

Customer Support System: An email to the customer

Special Topics: Generative AI-Driven Intelligent Apps
Development

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Links

Github:

[https://github.com/ademiltonnunes/Machine-Learning/tree/main/ChatGPT/Custom
er%20Support%20System/Send%20an%20email%20to%20the%20customer](https://github.com/ademiltonnunes/Machine-Learning/tree/main/ChatGPT/Custom%20Support%20System/Send%20an%20email%20to%20the%20customer)

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Introduction

This project aims to implement web application of a customer service assistant system for a large electronics store that sends email responses to customers. Email responses are sent based on comments that customers left about purchased electronic products.

The system was designed as a Flask web application with HTML and CSS user interface. This project will use the ChatGPT OpenAI GPT-3.5 Turbo model.

Introduction - System View

http://localhost:5000

Customer Support System

Question

Select Language:

English

Question:

Answer

Select Language:

English

Answer:

Submit

Send Email

Sender Email:

Recipient Email:

Sender Email Password:

Send Email

ENG INTL 13:43 08/10/2023

Introduction - System View - Question Division

The system will consist of 3 divisions:

- First division: Question Division:

The first division is called "Question". This section is where the user's comment about a purchased product is placed. For testing, in this project we will automatically generate a user comment using ChatGPT. It also has a dropdown box with language options so that the automatic comment generated by the system is in different languages for testing purposes. To use real comments, this language selection will not be necessary.

Introduction - System View - Answer Division

- Second division: Answer Division

The second division is called "Answer". In this section, the email based on the user's comment generated by the system will be shown. Also, in this section you will also have the option to select the language of the email response. Being having user comments in one language and responding in another language, according to the language selection.

Introduction - System View - Send Email

- Third division: Send Email

The third and final division is where it will be possible to send emails to the customer. In this section there are fields to enter the email and password of the sender, and the email of the customer who made the comment. By clicking on the "Send Email" button, the email is sent.

Introduction - Development Steps

To improve learning, I will show the development of the project in the following steps:

- Step 1: Generate a customer's comment
- Step 2: Generate the email subject
- Step 3: Generate the summary of the customer's comment
- Step 4: Sentiment analysis of the customer's comment
- Step 5: Generate Email
- Step 6: Send Email

Step 1: Generate a customer's comment

Because we are developing the system based on user comments, we will use ChatGPT to generate a comment to use as a basis for the email response.

When the page is loaded automatically the user's comment will be in English, however after loading, we can create this comment in other languages such as Portuguese, Spanish and French for example.

Customer Support System

Question

Select Language:

English

English

Spanish

French

Portuguese

Chinese

Answer

Select Language:

English

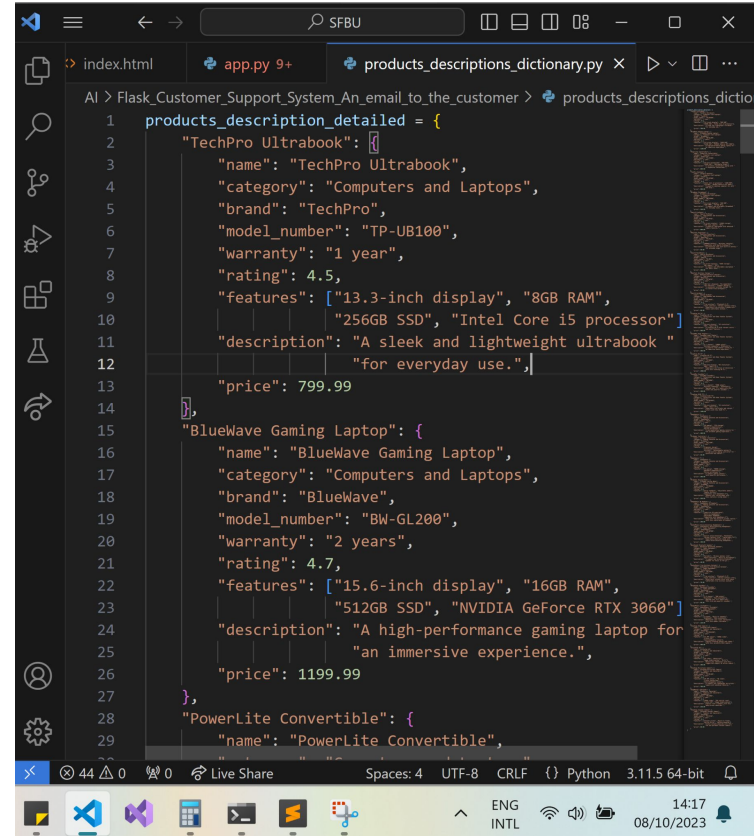
Answer:

