School of Computer Science and Artificial Intelligence

Lab Assignment # 4.5

Program	**: B. Tech (CSE)**
Specialization	**:**
Course Title	**: AI Assisted coding**
Course Code	**:**
Semester	
Academic Session	**: 2025-2026**
Name of Student	**:Mohammed Hashir Sayam Husain**
Enrollment No.	**: 2403A51L27**
Batch No.	**:51**
Date	**:16-01-2026**

Submission Starts here :

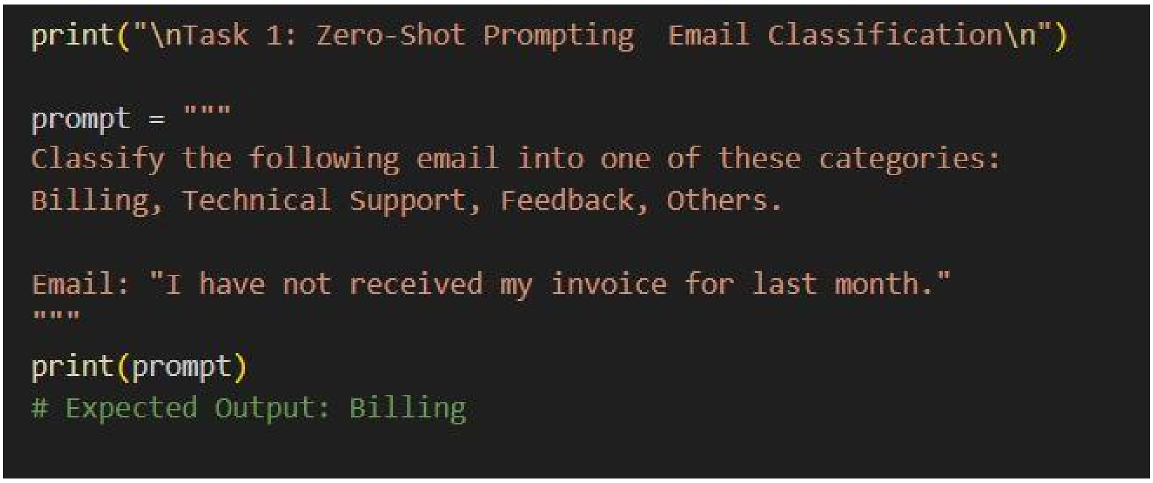
AI LAB – 4

Advanced Prompt Engineering: Zero-Shot, One-Shot, Few-Shot

Task 1: Zero-Shot Prompting – Email Classification

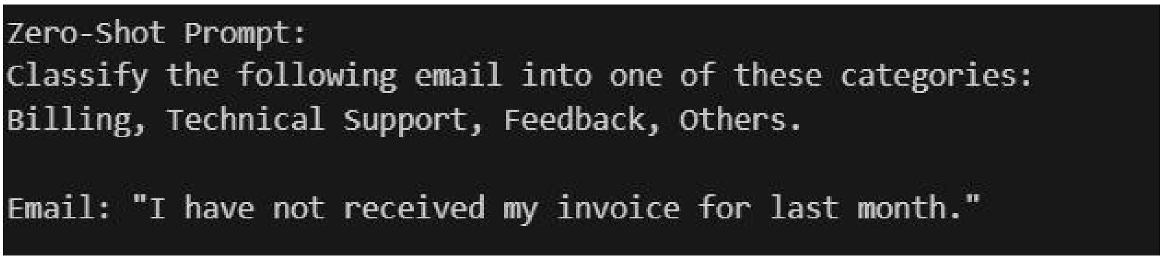
Prompt:
Classify the following email into one of these categories:
Billing, Technical Support, Feedback, Others.

Email: "I have not received my invoice for last month."



```
print("\nTask 1: Zero-Shot Prompting  Email Classification\n")

prompt = """
Classify the following email into one of these categories:
Billing, Technical Support, Feedback, Others.

Email: "I have not received my invoice for last month."
"""
print(prompt)
# Expected Output: Billing
```

Output :



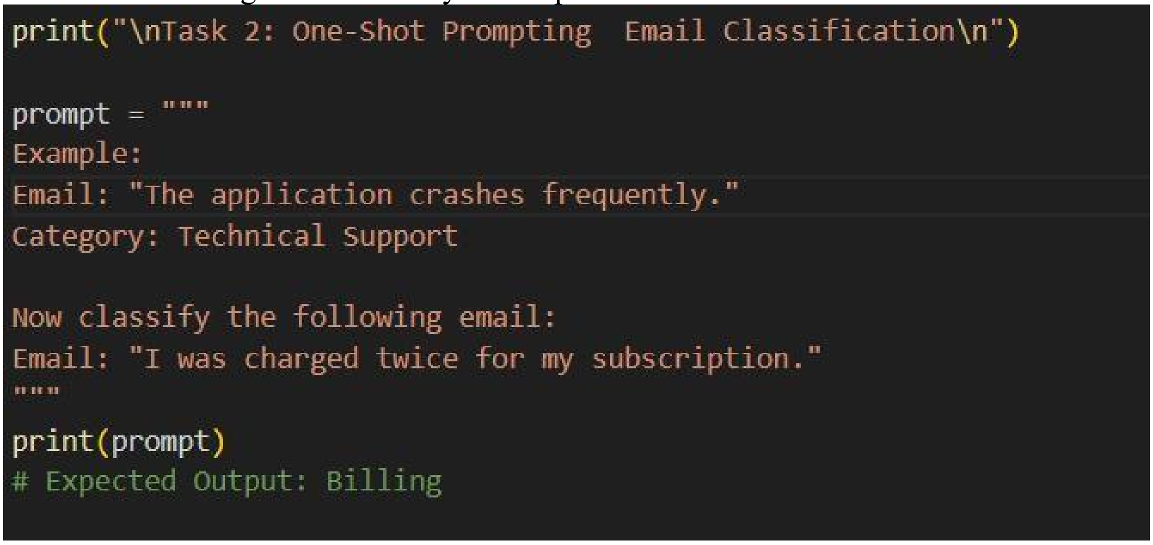
```
Zero-Shot Prompt:
Classify the following email into one of these categories:
Billing, Technical Support, Feedback, Others.

Email: "I have not received my invoice for last month."
```

Explanation:
Zero-shot prompting does not provide any examples to the model.
The model relies entirely on its pre-trained knowledge.
This method works well for simple and clear inputs.

