CSC510 Project 1a1

Stakeholders

Primary

- **Customers (web/mobile)** — browse, build cart, pay, receive order.
- **Restaurant Manager/Owner** — hours, menus, pricing, accept/reject orders.
- **Restaurant Staff (kitchen, cashier/packer/expediter)** — prep items, bag/hand off.
- **Delivery Drivers (W2 or gig)** — accept trip, pick up, deliver, capture proof.
- **Dispatch/Operations** — assign/reassign drivers, handle escalations.

How to find (Primary):
Walk the local journey (discover → order → pay → prep → pickup/delivery → support) and ask at each step: *who is taking an action in the app or at the counter/door?* Keep only the roles that directly move the order forward.

Secondary / Supporting (enable, monitor, or optimize the flow)

- **Platform Administrator (SRE/IT/DevOps)** — uptime, feature flags, incidents.
- **Payments/Risk (gateway, fraud team)** — auth/capture, chargebacks, abuse checks.
- **Customer Support (CSRs, chatbots)** — triage issues, refunds/redeliveries.
- **Marketing/Promotions** — coupons, referrals, retention campaigns.
- **Data/Analytics** — dashboards, forecasting, experiment readouts.
- **Partner Integrations** — POS/loyalty connectors, menu sync.
- **Third-Party Couriers (overflow partners)** — capacity during peaks.
- **Vendors** — SMS/email providers, mapping/ETA, ID verification (alcohol).

How to find (Secondary):
For each Primary step, list the **services or teams** that make it possible (payments, maps, notifications), monitor it (SRE/analytics), or recover it (support). Use the rule: *if it's not touching the customer/restaurant/driver directly, but the step fails without it → Secondary.*

External / Regulatory (local compliance & oversight)

- **City/Regulators** — restaurant health/safety, delivery/gig-work rules, operating hours/curfews.

How to find (External):
Walk the local flow (discover→order→pay→prep→deliver→support). At each step, list

any rule, permit, or inspection that could block/alter the step and name the local body responsible. Keep city-level only.

Special Populations (accessibility users)

- **Accessibility Users** — screen-reader users, low-vision, motor impairments (keyboard/switch control).

How to find (Accessibility):
Run the flow (browse→cart→promo→checkout→handoff→support) with (1) screen-reader, (2) keyboard-only, (3) low-vision; if any step needs an alternative interaction, add that group as a stakeholder.

Stakeholder bias & need clashes (five examples)

1. **Customer vs Delivery Drivers**: customers prefer low fees + fast delivery; drivers prefer higher pay per trip and batching that can delay single orders.
2. **Restaurant Manager/Owner vs Dispatch/Operations** — restaurants want flexible prep times and pausing items; dispatch/ops enforces SLAs and prefers stable, up-to-date menus.
3. **Marketing/Promotions vs Payments/Risk**: growth wants granular tracking and referral incentives; privacy/risk restrict data collection and limit abuse.
4. **Customer vs Payments/Risk**: customers want instant refunds for cold/late orders; risk teams throttle refunds to prevent fraud.
5. **Accessibility users vs Data/Analytics (A/B tests)** — experiment changes can break screen-reader flows or contrast; accessibility needs stable, WCAG-compliant UI.

How to find (Clashes — local):
“Take the primary/secondary stakeholder list, make a quick pairwise grid, and ask ‘What helps A might hurt B?’ for each local step (browse→pay→prep→deliver→support). Score by frequency×severity, and keep the top five.”

Prompt-crafting comment (zero-shot vs careful prompting)

Zero-shot prompting (“Generate 10 use cases for a food delivery app”) is fast but tends to be generic, inconsistent in structure, and may miss your course’s slide terminology. Careful prompting that specifies the template (Preconditions, Main Flow, Subflows, Alternative Flows), domain constraints (e.g., scheduled orders, substitutions, alcohol ID check), and evaluation criteria (coverage across browse, pay, fulfill, deliver, support) produces more complete, slide-aligned results and reduces revision time.

Minimal example:

Zero-shot:

"Write 10 use cases for a food delivery system."

Careful prompt:

"You are a software engineering tutor. Produce 10 **brief** use cases for a **food delivery system** using the following headings: **Preconditions**, **Main Flow**, **Subflows**, **Alternative Flows**. Cover browse→pay→fulfill→deliver→support. Assume web + mobile, in-app payment, substitutions, promos, scheduled delivery, driver reassignment, refunds, and accessibility. Keep each main flow to ≤8 steps."

Use Cases for Food Delivery App

UC1 Browse Restaurants by Location

A customer searches for nearby restaurants using GPS or an entered address.

Preconditions

- App installed and home screen open.
- Location services enabled or address entered.