Submit

Send Email

Step 1: Generate a customer's comment

The automatic comment will be generated using a list of descriptive comments on a list of products.



The screenshot shows a code editor with a dark theme. The file explorer on the left shows a project structure with files like 'index.html', 'app.py', and 'products_descriptions_dictionary.py'. The main editor window displays a Python dictionary named 'products_description_detailed' containing three product entries: 'TechPro Ultrabook', 'BlueWave Gaming Laptop', and 'PowerLite Convertible'. Each entry is a dictionary with fields for name, category, brand, model number, warranty, rating, features, description, and price. The 'TechPro Ultrabook' entry is currently selected and highlighted.

```
1 products_description_detailed = {  
2     "TechPro Ultrabook": {  
3         "name": "TechPro Ultrabook",  
4         "category": "Computers and Laptops",  
5         "brand": "TechPro",  
6         "model_number": "TP-UB100",  
7         "warranty": "1 year",  
8         "rating": 4.5,  
9         "features": ["13.3-inch display", "8GB RAM",  
10            "256GB SSD", "Intel Core i5 processor"]  
11         "description": "A sleek and lightweight ultrabook "  
12         "price": 799.99  
13     },  
14     "BlueWave Gaming Laptop": {  
15         "name": "BlueWave Gaming Laptop",  
16         "category": "Computers and Laptops",  
17         "brand": "BlueWave",  
18         "model_number": "BW-GL200",  
19         "warranty": "2 years",  
20         "rating": 4.7,  
21         "features": ["15.6-inch display", "16GB RAM",  
22            "512GB SSD", "NVIDIA GeForce RTX 3060"]  
23         "description": "A high-performance gaming laptop for  
24         "an immersive experience.",  
25         "price": 1199.99  
26     },  
27     "PowerLite Convertible": {  
28         "name": "PowerLite Convertible",  
29         "category": "Computers and Laptops",  
30         "brand": "PowerLite",  
31         "model_number": "PL-CV100",  
32         "warranty": "1 year",  
33         "rating": 4.6,  
34         "features": ["14-inch display", "12GB RAM",  
35            "512GB SSD", "Intel Core i7 processor"]  
36         "description": "A versatile laptop that can be used as a tablet or a  
37         "desktop replacement.",  
38         "price": 1099.99  
39     }  
40 }
```

Step 1: Generate a customer's comment

Customer Support System

Question

Select Language:
English

Question:
I recently purchased the TechPro Ultrabook from this electronic company, and I must say, I am extremely impressed with its performance. The