Task 2: One-Shot Prompting – Email Classification

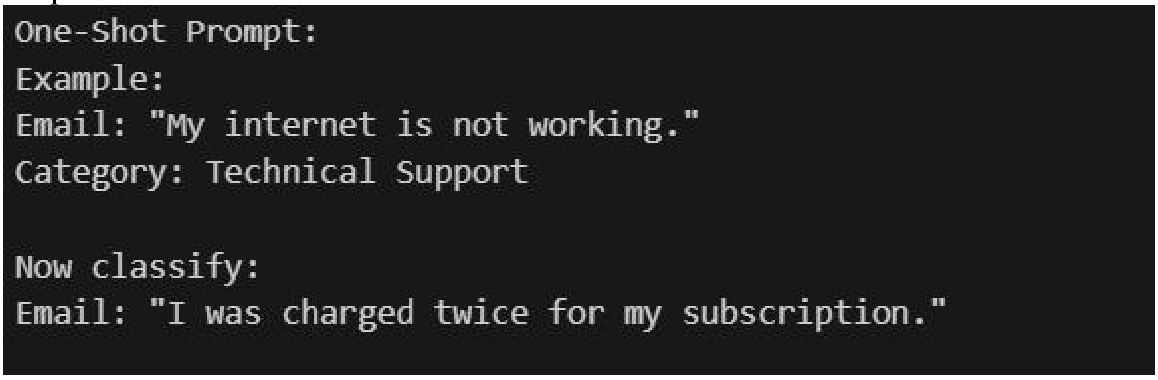
Prompt:
Example:
Email: "The application crashes frequently."
Category: Technical Support

Now classify the following email:
Email: "I was charged twice for my subscription."



```
print("\nTask 2: One-Shot Prompting  Email Classification\n")

prompt = """
Example:
Email: "The application crashes frequently."
Category: Technical Support

Now classify the following email:
Email: "I was charged twice for my subscription."
"""
print(prompt)
# Expected Output: Billing
```

Output :



```
One-Shot Prompt:
Example:
Email: "My internet is not working."
Category: Technical Support

Now classify:
Email: "I was charged twice for my subscription."
```

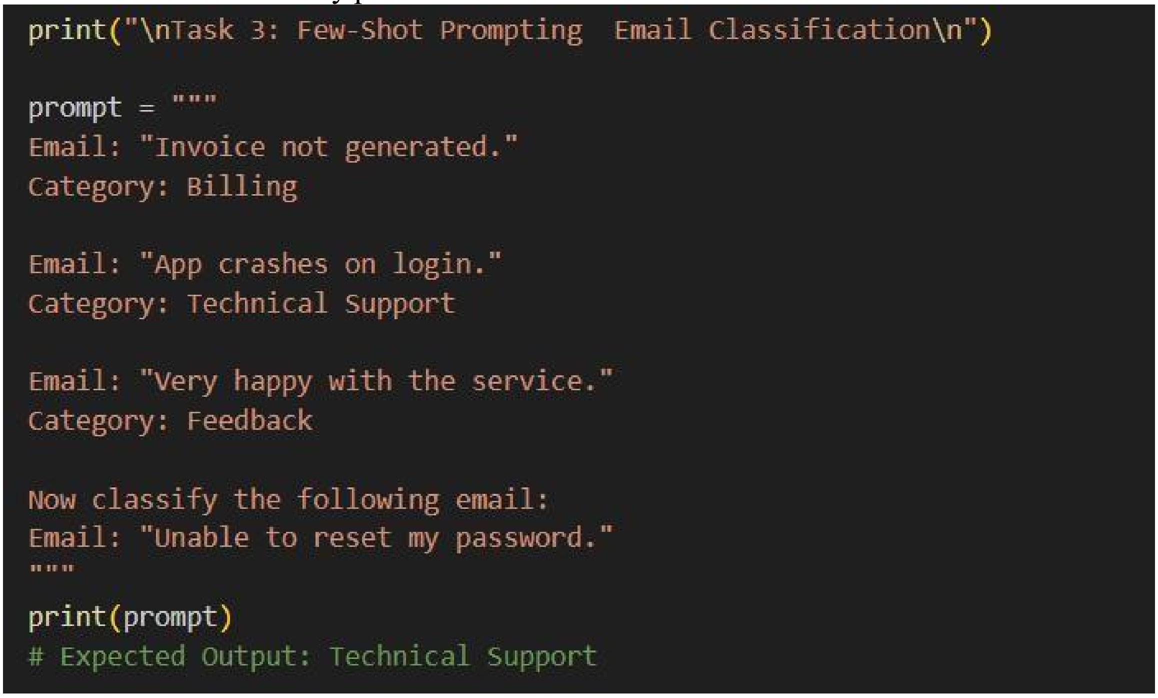
Explanation:
One-shot prompting provides a single labeled example.
It helps the model understand the expected format.
Accuracy improves compared to zero-shot prompting.

Task 3: Few-Shot Prompting – Email Classification

Prompt:
Email: "Invoice not generated."
Category: Billing

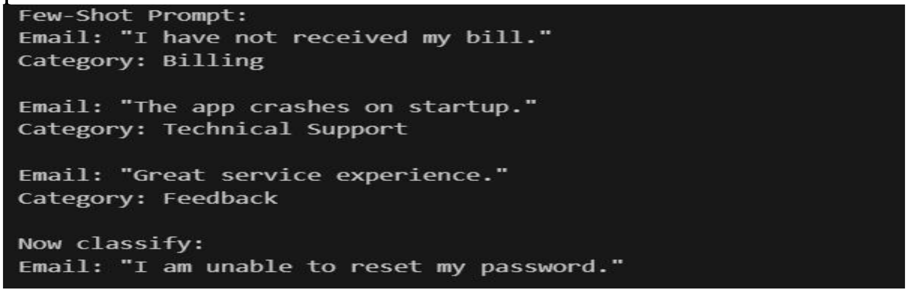
Email: "App crashes on login."
Category: Technical Support

Email: "Very happy with the service."
Category: Feedback
Now classify the following email:
Email: "Unable to reset my password."



```
print("\nTask 3: Few-Shot Prompting  Email Classification\n")

prompt = """
Email: "Invoice not generated."
Category: Billing

Email: "App crashes on login."
Category: Technical Support

Email: "Very happy with the service."
Category: Feedback

Now classify the following email:
Email: "Unable to reset my password."
"""
print(prompt)
# Expected Output: Technical Support
```

Output:



