CSC 510 SE Proj1b1

Section 001 - Group 29
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TiffinTrail — Smarter routes, Warmer meals.

A) Define Stakeholders:

1. Primary Stakeholders (Direct Users)

- **Customers** - People ordering food.
- **Restaurants** - Entities responsible for providing the food (dine-in, ghost/dark kitchens, cloud brands)
- **Delivery Drivers / Riders** – delivering the food.

2. Internal Stakeholders (Within the App Organization)

- **App Owners / Founders** – decision-makers, product vision.
- **Project Managers** – coordinate tasks, timelines, features.
- **Developers (Frontend, Backend, Mobile, DevOps, QA/Testers)** – build and maintain the system.
- **Design/UI-UX Team** – ensures usability and customer experience.
- **Marketing Team** – customer acquisition, promotions, campaigns.
- **Customer Support / Helpdesk** – handling complaints, queries.
- **Admin Panel Users** – oversee orders, users, disputes, system monitoring.
- **Data Analysts / Data Scientists** – analyze trends, personalization, fraud detection.
- **Security & Compliance Team** – ensure app and payment safety, privacy compliance.
- **Finance/Accounting Team** – manages transactions, commissions, payouts to restaurants/drivers.
- **Operations / Logistics Team** – optimize delivery times, zones, and fleet management.

3. External Stakeholders

- **Investors / Shareholders** – funding and expecting ROI.
- **Payment Gateway Providers (Stripe, PayPal, UPI, etc.)** – handle secure transactions.
- **Third-party API Providers** – maps (Google Maps), push notifications (Firebase), SMS/email providers, cloud hosting, etc.
  Regulatory Authorities / Government Bodies – compliance with food safety, labor laws, taxation, and data protection.
- **Restaurant Aggregators / Partners** – suppliers, franchise networks.

4. Indirect / Supporting Stakeholders

- **End Customers' Families** – indirectly impacted by service quality (e.g., family dinner orders).
- **Restaurant Staff (Chefs, Managers, Cashiers)** – who process app orders internally.
- **Local Communities** – traffic, environment, waste management (sustainability concerns).
- **Competitors** – indirectly influence strategy (benchmarking, features, pricing).

B) Potential stakeholder biases:

1. Customers ↔ Delivery Drivers – Speed vs. Fair Compensation

- **Needs:** Customers want fast, cheap delivery; drivers want fair pay and realistic workloads.
- **Clash:** Customer demand for instant or low-cost delivery may pressure drivers, risking low earnings or overwork.

2. Restaurants ↔ Customers ↔ App Owner/Investors – Pricing, Profit Tension

- **Needs:** Restaurants want higher margins and menu control; customers want affordable prices and frequent promotions; app owners/investors want maximum profit and growth.
- **Clash:** Discount demands, high commission fees, or driver pay cuts can boost app profitability but reduce satisfaction and retention for restaurants, drivers, and customers.

3. Restaurants ↔ Platform Admin – Menu Control vs. Data-Driven Decisions

- **Needs:** Restaurants want autonomy over pricing, menus, and promotions; platform admins want to optimize offerings using analytics to maximize engagement and revenue.
- **Clash:** Admin-driven recommendations or algorithmic promotions may override restaurant preferences, potentially forcing menu changes or pricing adjustments that conflict with the restaurant's strategy or brand identity.

4. Development Team ↔ Marketing Team – Stability vs. Feature Push

- **Needs:** Developers want realistic feature requests, system stability, and technical feasibility; marketing wants frequent new features, promotions, and personalized options.
- **Clash:** Marketing may push for flashy features and rapid rollouts, while developers prioritize reliability, security, and maintainable code.

5. Drivers ↔ Sustainability Policies – Speed vs. Eco-Routes

- **Needs:** Drivers want fastest routes to maximize pay; platform promotes low-emission bike/electric routes.
- **Clash:** Eco-friendly routing may increase delivery time and reduce driver earnings.

C) Prompt crafting:

Prompt crafting is essentially the **art of communicating clearly with AI** so that you get the kind of response you want. The way you phrase, structure, and contextualize your prompt has a big effect on the model's output.

D) Compare zero-shot prompting to careful prompting.

