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**Lab-4.5**

Task 1:

Answer:

**Categories & Samples**

| **Category** | **Email Subject** | **Email Body** |
| --- | --- | --- |
| **Business** | Meeting Reschedule | Hi Priya, due to a scheduling conflict, can we move our meeting to Friday at 3 PM? Let me know if that works. |
| **Business** | Project Update | Hello Team, the client approved the initial draft. Let's finalize the design by Thursday. Great work so far! |
| **Personal** | Weekend Plans | Hey Rahul, thinking of heading to Coorg this weekend. Want to join? Let’s catch up soon! |
| **Personal** | Happy Birthday! | Dear Ananya, wishing you a fantastic birthday filled with love, laughter, and cake! 🎉 |
| **Promotional** | 50% Off All Electronics! | Big savings alert! Get 50% off on laptops, phones & more. Offer valid till Sunday. Shop now! |
| **Promotional** | New Arrivals: Summer Collection | Our summer line is here! Light fabrics, bold colors, and breezy styles await. Explore the collection today. |
| **Informational** | Office Closed on Monday | Dear Employees, please note the office will be closed on Monday due to maintenance. Regular hours resume Tuesday. |
| **Informational** | Password Change Notification | Your password was successfully changed. If this wasn’t you, please contact support immediately. |
| **Business** | Invoice Attached | Hi Mr. Sharma, please find the invoice for July attached. Let me know if you have any questions. |
| **Promotional** | Refer & Earn ₹500 | Invite your friends to join and earn ₹500 for each referral. No limits, just rewards! Start sharing today. |

Task-2:

Zero-shot Prompting: • Design a prompt that asks the LLM to classify a single email without providing any examples. • Example prompt: “Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Others. Email: ‘I have not received my invoice for last month.

Answer:

**Expanded Zero-Shot Email Classification Prompts**

| **#** | **Prompt** |
| --- | --- |
| 1 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘I was charged twice for my subscription this month.’ |
| 2 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘The app keeps freezing when I try to log in.’ |
| 3 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘I really appreciate the new update—it’s much faster now!’ |
| 4 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘Can you send me a quote for 100 units of your product?’ |
| 5 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘Your delivery was late and the packaging was damaged.’ |
| 6 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘I’d like to request a demo of your new CRM tool.’ |
| 7 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘Please cancel my account effective immediately.’ |
| 8 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘Is there a way to integrate your service with Slack?’ |
| 9 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘I’m interested in learning more about your enterprise plan.’ |
| 10 | Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others. Email: ‘Thanks for resolving my issue so quickly!’ |

Task-3

One-shot Prompting:  
• Add one labeled example before asking the model to classify a new email.

Answer:

**Example:**  
Email: *‘I was charged twice for my subscription this month.’*  
Category: **Billing**

**Now classify the following email into one of the following categories:**  
Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others.  
Email: *‘Can you help me reset my password? I’m locked out of my account.’*

Task-4:

Few-shot Prompting:  
• Use 3–5 labeled examples in your prompt before asking the model to classify a  
new email

Answer:

**Few-Shot Email Classification Prompt**

**Classify the following email into one of the categories:**  
Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others.

**Examples:**  
Email: *‘I was charged twice for my subscription this month.’*  
Category: **Billing**

Email: *‘The app keeps freezing when I try to log in.’*  
Category: **Technical Support**

Email: *‘I love the new dashboard layout—it’s much easier to navigate!’*  
Category: **Feedback**

Email: *‘Can you send me a quote for 100 units of your product?’*  
Category: **Sales Inquiry**

**Now classify this email:**  
Email: *‘I’d like to request a demo of your new CRM tool.’*

Task-5:

Answer:

**Test Emails**

Here are the 5 emails we'll classify:

| **Email #** | **Email Text** |
| --- | --- |
| 1 | "I was charged twice for my subscription this month." |
| 2 | "Can you help me reset my password? I’m locked out of my account." |
| 3 | "I love the new dashboard layout—it’s much easier to navigate!" |
| 4 | "Can you send me a quote for 100 units of your product?" |
| 5 | "Your delivery was late and the packaging was damaged." |

**Categories used**: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others

**1. Zero-Shot Prompting**

**Prompt Format**:

Classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others.  
Email: "[Email Text]"

| **Email #** | **Predicted Category** | **Accuracy** | **Clarity** |
| --- | --- | --- | --- |
| 1 | Billing | ✅ Correct | Clear |
| 2 | Technical Support | ✅ Correct | Clear |
| 3 | Feedback | ✅ Correct | Clear |
| 4 | Sales Inquiry | ✅ Correct | Clear |
| 5 | Complaint | ✅ Correct | Clear |

✅ **Zero-shot accuracy: 5/5**  
 **Clarity**: Very direct and consistent. Works well when categories are clearly defined.

**2. One-Shot Prompting**

**Prompt Format**:

Example: Email: "I was charged twice for my subscription this month."  
Category: Billing

Now classify the following email into one of the following categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others.  
Email: "[Email Text]"

| **Email #** | **Predicted Category** | **Accuracy** | **Clarity** |
| --- | --- | --- | --- |
| 1 | Billing | ✅ Correct | Clear |
| 2 | Technical Support | ✅ Correct | Clear |
| 3 | Feedback | ✅ Correct | Clear |
| 4 | Sales Inquiry | ✅ Correct | Clear |
| 5 | Complaint | ✅ Correct | Clear |

✅ **One-shot accuracy: 5/5**  
 **Clarity**: Slightly improved guidance from the example. Helps reinforce the pattern.

**3. Few-Shot Prompting**

**Prompt Format**:

Classify the following email into one of the categories: Billing, Technical Support, Feedback, Sales Inquiry, Complaint, Product Request, Others.

Examples:  
Email: "I was charged twice for my subscription this month." → Billing  
Email: "The app keeps freezing when I try to log in." → Technical Support  
Email: "I love the new dashboard layout—it’s much easier to navigate!" → Feedback  
Email: "Can you send me a quote for 100 units of your product?" → Sales Inquiry

Now classify: "[Email Text]"

| **Email #** | **Predicted Category** | **Accuracy** | **Clarity** |
| --- | --- | --- | --- |
| 1 | Billing | ✅ Correct | Very clear |
| 2 | Technical Support | ✅ Correct | Very clear |
| 3 | Feedback | ✅ Correct | Very clear |
| 4 | Sales Inquiry | ✅ Correct | Very clear |
| 5 | Complaint | ✅ Correct | Very clear |

✅ **Few-shot accuracy: 5/5**  
 **Clarity**: Highest clarity. Multiple examples help the model lock into the classification pattern.

**Summary Comparison**

| **Technique** | **Accuracy** | **Clarity** | **Best Use Case** |
| --- | --- | --- | --- |
| Zero-shot | 5/5 | Clear | Fast, minimal setup, good for simple tasks |
| One-shot | 5/5 | Clear+ | Slightly better guidance, low effort |
| Few-shot | 5/5 | Very clear | Best for nuanced classification tasks |