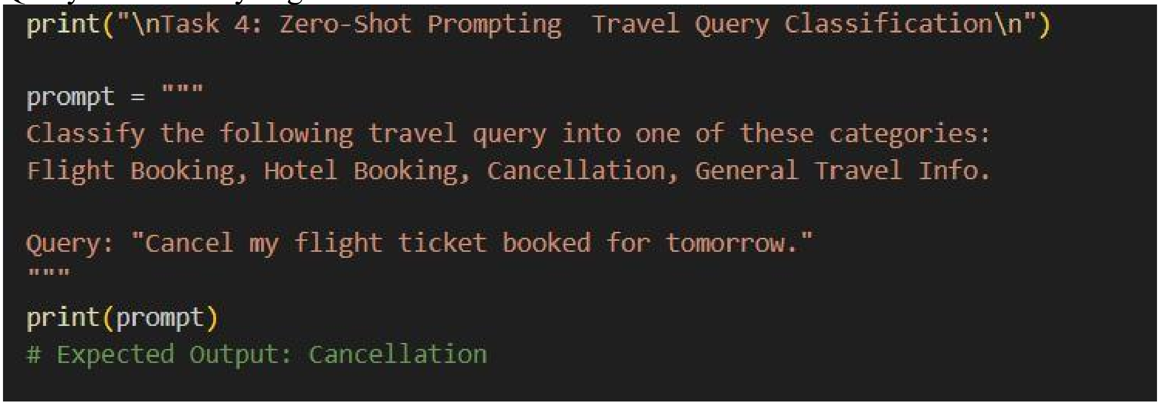
```
Few-Shot Prompt:
Email: "I have not received my bill."
Category: Billing

Email: "The app crashes on startup."
Category: Technical Support

Email: "Great service experience."
Category: Feedback

Now classify:
Email: "I am unable to reset my password."
```

Explanation:
Few-shot prompting provides multiple labeled examples.
This clearly defines the category boundaries.
It gives the highest accuracy among the methods.

Task 4: Zero-Shot Prompting – Travel Query Classification

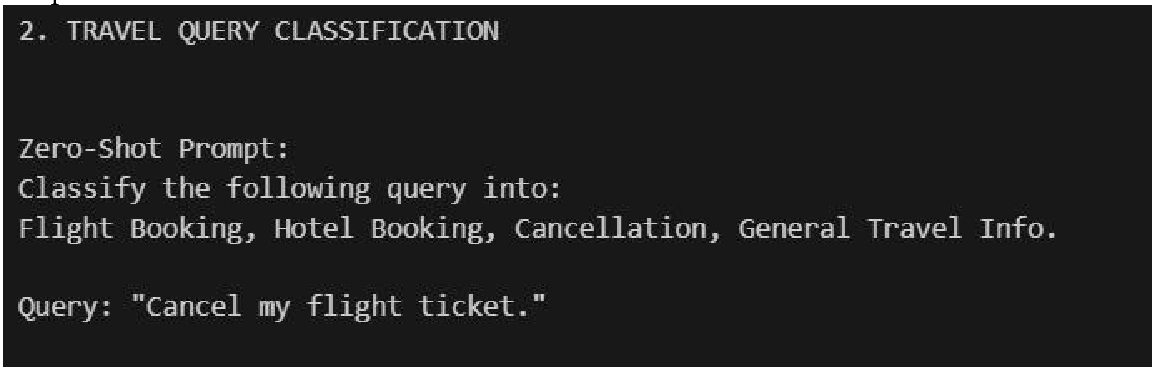
Prompt:
Classify the following travel query into one of these categories:
Flight Booking, Hotel Booking, Cancellation, General Travel Info.

Query: "Cancel my flight ticket booked for tomorrow."



```
print("\nTask 4: Zero-Shot Prompting  Travel Query Classification\n")

prompt = """
Classify the following travel query into one of these categories:
Flight Booking, Hotel Booking, Cancellation, General Travel Info.

Query: "Cancel my flight ticket booked for tomorrow."
"""
print(prompt)
# Expected Output: Cancellation
```

Output :



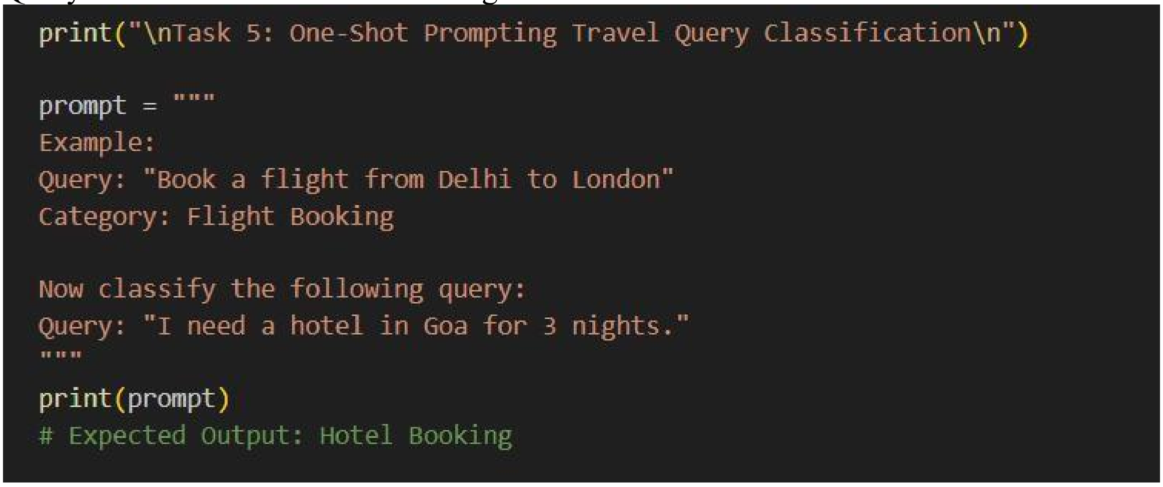
```
2. TRAVEL QUERY CLASSIFICATION



Zero-Shot Prompt:
Classify the following query into:
Flight Booking, Hotel Booking, Cancellation, General Travel Info.

Query: "Cancel my flight ticket."
```

Explanation:
The model classifies the query without prior examples.
It uses keywords and intent understanding.
Effective for direct and simple travel queries.

