



Streamlining Support: An Intelligent Email Generation and Translation Solution

Shruti Kavishwar
Guided By: Prof. Henry Chang
San Francisco Bay University

GitHub: [GenAI/ChatGPT/Customer Support System- Email generation and Translation at main · ShrutiK02/GenAI \(github.com\)](https://github.com/ShrutiK02/GenAI)

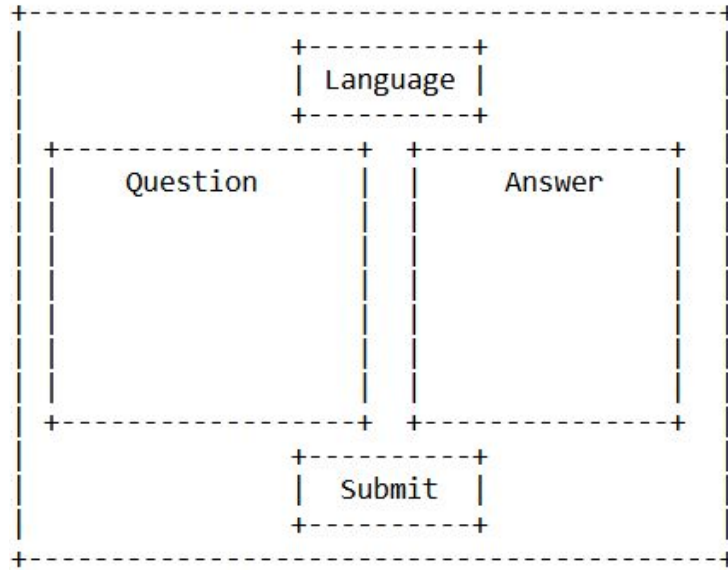
Objective

- The Objective of the Project is to use ChatGPT Models to send email to customer based on the comment provided for the products in an electronic company.
- Email will be sent to customer based on text completion techniques appropriately based on the language preferred.



Design

- Structure of the Web Interface



Installation



- Create python virtual environment
 - **#sudo apt install python3.10 -venv**
- Install the required packages
 - **#python -m venv env**
 - **#source env/bin/activate**
 - **#pip install -r requirements.txt**
- Flask installation
 - **#pip install flask**

Implementation



STEP 1: GENERATE CUSTOMER COMMENT

```
# Step 1: Generate customer comment based on the product input
def generate_customer_comment(products):

    system_message = f"""{products}""
    user_message = f""Generate comment in less than 100 words about the products""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f""{delimiter}Assume you are a customer of the electronics company. {user_message}{delimiter}""},
    ]

    comment = get_completion_from_messages(messages)
    print('Comment:\n', comment)
    return comment
```

Implementation



When ChatGPT is given input with details of the products and asked to generate comment assuming itself as a customer , it generates the output as below

OUTPUT

```
127.0.0.1 [10/06/2024 07:43:00] GET /static/styles.css HTTP/1.1 200
Comment:
I am highly impressed with the diverse range of electronics products offered by this company. From powerful laptops and smartphones to immersive TVs and gaming consoles, they cater to all tech needs. The quality and features of their products are top-notch, making them a go-to choice for anyone looking for reliable and innovative electronics. The warranty periods are also reassuring, ensuring peace of mind with every purchase. Overall, I am a satisfied customer and would recommend their products to anyone in search of cutting-edge technology.
Subject of the email:
Subject: Impressed Customer Feedback on Diverse Range of Electronics Products
Summary of the comment:
Customer praises the company for its diverse range of high-quality electronics products, excellent features, and reassuring warranty periods, recommending them for cutting-edge technology needs.
```

Implementation



STEP 2: GENERATE EMAIL SUBJECT

```
# Step 2: Generate a subject for the email from the comment
def generate_email_subject(comment):
    system_message = comment
    user_message = f"""Please generate a subject for the email from the comment using Inferring technique."""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f"{delimiter}Assume that you are a customer support representative of the electronics company. {user_message}{delimiter}"},
    ]

    subject = get_completion_from_messages(messages)
    print('Subject of the email:\n', subject)
    return subject
```

Implementation



When ChatGPT is given input with the created comment, asking to generate a subject for the email using Inferring technique.