Answer

Select Language:
English

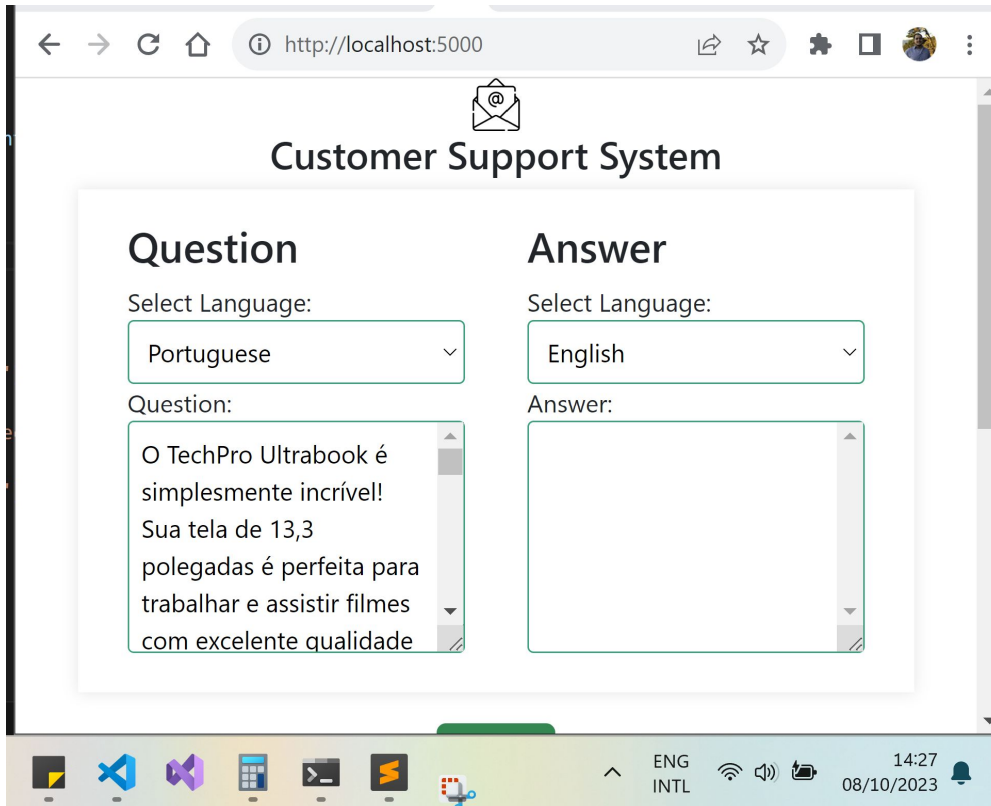
Answer:

Submit

Send Email

Automatic comment generated
in English

Step 1: Generate a customer's comment



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@

Customer Support System

Question

Select Language:

Portuguese ▾

Question:

O TechPro Ultrabook é simplesmente incrível!
Sua tela de 13,3 polegadas é perfeita para trabalhar e assistir filmes com excelente qualidade

Answer

Select Language:

English ▾

Answer:

ENG INTL 📶 🔊 🔌 14:27 08/10/2023 🔔

Automatic comment generated
in Portuguese

Step 2: Generate the email subject

Using the comment, we will create the email Subject. The subject is created by GPT chat with the following prompt:

“Assuming that you provide customer support for an electronic product company. The following text is the customer's comment about the products: {comment}. Please generate a subject. The subject will be used as the subject of the email sent to the customer.”

Step 2: Generate the email subject

```
#Ste View Problem (Alt+F8) No quick fixes available
def generate_email_subject(comment:str, language:str) -> Any
    prompt=f"""
    Assuming that you provide customer support for an electr
    The following text is the customer's comment about the p
    Please generate a subject.
    The subject will be used as the subject of the email sen

    if language != "english":
        prompt += f"""Please, write it in the language {lang

    chatGptResponse=generate_answer(prompt)
    return chatGptResponse
```

0 Live Share Spaces: 4 UTF-8 CRLF {} Python 3.11.5 64-bit

14:34 08/10/2023

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

Summarize the customer's comment using the Summarize technique. We use the following prompt:

“Assuming that you provide customer support for an electronic product company. The following text is the customer's comment about the products: {comment}. Please, generate an English summary of the comment.”

