SE Project 1b1

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Use-cases :

UC1 — Customer Places an Order

Preconditions

- Customer is authenticated (or guest checkout is enabled, if supported).
- Menu items exist and at least one is in stock.
- Sales tax rate is configured.

Main Flow

1. Customer browses the menu.
2. Customer selects one or more items and quantities [Select Item].
3. System shows cart with subtotal.
4. Customer proceeds to checkout.
5. System calculates tax [Apply Tax].
6. Customer chooses a tip (15%, 20%, 25%, or custom) [Add Tip].
7. Customer confirms payment details and submits [Process Payment].
8. System records order and returns order ID & "pending" status.

Subflows

- [Select Item] Add, change qty, or remove items.
- [Apply Tax] Apply current configured rate to subtotal.
- [Add Tip] Apply selected percentage or validated custom amount.
- [Process Payment] Send charge to payment provider; on success, mark order "paid".

Alternative Flows

- [Item Out of Stock] System prevents add; suggest alternatives.
- [Payment Failed] Show failure reason; allow retry or cancel.
- [Tax Not Configured] Default to 0% tax (flag for admin) or block checkout (policy decision).

UC2 — Customer Receives Notification & Picks Up Order

Preconditions

- A paid order exists.
- Staff has marked the order "fulfilled/ready".

Main Flow

1. System updates customer-facing display/notifications [Notify Ready].
2. Customer arrives at pickup station.
3. Staff verifies the order ID or customer identity [Verify Pickup].
4. Staff marks order "picked up"; system closes the order.

Subflows

- [Notify Ready] In-app banner/queue screen updates; optional email/SMS/push.
- [Verify Pickup] Match order ID, name, or QR; log timestamp.

Alternative Flows

- [Wrong Customer] Verification fails; refuse release; leave order "ready".
- [Stale Pickup] Order not collected within window; mark "expired" and follow policy (discard/refund/hold).

UC3 — Customer Cancels an Order

Preconditions

- Customer has an order in "pending" or "paid but not fulfilled" status.
- Cancellation window/policy applies.

Main Flow

1. Customer opens order details.
2. Customer selects "Cancel Order".
3. System checks status & policy window.
4. If eligible, system cancels order and initiates refund (if paid) [Refund].

Subflows

- [Refund] Reverse transaction via payment provider; update order to "canceled".

Alternative Flows

- [Too Late] Order already fulfilled or outside window → show policy; no cancel allowed.
- [Partial Cancel] Some items unavailable; offer partial cancel/refund.

UC4 — Staff Fulfills an Order

Preconditions

- Staff is authenticated with fulfill permissions.
- One or more paid orders exist in "pending".

Main Flow

1. Staff opens "Pending Orders" queue [View Queue].
2. Staff selects an order.
3. Staff prepares items.
4. Staff marks order "fulfilled/ready" [Update Status].
5. System notifies the customer (see UC2 subflow).

Subflows

- [View Queue] Filter/sort by time, priority, or item type.
- [Update Status] Transition: pending → in-progress → fulfilled.

Alternative Flows

- [Out of Ingredients] Mark item(s) unavailable, notify customer, propose substitution or partial refund.
- [Accidental Fulfillment] Allow revert to "pending" with audit log.

UC5 — Staff Manages Inventory

Preconditions

- Staff is authenticated with inventory permissions.

Main Flow

1. Staff opens Inventory.
2. Staff searches or selects an item [Find Item].
3. Staff adjusts quantity or restocks [Adjust Stock].
4. System updates stock levels and logs change.

Subflows

- [Find Item] Search by name/ID; view current levels and thresholds.
- [Adjust Stock] Increment/decrement; optional note (delivery, shrinkage).

Alternative Flows

- [Invalid Quantity] Negative or non-numeric rejected with message.
- [Item Not Found] Create new inventory item (if allowed) or request admin action.

UC6 — Staff Creates or Edits Recipes/Menu Items

Preconditions

- Staff is authenticated with menu-management permissions.

Main Flow

1. Staff opens Menu Management.
2. Staff creates a new item or edits an existing one [Edit Form].
3. Staff sets name, price, optional ingredients and availability.
4. System validates and saves changes; menu updates.

Subflows

- [Edit Form] Structured fields (name, price, description, category, availability, optional ingredient list).

Alternative Flows

- [Duplicate Name] Reject; prompt to choose a unique name.
- [Missing Required Fields] Highlight errors; prevent save.
- [Price Out of Range] Reject with guidance.

UC7 — Admin Manages User Accounts

Preconditions

- Admin is authenticated with user-admin permissions.

Main Flow

1. Admin opens User Management.
2. Admin creates, edits, or deletes a user [Modify User].
3. System validates role & fields; saves changes; logs action.

