New Use Cases for Minimum Viable Product (MVP)

UC1: User Login

Stakeholders: Customers, Staff, Admin, Delivery Partners, IT Support, Product Manager

Preconditions:

- User has a registered account.
- System is online and accessible.

Main Flow:

1. User navigates to the login page.
2. User enters username and password.
3. System verifies credentials against stored records.
4. If valid, system grants access and redirects to the appropriate dashboard (Customer, Staff, Admin, Delivery Partner).

Subflows:

- [S1] System maintains an active session until logout or timeout.
- [S2] System logs successful login for auditing.

Alternative Flows:

- [E1] Invalid credentials → error message and retry.
- [E2] Forgotten password → redirect to UC10 (Password Reset).
- [E3] Account locked due to repeated failures → notify user and Admin.

UC2: Register Account

Stakeholders: Customers, Staff, Admin, IT Support, Product Manager

Preconditions:

- User is not logged in.
- Registration feature is enabled.

Main Flow:

1. User clicks “Register.”
2. User selects role (Customer, Staff, Admin, Delivery Partner).

3. User enters name, email, password, and optional phone number.
4. System validates details and creates the account.
5. Confirmation email or SMS is sent.

Subflows:

- [S1] Password strength validator checks complexity.
- [S2] Admin approval may be required for Staff/Delivery roles.

Alternative Flows:

- [E1] Email already exists → error.
- [E2] Password too weak → error.
- [E3] Invalid role selection → error.

UC3: Add Item to Menu

Stakeholders: Admin, Staff, Customers, Regulatory Bodies, Product Manager

Preconditions:

- Admin is logged in.
- Inventory records exist.

Main Flow:

1. Admin navigates to “Manage Items.”
2. Admin enters item name, category, price, stock level, and description.
3. Admin enters regulatory info (ingredients, allergen warnings, lot numbers).
4. System validates input and saves the item.
5. Menu updates in real time for Customers.

Subflows:

- [S1] Allergen and dietary info tagged automatically (e.g., vegan, gluten-free).
- [S2] Supplier details linked to the item for traceability.

Alternative Flows:

- [E1] Item already exists → error.
- [E2] Missing compliance info → prompt Admin to complete fields.

UC4: View Menu

Stakeholders: Customers, Investors, Product Manager

Preconditions:

- Customer is logged in.
- Menu contains ≥1 item.

Main Flow:

1. Customer selects “View Menu.”
2. System displays all available items with name, price, allergen info, and availability.
3. Customer may filter by category or dietary preference.

Subflows:

- [S1] Items low in stock are labeled.
- [S2] Out-of-stock items hidden or greyed out.

Alternative Flows:

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

UC5: Place Order

Stakeholders: Customers, Staff, Delivery Partners, Payment Processors, Admin, Investors, Product Manager

Preconditions:

- Customer is logged in.
- Menu has at least one active item.

Main Flow:

1. Customer selects items and quantity.
2. Customer chooses pickup or delivery.
3. Customer proceeds to checkout and selects payment method.
4. Payment is processed (see UC11).
5. Order confirmation sent to Customer, Staff, and Delivery Partner (if delivery).

Subflows:

- None

Alternative Flows:

- [E1] Item out of stock → notify Customer.
- [E2] Payment declined → retry or cancel.

UC6: Fulfill Order

Stakeholders: Staff, Customers, Delivery Partners, Admin, Regulatory Bodies, Product Manager

Preconditions:

- Staff logged in.
- Pending order exists.

Main Flow:

1. Staff views pending orders.
2. Staff prepares food/drink.
3. Staff marks order "Fulfilled."
4. System logs timestamps for regulatory audit.
5. Customer/Delivery Partner notified of readiness.

Subflows:

- [S1] System records preparation start/completion for traceability.

Alternative Flows:

- [E1] Missing ingredient → mark "Failed" & notify Customer.
- [E2] Equipment failure → escalate to Admin.

UC7: Manage Inventory

Stakeholders: Admin, Staff, Suppliers, Regulatory Bodies, Product Manager

Preconditions:

- Admin/Staff logged in.

Main Flow:

1. Admin/Staff updates stock levels.
2. System records lot numbers, expiry dates, and supplier details.
3. System alerts low-stock or expiring items.

Subflows:

- [S1] Automatic low-stock notifications sent to Admin.
- [S2] Link supplier info for audits.

Alternative Flows:

- [E1] Invalid entry → error.
- [E2] Stock below threshold → supplier alert.

UC8: Track Order Status

Stakeholders: Customers, Staff, Delivery Partners, Investors, Regulatory Bodies, Product Manager

Preconditions:

- Customer has placed an order.

Main Flow:

1. Customer navigates to “My Orders.”
2. System displays order status: Pending, In Progress, Fulfilled, Failed.

Subflows:

- [S1] Delivery ETA shown if applicable.

