CS589- SPECIAL TOPICS AI DRIVEN

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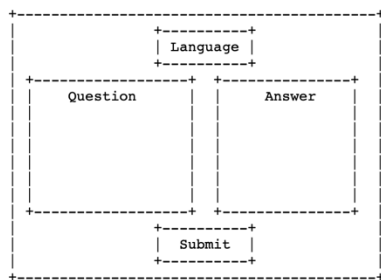
Assignment :

2. Customer Support System: An email to the customer
   A. Prerequiste
      ○ If possible, complete Project: Customer Support System: Use ChatGPT to build a web-based system that can answer questions about a website.
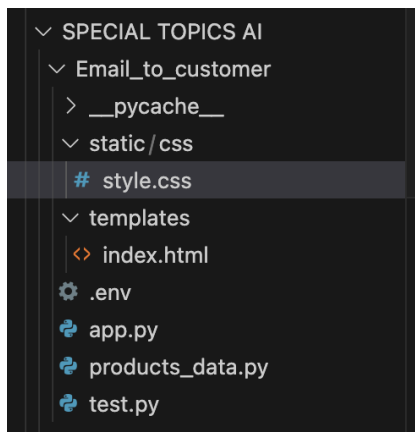   B. Overview
      ○ If you're a customer service assistant for a large electronics store
         ▪ The website of the store allows the customers to select language.
         ▪ The store's products
            ○ The products belong to different categories
            ○ Each product has detailed description
      ○ The web interface for this project

```
+---------------------------------------------+
|          +----------+                       |
|          | Language |                       |
|          +----------+                       |
| +------------------+  +----------------+     |
| |     Question     |  |     Answer     |     |
| |                  |  |                |     |
| |                  |  |                |     |
| |                  |  |                |     |
| |                  |  |                |     |
| |                  |  |                |     |
| +------------------+  +----------------+     |
|          +----------+                       |
|          |  Submit  |                       |
|          +----------+                       |
+---------------------------------------------+
```

First Get OpenAI API key and save it in a .env file

My Visual studio code library for this project looks like

To start the application, use "flask run"

```
127.0.0.1 - - [27/Feb/2024 11:22:27] "GET /static/css/style.css HTTP/1.1" 304 -
127.0.0.1 - - [27/Feb/2024 11:23:57] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2024 11:23:57] "GET /static/css/style.css HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2024 11:25:43] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2024 11:25:43] "GET /static/css/style.css HTTP/1.1" 200 -
Comment from customers:
The TechPro Ultrabook is a fantastic choice for those seeking a sleek and lightweight laptop with impressive performance. The BlueWave Gaming La
ptop is perfect for gamers looking for a high-performance machine. The SmartX ProPhone offers advanced features for smartphone enthusiasts. The
CineView 4K TV provides stunning visuals and smart features for an immersive viewing experience. The GameSphere X is a next-gen gaming console f
or ultimate gaming thrills. The AudioPhonic Noise-Canceling Headphones deliver top-notch sound quality. Overall, these products cater to a wide
range of needs and preferences, ensuring a satisfying tech experience.

Subject of customer comment:
Exciting Tech Products to Elevate Your Experience

Summary of customer comment:
The TechPro Ultrabook, BlueWave Gaming Laptop, SmartX ProPhone, CineView 4K TV, GameSphere X, and AudioPhonic Headphones offer diverse tech solu
tions for various needs, ensuring a satisfying tech experience for users.

Based on the customer's comment, the sentiment is overwhelmingly positive. The customer expresses satisfaction and admiration for the TechPro Ul
trabook, BlueWave Gaming Laptop, SmartX ProPhone, CineView 4K TV, GameSphere X, and AudioPhonic Noise-Canceling Headphones. They highlight the i
mpressive performance, sleek design, advanced features, stunning visuals, and immersive experience provided by these products. Overall, the cust
omer's feedback conveys a positive sentiment towards the range of tech products mentioned.

127.0.0.1 - - [27/Feb/2024 11:26:12] "POST / HTTP/1.1" 200 -
127.0.0.1 - - [27/Feb/2024 11:26:12] "GET /static/css/style.css HTTP/1.1" 304 -
```

Now to the code files

```python
1    from flask import Flask, request, render_template
2    import os
3    import openai
4
5    app = Flask(__name__)
6
7    # Set your OpenAI API key
8    openai.api_key = os.getenv("OPENAI_API_KEY")
9
10   # Define your delimiter
11   delimiter = "####"
12
```

- Step 2: Generate email subject
  - Input to ChatGPT
    - The customer's comment created from Step 1.
  - ChaGPT's response
    - Generate the subject of an email from the customer's comment using Inferring technique.
  - Hint
    - This step is an automation of the task of asking ChatGPT

```
Asuming that you provide customer support for an electronic product company.

The following text is the customer's comment about the products, please generate a
subject in English of the comment. The subject will be used as the
subject of the email to be sent to the customer.

===>

[ comment ]
```

```
372    # Step 2: Generate email subject
373    def get_subject(comment):
374        system_message_subject=comment
375        user_message_subject=f"""
376        Subject of an email from the comment using Inferring technique within 10 words"""
377        messages_subject =  [
378        {'role':'system',
379        'content': system_message_subject},
380        {'role':'user',
381        'content': f"{delimiter}{user_message_subject}{delimiter}"},
382        ]
383        subject = get_completion_from_messages(messages_subject)
384        print("Subject of customer comment: ")
385        print(subject+"\n")
386        return subject
```

