

# **CSC510 Fall 2025: Software Engineering**

## **Proj1c1 Solutions**

**Group number: 25**

### **Team Members:**

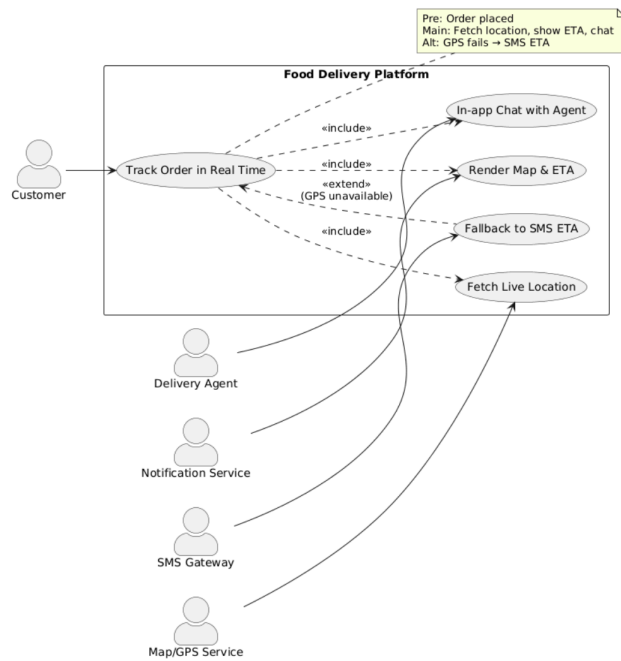
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### **Github Repository Link:**

[https://github.com/shreyas457/SE\\_G25/tree/main](https://github.com/shreyas457/SE_G25/tree/main)

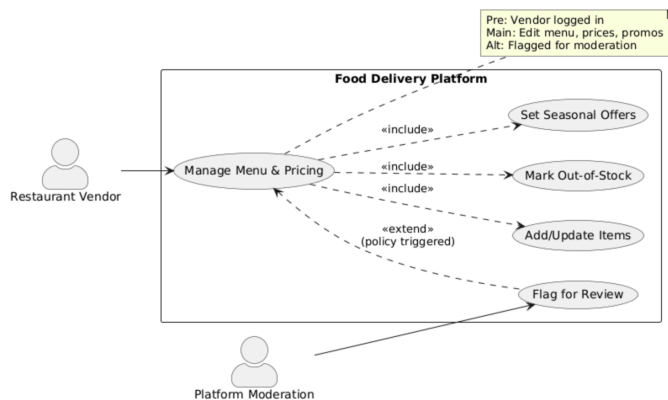
## Use Case 1 – Track Order in Real Time

- **Precondition:** Customer places an order.
- **Main Flow:** Customer opens app → Views live map of delivery → ETA updates.
- **Subflow:** Customer sends chat message to delivery agent.
- **Alternative Flow:** GPS/location service unavailable → fallback to SMS ETA.



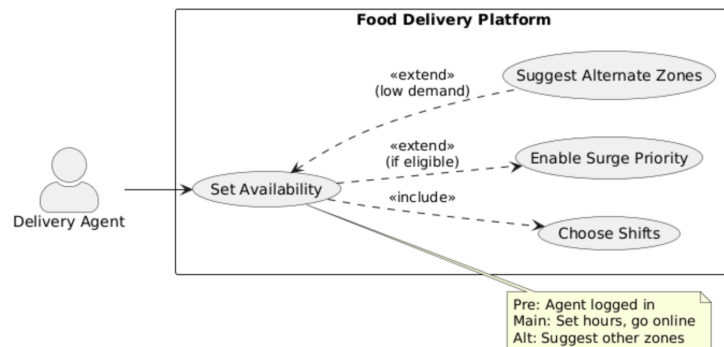
## Use Case 2 – Manage Menu & Pricing

- **Precondition:** Restaurant logged into vendor portal.
- **Main Flow:** Vendor updates menu items → Adds seasonal offers → Adjusts prices.
- **Subflow:** Enables “out of stock” toggle for unavailable items.
- **Alternative Flow:** Menu changes pending approval → flagged by platform moderation.