Zero-shot prompting is simply asking the model to do something without examples or detailed instructions. Careful prompting is giving clear structure, examples, or constraints to guide the model's response.

When using a rapid **zero-shot prompt**, the LLM generates answers immediately without examples or detailed guidance. The output is often **generic, high-level, and sometimes repetitive**, covering obvious points but lacking depth, nuance, or creativity. For instance, asking "List stakeholder conflicts in a food delivery system" produced only predictable clashes like "speed vs. cost" or "cheap delivery vs. driver pay," which did not add much new insight.

In contrast, a **longer, guided interaction**—where we specified the format ("Stakeholders – Needs – Clash") and asked for more original perspectives—led to answers that were **sharper, more creative, and structured for direct use**. In our own session, this iterative prompting helped surface subtler tensions, such as eco-friendly route choices for drivers, algorithmic menu influence on restaurants, or late-night delivery vs. labor laws. These were far more useful for analysis compared to the zero-shot output.

Wrap-up: Zero-shot prompting worked well for **quick brainstorming**, but careful prompting clearly produced **higher-quality, professional results**. From our own experience, the best approach was to start with a zero-shot run for breadth, then refine it through guided prompts to achieve depth, consistency, and report-ready clarity.

E) Use Cases for Food Delivery App

1) User Registration

a) **Preconditions:**
   - The user has installed the app.
   - The user has internet access.

b) **Main Flow:**
   1. The user opens the app and selects "Sign Up."
   2. System prompts for details (name, email, phone, password).
   3. The user enters details and submits.
   4. System validates data format.
   5. The system sends OTP (One-Time Password) for verification.
   6. The user enters OTP.
   7. The system confirms registration and creates a new account.

c) **Subflows:**
   - If social login (Google/Apple/Facebook) is selected, the system fetches details from the provider and skips manual entry.
   - The user adds optional details (name, profile picture).

d) **Alternative Flows:**
   - Invalid OTP → System notifies user, allows retry.
   - Email/phone already registered → System prompts to log in instead.
   - Network issue → Registration is paused, with retry option.

2) User Login

a) **Preconditions:**
   - Users are already registered.

b) **Main Flow:**
   1. The user opens the app, selects “Login.”
   2. The user enters email/phone and password.
   3. System verifies credentials.
   4. If valid, the system grants access to app features.

c) **Subflows:**
   - Biometric login (Face ID / Fingerprint) available if enabled.

d) **Alternative Flows:**
   - Wrong password → System shows error, offers “Forgot Password.”
   - Account locked after multiple failed attempts → User must verify identity.

3) Browse Restaurants

a) **Preconditions:**
   - User logged in.
   - GPS/location enabled OR delivery address saved.

b) **Main Flow:**
   1. The user selects “Browse Restaurants.”
   2. The system fetches a restaurant list for the location.
   3. The user applies filters (cuisine, rating, delivery time, offers).
   4. The system displays results with restaurant details and menus.

c) **Subflows:**
   - User taps on a restaurant → Menu is displayed.
   - Users add restaurants to favorites for later.

d) **Alternative Flows:**
   - No restaurants available in the area → System shows “Not Available” message.
   - API failure → System retries or shows cached results.

4) Add Items to Cart

a) **Preconditions:**
   - User logged in.
   - Restaurant selected.

b) **Main Flow:**
   1. Users browse menu items.
   2. The user selects an item and chooses quantity/customization
   3. The user taps “Add to Cart.
   4. System updates cart and displays confirmation.

c) **Subflows:**
   - User edits cart (increase/decrease quantity).
   - The user adds special instructions (e.g., “No onions”).

d) Alternative Flows:

- Item unavailable → System notifies user and prevents adding.
- Restaurant closed → User cannot add items.

5) Place an Order

a) **Preconditions:**
   - User logged in.
   - Items added to cart.

b) **Main Flow:**
   1. The user proceeds to checkout.
   2. The system displays delivery address and payment options.
   3. The user selects address and payment method.
   4. System confirms order summary.
   5. The user clicks “Place Order.”
   6. The system creates order, forwards to the restaurant.
   7. Payment processed via gateway.
   8. Confirmation sent to the user.

c) **Subflows:**
   - Apply promo code → System validates and adjusts price.
   - The user adds a tip for the driver.

d) **Alternative Flows:**
   - Payment fails → System allows retry or choose different method.
   - Restaurant rejects order → Refund initiated, user notified.