Task 5: One-Shot Prompting – Travel Query Classification

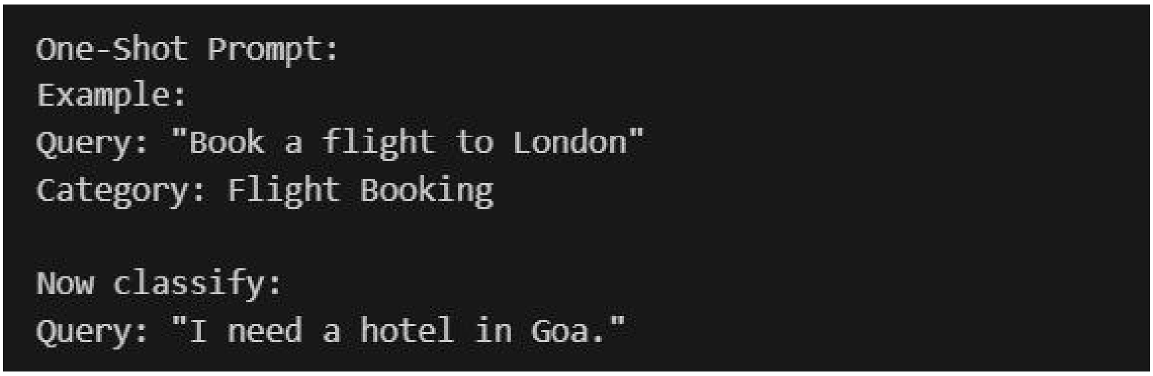
Prompt:
Example:
Query: "Book a flight from Delhi to London"
Category: Flight Booking

Now classify the following query:
Query: "I need a hotel in Goa for 3 nights."



```
print("\nTask 5: One-Shot Prompting Travel Query Classification\n")

prompt = """
Example:
Query: "Book a flight from Delhi to London"
Category: Flight Booking

Now classify the following query:
Query: "I need a hotel in Goa for 3 nights."
"""
print(prompt)
# Expected Output: Hotel Booking
```

Output :



```
One-Shot Prompt:
Example:
Query: "Book a flight to London"
Category: Flight Booking

Now classify:
Query: "I need a hotel in Goa."
```

Explanation:
One-shot prompting improves consistency in output.
The example guides the model’s understanding.
Better accuracy than zero-shot prompting.

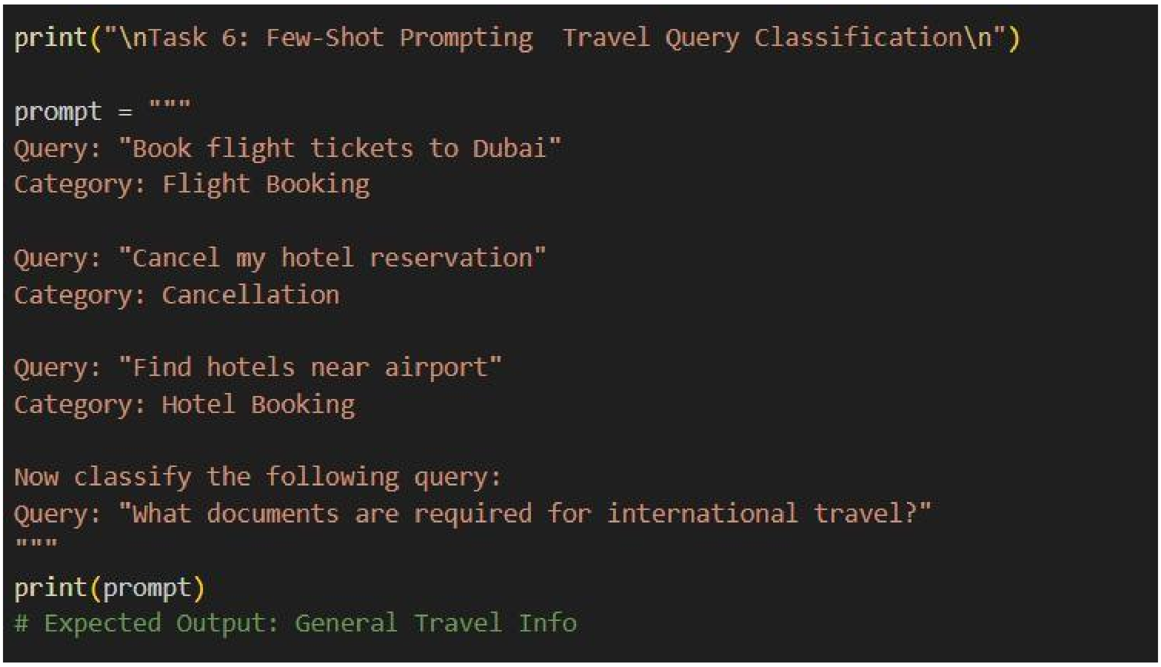
Task 6: Few-Shot Prompting – Travel Query Classification

Prompt:
Query: "Book flight tickets to Dubai"
Category: Flight Booking

Query: "Cancel my hotel reservation"
Category: Cancellation

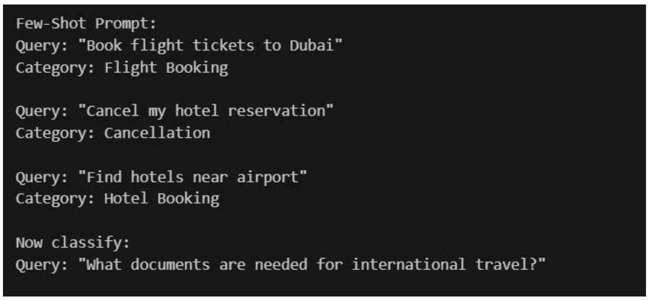
Query: "Find hotels near airport"
Category: Hotel Booking

Now classify the following query:
Query: "What documents are required for international travel?"



```
print("\nTask 6: Few-Shot Prompting  Travel Query Classification\n")

prompt = """
Query: "Book flight tickets to Dubai"
Category: Flight Booking

Query: "Cancel my hotel reservation"
Category: Cancellation

Query: "Find hotels near airport"
Category: Hotel Booking

Now classify the following query:
Query: "What documents are required for international travel?"
"""
print(prompt)
# Expected Output: General Travel Info
```

Output :



