

## ChatGPT 5: New Use Cases

### UC1: User Login

#### 1. Preconditions

- The user has a registered account in WolfCafe.

#### 2. Main Flow

- The user navigates to the login page.
- The user enters their username and password.
- The system verifies credentials and grants access.

#### 3. Subflows

- [S1] The user selects "Remember Me" to stay logged in.

#### 4. Alternative Flows

- [E1] Invalid username/password → error message.
- [E2] Account locked after multiple failed attempts.

### UC2: Register Account

#### 1. Preconditions

- The user is not logged in.
- The user does not have an account.

#### 2. Main Flow

- The user selects "Register".
- The user enters details (name, email, role = customer/staff).
- The system creates an account and confirms registration.

#### 3. Subflows

- [S1] Email verification is sent for confirmation.
- [S2] The user enables Two Factor authentication.

#### 4. Alternative Flows

- [E1] Email already exists → error message.
- [E2] Password does not meet requirements → error message.

### UC3: Add Item to Menu (Admin)

#### 1. Preconditions

- Admin is logged in.

#### 2. Main Flow

- Admin navigates to "Manage Items".
- Admin enters item details (name, price, category).
- The item is added to the system menu.

#### 3. Subflows

- [S1] Admin uploads an image for the item.

#### **4. Alternative Flows**

- [E1] Item name already exists → error shown.

### **UC4: View Menu (Customer)**

#### **1. Preconditions**

- The customer is logged in.

#### **2. Main Flow**

- The customer navigates to “Menu”.
- The system displays all available items with price.

#### **3. Subflows**

- [S1] The customer applies filters (e.g., drink/food).

#### **4. Alternative Flows**

- [E1] No items available → “Menu Empty” message.

### **UC5: Place Order**

#### **1. Preconditions**

- The customer is logged in.
- Menu contains at least one available item.

#### **2. Main Flow**

- The customer selects items and quantity.
- The customer proceeds to checkout.
- The customer selects the payment method and confirms the order.
- The system creates an order and assigns it to staff.

#### **3. Subflows**

- [S1] Customer applies a coupon.
- [S2] Customer selects pickup time.
- [S3] Customer saves payment method.

#### **4. Alternative Flows**

- [E1] Item out of stock → error shown.
- [E2] Payment declined → order canceled.

### **UC6: Fulfill Order (Staff)**

#### **1. Preconditions**

- Staff is logged in.
- An order is pending.

#### **2. Main Flow**

- Staff views pending orders.  
Staff prepares items.

- Staff marks order as fulfilled.

### **3. Subflows**

- [S1] Staff adds preparation notes.

### **4. Alternative Flows**

- [E1] Staff cannot complete order due to missing ingredient → order marked failed.

## **UC7: Manage Inventory (Admin/Staff)**

### **1. Preconditions**

- Admin or staff logged in.

### **2. Main Flow**

- The user navigates to “Inventory”.
- The user adds or updates ingredient stock levels.

### **3. Subflows**

- [S1] System generates low-stock alerts.

### **4. Alternative Flows**

- [E1] User enters invalid quantity → error message.

## **UC8: Track Order Status (Customer)**

### **1. Preconditions**

- The customer is logged in.
- The customer has placed at least one order.

### **2. Main Flow**

- Customer navigates to “My Orders”.
- The system displays a list of recent and active orders.
- Customer selects an active order.
- The system shows current status (e.g., pending, in progress, ready, fulfilled).

### **3. Subflows**

- [S1] The customer receives live updates as order status changes.

### **4. Alternative Flows**

- [E1] No active orders → system displays “No orders found.”

## **UC9: Customize Item on Menu (Customer)**

### **1. Preconditions**

- The customer is logged in.
- At least one customizable item exists on the menu.

### **2. Main Flow**

- The customer selects an item from the menu.
- System displays available customization options (e.g., size, add-ons, remove ingredients).

