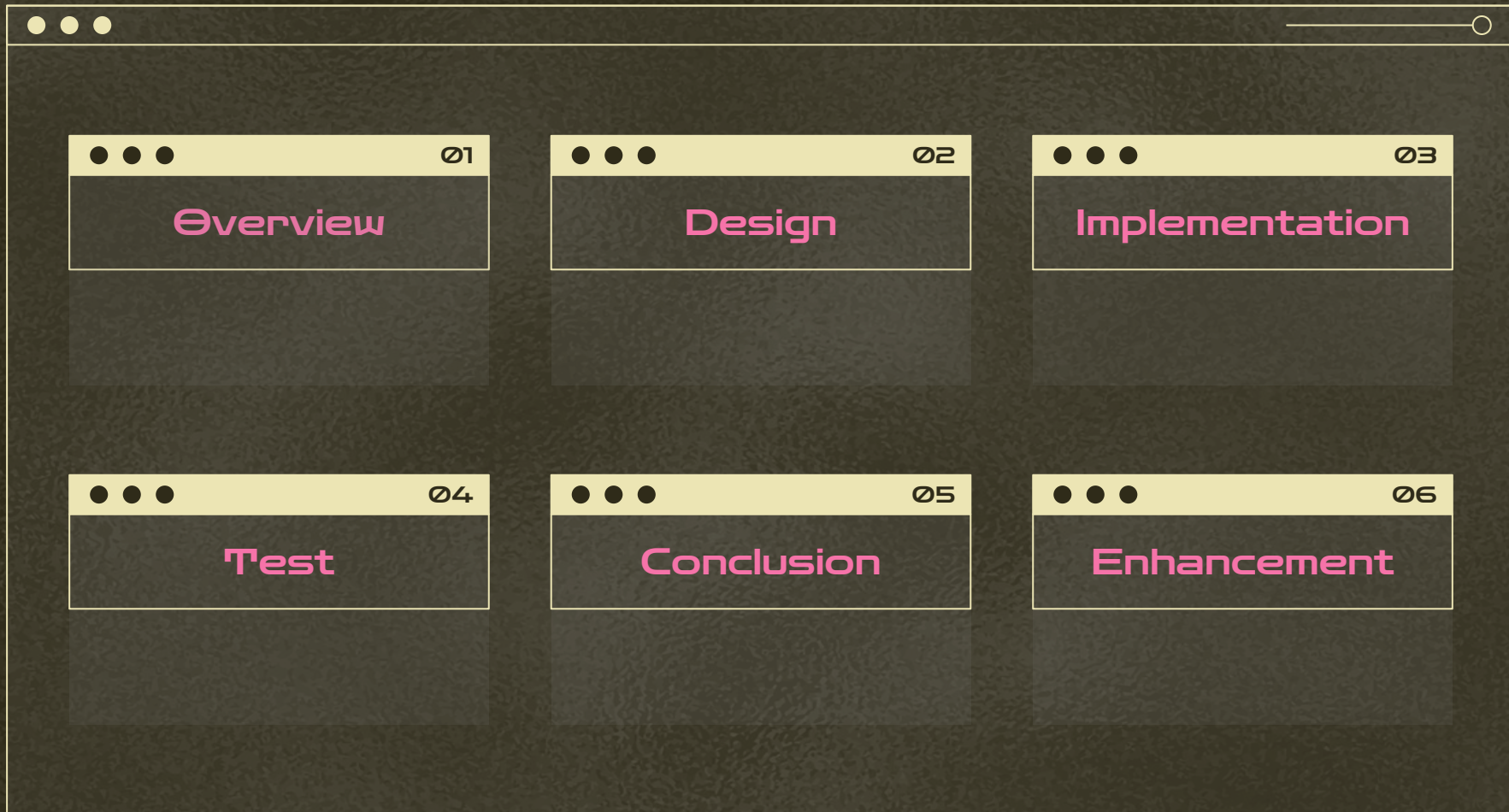


Customer Service: an email to customer



By Lianwei Deng(19874)