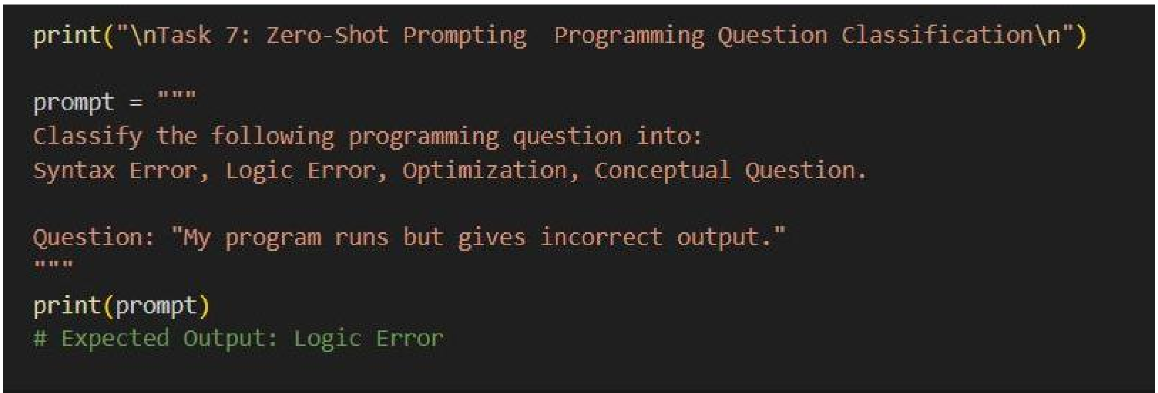
```
Few-Shot Prompt:
Query: "Book flight tickets to Dubai"
Category: Flight Booking

Query: "Cancel my hotel reservation"
Category: Cancellation

Query: "Find hotels near airport"
Category: Hotel Booking

Now classify:
Query: "What documents are needed for international travel?"
```

Explanation:
Few-shot prompting reduces ambiguity in classification.
The model generalizes better to unseen queries.
Most reliable method for travel assistants.

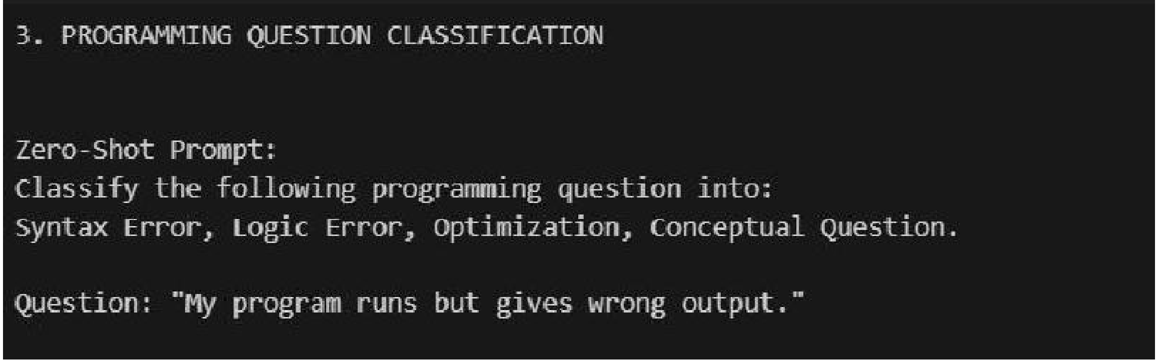
Task 7: Zero-Shot Prompting – Programming Question Classification

Prompt:
Classify the following programming question into:
Syntax Error, Logic Error, Optimization, Conceptual Question.

Question: "My program runs but gives incorrect output."



```python
print("\nTask 7: Zero-Shot Prompting  Programming Question Classification\n")

prompt = """
Classify the following programming question into:
Syntax Error, Logic Error, Optimization, Conceptual Question.

Question: "My program runs but gives incorrect output."
"""
print(prompt)
# Expected Output: Logic Error
```



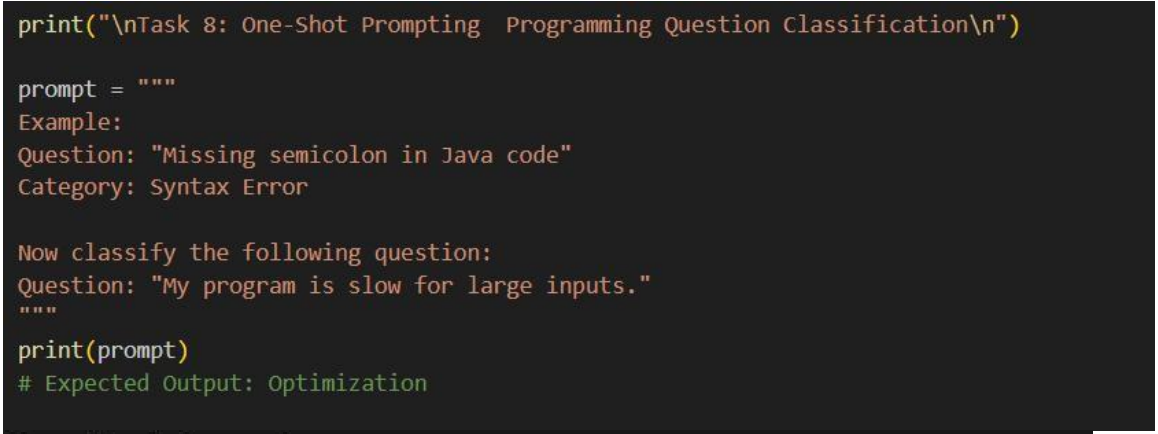
```
3. PROGRAMMING QUESTION CLASSIFICATION


Zero-Shot Prompt:
Classify the following programming question into:
Syntax Error, Logic Error, Optimization, Conceptual Question.

Question: "My program runs but gives wrong output."
```

Explanation:
The model infers the issue without examples.
Suitable for clearly described programming problems.
May struggle with ambiguous technical questions.

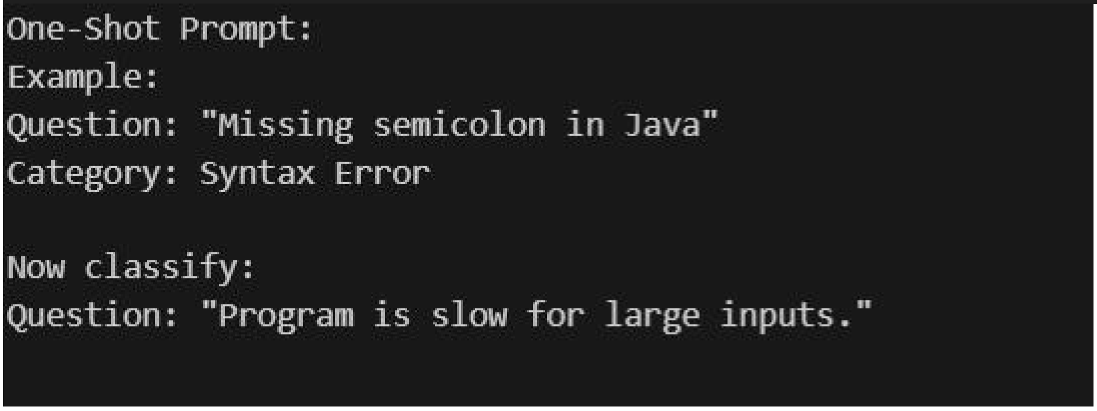
Task 8: One-Shot Prompting – Programming Question Classification

Prompt:
Example:
Question: "Missing semicolon in Java code"
Category: Syntax Error

Now classify the following question:
Question: "My program is slow for large inputs."



```
print("\nTask 8: One-Shot Prompting  Programming Question Classification\n")

prompt = """
Example:
Question: "Missing semicolon in Java code"
Category: Syntax Error

Now classify the following question:
Question: "My program is slow for large inputs."
"""
print(prompt)
# Expected Output: Optimization
```



```
One-Shot Prompt:
Example:
Question: "Missing semicolon in Java"
Category: Syntax Error

Now classify:
Question: "Program is slow for large inputs."
```

Explanation:
One example helps identify performance-related issues.
Improves technical understanding of categories.
More accurate than zero-shot prompting.