Main Flow

1. The user taps "Browse." [S1]
2. The system retrieves location information. [S2] [A1] [A2]
3. The system shows a restaurant list with ETA, pricing, and ratings. [S3]
4. The user applies filters (cuisine, price, dietary). [S4]
5. The user selects a restaurant. [S5]
6. The system loads menu and availability. [S6]

Subflows

[S1] Initiate location-based search from the home screen.
[S2] Use entered address if available, otherwise GPS.
[S3] Display a restaurant list including ETAs, price ranges, and ratings.
[S4] Apply qualitative filters (cuisine/dietary) and sort quantitatively (reviews/pricing).
[S5] Select a restaurant for details.
[S6] Load menu, availability, and basic details.

Alternative Flows

[A1] **Out of Zone:** If outside delivery area, show pickup zones.
[A2] **Unable to Locate:** Prompt user to enter an address and return to Step 2.

UC2 Build Cart & Customize Items

A customer browses a menu, customizes items, and adds them to their cart.

Preconditions

- Restaurant open.
- Menu loaded.

Main Flow

1. The user selects an item. [S1]
2. The system shows options (sizes, add-ons) and allergens. [S2]
3. The user customizes and adds the item to the cart. [S3] [A1] [A2]
4. The system recalculates totals and ETA. [S4]
5. The user repeats for more items. [S5]
6. The system shows nutrition and allergen info when necessary. [S6]

Subflows

[S1] Select menu item from category view.
[S2] Present choices such as size, toppings, sides, and allergens.
[S3] User customizes and clicks “Add to Cart.”
[S4] Totals and ETA update automatically.
[S5] User may continue browsing and add multiple items.
[S6] Get and show nutrition facts and allergen flags if available.

Alternative Flows

[A1] **Add-on Sold Out:** Prompt user to substitute or skip.
[A2] **Item Removed:** Notify, remove item, and recalculate totals.

UC3 Apply Promotion or Referral Credit

A customer applies a promo code or referral credit to reduce their order total.

Preconditions

- Cart has items.
- User logged in.

Main Flow

1. The user opens “Promotions.” [S1]
2. The user enters or selects a promo. [S2]
3. The system validates eligibility (min spend, geography, time). [S3] [S8] [A1] [A2]

4. The system applies discount and recalculates totals. [S4] [S7]
5. The user applies referral credit if available. [S5]
6. The system shows any restrictions. [S6]

Subflows

[S1] Open “Promotions” in cart/checkout.
[S2] Enter a promo code or pick from offers.
[S3] Check rules: min spend (subtotal), valid geography, time window.
[S4] Apply discount, show order of application vs. taxes/fees.
[S5] Select referral credit to apply.
[S6] Display program-specific restrictions (e.g., loyalty/student).
[S7] Enforce non-stackable promos and highlight applied discounts.
[S8] Disable promos outside valid regions.

Alternative Flows

[A1] **Ineligible:** Explain reason (e.g., below minimum spend).
[A2] **Expired:** Show expiry date and remove promo from cart.

UC4 Checkout & Payment

A customer reviews order details, selects payment, and completes checkout.

Preconditions

• Cart valid.
• User logged in or guest checkout allowed.

Main Flow

1. The user reviews order details including items, address, and tip. [S1] [S2] [S3]
2. The user selects payment method. [S4]
3. The system calculates taxes/fees and pre-authorizes payment. [S5] [A1]
4. The user confirms the order. [S6]
5. The system places order and sends confirmation. [S7] [A2]

Subflows

[S1] Review items and instructions.
[S2] Edit address if needed.
[S3] System shows privacy and data-use notices.
[S4] Choose card, wallet, or split payment.
[S5] Calculate taxes/fees, run pre-authorization.

[S6] User clicks “Confirm Order.”
[S7] System sends confirmation with order # and ETA.

Alternative Flows
[A1] **Payment Declined:** Retry or select another method.
[A2] **Undeliverable Address:** Prompt for update or offer pickup.

UC5: Restaurant Acceptance & Prep

Restaurant receives, accepts, and begins preparing the order.

Preconditions
- Order submitted.
- Restaurant online & open.

Main Flow

1. System forwards order to restaurant POS/tablet. [S1]
2. Restaurant accepts and sets prep time. [S2]
3. System updates ETA for user and driver dispatch. [S3]
4. Kitchen begins preparation; status = “Preparing.” [S4]
5. Ticket shows allergen notes for safe handling. [S5]

Subflows
[S1] Record POS acknowledgment timestamp.
[S2] Restaurant confirms order, sets prep time.
[S3] System updates ETA dynamically.
[S4] Order marked “Preparing.”
[S5] Show declared allergens/notes.
[S6] Display packaging guidance if required.

Alternative Flows
[A1] **Reject/No Response:** Order rerouted or canceled/refunded.
[A2] **Out-of-Stock:** Trigger substitution process.

UC6: Item Substitution Approval

Customer handles substitutions for unavailable items.

Preconditions
- Restaurant flags an item as out-of-stock.