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Overview

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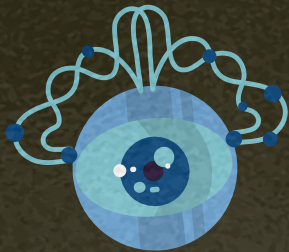
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Enhancement

Overview

How to generate an email to customer based on their comment

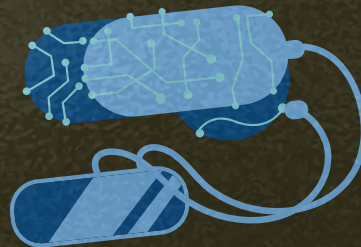




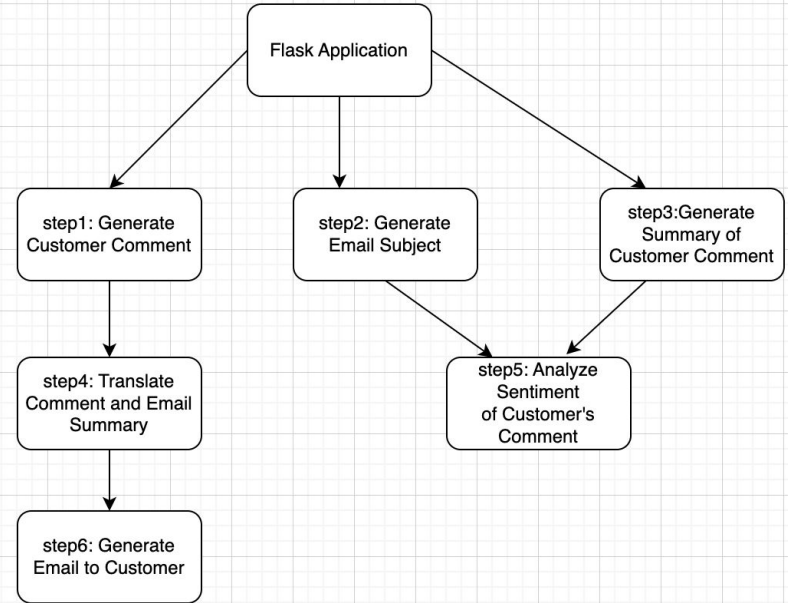
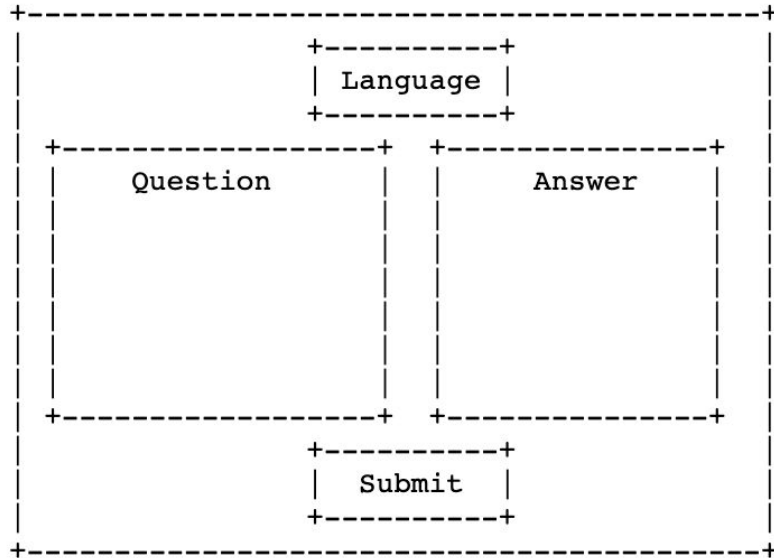
Overview

If you're a customer service assistant for a large electronics store, and the website of the store allows the customers to select language.

