Cohort2_Practical Task #3

1.

Customer Feedback Summary — a quick snapshot of trends in your dataset:

🧩 Categories

- **Compliments:** 3
- **Complaints:** 2
- **Suggestions:** 1
- **Neutral/Unclear:** 4

💬 Sentiment

- **Positive:** 6
- **Negative:** 3
- **Neutral:** 1

🎯 Themes

- **Features:** 2
- **Usability:** 2
- **Product Quality:** 2
- **Customer Service:** 2
- **Other:** 2

2.

Short Summary (for stakeholders)

- **Goal:** Qualify logistics leads, flag special cargo, set priority by timing/urgency, and hand off to sales when **cargo (Q1)** and **destination (Q2)** are present; otherwise suggest a **free consultation**.

- **Specialty cargo (Q1):** Any mention of *frozen/temperature-controlled, dangerous goods, or time-sensitive* marks **Specialty Cargo** for the sales team. Q1 also collects **stackable**.

- **Destination (Q2):** If the city can't be found, ask to rephrase. If **US city with no state**, request the **state**.

- **Transport mode (Q3):** If user says **"any/don't know"** and **cargo is NOT specialty**, ask **fastest vs. cheapest** to set preference.

- **Timing (Q4):**

    - **Within a week → High Priority**, ask **pickup ready date** and **pickup specifics**.

    - **Within 2 weeks → Mild Priority**; **within a month → Low Priority**.

    - **Pricing-only** (for supplier) becomes **To-Do (pricing only)** unless urgency words override to **High**.

- **Budget (Q5):** If unknown, ask if they've shipped before; if yes, request **approx previous price**.

- **Handoff rule:** If **Q1 & Q2 present**, send to sales with all fields (cargo type, stackable, destination, mode or preference, timing, priority, pickup details, budget). If not, prompt for missing info or offer **free consultation**.

3.

1) Triggers & Ingestion

Sources: inbound email, web form, chat, EDI/webhook, call transcript.
 Steps (sync):

1. Capture metadata (from, to, subject, cc, msg-id, thread-id).

2. Extract text (HTML → plain), attachments (PDF, XLSX, images), inline images.

3. Run PII/safety scan (strip creds, payment data).

4. Create/attach to **Ticket** by thread-id or similarity (avoid duplicates).

```
// Ticket (core)
{
  "ticket_id": "T-2025-001234",
  "channel": "email",
  "status": "open",
  "priority": "normal",
  "customer": {"name": "ACME Ltd", "email": "ops@acme.com",
"account_id": "C-4491"},
  "created_at": "2025-10-24T13:12:00Z",
  "last_inbound_at": "2025-10-24T13:12:00Z",
  "assignee": null,
  "category": null,
  "subtype": null,
  "entities": {},
  "sla": {"ack_deadline": "2025-10-24T15:12:00Z", "resolve_target":
"2025-10-25T13:12:00Z"}
}
```

---

2) Entity Extraction (Logistics NER)

Detect and normalize:

- **References:** booking no., container no., B/L, quotation id, PO, invoice no.

- **Locations & dates:** POL/POD, pickup/delivery addresses, cut-off, cargo ready date.

- **Cargo:** commodity, stackable?, dims/weight, pieces, HS code, temp/haz flags.

- **Ops context:** vessel/voyage, service loop, truck slot.

- **Finance:** invoice/credit/debit note numbers, amounts, due dates.

- **Urgency:** "urgent", "ASAP", "vessel closes today", "within a week".

Save to `ticket.entities`.

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3) Classification & Priority

Classifier output (single label + confidence + reasons):

- **Category:** Support | Sales | Operations | Accounting | General.

- **Subtype examples:** Support→Tracking, Docs (B/L copy, amendment), Portal access;
  Sales→RFQ FCL/LCL, Spot, Tender; Operations→Pickup, Cut-off, Special cargo handling;
  Accounting→Invoice copy, Payment status, Refund/CN;
  General→Office info, Careers, Partnership.

