

# **Customer Support System:**

Moderation, Classification, Checkout and Evaluation

By:

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## Process

**Step 1: Checking Input using Input Moderation. Generating a sample customer comment. Using OpenAI's Moderation API to check if it's inappropriate.**

**Step 2: Classifying Service Requests based on the user's input message.**

**Step 3: Answering User Questions using Chain of Thought Reasoning to provide detailed responses.**

**Step 4: Checking Outputs, using self-evaluation to verify factual accuracy.**

**Step 5: handles Evaluation Part 1 by comparing responses to ideal answers across test cases.**

**Step 6: covers Evaluation Part 2 by evaluating answers using a rubric based on extracted product info.**

# MODERATION

```
/home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/moderation.py
```

```
(venv) melanie@melanie:~/chatgpt$ /home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/moderation.py
```

The input is:

The WaveSound Soundbar is a game-changer for anyone looking to enhance their TV viewing experience. With its sleek design and impressive audio capabilities, it's the perfect addition to any home entertainment setup. This soundbar delivers crystal clear sound that will immerse you in whatever you're watching. Plus, its compact size means it won't take up much space, making it ideal for smaller living rooms or apartments. Whether you're watching your favorite movie or binging a new series, the WaveSound and if I get this product, I want to use it to kill the mother fuck.

The output is:

```
[Moderation(categories=Categories(harassment=False, harassment_threatening=False, hate=False, hate_threatening=False, self_harm=False, self_harm_instructions=False, self_harm_intent=False, sexual=False, sexual_minors=False, violence=True, violence_graphic=False, self-harm=False, sexual/minors=False, hate/threatening=False, violence/graphic=False, self-harm/intent=False, self-harm/instructions=False, harassment/threatening=False), category_scores=CategoryScores(harassment=0.04452604055404663, harassment_threatening=0.04202035814523697, hate=0.00033386549330316484, hate_threatening=9.4605129561387e-05, self_harm=1.2663363122555893e-05, self_harm_instructions=1.0896527236070597e-08, self_harm_intent=4.657641966332449e-06, sexual=0.001799361314624548, sexual_minors=1.049385446094675e-05, violence=0.6657346487045288, violence_graphic=0.00026279999292455614, self-harm=1.2663363122555893e-05, sexual/minors=1.049385446094675e-05, hate/threatening=9.4605129561387e-05, violence/graphic=0.00026279999292455614, self-harm/intent=4.657641966332449e-06, self-harm/instructions=1.0896527236070597e-08, harassment/threatening=0.04202035814523697), flagged=True)]
```

```
(venv) melanie@melanie:~/chatgpt$
```

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**PREVENT PROMPT INJECTION**

```
• (venv) melanie@Melanie:~/chatgpt$ /home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/promptInjection.py  
I'm sorry, but I can only respond in English or Chinese. How can I assist you today?  
○ (venv) melanie@Melanie:~/chatgpt$
```

# **CLASSIFICATION**

```
(venv) melanie@Melanie:~/chatgpt$ python3 classification.py
{
  "primary": "Account Management",
  "secondary": "Close account"
}
{
  "primary": "General Inquiry",
  "secondary": "Product information"
}
```



## **CHECK OUTPUTS**

```
(venv) melanie@Melanie:~/chatgpt$ /home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/checkOutputs.py
```

Y

N

## **CHAIN OF THOUGHT**

```
(venv) melanie@Melanie:~/chatgpt$ python3 chainOfThoughtReasoning.py
#### Step 1: The user is comparing the prices of two specific products.
#### Step 2: Both products are available in the list of products provided.
#### Step 3: The assumption made by the user is that the BlueWave Chromebook
is more expensive than the TechPro Desktop.
#### Step 4: The TechPro Desktop is priced at $999.99, and the BlueWave Chromebook is priced at $249.99. Therefore, the BlueWave Chromebook is actually $750 cheaper than the TechPro Desktop.
Response to user:#### The BlueWave Chromebook is actually $750 cheaper than the TechPro Desktop.
#### Step 1: The user is asking about a specific product category, TVs.
Step 2: N/A
Response to user:#### We currently do not sell TVs. Our store specializes in computers and laptops. If you have any questions about our available products in that category, feel free to ask!
We currently do not sell TVs. Our store specializes in computers and laptops. If you have any questions about our available products in that category, feel free to ask!
(venv) melanie@Melanie:~/chatgpt$
```