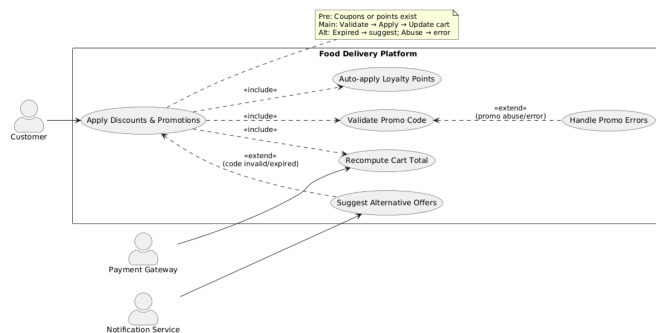
## Use Case 3 – Set Availability & Shift Preferences

- **Precondition:** Agent logged into app.
- **Main Flow:** Agent sets preferred working hours → Marks availability as online.
- **Subflow:** Requests priority shifts for surge pricing.
- **Alternative Flow:** Low demand → System suggests alternate areas/routes.



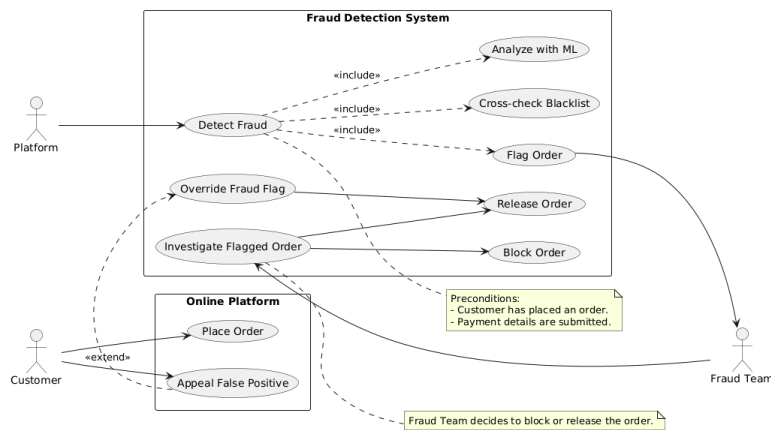
## Use Case 4 – Apply Discounts & Promotions

- **Precondition:** Customer has coupons/loyalty points.
- **Main Flow:** Customer selects restaurant → Applies discount code → Price recalculates.
- **Subflow:** Loyalty points auto-applied at checkout.
- **Alternative Flow:** Discount expired → System notifies customer, suggests alternatives.



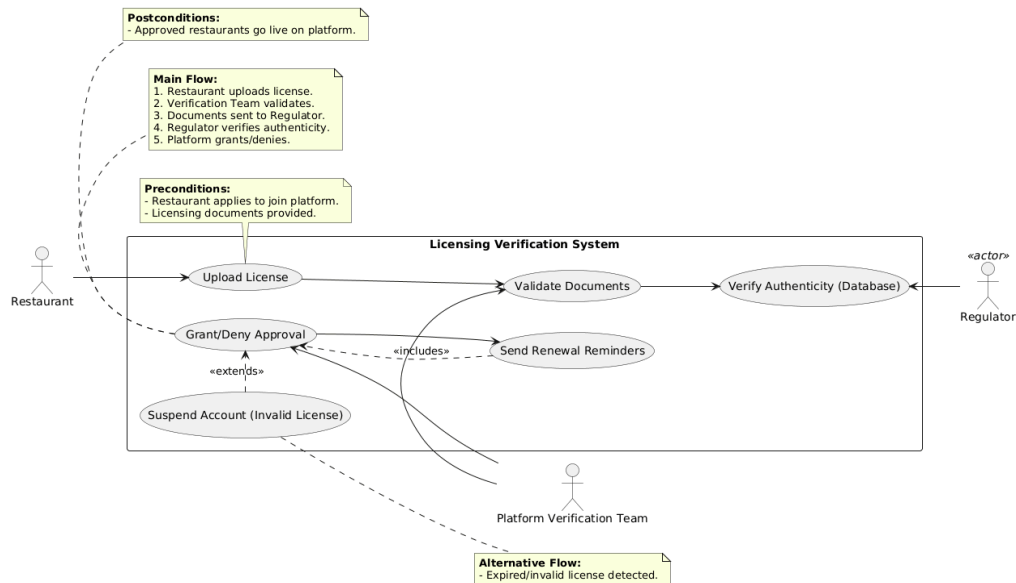
## Use Case 5: Fraud Detection and Prevention

