AI-ASSISTANT CODING

ASSIGNMENT 4.1

2303A51695

p. nandhini

BATCH 28

Problem Statement 1: Customer Email Classification

Task 1: Zero-Shot Prompting

Problem Number: 1.1

Prompt:
Classify a customer email into Billing, Technical Support, Feedback, or Others without using examples.

Code (Prompt Used):

Classify the following customer email into one of these categories:

Billing, Technical Support, Feedback, Others.

Email: "The app crashes whenever I try to log in."

Output:

Technical Support

Explanation:
The model correctly identifies that the email describes a technical issue related to application usage.

Task 2: One-Shot Prompting

Problem Number: 1.2

Prompt:
Use one labeled email example to guide classification.

Code (Prompt Used):

Example:

Email: "I was charged twice for my subscription."

Category: Billing

Now classify the following email:

Email: "My invoice shows an incorrect amount."

Output:

Billing

Explanation:
Providing one example improves classification accuracy by giving context to the model.

Task 3: Few-Shot Prompting

Problem Number: 1.3

Prompt:
Use multiple labeled email examples to improve classification.

Code (Prompt Used):

Example 1:

Email: "The app crashes on startup."

Category: Technical Support

Example 2:

Email: "I love the new dashboard design."

Category: Feedback

Example 3:

Email: "I was charged twice for my subscription."

Category: Billing

Now classify the following email:

Email: "What are your office working hours?"

Output:

Others

Explanation:
Few-shot prompting gives the model clear category boundaries, resulting in the most accurate output.

Problem Statement 2: Intent Classification for Chatbot Queries

Task 1: Zero-Shot Prompting

Problem Number: 2.1

Prompt:
Classify chatbot queries into Account Issue, Order Status, Product Inquiry, or General Question.

Code (Prompt Used):

Classify the following query into one of these intents:

Account Issue, Order Status, Product Inquiry, General Question.

Query: "Where is my order?"

Output:

Order Status

Explanation:
The model correctly recognizes the query as related to order tracking.

Task 2: One-Shot Prompting

Problem Number: 2.2

Prompt:
Provide one labeled example before classification.

Code (Prompt Used):

Example:

Query: "I forgot my password."

Intent: Account Issue

Now classify the following query:

Query: "My account was locked after multiple attempts."

Output:

Account Issue

Explanation:
The example helps the model understand similar account-related problems.

Task 3: Few-Shot Prompting

Problem Number: 2.3

Prompt:
Use multiple labeled examples to guide intent classification.

Code (Prompt Used):

Example 1:

Query: "Where is my order?"

Intent: Order Status

Example 2:

Query: "Does this phone support 5G?"

Intent: Product Inquiry

Example 3:

Query: "I cannot log into my account."

Intent: Account Issue

Now classify:

Query: "What are your customer support hours?"

Output:

General Question

Explanation:
Few-shot prompting ensures consistent intent mapping.

Problem Statement 3: Student Feedback Analysis

Task 1: Zero-Shot Prompting

Problem Number: 3.1

Prompt:
Classify student feedback sentiment.

Code (Prompt Used):

Classify the sentiment as Positive, Negative, or Neutral.

Feedback: "The lectures were informative and engaging."

Output:

Positive

Explanation:
Positive sentiment is detected from appreciative language.

Task 2: One-Shot Prompting

Problem Number: 3.2

Code (Prompt Used):

Example:

Feedback: "The course content was excellent."

Sentiment: Positive

Now classify:

Feedback: "The exams were too difficult."

Output:

Negative

Explanation:
The example helps identify dissatisfaction in feedback.

Task 3: Few-Shot Prompting

Problem Number: 3.3

Code (Prompt Used):

Example 1:

Feedback: "Clear explanations by professor."

Sentiment: Positive

Example 2:

Feedback: "Syllabus is outdated."

Sentiment: Negative

Example 3:

Feedback: "Classes were conducted as scheduled."

Sentiment: Neutral

Now classify:

Feedback: "The course met my expectations."

Output:

Positive

Explanation:
Multiple examples improve sentiment classification accuracy.

Problem Statement 4: Course Recommendation System

Task 1: Zero-Shot Prompting

Problem Number: 4.1

Code (Prompt Used):

Classify the learner query into Beginner, Intermediate, or Advanced.

Query: "I want to learn Python from scratch."

Output:

Beginner

Explanation:
The query indicates no prior knowledge.

Task 2: One-Shot Prompting

Problem Number: 4.2

Code (Prompt Used):

Example:

Query: "I am new to programming."

Level: Beginner

Now classify:

Query: "I know Python basics and want to build projects."

Output:

Intermediate

Explanation:
The example clarifies learning level progression.

Task 3: Few-Shot Prompting

Problem Number: 4.3

Code (Prompt Used):

Example 1:

Query: "No coding experience."

Level: Beginner

Example 2:

Query: "Strong understanding of data structures."

Level: Advanced

Example 3:

Query: "Know basics and want to improve."

Level: Intermediate

Now classify:

Query: "I want to master system design and optimization."

Output:

Advanced

Explanation:
Few-shot prompting enables precise level identification.

Problem Statement 5: Social Media Post Moderation

Task 1: Zero-Shot Prompting

Problem Number: 5.1

Code (Prompt Used):

Classify the post as Acceptable, Offensive, or Spam.

Post: "Buy cheap followers now!"

Output:

Spam

Explanation:
The post promotes misleading content.

Task 2: One-Shot Prompting

Problem Number: 5.2

Code (Prompt Used):

Example:

Post: "Get rich quickly!"

Category: Spam

Now classify:

Post: "You are an idiot."

Output:

Offensive

Explanation:
The example distinguishes abusive language from spam.

Task 3: Few-Shot Prompting

Problem Number: 5.3

Code (Prompt Used):

Example 1:

Post: "Free followers link"

Category: Spam

Example 2:

Post: "You are stupid"

Category: Offensive

Example 3:

Post: "Have a great day everyone"

Category: Acceptable

Now classify:

Post: "Click here to win a free phone!"

Output:

Spam

Explanation:
Few-shot prompting produces the most reliable moderation result.

Final Conclusion

Few-shot prompting consistently outperforms zero-shot and one-shot methods by providing clearer context and better classification accuracy.