- The store's products
- The products belong to different categories
- Each product has detailed description



Design: The web interface



Implementation



Product Comment Generation

- Generate a customer comment using ChatGPT based on detailed product descriptions
- code:

```
30 # Step 1: Generate a customer's comment
31 # System message includes product details
32 def generate_comment():
33     system_message_comment=f"""
34     Product details can be found as below
35
36     "TechPro Ultrabook":
37         "name": "TechPro Ultrabook",
38         "category": "Computers and Laptops",
39         "brand": "TechPro",
40         "model_number": "TP-UB100",
41         "warranty": "1 year",
42         "rating": 4.5,
43         "features": ["13.3-inch display", "8GB RAM",
44                     "256GB SSD", "Intel Core i5 processor"],
45         "description": "A sleek and lightweight ultrabook for everyday use.",
46         "price": 799.99
47
48     "BlueWave Gaming Laptop":
49         "name": "BlueWave Gaming Laptop",
50         "category": "Computers and Laptops",
51         "brand": "BlueWave",
52         "model_number": "BW-GL200",
53         "warranty": "2 years",
54         "rating": 4.7,
55         "features": ["15.6-inch display", "16GB RAM",
56                     "512GB SSD", "NVIDIA GeForce RTX 3060"],
57         "description": "A high-performance gaming laptop for
58                     an immersive experience.",
59         "price": 1199.99
```

Email Subject Creation

- Formulate an email subject using inferring techniques from the generated customer comment
-

```
# Step 2: Generate email subject
def get_subject(comment):
    system_message_subject=comment
    user_message_subject=f""""
    Subject of an email from the comment using Inferring technique within 10 words""""
    messages_subject = [
        {'role':'system',
        'content': system_message_subject},
        {'role':'user',
        'content': f"{delimiter}{user_message_subject}{delimiter}"},
    ]
    subject = get_completion_from_messages(messages_subject)
    print("Subject of customer comment: ")
    print(subject+"\n")
    return subject
```


Comment Summarization

- Create a concise summary of the customer's comment using Summarizing techniques

Step 3: Generate the summary of the customer's comment

```
def get_summary(comment):
    system_message_summary=comment
    user_message_summary=f""""
    Give the summary in English of the comment using Summarizing technique within 35 words.""
    messages_summary = [
        {'role':'system',
        'content': system_message_summary},
        {'role':'user',
        'content': f"{{delimiter}}{{user_message_summary}}{{delimiter}}"},
    ]
    summary=get_completion_from_messages(messages_summary)
    print("Summary of customer comment:")
    print(summary+"\n")
    return summary
```

Translation

```
# Step 4: Translate to user language
def get_translation(summary, language):
    system_message_translate=summary
    user_message_translate=f""""
    Translate the summary into {language} using Transforming technique""""
    messages_translate = [
        {'role':'system',
        'content':system_message_translate},
        {'role':'user',
        'content':f"{delimiter}{user_message_translate}{delimiter}"},
    ]
    translate=get_completion_from_messages(messages_translate)
    print("Translation of customer comment summary in "+language+":")
    print(translate+"\n")
    return translate
```


Sentiment Analysis

- Analyze the sentiment of the customer's comment using inferring techniques

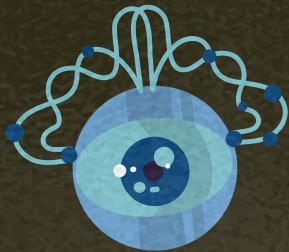
-

```
# Step 5: Sentiment analysis of the customer's comment
def get_sentiment(comment):
    system_message_sentiment=comment
    user_message_sentiment=f"''''
Sentiment analysis of the customer's comment using Inferring technique. Positive or Negative?''''
    messages_sentiment = [
        {'role':'system',
        'content': system_message_sentiment},
        {'role':'user',
        'content': f"{{delimiter}}{{user_message_sentiment}}{{delimiter}}"},
    ]
    sentiment=get_completion_from_messages(messages_sentiment)
    print(sentiment+"\n")
    return sentiment
```

Response Email Generation

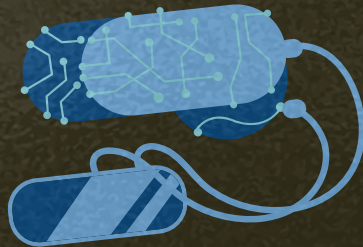
- Generate a personalized response email based on the customer's comment, subject, summary and sentiment analysis

```
# Step 6: Generate an email to be sent to the customer
def get_email(comment, subject, summary, sentiment):
    system_message_email = comment + subject + summary + sentiment
    user_message_email = f""
    Please create an email to be sent to the customer based on {comment}, including the {subject}, {summary} and {sentiment} with proper email format with subject
    messages_email = [
        {'role': 'system',
         'content': system_message_email},
        {'role': 'user',
         'content': f"{delimiter}{user_message_email}{delimiter}"},
    ]
    email = get_completion_from_messages(messages_email)
    return email # Return the email without printing it
```