Task 9: Few-Shot Prompting – Programming Question Classification

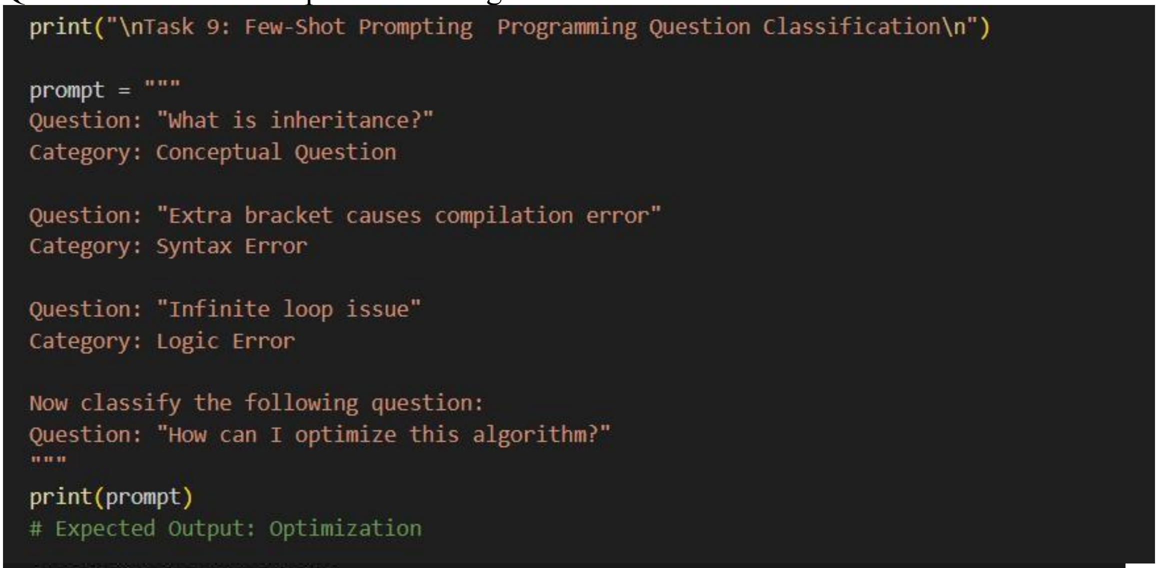
Prompt:
Question: "What is inheritance?"
Category: Conceptual Question

Question: "Extra bracket causes compilation error"
Category: Syntax Error

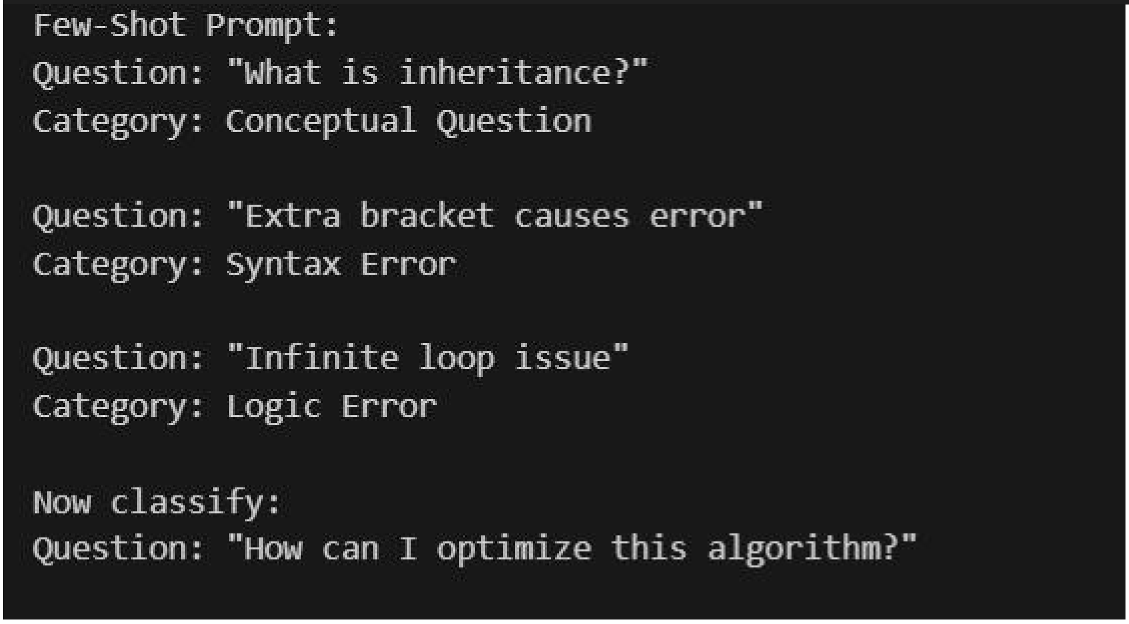
Question: "Infinite loop issue"
Category: Logic Error

Now classify the following question:

Question: "How can I optimize this algorithm?"



```
print("\nTask 9: Few-Shot Prompting  Programming Question Classification\n")

prompt = """
Question: "What is inheritance?"
Category: Conceptual Question

Question: "Extra bracket causes compilation error"
Category: Syntax Error

Question: "Infinite loop issue"
Category: Logic Error

Now classify the following question:
Question: "How can I optimize this algorithm?"
"""
print(prompt)
# Expected Output: Optimization
```



