cases following the specific format that we wanted
- Careful prompting gave much more relevant use-cases based on the project description and supplemental materials
- Careful prompting almost always yielded use–cases that could be immediately used

Costs involved

Chatgpt GPT 5 - **0 USD**
Gemini Plus - **0 USD** (student offer)
Perplexity Pro - **0 USD** (student offer)