- The customer chooses preferences.
- The customized item is added to the cart.

### 3. Subflows

- [S1] The customer saves a favorite customization for future use.

### 4. Alternative Flows

- [E1] Customization option unavailable → system notifies customer.

## UC10: Apply Coupon/Promo Code

### 1. Preconditions

- The customer is logged in.
- The customer has items in the cart.

### 2. Main Flow

- Customer proceeds to checkout.
- The customer enters a coupon or promo code.
- The system validates the code and applies the discount.

### 3. Subflows

- [S1] Multiple coupons may be combined if the system supports stacking.

### 4. Alternative Flows

- [E1] Invalid coupon → error message displayed.
- [E2] Expired coupon → error message displayed.
- [E3] Coupon not applicable to selected items → system rejects code.

## UC11: WIC-Eligible Basket Validation (Customer)

### 1. Preconditions

Customer is logged in; WIC profile/payment method is on file.

### 2. Main Flow

Customer adds items to cart → System flags WIC-eligible vs non-eligible → Customer views WIC subtotal and non-WIC subtotal.

### 3. Subflows

[S1] System suggests eligible substitutes when an item isn't WIC-approved.

### 4. Alternative Flows

- [E1] No eligible items in cart → Prompt to browse WIC-eligible menu.
- [E2] State program not supported → Show "WIC not available" notice.

## UC12: WIC Online Tender & Split Payment (Customer)

### 1. Preconditions

Customer has a mixed cart (WIC + non-WIC).

2. **Main Flow**

Checkout → WIC tender applied to eligible items → Remaining balance paid with card/cash → Order placed.

3. **Subflows**

[S1] Customer saves WIC card for future use (tokenized per policy).

4. **Alternative Flows**

[E1] Ineligible item in WIC portion → System moves it to non-WIC bucket.

[E2] WIC balance insufficient → Partial WIC payment + prompt for second tender.

Refs: [Federal RegisterGovInfo](#)

### UC13: WIC Pickup/Delivery ID & PIN Verification (Staff/Customer)

1. **Preconditions**

Order includes WIC-paid items.

2. **Main Flow**

At pickup/delivery, staff confirms identity and (if required) captures EBT PIN entry → Release order.

3. **Subflows**

[S1] Proxy pickup allowed if profile lists authorized shopper.

4. **Alternative Flows**

[E1] Identity mismatch → Hold order and notify customer.

[E2] PIN failure → Attempt again or convert to non-WIC payment.

### UC14: Nutrition Information & Healthy Defaults (Customer)

1. **Preconditions**

Menu items have nutrition metadata.

2. **Main Flow**

Customer opens item → System shows calories/macros and marks healthier default sides/sizes → Customer confirms.

3. **Subflows**

[S1] “Make it healthier” one-tap swaps (e.g., skim milk, no-syrup).

4. **Alternative Flows**

[E1] Missing nutrition data → “Info unavailable” banner + feedback to admin.

### UC15: Allergen & Ingredient Disclosure (Customer)

1. **Preconditions**

Item has allergen mapping (e.g., milk, nuts, gluten).

2. **Main Flow**

Customer views item → System displays allergens and ingredient list → Customer proceeds or selects alternative.

3. **Subflows**

[S1] Customer sets persistent allergen profile → Risk warnings shown across menu.

4. **Alternative Flows**

[E1] Allergen data missing → Item blocked for customers with matching allergen profile.

### **UC16: Nutrition Label & Calorie Display for Packaged Items (Admin/Customer)**

1. **Preconditions**

Admin maintains packaged item labels.

2. **Main Flow**

Admin uploads label details → Menu shows Nutrition Facts (or link/image) → Customer reviews before adding.

3. **Subflows**

[S1] Small-business labeling exemption flagged where applicable.

4. **Alternative Flows**

[E1] Label out of date → Admin warned to update before publishing.