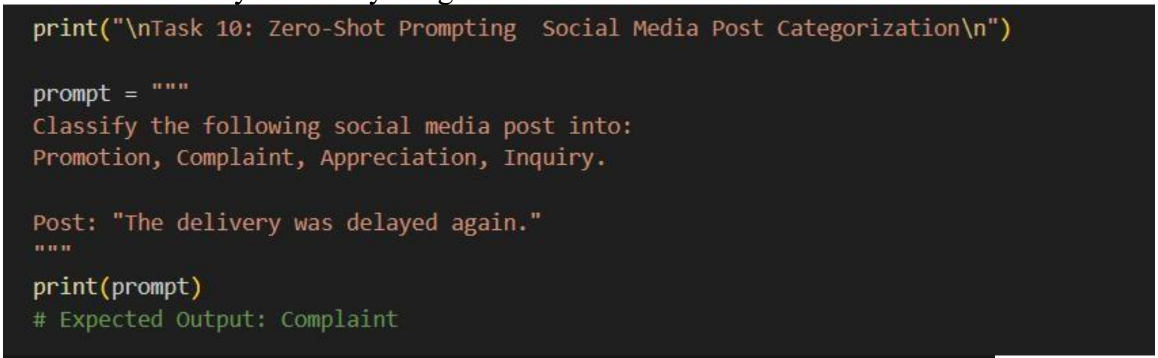
```
Few-Shot Prompt:
Question: "What is inheritance?"
Category: Conceptual Question

Question: "Extra bracket causes error"
Category: Syntax Error

Question: "Infinite loop issue"
Category: Logic Error

Now classify:
Question: "How can I optimize this algorithm?"
```

Explanation:
Multiple examples clarify category distinctions.
The model better understands technical intent.
Provides the highest classification accuracy.

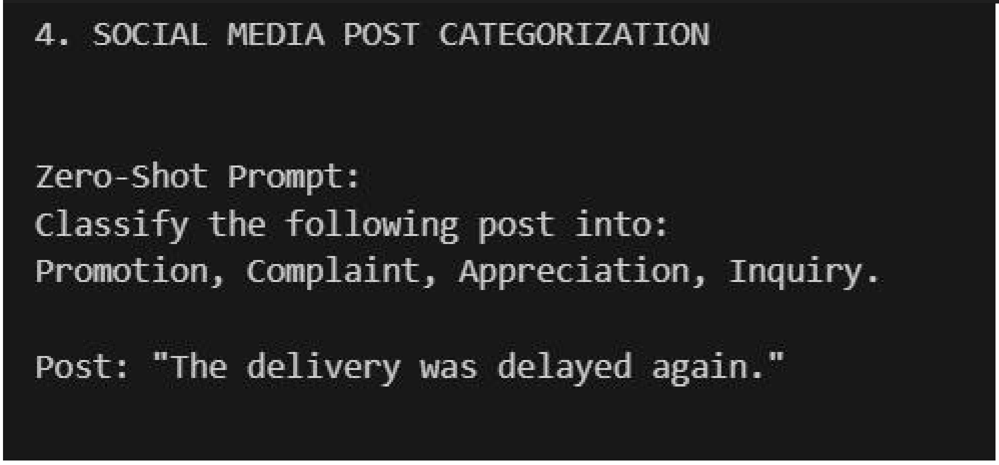
Task 10: Zero-Shot Prompting – Social Media Post Categorization

Prompt:
Classify the following social media post into:
Promotion, Complaint, Appreciation, Inquiry.

Post: "The delivery was delayed again."



```
print("\nTask 10: Zero-Shot Prompting  Social Media Post Categorization\n")

prompt = """
Classify the following social media post into:
Promotion, Complaint, Appreciation, Inquiry.

Post: "The delivery was delayed again."
"""
print(prompt)
# Expected Output: Complaint
```



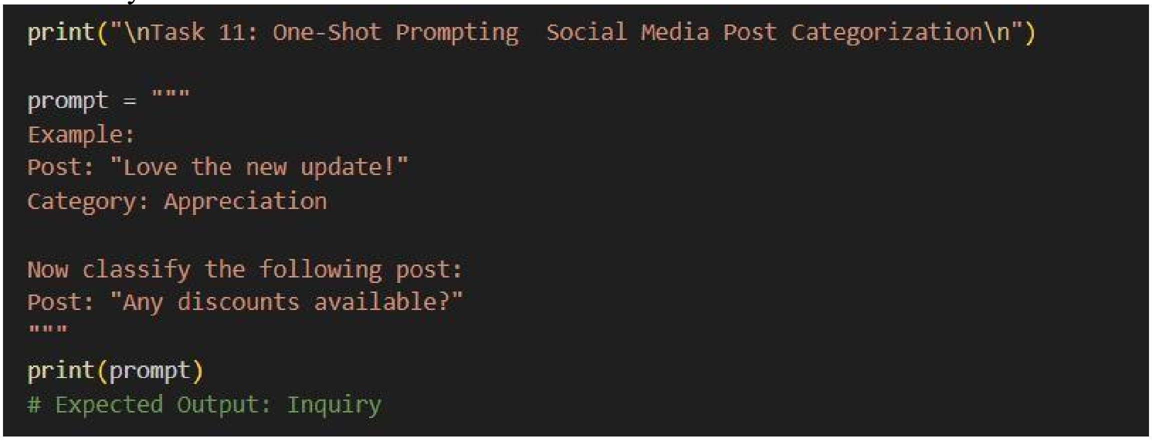
```
4. SOCIAL MEDIA POST CATEGORIZATION


Zero-Shot Prompt:
Classify the following post into:
Promotion, Complaint, Appreciation, Inquiry.

Post: "The delivery was delayed again."
```

Explanation:
The model classifies based on sentiment alone.
No prior examples are provided.
Works well for clear complaints.

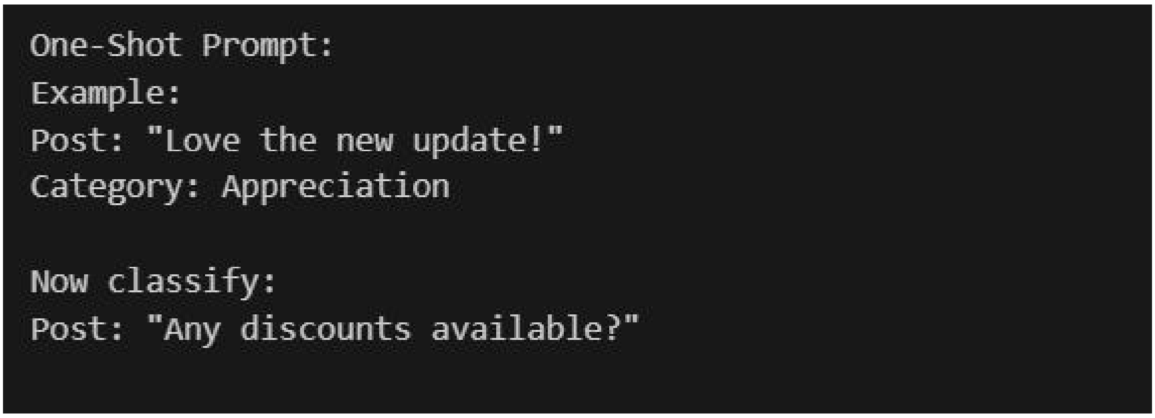
Task 11: One-Shot Prompting – Social Media Post Categorization