OUTPUT

```
Subject of the email:
```

```
Subject: Impressed Customer Feedback on Diverse Range of Electronics Products
```


Implementation



STEP 3: GENERATE SUMMARY OF CUSTOMER COMMENTS

```
# Step 3: Create a summary of the comment
def generate_summary(comment):
    system_message = comment
    user_message = f"""Provide a concise summary of the comment in at most 30 words."""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f"{delimiter}Assume that you are a customer support representative of the electronics company. {user_message}{delimiter}"},
    ]

    summary = get_completion_from_messages(messages)
    print('Summary of the comment:\n', summary)
    return summary
```

Implementation



When ChatGPT is given comments about the products and asked to generate a summary of the products in 30 words using Summarization, output looks like below.

OUTPUT

Summary of the comment:

Customer praises the company for its diverse range of high-quality electronics products, excellent features, and reassuring warranty periods, recommending them for cutting-edge technology needs.

Implementation



STEP 4: SENTIMENT ANALYSIS OF CUSTOMER COMMENT

```
# Step 4: Analyze the sentiment of the comment and tell if it is positive or negative
def analyze_sentiment(comment):
    system_message = comment
    user_message = f"""Do sentiment analysis of the comment using Inferring technique. Just mention if it is positive or negative in one word."""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f"{delimiter}Assume that you are a customer support representative of the electronics company. {user_message}{delimiter}"},
    ]

    sentiment = get_completion_from_messages(messages)
    print('Sentiment of the comment:\n', sentiment)
    return sentiment
```

Implementation



On having the comments from customer, ChatGPT can analyse the sentiment of the comment and tell if it is positive or negative using Inferring technique.

OUTPUT

```
warranty periods, I recomme  
Sentiment of the comment:  
Positive
```

Implementation



The content generated must be transformed into the preferred language before sending it to the user. This can be done using one of the text completion techniques - Transformation.

```
# Translate the given content into the selected language
def get_translation(email, language):
    system_message = email
    user_message = f"""Translate the given email content into {language} using Transforming technique"""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f"{delimiter}{user_message}{delimiter}"},
    ]

    translate = get_completion_from_messages(messages)
    print(f"Translation of customer comment email in {language}: ")
    print(translate+"\n")
    return translate
```

Implementation



STEP 5: GENERATE EMAIL

```
# Step 5: Generate email based on the comment, summary, sentiment and subject generated
def generate_email(comment, subject, summary, sentiment):
    system_message = comment + subject + summary + sentiment
    user_message = f"""Create an email to be sent to the customer based on the {comment} and {sentiment}, including {subject}
    }, {summary} in a proper format having subject and other content."""

    messages = [
        {'role': 'system',
         'content': system_message},
        {'role': 'user',
         'content': f"{delimiter}Assume that you are a customer support representative of the electronics company. {user_message}
    {delimiter}"},
    ]

    email = get_completion_from_messages(messages)
    print('Email generated:\n', email)
    return email
```

Implementation



Using the comment, summary, sentiment and subject, ChatGPT can generate an email based on the sentiment in the preferred language.

Email generated:

Subject: Thank you for your Positive Feedback on our Diverse Range of Electronics Products!

Dear Valued Customer,

I hope this email finds you well.

I wanted to personally reach out and express my gratitude for your positive feedback regarding our diverse range of electronics products. We are thrilled to hear that you are highly impressed with the quality, features, and warranty periods of our products. Your satisfaction is our top priority, and we are delighted to know that we have met your expectations.

At [Company Name], we strive to offer cutting-edge technology solutions that cater to all your tech needs, whether it's powerful laptops, smartphones, immersive TVs, or gaming consoles. Your recommendation means a lot to us, and we are grateful for your support.

If you have any further feedback, questions, or if there is anything else we can assist you with, please do not hesitate to reach out to us. We are here to ensure that your experience with our products remains exceptional.

Thank you once again for choosing [Company Name]. We truly appreciate your business and look forward to serving you in the future.

Best regards,

[Your Name]

Customer Support Representative

[Company Name]

Translation of customer comment email in pt:

Implementation



Translation into desired language

Translation of customer comment email in pt:
Prezado Cliente Valioso,

Espero que este email o encontre bem.

Queria pessoalmente agradecer pelo seu feedback positivo em relação à nossa ampla gama de produtos eletrônicos. Estamos muito felizes em saber que você está altamente impressionado com a qualidade, recursos e períodos de garantia dos nossos produtos. Sua satisfação é a nossa principal prioridade e estamos encantados em saber que atendemos às suas expectativas.