- **Priority rules (example):**

  - `urgent/ASAP/time-sensitive` → **High**

  - **Perishables/reefer/DG/TS cargo → High**

  - Shipment **within 7 days** → **High**; within **14 days** → **Medium**; within **30 days** → **Low**

  - VIP account tier → +1 priority level

```
// Classifier result
{
  "category": "Operations",
  "subtype": "Pickup scheduling",
  "priority": "high",
  "special_cargo": ["reefer"],
  "confidence": 0.94,
```

```
    "rationale": "mentions temp + pickup date + cut-off"
}
```

---

4) Response Strategy (Smart Reply)

Language: detect and reply in the customer's language; mirror tone; keep subject.
 Policy: never expose internal systems; no pricing for non-qualified leads; mask internal emails.

A) Support (examples)

- If **tracking** and container id present → call TMS/carrier API → include live ETA, last event.

- If **doc request** (B/L, DO) → fetch from DMS → attach; if missing, ask reference.

- If **amendment** → validate cut-off; list required docs & fee note (no amounts unless allowed).

Template (auto-filled):

> Subject: Re: [Subject] • Case {{ticket_id}}
> Hi {{name}},
> We've checked booking **{{booking}}** / container **{{cntr}}**. Latest event: **{{event}}** ({{event_time}}), ETA **{{eta}}** at **{{pod}}**.
> Attachments: {{docs}}. If anything looks off, tell us and we'll amend before **{{cutoff}}**.
> Best regards, {{agent}}

B) Sales (RFQ)

Ask only for **missing** fields; if complete, price instantly or route to Sales.

Info checklist: origin/pickup, POL, POD, delivery, cargo (dims/weight, stackable), INCOTERMS, ready date, mode (FCL/LCL/air/road/rail), special handling (reefer/DG), frequency.

Template (progressive disclosure):

> Thanks for your RFQ for **{{commodity}}**. To finalize rates, could you confirm:
>
> - Pieces/dims/weight (per package)

- Stackable: yes/no

- Pickup: {{pickup? or "address"}}; Delivery: {{delivery?}}

- Cargo ready date: {{date?}}
  Once received, we'll return a tailored quote with transit time and validity.

C) Operations

- Book/confirm pickup slots, verify cut-offs, issue VGM reminders, special cargo SOPs.

Template:

Noted cargo readiness on **{{ready_date}}** at **{{pickup_addr}}**.
Proposed pickup window: **{{slot}}**. Export cut-off is **{{cutoff_dt}}** at **{{terminal}}**.
Please confirm loading conditions (forklift/ramps) and **stackable = {{stackable}}**.
We'll dispatch the truck and share the DO/booking once confirmed.

D) Accounting

- Invoice copy, statement, payment status, CN/DN requests.

Template:

We've located **Invoice {{inv_no}}** ({{amount}} {{currency}}, due {{due}}) for **{{booking}}**.
Attaching the PDF. If you need a statement of account or PO match, let us know.

E) General

Thanks for reaching out to **{{company}}**.
For shipment-related queries, please include booking/container/B/L so we can assist faster.
Office contacts: {{link}}.

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5) Action Orchestration

- **If all data present** → auto-resolve (send info/docs); set status **"pending customer"**.

- **If data missing** → ask only what's missing; set **waiting_on_customer**.

- **If system calls needed** → create sub-tasks:

    - `ops.schedule_pickup`

    - `docs.retrieve_bl`

    - `sales.build_quote`

    - `acct.fetch_invoice`

- **Assignee routing:** skill-based + workload + account owner; auto @mention in CRM.

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6) SLAs & Timers

- **First response:** ≤ 2 business hours (VIP ≤ 1h).

- **Follow-up:** if no customer reply **in 48h**, send polite nudge and keep ticket open.

- **Auto-close:** after **7 days** of silence (with final notice 24h before).

48h follow-up (automated):

Hi {{name}}, just checking in on Case **{{ticket_id}}** about **{{topic}}**.
Do you still need assistance, or can we close this one?