- Step 3: Generate the summary of the customer's comment
  - Input to ChatGPT
    - The customer's comment created from Step 1.
  - ChaGPT's response
    - Step 3.1: Generate the summary in English from the customer's comment using Summarizing technique.

```
389    def get_summary(comment):
390        system_message_summary=comment
391        user_message_summary=f"""
392        Give the summary in English of the comment using Summarizing technique within 35 words."""
393        messages_summary =  [
394        {'role':'system',
395        'content': system_message_summary},
396        {'role':'user',
397        'content': f"{delimiter}{user_message_summary}{delimiter}"},
398        ]
399        summary=get_completion_from_messages(messages_summary)
400        print("Summary of customer comment:")
401        print(summary+"\n")
402        return summary
403
```

- Step 4: Sentiment analysis of the customer's comment
  - Input to ChatGPT
    - The customer's comment created from Step 1.
  - ChaGPT's response
    - Sentiment analysis of the customer's comment using Inferring technique.
      - The result of the sentiment analysis shows whether the customer's comment is
        - Positive, or
        - Negative
  - Hint

```
421  def get_sentiment(comment):
422      system_message_sentiment=comment
423      user_message_sentiment=f"""
424      Sentiment analysis of the customer's comment using Inferring technique. Positive or Negative?"""
425      messages_sentiment =  [
426      {'role':'system',
427      'content': system_message_sentiment},
428      {'role':'user',
429      'content': f"{delimiter}{user_message_sentiment}{delimiter}"},
430      ]
431      sentiment=get_completion_from_messages(messages_sentiment)
432      print(sentiment+"\n")
433      return sentiment
434
```

- Step 5: Generate an email to be sent to the customer.
  - Input to ChatGPT
    - The customer's comment created from Step 1.
    - The Subject generetaed from Step 2 which is based on the customer's comment.
    - The summary of the customer's comment. The summary is generated from Step 3.1.
    - The result of sentiment analysis created from Step 4.
    - The customer's selected language.
  - ChaGPT's response

```
436  def get_email(comment, subject, summary, sentiment):
437      system_message_email = comment + subject + summary + sentiment
438      user_message_email = f"""
439      Please create an email to be sent to the customer based on {comment}, including the {subject}, {summary} and \
440          {sentiment} with proper email format with subject and extra."""
441      messages_email = [
442          {'role': 'system',
443          'content': system_message_email},
444          {'role': 'user',
445          'content': f"{delimiter}{user_message_email}{delimiter}"},
446      ]
447      email = get_completion_from_messages(messages_email)
448      return email  # Return the email without printing it
```

Index.html. file

```html
<div class="container">
    <h1>Email to Customer</h1>
    <form method="POST">
        <label for="language">Select Language:</label>
        <select name="language" id="language" class="language-select">
            <option value="English">English</option>
            <option value="Spanish">Spanish</option>
            <option value="Chinese">Chinese</option>
            <option value="Japanese">Japanese</option>
            <option value="Korean">Korean</option>
            <option value="French">French</option>
            <option value="German">German</option>
            <option value="Italian">Italian</option>
            <option value="Hindi">Hindi</option>
            <option value="Arabic">Arabic</option>
            <option value="Telugu">Telugu</option>
            <!-- Add more language options as needed -->
        </select>
        <input type="submit" value="Generate" class="submit-button">
        <div class="translate-options">
            <label for="translate-comment">Translate Comment:</label>
            <input type="checkbox" name="translate-comment" id="translate-comment" class="translate-checkbox">
            <label for="translate-email">Translate Email:</label>
            <input type="checkbox" name="translate-email" id="translate-email" class="translate-checkbox">
        </div>
    </form>
    <div class="result-container">
        {% if comment %}
        <div class="result-section">
            <div class="left-section">
```

Accesing the code and test. Running on port 5000

Email to Customer

Select Language:

English

Generate

Translate Comment: ☐ Translate Email: ☐

Comment:

The TechPro Ultrabook is a fantastic choice for those seeking a sleek and lightweight laptop with impressive performance. The BlueWave Gaming Laptop is perfect for gamers looking for a high-performance machine. The SmartX ProPhone offers advanced features for smartphone enthusiasts. The CineView 4K TV provides stunning visuals and smart features for an immersive viewing experience. The GameSphere X is a next-gen gaming console for ultimate gaming thrills. The AudioPhonic Noise-Canceling Headphones deliver top-notch sound quality. Overall, these products cater to a wide range of needs and preferences, ensuring a satisfying tech experience.

Email:

Subject: Elevate Your Tech Experience with Our Exciting Product Range! Dear Valued Customer, We hope this email finds you well. We are thrilled to hear about your positive experience with our range of tech products, including the TechPro Ultrabook, BlueWave Gaming Laptop, SmartX ProPhone, CineView 4K TV, GameSphere X, and AudioPhonic Noise-Canceling Headphones. Your feedback is truly appreciated, and we are delighted that our products have met your expectations. Our TechPro Ultrabook is designed for those seeking a sleek and lightweight laptop with impressive performance. The BlueWave Gaming Laptop is perfect for gamers looking for a high-performance machine. The SmartX ProPhone offers advanced features for smartphone enthusiasts. The CineView 4K TV provides stunning visuals and smart features