Alternative Flows:

- [E1] No active orders → "No orders found."

UC9: Pickup/Delivery & Handoff

Stakeholders: Customers, Staff, Delivery Partners, Admin, Regulatory Bodies, Product Manager

Preconditions:

- Customer has chosen pickup/delivery.
- Staff prepared order.

Main Flow:

1. Customer selects pickup/delivery slot.
2. System confirms slot availability.
3. Staff hands off order to Customer or Delivery Partner.
4. System records time, recipient name, and optional code/signature.

Subflows:

- [S1] Verify Delivery Partner credentials.

Alternative Flows:

- [E1] Pickup slot full → suggest next available.
- [E2] Delivery partner fails verification → hold order.

UC10: Password Reset

Stakeholders: All users, IT Support, Product Manager

Preconditions:

- User account exists.

Main Flow:

1. User selects "Forgot Password."
2. System requests email.
3. System sends reset link.
4. User resets password successfully.

Alternative Flows:

- [E1] Email not registered → error.
- [E2] Link expired → request new link.

UC11: Basic Payment Handling

Stakeholders: Customers, Payment Processors, Admin, Investors, Regulatory Bodies, Product Manager

Preconditions:

- Customer has placed an order.

Main Flow:

1. Customer chooses payment method.
2. System processes payment securely (PCI/DSS).
3. Payment confirmation sent to Customer and Admin.

Alternative Flows:

- [E1] Payment declined → retry or cancel order.
- [E2] Timeout → cancel or retry.

UC12: Delivery Partner – View and Accept Orders

Stakeholders: Delivery Partners, Customers, Staff, Admin, Product Manager, Regulatory Bodies

Preconditions:

- Delivery Partner is logged in.
- There are pending delivery orders assigned or available for pickup.
- Delivery scheduling and slot availability are configured.

Main Flow:

1. Delivery Partner logs into their dashboard.
2. System displays a list of pending delivery orders with details:
    - Order number
    - Customer name & address
    - Pickup location & time
    - Delivery time window
    - Special instructions (allergens, WIC eligibility, etc.)

3. Delivery Partner selects an order to accept.
4. System confirms acceptance and updates order status to “Assigned.”
5. Customer and Staff are notified of the assigned delivery partner.

Subflows:

- [S1] Delivery Partner may filter orders by location, time window, or order size.
- [S2] System logs timestamp of acceptance for audit and performance tracking.

Alternative Flows:

- [E1] Order already assigned to another partner → show message and remove from list.
- [E2] Delivery Partner cannot reach pickup location → mark unavailable and notify Staff/Admin.
- [E3] Delivery Partner cancels after acceptance → system reopens order for reassignment.

Reflection

To reduce our extensive list of use cases into the minimum viable product (MVP), our team focused on the core functionality of a food delivery system. Our objective was to determine what was essential to a food delivery service application: enabling customers to order food, staff to fulfill it, and delivery partners to deliver it. We identified what we considered the minimum steps required for a customer to place and receive a delivery order, along with the essential administrative steps for staff, food vendors, and delivery drivers. After settling on a list of core functions for our MVP, we prompted the LLMs to follow a similar process, taking our large set of use cases, stripping away non-essential features, and providing justification for each use case necessary for a functional prototype. We then cross-referenced the results from the LLMs with our group discussion and found general agreement on what should be included in the MVP.

We decided to eliminate use cases that were not central to the primary purpose of the software: facilitating the exchange of food for money between customers and delivery partners. This included any discount or promotional codes, specific verifications, food recalls, allergen information, extra tax handling, and other features that did not directly pertain to either the transaction process or the coordination with delivery partners. Among the new use cases, we added UC12: Delivery Partner – View and Accept Orders. This was included because the original set of generated use cases did not address delivery partner interactions, which are critical for ensuring that food reaches customers efficiently.

One of the most apparent critiques of the MVP is the simplicity of the design and system processes. The greatest flaw, or most significant limitation, of the MVP is the lack of consideration for regulatory authorities and potential compliance requirements. Customers may experience disappointment due to the lack of features such as discounts, promotions, or advanced menu customization, which limits their flexibility and reduces engagement with the platform. Staff may face operational frustrations because they cannot leverage promotional tools or enhanced order management features, which could slow fulfillment or limit efficiency.

To address stakeholder concerns without introducing undue complexity, we implemented several targeted enhancements. Although not initially considered, we incorporated basic payment handling to ensure secure financial transactions for both customers and food vendors. We also included a delivery partner view that allows personnel delivering food to view and accept orders. While not fully sophisticated, we incorporated a simple order tracking system that can be updated manually to provide customers with visibility into order progress. This system can later be expanded to include real-time tracking of delivery operations. We concluded that these enhancements significantly improve both the user experience and operational effectiveness of the system, without adding excessive complexity.

Prompt History

1. GPT-5
2. Gemini Flash 2.5