### **UC17: Employer-Provided Staff Meals Tracking (Admin/Staff)**

1. **Preconditions**

Staff is logged in; org policy on staff meals configured.

2. **Main Flow**

Staff orders shift meal → System records meal reason (convenience of employer, on-premises) → HR/Payroll export ready.

3. **Subflows**

[S1] Auto-rules mark qualifying meals as non-taxable when criteria met.

4. **Alternative Flows**

[E1] Meal outside qualifying rules → Mark as taxable fringe.

### **UC18: Employee Discount Benefit Tracking (Admin/Staff)**

1. **Preconditions**

Staff discount program enabled.

2. **Main Flow**

Staff applies discount → System evaluates taxable vs non-taxable thresholds → Records benefit value for payroll.

3. **Subflows**

[S1] Monthly benefit statement to employee.

4. **Alternative Flows**

[E1] Discount misuse detected (role mismatch) → Block + notify admin.

### **UC19: Budget-Friendly Suggestions Using National Standards (Customer)**

1. **Preconditions**

Customer opts in to budget guidance.

2. **Main Flow**

System estimates monthly food spend vs national standards → Suggests budget-friendly combos and meal plans.

3. **Subflows**

[S1] Customer sets a weekly spend cap → Cart warns on overage.

4. **Alternative Flows**

[E1] Standards unavailable for region → Use café defaults.

## **UC20: Supplier Lab Test & Certificate Management (Admin)**

1. **Preconditions**

Admin manages suppliers for packaged/ingredient items.

2. **Main Flow**

Admin uploads lab certificates (e.g., LAAF-accredited results) → Links to ingredient lots → Publishes compliance status.

3. **Subflows**

[S1] Expiry reminders for certificates.

4. **Alternative Flows**

[E1] Missing/expired cert → Block item from sale until resolved.

## **UC21: Food Recall & Unsafe Item Pull (Admin/Staff)**

1. **Preconditions**

Active inventory with lot IDs; recall alert received.

2. **Main Flow**

Admin records recall → System locates affected lots/menu items → Auto-86 items and notifies staff/customers with open orders.

3. **Subflows**

[S1] Export recall action log for regulators.

4. **Alternative Flows**

[E1] No matching lots → Record “No impact” evidence.

## **UC22: Nutrition Badges & Filterable Menu (Customer/Admin)**

1. **Preconditions**

Admin configured nutrition badges (low sugar, whole grain, reduced sodium).

2. **Main Flow**

Customer filters menu by badges → System highlights qualifying items and swaps.

3. **Subflows**

[S1] Admin runs report on % of sales from healthier options.

4. **Alternative Flows**

[E1] No items match filter → Offer nearby alternatives.

**UC23: Impulsive-Order Guardrails & Mealtimes Nudges (Customer)**

1. **Preconditions**

Customer opted in to wellness nudges.

2. **Main Flow**

At late hours or repeated high-calorie patterns, system suggests smaller sizes, shareable items, or schedule-ahead pickup.

3. **Subflows**

[S1] “Smart swap” recommendations based on prior choices.

4. **Alternative Flows**

[E1] Customer disables nudges → Revert to standard flow.

**UC24: Coupon/Promo Rules with Program Eligibility Segmentation (Admin/Customer)**

1. **Preconditions**

Admin defines coupon eligibility (e.g., exclude WIC items).

2. **Main Flow**

Customer enters code → System validates scope, stacking, and program restrictions → Applies discount.

3. **Subflows**

[S1] Split application: non-WIC items discounted, WIC items excluded.

4. **Alternative Flows**

[E1] Ineligible item set → Show reason and remove from discount.

**UC25: Pickup Window Scheduling & Capacity Limits (Customer/Staff)**

1. **Preconditions**

Capacity rules configured for time slots.

2. **Main Flow**

Customer selects pickup time → System checks slot capacity → Confirms or suggests next available.

3. **Subflows**

[S1] Staff throttling increases prep time during spikes.