Subflows

- [Modify User] For create: set username, role (staff/customer), temp password; for edit: update profile; for delete: confirm and deactivate/delete per policy.

Alternative Flows

- [Unauthorized Role Change] Prevent elevating to Admin (unless current user qualifies); log attempt.
- [Invalid Input] Reject malformed emails, weak passwords, or empty fields.

- [Delete Constraints] Prevent deleting the last Admin; require transfer of ownership.

UC8 — Admin Updates Sales Tax Rate

Preconditions

- Admin is authenticated.
- System supports configurable tax.

Main Flow

1. Admin opens Settings → Tax.
2. Admin enters a new rate (%) [Validate Rate].
3. System saves new rate and applies to future calculations.

Subflows

- [Validate Rate] Accept numeric values within allowed bounds (e.g., 0–20%).

Alternative Flows

- [Invalid Entry] Reject non-numeric/negative/out-of-range.
- [Insufficient Permission] Block and log attempt.

UC9 — System Ensures Accessibility Compliance

Preconditions

- Frontend uses accessible components; accessibility checks enabled.

Main Flow

1. System exposes semantic labels/roles for interactive elements [SR Labels].
2. System enforces logical tab order and visible focus states [Keyboard Nav].
3. System maintains minimum color contrast for text/icons [Contrast].
4. System surfaces alt text for images and ARIA attributes where appropriate.

Subflows

- [SR Labels] aria-label/aria-labelledby associated to controls.
- [Keyboard Nav] All actions reachable by keyboard; no keyboard traps.
- [Contrast] Check against WCAG thresholds; apply tokens/themes.

Alternative Flows

- [Missing Labels Detected] Log accessibility violation; show dev warning; create issue.

- [Theme Breaks Contrast] Fall back to safe palette; flag to UI team.

UC10 — System Maintains Privacy & Compliance

Preconditions

- Privacy Policy content exists.
- Logging/auditing configured.

Main Flow

1. System displays Privacy Policy link and obtains consent where required [Consent].
2. System stores only necessary personal data with least privilege [Data Min].
3. System logs admin/security-relevant actions for audit [Audit Log].
4. System applies configured tax policy to orders [Tax Apply].

Subflows

- [Consent] First-run or pre-checkout notice with link to policy.
- [Data Min] Avoid storing sensitive data unnecessarily; mask tokens.
- [Audit Log] Immutable logs for user/role changes, tax changes, inventory adjustments.
- [Tax Apply] Use the current configured rate in order totals.

Alternative Flows

- [Consent Declined] Provide limited experience or block checkout per policy.
- [Logging Failure] Alert ops/admin; queue logs for retry; fail-safe restrictions until resolved.

UC1 — Create New Item/Recipe/Ingredient (Staff)

Preconditions:

- Staff logged in with valid credentials.
- Staff has role permissions for inventory management.

Main Flow:

1. Staff navigates to "Create Item/Recipe."
2. Staff enters recipe name, description, ingredients, and price.
3. System validates all fields.
4. Staff submits form.
5. System saves new item to the menu.

Subflows:

- S1.1: Staff attaches allergen/nutrition information.

- S1.2: Staff uploads image for menu display.

Alternative Flows:

- A1.1: Recipe name already exists → system rejects and prompts rename.
- A1.2: Missing required fields → system displays error and prevents save.

UC2 — Add Inventory (Staff)

Preconditions:

- Staff logged in.
- Item/recipe already exists in system.

Main Flow:

1. Staff navigates to inventory dashboard.
2. Selects an item to restock.
3. Enters quantity to add.
4. Confirms update.
5. System updates stock level.

Subflows:

- S2.1: Staff scans barcode for quick entry.
- S2.2: System auto-generates low-stock alerts when thresholds met.

Alternative Flows:

- A2.1: Invalid quantity entered → system rejects input.
- A2.2: Item not found → system prompts to create new item.

UC3 — Purchase Item/Recipe (Customer)

Preconditions:

- Customer logged in or guest checkout available.
- Menu loaded and items available.

Main Flow:

1. Customer browses menu and adds items to cart.
2. Customizes order (e.g., size, add-ons).
3. Proceeds to checkout.
4. Selects tip amount and pays.
5. System confirms order.

Subflows:

- S3.1: Apply promotions or discounts.
- S3.2: Apply correct sales tax.

Alternative Flows:

- A3.1: Payment failure → prompt retry.
- A3.2: Item out of stock → suggest substitute or remove.

UC4 — View and Fulfill Orders (Staff)

Preconditions:

- Staff logged in.
- Active orders exist.