Test Case

English -> English
English -> non- English
Non-English -> English
Non-English -> Non-English



English -> English(terminal)

```
127.0.0.1 -- [03/Oct/2023 22:22:06] "GET / HTTP/1.1" 200 -  
127.0.0.1 -- [03/Oct/2023 22:22:06] "GET /static/styles.css HTTP/1.1" 200 -  
Comment from customers:
```

As a customer, I am impressed by the wide range of products offered by this brand. The TechPro Ultrabook caught my eye with its sleek design and powerful features, while the BlueWave Gaming Laptop seems perfect for my gaming needs. I also appreciate the variety in the smartphone and audio equipment categories, with options like the SmartX ProPhone and AudioPhonic Noise-Canceling Headphones. The warranty and ratings for each product give me confidence in their quality. Overall, I am excited to explore and potentially purchase from this brand for my technology and entertainment needs.

Subject of customer comment:

"Impressed by wide range of products from this brand!"

Summary of customer comment:

Impressed by the wide range of products, the customer is particularly interested in the sleek TechPro Ultrabook and powerful BlueWave Gaming Laptop. They also appreciate the variety in smartphones and audio equipment, with confidence in the quality due to warranty and ratings.

Positive

English -> non-English

Email to Customer

Select Language: English

Translate Comment: ☐ Translate Email: ☐

Generate

Comment:

As a customer, I am impressed by the wide range of products offered by this brand. The TechPro Ultrabook caught my eye with its sleek design and powerful features, while the BlueWave Gaming Laptop seems perfect for my gaming needs. I also appreciate the variety in the smartphone and audio equipment categories, with options like the SmartX ProPhone and AudioPhonic Noise-Canceling Headphones. The warranty and ratings for each product give me confidence in their quality. Overall, I am excited to explore and potentially purchase from this brand for my technology and entertainment needs.

Email:

亲爱的[客户姓名], 我们很高兴我们的[品牌名称]的各种产品吸引了您的注意。作为客户, 我们理解拥有选择的重要性, 我们自豪地提供多样化的技术和娱乐产品来满足您的需求。我们很高兴听到我们的TechPro超极本和BlueWave游戏笔记本电脑以其时尚的设计和强大的功能引起了您的兴趣。我们保证这些产品不仅外观吸引人, 而且性能也是一流的。此外, 我们很高兴您欣赏我们智能手机和音频设备类别的多样性。我们的SmartX ProPhone和AudioPhonic降噪耳机只是我们提供的众多选择之一。我们以提供高质量的产品为荣, 我们的保修和评级证明了这一点。我们很期待您探索并可能从我们的品牌购买您的技术和娱乐需求。我们的团队随时为您提供帮助, 解答您可能有的任何问题或疑虑。感谢您考虑[品牌名称]作为您下一次购买的选择。我们期待为您服务, 为您提供无缝的购物体验。最诚挚的问候, [您的姓名] [品牌名称]团队

Non-English -> English

Generate Email to Customer

Select Language: English ▼

Translate Comment: ☐ Translate Email: ☐

Generate

Comment:

Como cliente, estoy impresionado por la amplia gama de productos ofrecidos por esta marca. El TechPro Ultrabook llamó mi atención con su diseño elegante y potentes características, mientras que el BlueWave Gaming Laptop parece perfecto para mis necesidades de juego. También aprecio la variedad en las categorías de teléfonos inteligentes y equipos de audio, con opciones como el SmartX ProPhone y los auriculares con cancelación de ruido AudioPhonic. La garantía y las calificaciones de cada producto me dan confianza en su calidad. En general, estoy emocionado de explorar y potencialmente comprar de esta marca para mis necesidades tecnológicas y de entretenimiento.