- **Preconditions:** Customer has placed an order and the payment details are submitted.
- **Main Flow:** Platform sends payment/order info to Fraud Detection System → Fraud Detection System analyzes for anomalies. → If high risk, order flagged. → Fraud Team investigates. → Order either blocked or released.
- **Subflows:** Cross-check with blacklisted accounts. → ML-based anomaly detection.
- **Alternative Flows:** False positive → Customer appeals → Fraud Team overrides.



## Use Case 6: Restaurant Licensing Verification

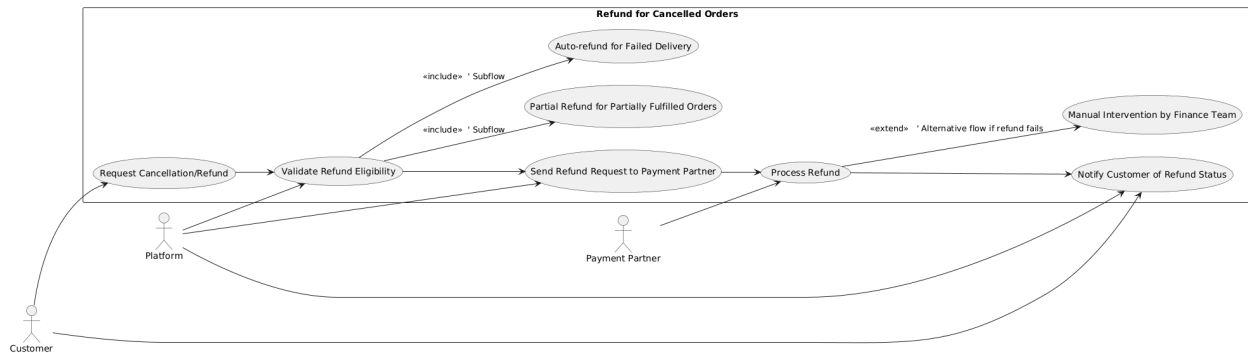
- **Preconditions:** Restaurant applies to join platform → Licensing documents provided.
- **Main Flow:** Restaurant uploads license → Platform Verification Team validates completeness → Documents sent to Regulator's licensing database → Regulator verifies authenticity → Platform grants/denies approval.
- **Subflows:** Renewal reminders sent automatically before expiry.
- **Alternative Flows:** Expired/invalid license → Restaurant suspended until renewal.



## Use Case 7 : Refund for Cancelled Orders

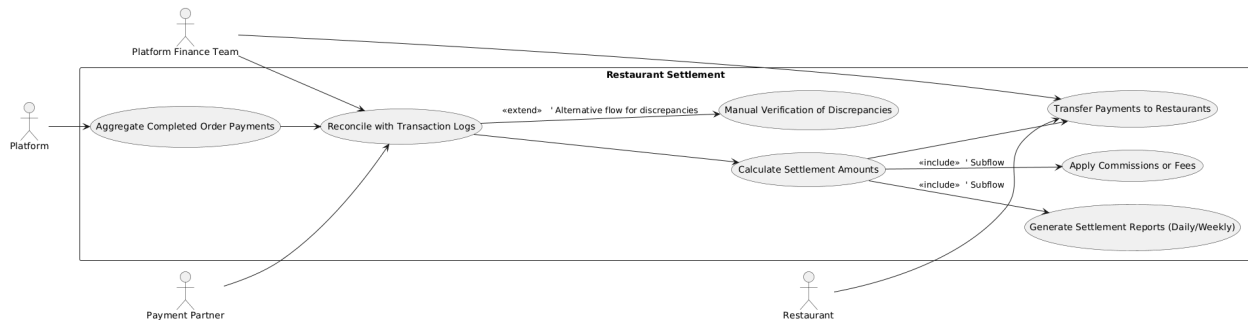
- **Preconditions:** Order eligible for refund → Original payment recorded.
- **Main Flow:** Customer requests cancellation/refund → Platform validates refund eligibility → Refund request sent to Payment Partner → Payment Partner processes refund → Platform notifies customer of refund status.