Na [Nome da Empresa], nos esforçamos para oferecer soluções tecnológicas de ponta que atendam a todas as suas necessidades de tecnologia, seja em laptops potentes, smartphones, TVs imersivas ou consoles de jogos. Sua recomendação significa muito para nós e estamos gratos pelo seu apoio.

Se tiver mais feedback, perguntas ou se houver algo mais com o qual possamos ajudar, não hesite em entrar em contato conosco. Estamos aqui para garantir que sua experiência com nossos produtos continue excepcional.

Mais uma vez, obrigado por escolher a [Nome da Empresa]. Valorizamos muito o seu negócio e esperamos atendê-lo no futuro.

Atenciosamente,

[Seu Nome]

Representante de Suporte ao Cliente

[Nome da Empresa]

Output



The UI looks like below giving you options to select your language and translate the comment or email or both into the selected language

Choose the language of Email to be generated:

Portuguese



Translate Comment in selected language: ☐ Translate Email in selected language: ☒

Process

Output

English to Portuguese translation of the email

Choose the language of Email to be generated:

Portuguese

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Comment:

I am highly impressed with the diverse range of electronics products offered by this company. From powerful laptops and smartphones to immersive TVs and gaming consoles, they cater to all tech needs. The quality and features of their products are top-notch, making them a go-to choice for anyone looking for reliable and innovative electronics. The warranty periods are also reassuring, ensuring peace of mind with every purchase. Overall, I am a satisfied customer and would recommend their products to anyone in search of cutting-edge technology.

Email:

Prezado Cliente Valioso, Espero que este email o encontre bem. Queria pessoalmente agradecer pelo seu feedback positivo em relação à nossa ampla gama de produtos eletrônicos. Estamos muito felizes em saber que você está altamente impressionado com a qualidade, recursos e períodos de garantia dos nossos produtos. Sua satisfação é a nossa principal prioridade e estamos encantados em saber que atendemos às suas expectativas. Na [Nome da Empresa], nos esforçamos para oferecer soluções tecnológicas de ponta que atendam a todas as suas necessidades de tecnologia, seja em laptops potentes, smartphones, TVs imersivas ou consoles de jogos. Sua recomendação significa muito para nós e estamos gratos pelo seu apoio. Se tiver mais feedback, perguntas ou se houver algo mais com o qual possamos ajudar, não hesite em entrar em contato conosco. Estamos aqui para garantir que sua experiência com nossos produtos continue excepcional. Mais uma vez, obrigado por escolher a [Nome da Empresa]. Valorizamos muito o seu negócio e esperamos atendê-lo no futuro. Atenciosamente, [Seu Nome] Representante de Suporte ao Cliente [Nome da Empresa]

Output

Translation of the comment to Spanish and Email generation in English

Choose the language of Email to be generated:

Spanish

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Comment:

Estoy muy impresionado con la amplia gama de productos electrónicos ofrecidos por esta empresa. Desde potentes laptops y smartphones hasta televisores envolventes y consolas de juegos, satisfacen todas las necesidades tecnológicas. Las descripciones de los productos resaltan las características clave, facilitando la elección del dispositivo adecuado. Los períodos de garantía brindan tranquilidad, y los precios competitivos añaden valor a los productos de alta calidad. En general, me siento seguro invirtiendo en sus productos tanto para el trabajo como para el entretenimiento.

Email:

Subject: Thank you for your positive feedback on our diverse range of electronics! Dear Valued Customer, I hope this email finds you well. I wanted to personally reach out and express our gratitude for your kind words regarding our wide selection of electronics. Your feedback is truly appreciated, and it motivates us to continue providing top-notch products and services to our customers. We are thrilled to hear that you found our product descriptions helpful in choosing the right device for your needs. Ensuring that our customers have all the necessary information to make informed decisions is a top priority for us. Moreover, we are delighted that you have found peace of mind in our warranty coverage. We strive to offer comprehensive warranty periods to ensure that our customers can enjoy their purchases with confidence. It's fantastic to hear that you value the competitive pricing of our high-quality products. We aim to provide the best value for our customers without compromising on quality. We are thrilled that you feel confident in investing in our products for both work and entertainment purposes. Your trust in our brand means the world to us, and we are committed to continuously exceeding your expectations. If you have any further feedback, questions, or need assistance with anything, please do not hesitate to reach out to us. We are here to help and ensure that your experience with our products is nothing short of exceptional. Thank you once again for your kind words and for choosing our electronics company. We look forward to serving you in the future and providing you with more innovative and high quality products.