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7) Escalation & Exceptions

- **High severity** (DG incident, reefer temp excursion, missed cut-off risk) → page on-call ops lead; mark **SEV-1**; bridge call note.

- **Compliance** (sanctions/embargo, restricted party) → hold + Legal review.

- **Disputes** (damage, demurrage) → route to Claims; lock messaging template.

8) Human-in-the-Loop (HITL)

- Confidence < threshold? Queue for human review with suggested draft.

- One-click buttons: **Send as-is** | **Edit draft** | **Return to inbox**.

- Continuous learning: capture human edits → retrain prompt/policies.

9) Attachments Handling

- Auto-OCR (CMR, B/L, invoice, packing list).

- Validate fields vs. entities (e.g., container number checksum, date formats).

- Store in DMS with ticket linkage; virus scan; block executables.

10) Audit, Metrics, & QA

- **Logs:** classification, prompts, responses, API calls, assignee, SLA events.

- **Dashboards:** FRT, FCR, reopen rate, deflection %, quote TAT, ops on-time pickups, DSOs.

- **QA sampling:** 2% random + 100% of SEV-1; rubric for accuracy, tone, completeness.

11) Security & Compliance

- Least-privileged API tokens; redact PII in logs.

- Data residency as required (EU).

- Record retention policy (e.g., 12–36 months).

- Consent banner for AI assistance in customer-facing portals.

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12) Multilingual Support

- Detect language; translate internally; reply in the **customer's language**.

- For regulated content (rates/terms), lock to pre-approved glossaries.

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13) State Machine (simplified)

```
NEW → CLASSIFIED → (AUTO-RESOLVE | ACTION-REQUIRED)
ACTION-REQUIRED → (WAITING-ON-CUSTOMER | IN-PROGRESS)
WAITING-ON-CUSTOMER → (FOLLOW-UP-48H) → (CUSTOMER-REPLIED →
IN-PROGRESS | AUTO-CLOSE)
IN-PROGRESS → RESOLVED → CLOSED
(At any state: ESCALATED if SEV-1)
```

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14) Pseudo-Orchestration (event-driven)

```
def on_inbound(message):
    ticket = upsert_ticket(message)
    entities = extract_entities(message)
    cls = classify(message, entities)
    priority = score_priority(message, entities, cls)
    route(ticket, cls, priority)

    reply = build_reply(ticket, cls, entities)
    if reply.ready:
        send(reply); set_status(ticket, "waiting_on_customer")
    else:
```

```
        request_missing_info(ticket, reply.questions)

    schedule_timer(ticket, "followup_48h", hours=48)

def on_timer(ticket, timer_name):
    if timer_name == "followup_48h" and ticket.status ==
"waiting_on_customer":
        send(followup_template(ticket))
        schedule_timer(ticket, "auto_close", days=5)

def on_customer_reply(ticket):
    cancel_timer(ticket, "auto_close")
    reclassify_if_needed(ticket)
    continue_workflow(ticket)
```

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15) Minimal Field Checklist (per Category)

Sales: Origin, Destination, Mode, Ready date, Commodity, Dims/Weight, Stackable, Special (reefer/DG), Frequency.
 Support: Booking/Container/B/L, What's wrong/needed, Deadline (cut-off).
 Operations: Cargo ready, Pickup address & slot, Equipment access, Stackable, Terminal, Cut-offs.
 Accounting: Invoice/CN/DN number, Amount, Currency, PO, Bank transfer date/proof.

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16) Ready-to-Use Reply Blocks (short)

- **Missing refs:** "Could you share booking/container/B/L to speed things up?"

- **Cut-off reminder:** "Export docs close **{{dt}}** at **{{terminal}}**; VGM by **{{time}}**."

- **Special cargo:** "Please confirm temp setpoint / UN no. / packing group / MSDS attached."

- **Stackability:** "Is the cargo stackable? If not, we'll adjust stowage and pricing."