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

```
#Step 3: Generate the summary of the customer's comment
def summary_comment(comment:str) -> Any:
    prompt=f"""
    Assuming that you provide customer support for an electr
    The following text is the customer's comment about the p
    Please, generate an English summary of the comment."""

    chatGptResponse=generate_answer(prompt)
    return chatGptResponse
```



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UTF-8

CRLF

{ }

Python

3.11.5 64-bit



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08/10/2023



Step 4: Sentiment analysis of the customer's comment

We will also analyze consumer sentiment when making the comment, the result of the sentiment analysis is used using the Inference technique. The result of this analysis returns Positive if the comments sentiment was positive, or Negative, if the comment was negative. The prompt for this analysis was:

“Assuming that you provide customer support for an electronic product company. The following text is the customer's comment about the products: {comment}. Please, do a sentiment analysis based on the comment. The result of the sentiment analysis shows whether the customer's comment s Positive or Negative. Please, answer Positive if the comment is positive, or answer negative if the comment is negative”

Step 4: Sentiment analysis of the customer's comment

```
#Step 4: Sentiment analysis of the customer's comment
def analyse_comment_sentiment(comment:str) -> Any:
    prompt=f"""
    Assuming that you provide customer support for an electr
    The following text is the customer's comment about the p
    Please, do a sentiment analysis based on the comment.
    The result of the sentiment analysis shows whether the c
    is Positive or Negative. Please, answer Positive if the
    answer negative if the comment is negative
    """

    chatGptResponse=generate_answer(prompt)
    return chatGptResponse
```



Live Share

Spaces: 4

UTF-8

CRLF

{ } Python

3.11.5 64-bit



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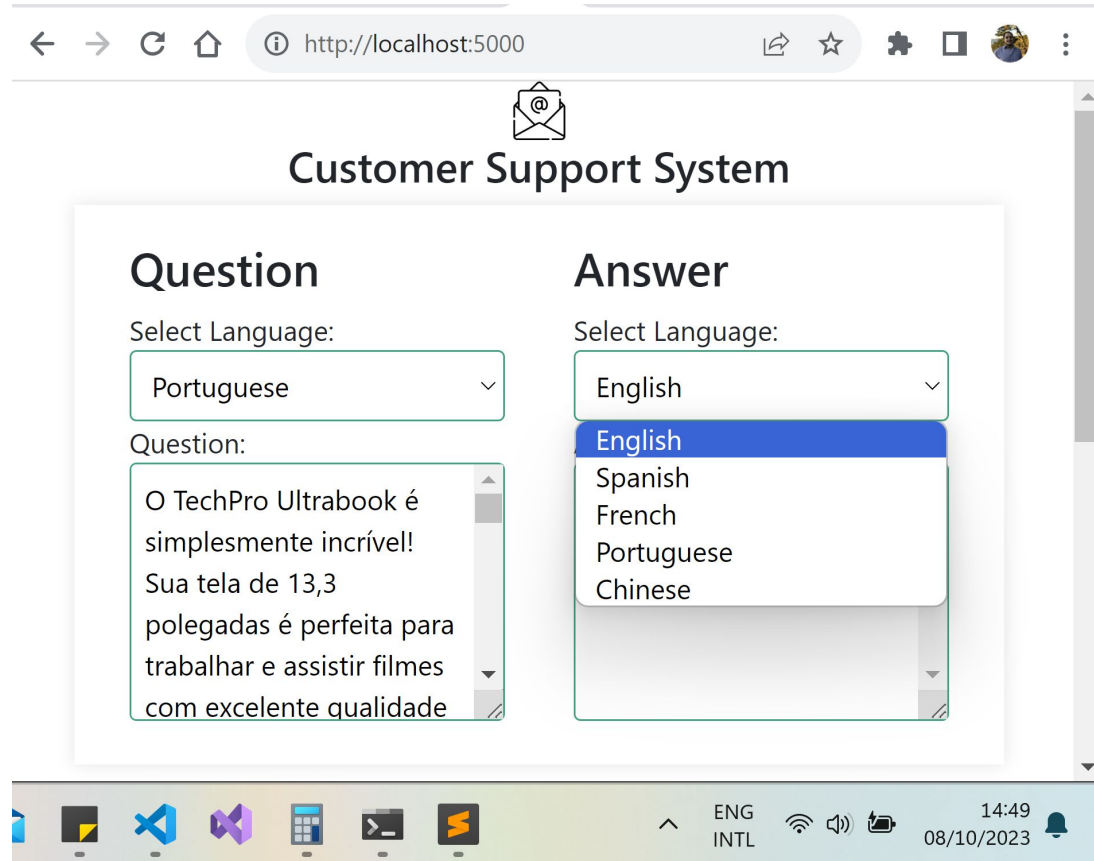