6) Order Tracking

a) **Preconditions:**
   - Order successfully placed.

b) **Main Flow:**
   1. Customer navigates to “My Orders.”
   2. The system shows order status (accepted, preparing, out for delivery).
   3. When a driver is assigned, the system shows driver details and live location.
   4. Notifications sent at each status update.

c) **Subflows:**
   - The user contacts the driver via call/message.
   - The user contacts customer support from the tracking screen.

d) **Alternative Flows:**
   - GPS not available → System shows approximate delivery time.
   - Driver reassigned due to cancellation → System updates customer.

7) Delivery Driver Accepts Order

a) **Preconditions:**

- Driver logged into driver app.

b) Main Flow:

1. The system pushes available delivery requests to drivers nearby.
2. The driver receives an order request with details (pickup, drop-off, earnings).
3. The driver accepts the order.
4. System confirms assignment.

c) Subflows:

- Driver rejects order → System offers it to another driver.

d) Alternative Flows:

- No drivers available → System notifies restaurant and customer.
- Driver accepts but cancels later → Reassignment triggered.

8) Payment Processing

a) Preconditions:

- User at checkout.

b) Main Flow:

1. The user selects the payment method (credit card, wallet, UPI).
2. System redirects to secure payment gateway.
3. The user authenticates payment.
4. Gateway confirms success.
5. The system generates payment receipts and sends them to finance.

c) Subflows:

- Wallet payment → Balance deducted directly.
- Cash on delivery → System marks as pending until driver collects.

d) Alternative Flows:

- Payment gateway timeout → Retry option.
- Insufficient funds → System prompts users to choose another method.

9) User Re-orders from a Past Order

a) Preconditions:

- The user has a completed order in their history.
- The items from the past order are still available on the restaurant's menu.

b) Main Flow:

1. The user navigates to their "Order History" or "Past Orders" section.
2. The user selects a past order they wish to re-order.
3. The user taps a "Re-order" or "Order Again" button.
4. The app adds all the items from that past order to the user's current cart.
5. The user is taken to the checkout screen to review and confirm the order.

c) Subflows:

- Editing the Re-order**:** Before checking out, the user can remove or add items to the cart that was populated from the re-order.

d) Alternative Flows:

- Item Unavailable: An item from the past order is no longer available on the menu. The app notifies the user that the item is out of stock and removes it from the cart. The user can then proceed with the rest of the order or cancel.

10) User Writes a Restaurant Review and Rating

a) **Preconditions:**
   - The user has completed and received an order from a restaurant.
   - The review period for the order is still open (e.g., within 7 days of delivery).

b) **Main Flow:**
   1. The app sends a push notification prompting the user to review their recent order.
   2. The user navigates to their past orders.
   3. The user taps on the "Rate & Review" button for a specific order.
   4. The user rates the restaurant on a scale (e.g., 1-5 stars).
   5. The user writes a text review in a provided field.
   6. The user submits the review.
   7. The app confirms the submission.

c) **Subflows:**
   - **Rating Food and Delivery Separately:** The app allows the user to rate the quality of the food and the delivery service separately.

d) **Alternative Flows:**
   - **Review is Flagged:** The review contains inappropriate language. The app's moderation system flags the review and prevents it from being published. The user receives a message that the review violates policy.

11) User Requests Customer Support

a) **Preconditions:**
   - The user has a past or current order.
   - The user has encountered an issue (e.g., missing item, late delivery, cold food).

b) **Main Flow:**
   1. The user navigates to the "Help" or "Support" section of the app.
   2. The user selects the order they have an issue with.
   3. The user chooses a reason for the issue from a list (e.g., "Missing item," "Incorrect order," "Late delivery").
   4. The user writes a detailed description of the problem.
   5. The user submits the support ticket.
   6. The app confirms the ticket has been submitted and provides a reference number.

c) **Subflows:**
   - The user can initiate a live chat with a support agent.
   - The user can attach a photo of the incorrect or damaged order.

d) **Alternative Flows:**
   - For common issues like a missing drink, the app's system may automatically process a partial refund without a human agent. The user is notified of the refund confirmation.