Main Flow

1. System proposes substitute(s) with price differences. [S1]
2. User receives prompt to approve or decline. [S2] [A1] [A2]
3. On approval, system updates totals and continues prep. [S3]
4. System shows nutrition/allergen comparison. [S4] [S5]

Subflows

[S1] Suggest substitute items with price delta.
[S2] Push prompt notification in-app for approval.
[S3] Update order totals and resume preparation when approved.
[S4] Display nutrition and allergen differences between original and substitute.
[S5] Respect user's auto-approve preference for category-equivalent items.

Alternative Flows

[A1] **User Declines:** Remove item from cart, recalculate totals.
[A2] **No Response:** Default policy applies (remove item or closest substitute).

UC7: Driver Assignment & Pickup

System assigns driver and order is picked up.

Preconditions

- Order marked "Ready soon."
- Drivers available.

Main Flow

1. System scores nearby drivers by distance, rating, and availability. [S1]
2. Trip offered to best-fit driver. [S2] [A1]
3. Driver accepts and receives pickup instructions. [S3]
4. Driver arrives and verifies order details. [S4] [A2]
5. Driver departs; system marks status "On the way." [S5]
6. System logs mileage/tolls for trip ledger. [S6]
7. If applicable, orders may be batched. [S7]

Subflows

[S1] Rank drivers using weighted scoring.
[S2] Dispatch sends trip offer to top candidate.
[S3] Share pickup location, parking notes, and contact info.
[S4] Driver verifies order code and bag count; sealed if required.
[S5] System updates status to "On the way."

[S6] Capture mileage/toll data for driver.
[S7] Optionally batch compatible orders for efficiency.

Alternative Flows
[A1] **No Driver Accepts:** Increase incentive or extend ETA.
[A2] **Order Not Ready:** Driver arrival before readiness triggers wait policy.

UC8: Delivery to Customer

Driver delivers the order to the customer.

Preconditions
- Driver en route.
- Address valid.

Main Flow

1. System provides navigation and delivery notes. [S1]
2. Driver hands off the order to customer or leaves at door. [S2] [A1] [A2]
3. Driver captures proof photo if contactless delivery. [S3]
4. System marks order delivered, notifies user, finalizes receipt. [S4]
5. System enforces ID check for restricted items. [S5]
6. Proof of delivery stored for support. [S6]

Subflows
[S1] Navigation guidance and gate/delivery instructions displayed.
[S2] Handoff performed per user preference (meet or leave at door).
[S3] Driver takes a proof photo if required.
[S4] System marks delivered, sends receipt, and allows post-tip edits if enabled.
[S5] PIN/ID required for alcohol or restricted items.
[S6] Archive proof/timestamp for support.

Alternative Flows
[A1] **Customer Unreachable:** After timed attempts, escalate to support.
[A2] **Wrong Address:** Contact customer for reroute or return to restaurant.

UC9: Order Issue & Refund/Redelivery

User reports a problem after delivery and the system tries to resolve it.

Preconditions

- Order delivered.
- Issue reported within allowed window.

Main Flow

1. User opens “Help” and selects issue type. [S1]
2. System collects evidence such as photos/timestamps. [S2]
3. Policy engine suggests resolution (refund, credit, redelivery). [S3] [A1] [A2]
4. User accepts; system executes and logs case. [S4]
5. Sensitive data handled per privacy rules. [S5]
6. If complex, escalate to CSR. [S6]

Subflows

[S1] User selects problem category (missing, cold, late).
[S2] System requests supporting evidence (photos, GPS, delivery logs).
[S3] Resolution options generated by policy engine.
[S4] Resolution executed (credit/refund/redelivery).
[S5] Personal data handled with privacy safeguards.
[S6] Escalate to human support if necessary.

Alternative Flows

[A1] **Abuse Detected:** System flags for manual review.
[A2] **Redelivery Not Possible:** System offers credit/refund only.

UC10: Scheduled Order

User places an order for a future time.

Preconditions

- Restaurant supports scheduled ordering.

Main Flow

1. User selects a future delivery/pickup window. [S1]
2. System validates restaurant hours and driver supply. [S2] [A1] [A2]
3. System pre-authorizes payment. [S3]
4. At prep time, order auto-release to a restaurant. [S4]
5. Order follows standard assignment, pickup, and delivery flow. [S5]
6. System recalculates taxes/fees at fulfillment. [S6]
7. Users may edit or cancel before the cutoff. [S7]

Subflows

[S1] Select desired future date and time.
[S2] Verify restaurant availability and driver coverage.
[S3] Payment method pre-authorized.
[S4] Order automatically sent at scheduled prep time.
[S5] Normal workflow continues (driver assigned, pickup, delivery).
[S6] Taxes/fees recalculated at time of fulfillment.
[S7] Users can edit/cancel orders up until cutoff time.

Alternative Flows

[A1] **Restaurant Changes Hours:** System prompts reschedule or switch.
[A2] **Driver Shortage:** Expand delivery window or offer pickup.