- **Subflows:** Partial refunds for partially fulfilled orders → Auto-refund for failed delivery.
- **Alternative Flows:** Refund fails → Manual intervention by platform finance team.



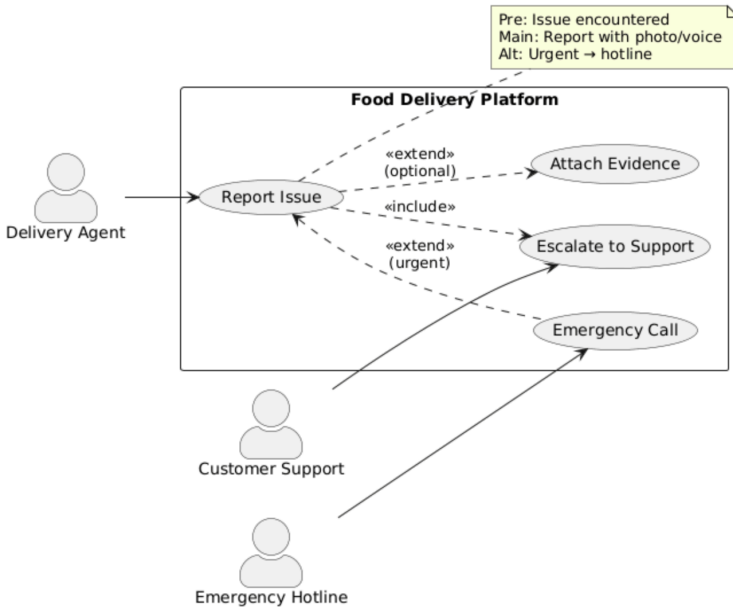
## Use Case 8 : Restaurant Settlement

- **Preconditions:** Completed orders available → Payment Partner provides transaction reports.
- **Main Flow:** Platform aggregates completed order payments → Platform Finance Team reconciles with Payment Partner transaction logs → Settlement amounts calculated → Payments transferred to restaurants.
- **Subflows:** Generate weekly or daily settlement reports → Apply commissions or fees.
- **Alternative Flows:** Discrepancies → Manual verification with restaurant or Payment Partner.



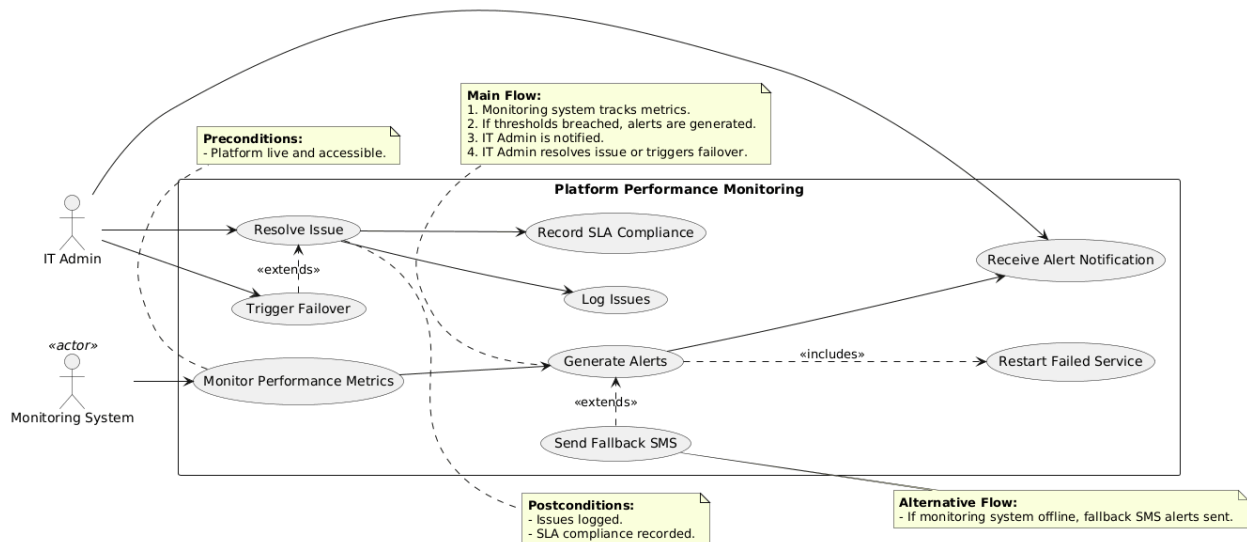
## Use Case 9 : Report Safety or Quality Issues