Email:

Subject: Exciting Products from [Brand Name] - Explore and Purchase Now! Dear [Customer Name], We are thrilled to have caught your eye with our wide range of products at [Brand Name]. As a customer, we understand the importance of having options and we are proud to offer a diverse selection of technology and entertainment products to meet your needs. We are particularly pleased to hear that our TechPro Ultrabook and BlueWave Gaming Laptop have caught your attention. With their sleek design and powerful features, we are confident that they will exceed your expectations. Our smartphones, such as the SmartX ProPhone, and audio equipment, like the AudioPhonic Noise-Canceling Headphones, also offer a variety of options for you to choose from. We take pride in the quality of our products and want you to feel confident in your purchase. That's why we offer a warranty and ratings for each product, ensuring that you receive the best possible experience. We are excited for you to explore our products and potentially make a purchase from our brand. Thank you for considering us for your technology and entertainment needs. We look forward to serving you and providing you with the best products and customer service. Sincerely, [Your Name] [Brand Name] Team

Non-English -> Non-English

Generate Email to Customer

Select Language: English ▾

Translate Comment: ☐ Translate Email: ☐

Generate

Comment:

Como cliente, estoy impresionado por la amplia gama de productos ofrecidos por esta marca. El TechPro Ultrabook llamó mi atención con su diseño elegante y potentes características, mientras que el BlueWave Gaming Laptop parece perfecto para mis necesidades de juego. También aprecio la variedad en las categorías de teléfonos inteligentes y equipos de audio, con opciones como el SmartX ProPhone y los auriculares con cancelación de ruido AudioPhonic. La garantía y las calificaciones de cada producto me dan confianza en su calidad. En general, estoy emocionado de explorar y potencialmente comprar de esta marca para mis necesidades tecnológicas y de entretenimiento.

Email:

Estimado [Nombre del cliente], Estamos emocionados de haber captado tu atención con nuestra amplia gama de productos en [Nombre de la marca]. Como cliente, entendemos la importancia de tener opciones y nos enorgullece ofrecer una selección diversa de productos tecnológicos y de entretenimiento para satisfacer tus necesidades. Nos complace especialmente saber que nuestro TechPro Ultrabook y BlueWave Gaming Laptop han llamado tu atención. Con su diseño elegante y potentes características, estamos seguros de que superarán tus expectativas. Nuestros teléfonos inteligentes, como el SmartX ProPhone, y equipos de audio, como los auriculares con cancelación de ruido AudioPhonic, también ofrecen una variedad de opciones para que elijas. Nos enorgullece la calidad de nuestros productos y queremos que te sientas seguro en tu compra. Es por eso que ofrecemos una garantía y calificaciones para cada producto, asegurando que recibas la mejor experiencia posible. Estamos emocionados de que explores nuestros productos y potencialmente realices una compra de nuestra marca. Gracias por considerarnos para tus necesidades tecnológicas y de entretenimiento. Esperamos poder servirte y brindarte los mejores productos y servicio al cliente. Sinceramente, [Tu nombre] Equipo de [Nombre de la marca]

Conclusion

Automation Success:

- Streamlined customer feedback handling.
- Generated compelling comments.
- Crafted personalized responses efficiently.

Enhancements Explored:

- Multilingual support considered.
- Improved sentiment analysis.
- User-friendly interface explored.

Impact:

- Enhanced operational efficiency.
- Improved customer interaction quality.

Next Steps:

- Gather user feedback for refinement.
- Continue seeking ways to enhance the project.

Enhancement

Integration with Email Services

Integrate the project with popular email services, allowing users to directly send the generated response emails to customers

Performance Metrics

Include performance metrics to measure the accuracy and efficiency of the generated responses. This can help in continually improving the system

Feedback Loop

Implement a feedback loop where users can provide feedback on the generated content. This feedback can be used to fine-tune and improve the model over time.

References

https://hc.labnet.sfbu.edu/~henry/sfbu/course/deeplearning_ai/chatgpt_prompt_eng_for_developer/slide/exercise_chat_gpt_prompt_eng_for_developer.html