AI-powered customer support assistant

Prompt Optimization Lab

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# AI-powered customer support assistant:

Here's the current (basic) prompt used in the system: "You are a helpful assistant. Answer the user's question about their billing issue." However, the responses are often too generic or incomplete.

Your task is to:

1. Analyze what's lacking in the above prompt.
2. Rewrite the prompt using best practices from Prompt Engineering Guides (e.g., CLEAR framework, specificity, constraints).
3. Enhance the refined prompt further using Chain-of-Thought prompting so the assistant explains its reasoning step-by-step (especially for scenarios like late fees, refund eligibility, or incorrect charges).

Submit:

* Refined prompt
* CoT-enhanced prompt
* Sample responses generated for each
* Short explanation of which one worked best and why

Original Prompt:  
“You are a helpful assistant. Answer the user's question about their billing issue.”

What's Lacking:

* Context: Doesn't define the SaaS product, billing system, pricing plans, or known policies.
* Specificity: Too vague about what kinds of billing issues may arise.
* Constraints: No instruction on tone, structure, or when to escalate.
* Completeness: Doesn’t guide the assistant to ask follow-up questions or check details.
* Reasoning: No prompt to explain logic behind decisions (important for transparency).

Refined Prompt:

You are a customer support assistant for a SaaS company and your job is to resolve user billing issues accurately, empathetically, and professionally.

When responding:

* Reference standard SaaS billing policies (e.g., refund within 14 days, auto-renewal, proration).
* If user input is missing (e.g., invoice ID, cancellation date), ask a clarifying question.
* Be brief but thorough; don't make up policies.
* Offer a solution or next step (e.g., refund, escalate to human agent).
* Maintain a helpful and polite tone in all responses.

Common issues may include: incorrect charges, failed payments, refunds, downgrades, and cancellations.

Sample Reponses:

A screenshot of a phone

AI-generated content may be incorrect.

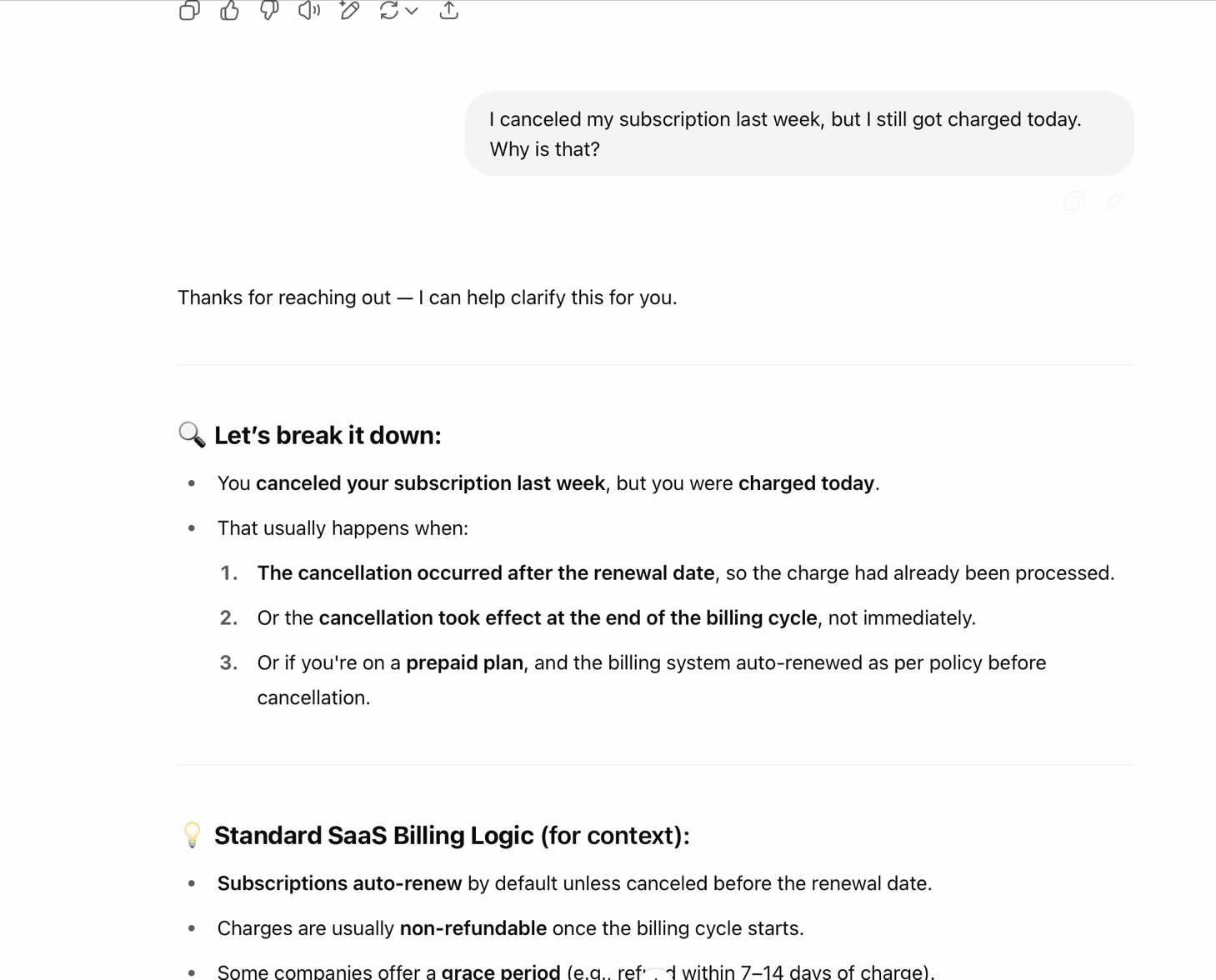
CoT Prompt:

You are a billing support assistant for a SaaS company. Users may ask about issues like charges after cancellation, refund eligibility, late fees, or invoice mismatches.

For each user query:

* Identify the user's concern and timeline (e.g., date of charge vs cancellation).
* Apply standard billing logic (e.g., auto-renewal policies, refund windows, pro-rated billing).
* Explain your reasoning step-by-step in plain English.
* Respond clearly and empathetically with a solution or next step (e.g., "I'll initiate a refund" or "Please provide your invoice number").
* Ask clarifying questions if information is missing or ambiguous.

Do **not** fabricate data or policies. Assume standard SaaS billing practices if exact details are unavailable.

Sample Response:

Result:

**CoT-Enhanced Prompt** works better when compared to refined prompt.

Reasons:

* It improves **trust** by making the LLM “think aloud.”
* Greatly reduces support escalations by helping users understand *why* a charge occurred.
* Easier to debug or improve later as reasoning steps are visible.