12) User Searches for a Specific Restaurant or Cuisine

a) **Preconditions:**
   - The app is open.
   - The user has set a valid delivery address.

b) **Main Flow:**
   1. The user taps on the search bar.
   2. The user types in the name of a restaurant (e.g., "Taco Bell") or a type of cuisine (e.g., "Pizza").
   3. The app displays search results that match the query, filtering by restaurants that deliver to the user's address.
   4. The user taps on a search result to view the restaurant's page.

c) **Subflows:**
   - **Filtering Results:** The user can filter the search results by factors like price, delivery time, or ratings.

d) **Alternative Flows:**
   - **No Search Results:** The search query does not match any restaurants that deliver to the user's location. The app displays a "No Results Found" message and suggests a broader search or different cuisines.

New Use Cases:

13) WIC/SNAP EBT Payment Integration and Compliance

a) **Preconditions:**
   - The user has a valid WIC or SNAP EBT card.
   - The app supports government benefit payments per USDA regulations.
   - The restaurant is an authorized WIC/SNAP vendor.

b) **Main Flow:**
   1. The user adds eligible food items to the cart.
   2. The system automatically identifies and filters WIC/SNAP approved items.
   3. The user selects the "Pay with EBT" option at checkout.
   4. The system verifies benefit balance through a secure government gateway.
   5. The user enters EBT card number and PIN for authentication.
   6. Transaction processed following WIC online ordering regulations.
   7. Receipt shows benefit usage and remaining balance.

c) **Subflows:**
   - The system provides nutritional information for WIC-approved items.
   - Users receive educational materials about healthy food choices.

d) **Alternative Flows:**
   - When benefits are insufficient, the system offers a split payment option.
   - When non-eligible items are included, the system removes them and suggests approved alternatives.

- When authentication fails, the system provides a retry option along with help resources.

14) FDA-Compliant Food Safety and Allergen Management

a) **Preconditions:**
   - The app maintains an FDA-compliant food safety database.
   - Restaurants provide accurate ingredient and allergen information.

b) **Main Flow:**
   1. User views menu with comprehensive allergen warnings.
   2. The system displays FDA-required nutrition facts panels for each item.
   3. Users set dietary restrictions and allergen preferences.
   4. The system filters menu options and highlights safe choices.
   5. The restaurant receives special preparation instructions for allergies.
   6. Delivery includes allergen-safe packaging and labeling.

c) **Subflows:**
   - The system provides ingredient source traceability information.
   - The restaurant follows HACCP protocols for allergen-sensitive orders.

d) **Alternative Flows:**
   - When an allergen conflict is detected, the system blocks the order and suggests safe alternatives.
   - When ingredient data is missing, the system contacts the restaurant for verification before proceeding.
   - When temperature requirements are not met, the system alerts the customer and offers a replacement.

15) IRS-Compliant Employer Food Benefit Management

a) **Preconditions:**
   - User's employer provides meal benefits through the app
   - App complies with IRS Publication 15-B fringe benefit rules

b) **Main Flow:**
   1. Employee logs in with company-provided credentials
   2. System displays available meal allowance balance
   3. User places order within IRS de minimis benefit limits
   4. System tracks employer-provided meal expenses for tax compliance
   5. Transaction processed with proper categorization for payroll
   6. Monthly reports generated for employer tax filing requirement

c) Subflows:

- The system applies IRS meal exclusion rules automatically.
- Employers receive compliant expense reports for tax purposes.

d) Alternative Flows:

- Order exceeds de minimis limits → System requests employee payment for excess.
- Working condition benefit rules applied → System validates business meal purposes.
- Highly compensated employee restrictions → System applies appropriate limitations.

16) Personalized Health Filters

a) **Precondition**
   - The user sets dietary preferences in the profile.

b) **Main Flow:**
   1. The user searches for food.
   2. App filters results (e.g., gluten-free, diabetic-friendly).
   3. The user selects filtered meals.

c) **Subflows:**
   - Dynamic recommendations based on preferences.

d) **Alternative Flows:**
   - If there are no matching options, the app suggests nearest alternatives.