Main Flow:

1. Staff views dashboard of pending orders.
2. Selects an order.
3. Marks order "in progress."
4. Prepares items.
5. Marks order as "fulfilled."

Subflows:

- S4.1: Staff updates estimated preparation time.

Alternative Flows:

- A4.1: Order already canceled → system blocks fulfillment.

UC5 — Customer Order Pickup (Customer)

Preconditions:

- Customer has placed and paid for order.
- Staff has fulfilled order.

Main Flow:

1. System notifies customer order is ready.
2. Customer arrives at pickup counter.
3. Staff verifies order ID.
4. Customer picks up order.

Subflows:

- S5.1: Notifications sent via app, SMS, or email.

Alternative Flows:

- A5.1: Wrong ID → deny pickup.
- A5.2: Customer fails to collect order → staff marks abandoned.

UC6 — Admin Creates/Edits/Deletes Staff Accounts

Preconditions:

- Admin logged in with account permissions.

Main Flow:

1. Admin navigates to staff management.
2. Creates, edits, or deletes staff accounts.
3. Saves changes.

Subflows:

- S6.1: Assigns role-based permissions.

Alternative Flows:

- A6.1: Invalid entry → reject and prompt correction.

UC7 — Admin Edits/Deletes Customer Accounts

Preconditions:

- Admin logged in.

Main Flow:

1. Admin opens customer account list.
2. Selects a customer.
3. Edits or deletes account.
4. System confirms changes.

Alternative Flows:

- A7.1: Customer not found → error message.

UC8 — Admin Updates Sales Tax Rate

Preconditions:

- Admin logged in.

Main Flow:

1. Admin navigates to tax settings.
2. Inputs new tax rate.
3. Saves settings.
4. System applies rate to all future orders.

Alternative Flows:

- A8.1: Invalid input format → reject change.

UC9 — Customer Cancels an Order

Preconditions:

- Order placed but not yet prepared.

Main Flow:

1. Customer navigates to order history.
2. Selects "Cancel Order."
3. System checks status.
4. Refund processed if eligible.

Subflows:

- S9.1: Refund processed via payment provider.

Alternative Flows:

- A9.1: Order already in preparation → cancellation denied.

UC10 — Guest Checkout

Preconditions:

- Guest checkout enabled.

Main Flow:

1. Guest adds items to cart.

2. Provides minimal info (email, payment).
3. Places order.
4. System confirms order.

Subflows:

- S10.1: System prompts account creation afterward.

Alternative Flows:

- A10.1: Invalid guest info → reject order.

UC11 — Customer Customizes Packaging Preference

Preconditions:

- Packaging options defined in system.

Main Flow:

1. Customer adds items to cart.
2. Chooses eco-friendly or insulated packaging.
3. Confirms choice.
4. System applies change to order.

Alternative Flows:

- A11.1: Selected packaging unavailable → show alternatives.

UC12 — Customer Schedules a Future Delivery/Pickup

Preconditions:

- Future scheduling enabled.

Main Flow:

1. Customer selects "Schedule for Later."
2. Picks available time slot.
3. System validates slot.
4. Order placed with scheduled time.

Alternative Flows:

- A12.1: Slot becomes unavailable → propose nearest available.

UC13 — Customer Uses Meal Subscription Service

Preconditions:

- Subscription plans configured.

Main Flow:

1. Customer selects a plan (e.g., weekly meals).
2. Configures menu preferences.
3. Submits recurring payment method.
4. Orders scheduled automatically.

Subflows:

- S13.1: Customer pauses or skips week.

Alternative Flows:

- A13.1: Payment failure → retry or alert customer.

UC14 — Customer Joins Loyalty Program

Preconditions:

- Loyalty rules active.

Main Flow:

1. Customer opts into loyalty.
2. Earns points per order.
3. Redeems rewards at checkout.

Subflows:

- S14.1: Birthday bonus applied automatically.

Alternative Flows:

- A14.1: Reward conflict with promotion → best-value applied.

UC15 — Customer Refers a Friend

Preconditions:

- Referral program enabled.

Main Flow:

1. Customer copies referral link.
2. Friend signs up and orders.
3. System validates referral.
4. Both accounts rewarded.

Alternative Flows:

- A15.1: Self-referral detected → deny reward.

UC16 — Customer Provides Delivery Instructions

Preconditions:

- Delivery mode enabled.

Main Flow:

1. Customer enters special instructions.
2. System validates text.
3. Instructions shown to staff/driver.

Alternative Flows:

- A16.1: Invalid content → ask for edit.

UC17 — Customer Uses Dietary Filters

Preconditions:

- Items tagged with dietary info.