- **Precondition:** Agent encounters problems (e.g., damaged food, unsafe location).
- **Main Flow:** Agent reports via in-app form → Option to upload photo/voice.
- **Subflow:** Escalates to customer service.
- **Alternative Flow:** Urgent threat (e.g., harassment) → Emergency hotline enabled.



## Use Case 10: Platform Performance Monitoring

- **Preconditions:** Platform live and accessible.
- **Main Flow:** Monitoring system tracks uptime, latency, and errors → If thresholds breached, alerts generated → IT Admin receives notification → IT Admin resolves issue or triggers failover.
- **Subflows:** Auto-recovery system restarts failed service.
- **Alternative Flows:** If monitoring systems are offline, fallback SMS alerts are sent.



## Reflection document

We consulted two LLMs (ChatGPT and Claude) to identify the 10 most relevant use cases for our MVP. For context, we provided them with the content of Proj1b1 and instructed them to consider all stakeholders. Their responses were largely consistent, differing only in three cases: Claude emphasized use cases related to regulators and food suppliers, while ChatGPT focused more on business-oriented use cases essential for startups.

The use cases they agreed upon were essential to any food delivery system, addressing the needs of both end users and delivery partners. The challenge, then, was deciding between the three differing use cases. To resolve this, we asked ChatGPT to compare both responses and identify their shortcomings. Its verdict was that Claude's response was more academically oriented, with detailed and extensive stakeholder coverage, while ChatGPT's response was more practical and better suited for pitching to investors. Upon further review, however, we noticed that ChatGPT had overlooked regulatory bodies—an important stakeholder group. As a result, we decided to adopt Claude's choices for the remaining three use cases to ensure more comprehensive stakeholder coverage.

## Before the Changes – Negative Impacts or Disappointments

1. **Customers** would be disappointed by:
  - a. No way to rate or review their orders (UC3 excluded).
  - b. No loyalty or rewards program (UC12 excluded).
  - c. No allergy/dietary preference or nutrition information (UC17, UC32 excluded).
2. **Restaurants** would be frustrated by:
  - a. Lack of sales/analytics dashboards (UC5 excluded).
  - b. No compliance reminders (UC16 excluded).
3. **Delivery Agents** could feel dissatisfied because:
  - a. No clear earnings or performance tracking (UC8, UC19 excluded).
  - b. No additional safety support features (beyond reporting quality issues).
4. **Regulators/Finance Teams** might be concerned that:
  - a. There are no compliance logs or data export capabilities (UC21+ excluded).
  - b. Audits and oversight would be manual, time-consuming, and error-prone.

## 1. Track Order in Real Time (UC1)

- **Precondition:** Customer places an order.
- **Main Flow:** Customer opens app → Views live map of delivery → ETA updates.
- **Subflow:** Customer sends chat message to delivery agent.

- **Alternative Flow:** GPS/location unavailable → fallback to SMS ETA.

## 2. Manage Menu & Pricing (UC4)

- **Precondition:** Restaurant is onboarded on the platform.
- **Main Flow:** Vendor opens dashboard → Updates menu items → Adjusts prices → Adds seasonal offers.
- **Subflow:** Vendor marks item “out of stock.”
- **Alternative Flow:** Weekly email digest sent with sales summary (lightweight analytics).

## 3. Set Availability & Shift Preferences (UC7)

- **Precondition:** Delivery agent is registered on the platform.
- **Main Flow:** Agent logs into app → Sets working hours → Marks availability as online.
- **Subflow:** System suggests alternate delivery zones during low demand.
- **Alternative Flow:** Agent tries to log in outside supported regions → System shows “Not Available.”