17) Accessibility Compliance (ADA) and Inclusive Design

a) **Preconditions:**
   - App meets Section 508 and WCAG 2.1 AA accessibility standards.
   - Users may have visual, hearing, or motor impairments.

b) **Main Flow:**
   1. The user activates accessibility features during setup.
   2. The app provides screen reader compatibility and high contrast options.
   3. The user navigates using voice commands or keyboard shortcuts.
   4. The system offers a simplified ordering interface for cognitive accessibility.
   5. Delivery instructions accommodate mobility and communication needs.
   6. The driver receives accessibility training and special instructions.

c) **Subflows:**
   - The system provides audio descriptions of menu items and images.
   - Large text and button options available for low vision users.

d) **Alternative Flows:**
   - Voice recognition fails → System provides alternative text input methods.
   - Complex menu navigation → System offers simplified single-option ordering.
   - Communication barriers → System provides multiple contact methods**.**

18) Food Temperature Safety and HACCP Compliance

a) **Preconditions:**
   - Delivery partners equipped with temperature monitoring equipment.
   - Restaurants follow FDA food safety protocols.

b) **Main Flow:**
   1. The restaurant prepares food following HACCP critical control points.
   2. The driver receives orders with specific temperature requirements.
   3. The system monitors food temperature throughout delivery via IoT sensors.
   4. Customers receive real-time temperature updates and safety confirmations.
   5. Delivery completion includes temperature verification documentation.
   6. The system logs all temperature data for food safety compliance records.

c) **Subflows:**
   - The driver uses insulated containers with temperature monitoring devices.
   - The system alerts all parties if temperature falls outside safe ranges.

d) Alternative Flows:

- Temperature violation → Driver returns to restaurant for fresh preparation.
- Extended delivery time → System implements additional safety protocols.
- Customer safety concerns → System provides full refund and incident report.

19) Anti-Discrimination and Fair Pricing Compliance

a) Preconditions:

- The app complies with civil rights laws and fair pricing regulations.
- System monitors for discriminatory practices.

b) Main Flow:

1. The system ensures consistent pricing across all user demographics.
2. Delivery areas and restaurant availability determined by logistics, not demographics.
3. Customer service response times monitored for equality.
4. Payment methods accepted without discriminatory restrictions.
5. The system logs all interactions for compliance auditing.
6. Regular bias testing conducted on recommendation algorithms.

c) Subflows:

- The system provides multiple language options for diverse communities.
- Cultural dietary preferences accommodated in restaurant categorization.

d) Alternative Flows:

- Pricing discrepancy detected → System investigation triggered automatically.
- Service denial reported → Immediate review and corrective action initiated.
- Discriminatory pattern identified → System adjustments implemented immediately.

20) Environmental Sustainability and Waste Reduction

a) Preconditions:

- App promotes environmentally sustainable practices
- Restaurants and delivery partners participate in green initiatives

b) Main Flow:

1. User opts into sustainability programs during registration
2. System offers eco-friendly packaging options and incentives
3. User can select "minimal packaging" or "reusable container" options
4. Route optimization reduces delivery vehicle emissions
5. System tracks and reports environmental impact metrics
6. User receives sustainability credits for eco-friendly choices

c) Subflows:

- Carbon footprint calculation displayed for each delivery
- Local sourcing preferences highlighted in restaurant listings

d) Alternative Flows:

- Sustainable options unavailable → System explains alternatives and impact
- Packaging preference conflicts → System prioritizes food safety while minimizing waste
- Environmental goal tracking → User receives progress reports and recommendations

21) Data Privacy and GDPR/CCPA Compliance

a) **Preconditions:**
   - The app complies with GDPR, CCPA, and other privacy regulations.
   - User data collection follows privacy-by-design principles.

b) **Main Flow:**
   1. The user provides explicit consent for data collection during onboarding.
   2. The system clearly explains data usage and retention policies.
   3. Users can access, modify, or delete personal data at any time.
   4. Minimal necessary data collected for service functionality.
   5. All data processing is logged and auditable.
   6. Users receive regular privacy policy updates and consent confirmations.