Main Flow:

1. Customer enables filters (vegan, nut-free).
2. System filters menu accordingly.
3. Customer selects items.

Alternative Flows:

- A17.1: No items meet filter → suggest nearest matches.

UC18 — Customer Tracks Order in Real Time

Preconditions:

- Tracking enabled.

Main Flow:

1. Customer opens order tracking.
2. System shows status (received, preparing, ready).

Alternative Flows:

- A18.1: Tracking unavailable → fallback to static status.

UC19 — Staff Marks Order as Delayed

Preconditions:

- Active order exists.

Main Flow:

1. Staff flags delay.
2. System updates ETA.
3. Notifies customer.

Alternative Flows:

- A19.1: Customer cancels due to delay → refund policy applies.

UC20 — Admin Configures Surge Pricing

Preconditions:

- Surge pricing feature enabled.

Main Flow:

1. Admin sets surge conditions.
2. System validates rules.
3. Pricing updated dynamically.

Alternative Flows:

- A20.1: Conflict with discounts → resolved by rules.

UC21 — Admin Sets Geo-Targeted Promotions

Preconditions:

- Zones mapped.

Main Flow:

1. Admin creates promotion for a zone.
2. Customers in area see offer.
3. Discount applied at checkout.

Alternative Flows:

- A21.1: Customer outside zone → no promo applied.

UC22 — System Optimizes Delivery Routes

Preconditions:

- Multiple orders in queue.

Main Flow:

1. System groups orders.
2. Computes optimal route.
3. Assigns driver.

Alternative Flows:

- A22.1: Driver declines → system reassigns.

UC23 — Generate Financial Report (Admin)

Preconditions:

- Admin logged in.

Main Flow:

1. Admin selects date range.
2. Chooses report type (sales, revenue).
3. System generates report.

Alternative Flows:

- A23.1: No data available → display message.

UC24 — Analyze Website/App Traffic

Preconditions:

- Analytics tool integrated.

Main Flow:

1. Admin views dashboard.
2. Filters by date or device.
3. Reviews user patterns.

UC25 — Track Customer Loyalty

Preconditions:

- Loyalty system enabled.

Main Flow:

1. System tracks purchases.
2. Awards points or status.
3. Customers redeem rewards.

UC26 — System Logs Sustainability Metrics

Preconditions:

- Packaging types tagged.

Main Flow:

1. System logs packaging and delivery mode.
2. Aggregates metrics.
3. Exports report.

UC27 — Finance Auditors Review Order Logs

Preconditions:

- Audit logs enabled.

Main Flow:

1. Auditor logs in.
2. Selects date range.
3. Reviews transactions.

Alternative Flows:

- A27.1: Missing log → escalate issue.

UC28 — Data Anonymization

Preconditions:

- Customer requests deletion.

Main Flow:

1. System identifies data to purge.
2. Removes or anonymizes records.

Alternative Flows:

- A28.1: Retention lock prevents deletion.

UC29 — Conduct Security Audit

Preconditions:

- Audit scheduled.

Main Flow:

1. Auditor runs vulnerability scans.
2. Reviews system logs.
3. Documents findings.

UC30 — Regulators Request Compliance Records

Preconditions:

- Regulator request received.

Main Flow:

1. Admin selects scope and timeframe.
2. System compiles compliance documents.
3. Shares securely.

Alternative Flows:

● A30.1: Missing artifact → corrective action plan created.

Differences in the LLM reports :

Use Case Category	Gemini Cases	GPT's Use Cases
Menu & Inventory Management	Focused on Admin managing menu items and Staff managing inventory. Included unique details like low-stock alerts.	Separated item creation, inventory addition, and general management into distinct, granular use cases. Suggested features like barcode scanning.
Ordering & Fulfillment	Described core flows for placing and fulfilling orders. Included specific steps like Mark Order as Picked Up.	Split the core process into three separate, action-oriented use cases: Purchase, Fulfill, and Pickup.
User & Access Management	Covered broad topics like Manage Staff Permissions and Account Deactivation. The deactivation use case directly addressed data privacy and compliance.	Provided granular actions (Create, Edit, Delete) for both staff and customer accounts separately.
Compliance & Reporting	Directly referenced the 1a1.pdf for use cases like Set Tax Rate and Audit Log Generation, focusing on internal system actions.	Included use cases for external stakeholders like Finance Auditors and Regulators reviewing logs and records.
Advanced Features	Included general business use cases like Subscription Service Management and Gift Card Redemption.	Introduced highly specific, user-centric features such as Customizes Packaging Preference, Schedules a Future Delivery/Pickup, and Refer a Friend.

Total cost of LLM usage : ChatGPT **$20/mo** and Gemini (**Free**)