## 4. Apply Discounts & Promotions (UC2)

- **Precondition:** Customer selects items and proceeds to checkout.
- **Main Flow:** Customer enters discount code → Price recalculates → Loyalty points auto-applied.
- **Subflow:** Customer uses “order 5 get ₹50 off” type loyalty reward.
- **Alternative Flow:** Invalid or expired code → Error message displayed.

## 5. Fraud Detection and Prevention (UC10)

- **Precondition:** Customer initiates payment.
- **Main Flow:** System analyzes payment info → Flags suspicious activity → Blocks high-risk orders.
- **Subflow:** Customer submits appeal for false positive → Review team validates.
- **Alternative Flow:** Payment partner service unavailable → Retry with backup provider.

## 6. Restaurant Licensing Verification (UC15)

- **Precondition:** Restaurant applies to join platform.
- **Main Flow:** Restaurant uploads license → Verification team reviews → Regulator validates.
- **Subflow:** Automated reminders sent for upcoming license expiry.
- **Alternative Flow:** License rejected → Onboarding halted until resubmission.

## 7. Refund for Cancelled Orders (UC30)



- **Precondition:** Customer cancels an order or delivery fails.
- **Main Flow:** Customer requests refund → Platform validates eligibility → Payment partner processes.
- **Subflow:** Auto-refund initiated for failed deliveries.
- **Alternative Flow:** Refund eligibility fails → Customer notified with reason.

## 8. Restaurant Settlement (UC31)

- **Precondition:** Restaurant has completed at least one order.
- **Main Flow:** Platform aggregates orders → Calculates settlements → Transfers payments.
- **Subflow:** Restaurant views weekly/daily settlement report with commission deductions.
- **Alternative Flow:** Payment transfer fails → Settlement retried or flagged for finance review.

## 9. Report Safety or Quality Issues (UC9)

- **Precondition:** Delivery agent or customer experiences an issue.
- **Main Flow:** Agent/customer submits in-app form → Optionally uploads evidence → Escalates to support.
- **Subflow:** Delivery agent triggers SOS emergency option for personal safety.
- **Alternative Flow:** Support unavailable → Case logged and escalated to next working shift.

## 10. Platform Performance Monitoring (UC14)

- **Precondition:** Platform services are running.
- **Main Flow:** Monitoring tracks uptime, latency, errors → Alerts generated → IT admin resolves.
- **Subflow:** Audit logs and data exports available for regulators/finance.
- **Alternative Flow:** Monitoring system fails → Failover monitoring activated.

## What changes you made (and why) to the MVP to appease at least some of the stakeholders.

To address stakeholder concerns without expanding the MVP scope significantly, we made several lightweight enhancements within existing features:

- **Customers:** Added simple loyalty rewards (“order 5 get ₹50 off”) and dietary preference tags to increase engagement and personalization.
- **Restaurants:** Provided basic sales summaries and weekly email digests, plus automated license expiry reminders, giving them visibility into performance and compliance without building full analytics dashboards.
- **Delivery Agents:** Introduced an SOS safety option and clearer earnings visibility to improve safety and transparency.

- **Regulators/Finance:** Added audit logs and data export options to support compliance and reporting requirements in a minimal, manageable way.

These changes ensured that key stakeholder pain points—feedback, rewards, analytics, safety, and compliance—were addressed while keeping the MVP lightweight and focused.

## **Prompt History:**

### **Chat history showing prompts with LLM1 (Claude Opus 4.1) :**

Link 1 : <https://claude.ai/share/1328f1bb-a4d1-4acb-a777-947185e5e83d>

### **Chat history showing prompts with LLM2 (ChatGPT) :**

Link 1 : <https://chatgpt.com/share/68c45cbd-1ce0-8007-9376-a47df85bee41>

Link 2 : <https://chatgpt.com/share/68c43b6f-42a8-8011-9925-3638ef9e41c7>

Link 3 : <https://chatgpt.com/share/68c45bdc-8620-800d-a65f-8e3c9a0b7c89>