c) **Subflows:**
   - Data portability options available for user data export.
   - Third-party data sharing requires separate explicit consent.

d) **Alternative Flows:**
   - Data breach detected → Immediate user notification and protective measures
   - Privacy setting changes → System updates processing accordingly
   - Data deletion request → Complete removal within regulatory timeframe

22) Emergency Food Distribution and Disaster Response

a) **Preconditions:**
   - The app has disaster response protocols activated.
   - Emergency food distribution partnerships established.

b) **Main Flow:**
   1. Emergency mode activated during natural disasters or crises.
   2. The system prioritizes essential food deliveries and emergency supplies.
   3. Free or subsidized meal programs activated for affected areas.
   4. Real-time coordination with local emergency services.
   5. Supply chain adjustments made to ensure food availability.
   6. Community resource information provided to affected users.

c) **Subflows:**
   - Partnership with food banks and emergency relief organizations.
   - Special delivery protocols for evacuation centers and shelters.

d) **Alternative Flows:**
   - Infrastructure damage → Alternative delivery methods implemented.
   - Supply shortage → Priority given to vulnerable populations.
   - Communication systems down → Offline ordering capabilities activated.

23) Child Protection and Age Verification

a) **Preconditions:**
   - App implements COPPA compliance measures.
   - Age-restricted items require proper verification.

b) **Main Flow:**
   1. User age verification required during account creation.
   2. Parental controls available for users under 18.

3. Age-restricted products (alcohol, etc.) require additional verification.
4. Child safety features prevent inappropriate content exposure.
5. Parental consent required for children's accounts.
6. Limited data collection for users under 13.

c) Subflows:

- Robust age verification using multiple validation methods.
- Parental oversight dashboard for monitoring child account activity.

d) Alternative Flows:

- Age verification fails → Alternative verification methods offered.
- Underage alcohol purchase attempt → Order blocked and account flagged.
- Parental consent withdrawn → Child account immediately suspended.

24) Senior Citizen and Elderly Care Support

a) Preconditions:

- App provides senior-friendly interface and services
- Partnerships with healthcare providers and senior care facilities

b) Main Flow:

1. Senior users access simplified, large-text interface
2. System provides medication reminder integration with meal timing
3. Nutritionist-approved meal plans available for common senior health conditions
4. Family members can monitor and assist with elderly relative's nutrition
5. Delivery drivers trained in senior interaction and safety protocols
6. Health monitoring integration tracks nutritional intake

c) Subflows:

- Voice ordering system for users with limited mobility
- Integration with medical alert systems and healthcare providers

d) Alternative Flows:

- Health emergency detected → Family and medical contacts notified
- Medication interaction warnings → Healthcare provider consultation recommended
- Social isolation concerns → Wellness check protocols activated

25) Corporate Wellness Program Integration

a) Preconditions:

- App integrates with employer wellness programs
- HIPAA compliance for health-related data

b) Main Flow:

1. Employee connects app to company wellness program
2. System provides healthy meal recommendations aligned with wellness goals
3. Nutritional data shared with employer wellness platform (with consent)

4. Health coaching integration provides personalized dietary guidance
5. Wellness challenges and incentives encourage healthy food choices
6. Aggregate (anonymous) health metrics provided to employers

c) Subflows:

- Integration with fitness trackers and health monitoring devices
- Dietitian consultations available through corporate partnerships

d) Alternative Flows:

- Privacy concerns → User can opt out while maintaining basic service
- Health condition changes → System adjusts recommendations accordingly
- Wellness program ends → System maintains user preferences independently

26) Food Rescue and Anti-Waste Programs

a) Preconditions:
- Partnerships established with food rescue organizations
- System tracks food waste and surplus inventory

b) Main Flow:
1. Restaurants report surplus food availability near closing time
2. System offers discounted "rescue meals" to nearby customers
3. User opts into food rescue notifications for discounted meals
4. Unsold food donated to local food banks and shelters
5. Impact metrics tracked and reported to users and partners
6. Tax documentation provided to participating restaurants

c) Subflows:

- Real-time inventory tracking prevents food waste
- Community impact reporting shows food rescue statistics

d) Alternative Flows:

- No rescue buyers found → Food bank pickup arranged
- Food safety concerns → Strict protocols followed for rescued items
- High demand → Fair distribution system implemented

27) Multi-Language Support and Localization

a) Preconditions:
- The app supports multiple languages and cultural preferences.
- Local regulatory compliance in different regions.

b) Main Flow:
1. User selects preferred language and cultural settings
2. Menu items, descriptions, and dietary information localized
3. Cultural food preferences and restrictions accommodated
4. Local payment methods and currencies supported

5. Region-specific regulations automatically applied
6. Customer service available in user's preferred language

c) Subflows:

- Automatic language detection based on location.
- Cultural holiday and dietary observance awareness.

d) Alternative Flows:

- Translation accuracy concerns → Professional verification process
- Cultural misunderstanding → Cultural liaison consultation
- Regulatory conflicts → Local law compliance prioritized

28) Equitable Access for Rural Areas

a) Preconditions:

- The app recognizes rural delivery zones.
- Public subsidy or nonprofit partnership enabled.
- Delivery fee subsidy rules are active in the system.

b) Main Flow:

1. The user enters a rural address.
2. The app applies fee reduction automatically.
3. The user completes a discounted order.

c) Subflows:

- Last-mile delivery handled by community partners.
- Subsidy usage tracked in the backend.

d) Alternative Flows:

- Subsidy exhausted → User pays standard fee.
- Delivery unavailable → App offers pickup instead.
- Address misclassified → User requests manual review.

29) Dynamic Nutrition Warnings

a) Preconditions:

- Nutrition database synced with app.
- Thresholds set for high sodium, sugar, fat.
- User has not disabled warnings in profile.

b) Main Flow:

1. User selects meal exceeding threshold.
2. System alerts: “This exceeds recommended daily intake.”
3. User accepts or changes order.

c) Subflows:

- System suggests healthier sides to balance intake.
- Warnings tailored based on user’s health profile.

d) Alternative Flows:

- User ignores warning → Order proceeds normally.
- Nutrition data missing → App skips warning.
- User disables alerts → Feature bypassed.

30) Quality Assurance and Review System Integrity

a) Preconditions:

- The app maintains a verified review system with fraud prevention.

- Quality standards enforced across all partners.

b) Main Flow:

1. User submits verified review after confirmed delivery.
2. The system uses AI and human moderation to detect fake reviews.
3. Restaurant quality metrics calculated from verified customer feedback.
4. Poor-performing restaurants receive improvement support.
5. Quality trends tracked and reported to restaurant partners.
6. User trust maintained through transparent review processes.

c) Subflows:

- Photo verification for review authenticity.
- Response system for restaurants to address concerns.

d) Alternative Flows:

- Fake review detected → Review removed and account investigated
- Persistent quality issues → Restaurant partnership review initiated
- Review disputes → Mediation process with evidence requirements

31) Educational Institution Food Service Integration

a) Preconditions:

- The app serves educational institutions with special requirements.
- Compliance with school nutrition standards and regulations.

b) Main Flow:

1. Student/faculty authentication through educational institution credentials.
2. Campus-specific meal plans and dietary programs available.
3. Nutritional requirements for growing students met.
4. Integration with student meal plan accounts and budgets.
5. Campus delivery logistics coordinated with institution security.
6. Educational nutrition content provided to promote healthy choices.

c) Subflows:

- Allergy management for school food service.
- Parent oversight for younger student accounts.

d) Alternative Flows:

- Account funding insufficient → Alternative payment methods or assistance programs
- Campus restrictions → Alternative pickup locations arranged
- Nutritional standards not met → Menu adjustments required

32) Food Safety Certification Tracking

a) Preconditions:

- Vendor uploads food safety certification.
- Expiry and authority metadata stored.
- Compliance monitoring engine active.

b) Main Flow:

- Restaurant profile updated with certification.
- App validates authenticity.
- Badge shown on vendor listing.

c) **Subflows:**
   - Auto-reminders before expiration.
   - Renewal documents uploaded directly via app.

d) **Alternative Flows:**
   - Certificate expired → Badge removed until renewal.
   - Invalid certificate → Vendor flagged for suspension.
   - Certification missing → Restaurant hidden from search re sults.