4. **Alternative Flows**

[E1] Slot full → Offer waitlist or alternative location.

**UC26: Delivery Handoff Code Verification (Staff/Customer)**



1. **Preconditions**  
Order marked for delivery.
2. **Main Flow**  
System generates one-time code/QR → Courier verifies at handoff → Order marked delivered.
3. **Subflows**  
[S1] Photo proof captured (if policy enabled).
4. **Alternative Flows**  
[E1] Code mismatch → Delivery blocked and support notified.

#### **UC27: Allergen Cross-Contact Prevention Log (Staff)**

1. **Preconditions**  
Kitchen has allergen SOPs.
2. **Main Flow**  
Staff marks equipment cleaning and segregation steps before/after prep → System records log per order.
3. **Subflows**  
[S1] Low-risk prep path auto-suggested for allergen orders.
4. **Alternative Flows**  
[E1] Required cleaning step skipped → Order blocked until completed.

#### **UC28: Ingredient Lot/Expiry Tracking & Auto 86'ing (Admin/Staff)**

1. **Preconditions**  
Lots and expiries recorded in inventory.
2. **Main Flow**  
Nightly job decrements shelf life → Auto-removes expired lots from availability → Menu updates in real time.
3. **Subflows**  
[S1] Suggest purchase orders for soon-to-expire items.
4. **Alternative Flows**  
[E1] No substitute for expiring key ingredient → Pause related items and notify admin.

#### **UC29: Tax Handling for Subsidized/Exempt Orders (Admin)**

1. **Preconditions**  
Tax engine configured with item/category rules and exemptions.
2. **Main Flow**  
At checkout, system applies correct tax per item, location, and program (e.g., exempt categories) → Tax on receipt.

3. **Subflows**

[S1] Admin runs tax summary report by category.

4. **Alternative Flows**

[E1] Location tax tables missing → Fallback rate and admin alert.

**UC30: Regulatory Audit Log & Evidence Export (Admin)**

1. **Preconditions**

Audit mode enabled.

2. **Main Flow**

Admin exports logs (WIC tender usage, nutrition labels, allergen steps, recalls, lab certs) for auditors.

3. **Subflows**

[S1] Time-bounded export with hash/signature for integrity.

4. **Alternative Flows**

[E1] Missing evidence (e.g., expired certificate) → Report highlights gaps for remediation.

## **Comparison between Models and Prompting Strategies**

Our group decided to compare the results generated from the OpenAI GPT-5 model and Google Gemini's 2.5 Flash model. For each LLM, we provided a template detailing the desired structure, links to the supplemental information, and directions to scrape the information from the links to develop the use cases. We compared the outputs from both LLMs for accuracy, adherence to our project description, and integration of supplemental information. Our group determined that Gemini did not utilize all of the supplemental links provided as effectively as GPT-5. Of the seven links given, Gemini only parsed information from four of them, and only used one link to support each use case. GPT-5, however, was able to parse information from all seven supplemental links and incorporate the information into multiple use cases.

Comparing zero-shot and careful prompting, zero-shot prompting resulted in generalized use cases, which is good for brainstorming, as it doesn't tunnel vision on the provided information. Zero-shot doesn't provide the desired structured format, nor is it specific enough to create testable cases. It also doesn't take into account the supplemental information to guide its use case generation, so it is missing domain knowledge from the food delivery field and is relying on pre-trained information. Of the two models we tested zero-shot on, GPT-5 was at least able to demonstrate chain-of-thought reasoning, as it offered to structure the output of the use cases (preconditions, expected outcomes, etc.).

On the other hand, careful prompting (as described in the first paragraph) resulted in perfectly-structured use cases that incorporated the supplemental information and required little to no modifications to fulfill the assignment.

### **Total Cost of LLM Usage**

**Gemini Flash 2.5:** \$0 (available at no cost to NCSU students)

**GPT-5:** \$20 (ChatGPT Plus monthly subscription)