Prompt Engineering Exercise: Customer Service Query Classifier

COS243 class project ~ Fei Tian College

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1 Prompt Engineering Exercise: Customer Service Query Classifier

1.1 Problem Statement

You are working for a large e-commerce company that receives thousands of customer service queries daily. Your task is to create a prompt for a Large Language Model (LLM) that can accurately classify these queries into primary and secondary categories. This classification will help route queries to the appropriate department and provide quick summaries to customer service representatives.

1.1.1 Requirements:

1. Your prompt should instruct the LLM to classify each query into both a primary and a secondary category.

2. The output should be in JSON format with "primary" and "secondary" keys.

3. Use the following categories:

   Primary categories:

- Billing
- Technical Support
- Account Management
- General Inquiry

Secondary categories:

- Billing: Unsubscribe or upgrade, Add a payment method, Explanation for charge, Dispute a charge
- Technical Support: General troubleshooting, Device compatibility, Software updates
- Account Management: Password reset, Update personal information, Close account, Account security
- General Inquiry: Product information, Pricing, Feedback, Speak to a human

4. Your prompt should include instructions on how to handle queries that don't clearly fit into any category.

5. The prompt should be clear, concise, and effective in guiding the LLM to provide accurate classifications.

1.2 Task

1. Write a system message that instructs the LLM how to classify the queries.
2. Create a function that takes a user query (string) as input and call LLM to return the json object for classification. You want to validate the json output from LLM first.
3. Test your prompt with the sample data provided below and iterate on your design to improve accuracy.

1.3 Sample Data

Use the following customer service queries to test and refine your prompt:

1. "How do I update my email address on my account?"
2. "I was charged twice for my last order. Can you help?"
3. "Your app keeps crashing on my phone. What should I do?"
4. "I want to cancel my subscription."
5. "Do you offer student discounts on your products?"
6. "I forgot my password and can't log in."
7. "When will the new model of your smartwatch be released?"
8. "My package hasn't arrived yet. Can you track it for me?"
9. "How do I connect your smart home device to my Wi-Fi?"
10. "I'd like to speak with a real person about my order."

1.4 Evaluation

Your prompt will be evaluated based on: 1. Accuracy of classifications 2. Clarity and conciseness of instructions 3. Handling of edge cases or ambiguous queries 4. Overall effectiveness in guiding the LLM to provide useful classifications

Good luck!