Prompt:
Example:
Post: "Love the new update!"
Category: Appreciation

Now classify the following post:
Post: "Any discounts available?"



```
print("\nTask 11: One-Shot Prompting  Social Media Post Categorization\n")

prompt = """
Example:
Post: "Love the new update!"
Category: Appreciation

Now classify the following post:
Post: "Any discounts available?"
"""
print(prompt)
# Expected Output: Inquiry
```



```
One-Shot Prompt:
Example:
Post: "Love the new update!"
Category: Appreciation

Now classify:
Post: "Any discounts available?"
```

Explanation:
One-shot prompting improves sentiment recognition.
Helps the model follow a consistent format.
Better accuracy than zero-shot.

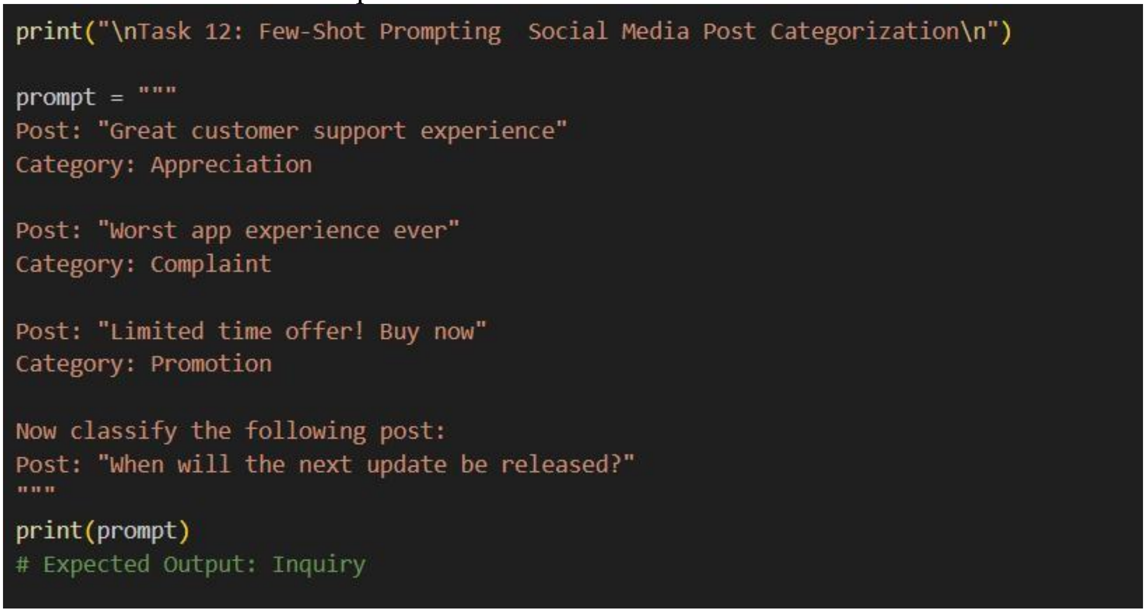
Task 12: Few-Shot Prompting – Social Media Post Categorization

Prompt:
Post: "Great customer support experience"
Category: Appreciation

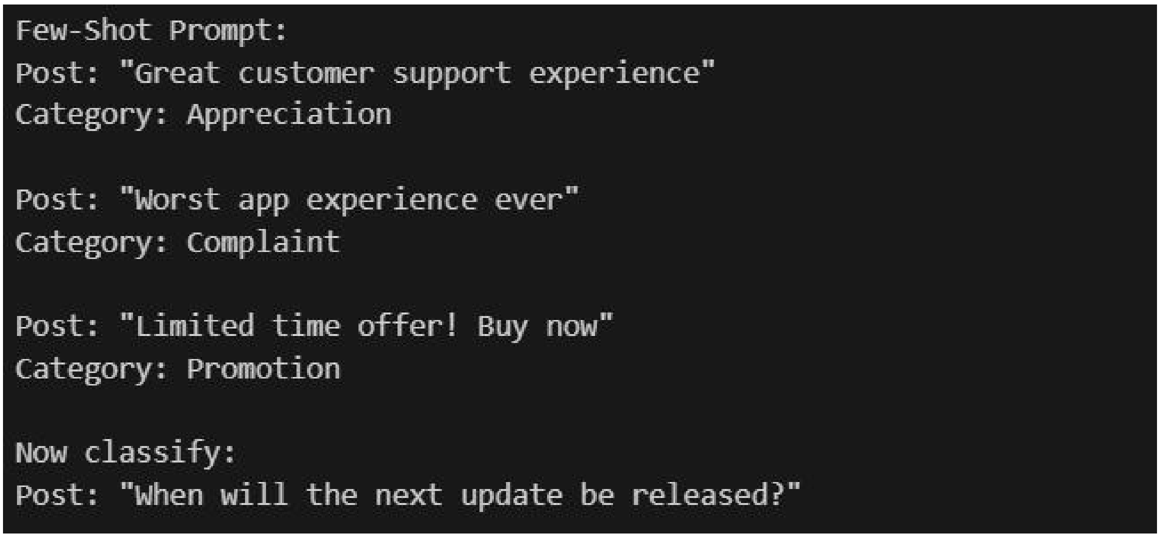
Post: "Worst app experience ever"
Category: Complaint

Post: "Limited time offer! Buy now"
Category: Promotion

Now classify the following post:
Post: "When will the next update be released?"



```python
print("\nTask 12: Few-Shot Prompting  Social Media Post Categorization\n")

prompt = """
Post: "Great customer support experience"
Category: Appreciation

Post: "Worst app experience ever"
Category: Complaint

Post: "Limited time offer! Buy now"
Category: Promotion

Now classify the following post:
Post: "When will the next update be released?"
"""
print(prompt)
# Expected Output: Inquiry
```



```
Few-Shot Prompt:
Post: "Great customer support experience"
Category: Appreciation

Post: "Worst app experience ever"
Category: Complaint

Post: "Limited time offer! Buy now"
Category: Promotion

Now classify:
Post: "When will the next update be released?"
```

Explanation:
Few-shot prompting handles informal language better.
Reduces confusion between similar categories.
Most effective method for social media data.