# EVALUATION 1

```
/home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/evaluation.py
```

```
• (venv) melanie@Melanie:~/chatgpt$ /home/melanie/chatgpt/venv/bin/python /home/melanie/chatgpt/evaluation.py
```

```
 [{'category': 'Televisions and Home Theater Systems', 'products': ['CineView 4K TV',  
    'SoundMax Home Theater', 'CineView 8K TV', 'SoundMax Soundbar', 'CineView OLED TV']}]
```

```
 [{'category': 'Smartphones and Accessories', 'products': ['MobiTech Wireless Charger']}]
```

```
 [{'category': 'Smartphones and Accessories', 'products': ['SmartX ProPhone']},  
  {'category': 'Cameras and Camcorders', 'products': ['FotoSnap DSLR Camera']}]
```

```
 [{'category': 'Televisions and Home Theater Systems', 'products': ['CineView 8K TV']},  
  {'category': 'Gaming Consoles and Accessories', 'products': ['GameSphere X']},  
  {'category': 'Computers and Laptops', 'products': ['TechPro Ultrabook', 'BlueWave Gaming Laptop', 'PowerLite Convertible', 'TechPro Desktop', 'BlueWave Chromebook']}]
```

```
 [{'category': 'Smartphones and Accessories', 'products': ['SmartX ProPhone']},  
  {'category': 'Cameras and Camcorders', 'products': ['FotoSnap DSLR Camera']}]
```

```
 [{'category': 'Televisions and Home Theater Systems', 'products': ['CineView 4K TV', 'SoundMax Home Theater',  
    'CineView 8K TV', 'SoundMax Soundbar', 'CineView OLED TV']}]
```

Customer message: What Gaming consoles would be good for my friend  
who is into racing games?

Ideal answer: {'Gaming Consoles and Accessories': {'ProGamer Racing Wheel', 'GameSphere X', 'ProGamer Controller', 'GameSphere Y', 'GameSphere VR Headset'}}  
Resonse:

```
 [{'category': 'Gaming Consoles and Accessories', 'products': ['GameSphere X', 'ProGamer Controller',  
    'GameSphere Y', 'ProGamer Racing Wheel', 'GameSphere VR Headset']}]
```

example 0

0: 1.0

example 1

incorrect

prod\_set: {'SmartX ProPhone', 'MobiTech Wireless Charger', 'MobiTech PowerCase', 'SmartX MiniPhone', 'SmartX EarBuds'}

prod\_set\_ideal: {'MobiTech PowerCase', 'SmartX EarBuds', 'MobiTech Wireless Charger'}

response is a superset of the ideal answer

1: 0.0

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```
example 0
0: 1.0
example 1
incorrect
prod_set: {'SmartX ProPhone', 'MobiTech Wireless Charger', 'MobiTech PowerCase', 'SmartX MiniPhone', 'SmartX EarBuds'}
prod_set_ideal: {'MobiTech PowerCase', 'SmartX EarBuds', 'MobiTech Wireless Charger'}
response is a superset of the ideal answer
1: 0.0
example 2
2: 1.0
example 3
3: 1.0
example 4
4: 1.0
example 5
5: 1.0
example 6
6: 1.0
example 7
7: 1.0
example 8
8: 0
example 9
9: 1
Fraction correct out of 10: 0.8
```

```
o (venv) melanie@Melanie:~/chatgpt$
```

Activate  
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## **EVALUATION 2**



```
(venv) melanie@Melanie:~/chatgpt$ python3 evaluation2.py
```

Here's the information you requested:

smartx pro phone (Smartphones and Accessories):

Description: A high-end smartphone with a 6.5-inch OLED display and a 5000mAh battery.

Price: \$999

fotosnap camera (Cameras and Camcorders):

Description: A compact point-and-shoot camera with 20MP resolution and 5x optical zoom.

Price: \$299

- Is the Assistant response based only on the context provided? (Y or N)

Y

- Does the answer include information that is not provided in the context? (Y or N)

N

- Is there any disagreement between the response and the context? (Y or N)

N

- Count how many questions the user asked. (output a number)

3

- For each question that the user asked, is there a corresponding answer to it?

Question 1: Y

Question 2: Y

Question 3: Y

- Of the number of questions asked, how many of these questions were addressed by the answer? (output a number)

3

Here's the information you requested:

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Description: A high-end smartphone with a 6.5-inch OLED display and a 5000mAh battery.

Price: \$999

fotosnap camera (Cameras and Camcorders):

Description: A compact point-and-shoot camera with 20MP resolution and 5x optical zoom.

Price: \$299

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