Output

Email and comment translation to Portuguese

Choose the language of Email to be generated:

Portuguese

☐ Translate Comment in selected language:

☐ Translate Email in selected language:

Comment:

"Estou impressionado com a ampla gama de eletrônicos de alta qualidade oferecidos por esta empresa. De laptops e smartphones potentes a TVs imersivas e consoles de jogos, há algo para todos. Os recursos inovadores, designs elegantes e preços competitivos fazem dela um destino ideal para todas as minhas necessidades de tecnologia. A garantia e as avaliações fornecem garantia de confiabilidade, e o atendimento ao cliente é excelente. No geral, recomendo muito esses produtos para quem procura tecnologia de ponta e uma ótima experiência de compra."

Email:

Assunto: Agradecimento pelo Seu Feedback Positivo sobre Nossos Eletrônicos de Alta Qualidade Prezado(a) [Nome do Cliente], Espero que este email o encontre bem. Queria pessoalmente entrar em contato para expressar nossa gratidão pelo seu feedback elogioso em relação à nossa ampla gama de eletrônicos de alta qualidade. Suas palavras gentis sobre nossos laptops potentes, smartphones, TVs imersivas e consoles de jogos realmente significam muito para nós. Estamos felizes em saber que você considera nossos produtos inovadores, com design elegante, com preços competitivos e atendendo a todas as suas necessidades tecnológicas. Sua valorização de nossa garantia e classificações que fornecem garantia de confiabilidade, bem como seus elogios ao nosso serviço de atendimento ao cliente de alta qualidade, são muito apreciados. Na [Nome da Empresa], nos esforçamos para oferecer tecnologia de ponta e proporcionar uma ótima experiência de compra para nossos clientes, e é o feedback como o seu que nos motiva a continuar entregando excelência. Mais uma vez, obrigado pela sua recomendação positiva. Se tiver mais algum feedback ou se houver algo mais com o qual possamos ajudá-lo, não hesite em entrar em contato conosco. Esperamos atendê-lo novamente no futuro e esperamos superar suas expectativas com nossos produtos e serviços. Atenciosamente, [Seu Nome] Representante de Suporte ao Cliente [Nome da Empresa]

Output

Email generation in English

Choose the language of Email to be generated:

English

Translate Comment in selected language: ☐ Translate Email in selected language: ☐

Comment:

"I am impressed with the wide range of high-quality electronics offered by this company. From powerful laptops and smartphones to immersive TVs and gaming consoles, there is something for everyone. The innovative features, sleek designs, and competitive prices make it a go-to destination for all my tech needs. The warranty and ratings provide assurance of reliability, and the customer service is top-notch. Overall, I highly recommend these products to anyone looking for cutting-edge technology and a great shopping experience."

Email:

Subject: Appreciation for Your Positive Feedback on Our Diverse Range of High-Quality Electronics Dear [Customer's Name], I hope this email finds you well. I wanted to personally reach out and express our gratitude for your incredibly positive feedback regarding our wide range of high-quality electronics. Your kind words about our powerful laptops, smartphones, immersive TVs, and gaming consoles truly mean a lot to us. We are thrilled to hear that you find our products to be innovative, sleek in design, and competitively priced. Providing cutting-edge technology that caters to all your tech needs is at the core of what we strive for as a company. Moreover, we are delighted that you have found assurance in the reliability of our products through our warranty and ratings system. Ensuring that our customers have a seamless and satisfactory experience with our electronics is a top priority for us. Your commendation of our top-notch customer service is truly appreciated. We take pride in offering exceptional support to our valued customers like yourself. Thank you once again for recommending our products to others seeking cutting-edge technology and a great shopping experience. Your satisfaction is our ultimate reward, and we are committed to continuously exceeding your expectations. Should you have any further feedback, questions, or require assistance, please do not hesitate to reach out to us. We are here to help in any way we can. Thank you for choosing us as your trusted electronics provider. We look forward to serving you again in the future. Warm regards, [Your Name] Customer Support Representative [Company Name]