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08/10/2023



Step 5: Generate Email

Sending prompts to ChatGpt to generate the subject, summary, sentiment analysis of the comment based on the customer's comment, we are ready to send the response email to the customer. The response to the consumer may be in different languages, depending on the language selected.



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Customer Support System

Question

Select Language:

Portuguese ▾

Question:

O TechPro Ultrabook é simplesmente incrível! Sua tela de 13,3 polegadas é perfeita para trabalhar e assistir filmes com excelente qualidade

Answer

Select Language:

English ▾

English
Spanish
French
Portuguese
Chinese

ENG INTL 📶 🔊 🔋 14:49 08/10/2023 🔔

Step 5: Generate Email

By pressing the "Submit" button, we can see the result of ChatGPT processing and the response email generated based on the customers comment:

Step 5: Generate Email

Email customer response

Tests

I did some language switching tests. I ran the following tests:

ID	Question	Answer
1	English	English
2	English	Portuguese
3	Portuguese	English
4	Portuguese	Portuguese

Tests

English - English

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Customer Support System

Question

Select Language:

English ▾

Question:

I recently purchased the TechPro Ultrabook from this electronic company and I must say, I am extremely satisfied with my purchase. The sleek and lightweight design makes it perfect for my everyday use.

Answer

Select Language:

English ▾

Answer:

Dear [Customer's Name],

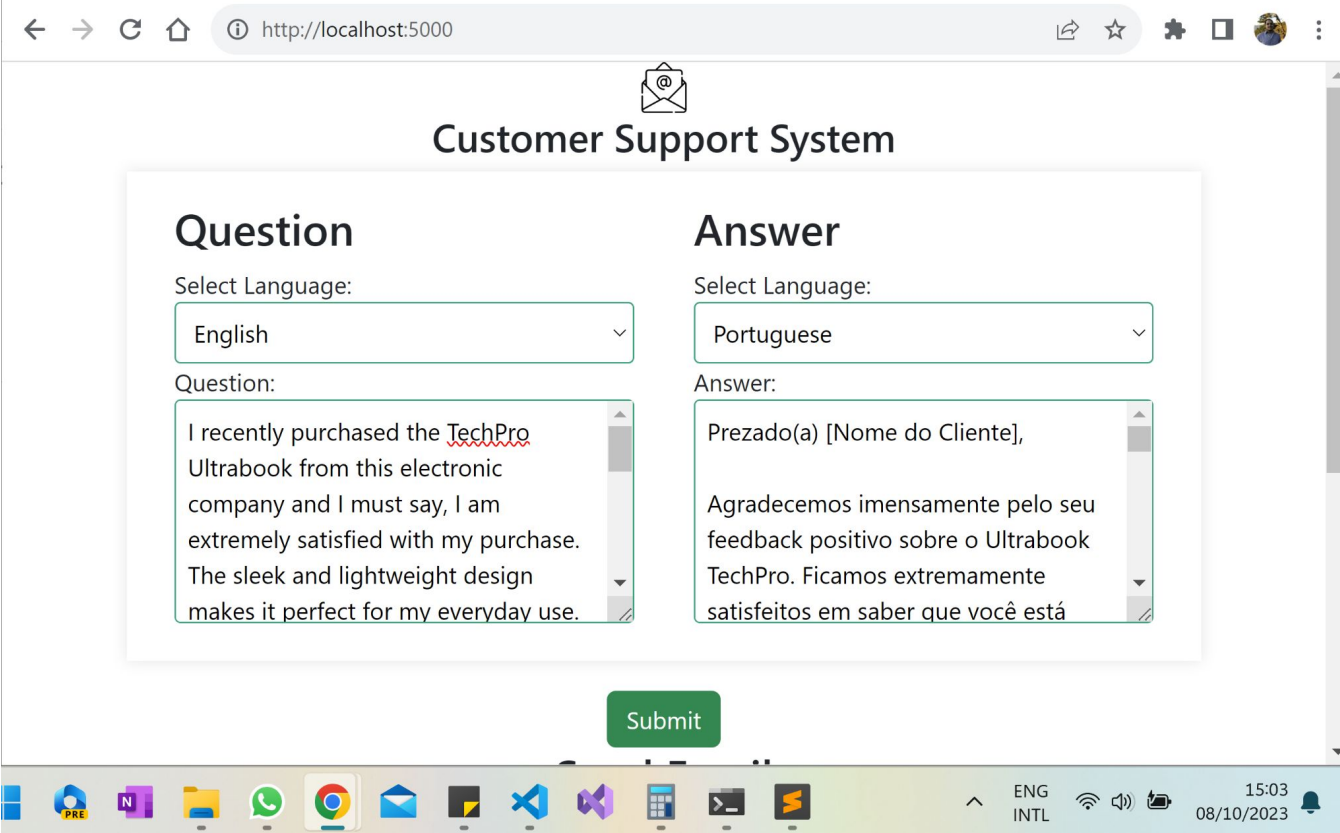
Thank you for taking the time to provide us with your valuable feedback on your recent purchase of the TechPro Ultrabook from our

Submit

Windows taskbar: PRE, N, File Explorer, WhatsApp, Chrome, Mail, Task View, VS Code, Edge, Calculator, Task View, File Explorer, ENG INTL, 15:01, 08/10/2023

Tests

English - Portuguese



The screenshot shows a web browser window at `http://localhost:5000` displaying a "Customer Support System" interface. The interface is divided into two main sections: "Question" and "Answer".

Question Section:

- Select Language:** A dropdown menu with "English" selected.
- Question:** A text area containing the text: "I recently purchased the TechPro Ultrabook from this electronic company and I must say, I am extremely satisfied with my purchase. The sleek and lightweight design makes it perfect for my everyday use." The word "TechPro" is underlined in red.

Answer Section:

- Select Language:** A dropdown menu with "Portuguese" selected.
- Answer:** A text area containing the text: "Prezado(a) [Nome do Cliente],

Agradecemos imensamente pelo seu feedback positivo sobre o Ultrabook TechPro. Ficamos extremamente satisfeitos em saber que você está".

At the bottom of the form is a green "Submit" button.

The browser's taskbar at the bottom shows various application icons, including a terminal window, and the system tray on the right displays "ENG INTL", signal icons, and the date/time "15:03 08/10/2023".

Portuguese - English

Tests

Portuguese - Portuguese

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Customer Support System

Question

Select Language:

Portuguese ▾

Question:

O Ultrabook TechPro é simplesmente incrível! Sua tela de 13.3 polegadas proporciona uma experiência visual imersiva, enquanto o processador Intel Core i5 e os 8GB de RAM garantem um desempenho ágil e

Answer

Select Language:

Portuguese ▾

Answer:

Assunto: Obrigado por escolher o Ultrabook TechPro!

Prezado(a) [Nome do cliente],

Agradecemos imensamente por ter

Submit

ENG INTL 📶 🔊 🔋 15:08 08/10/2023 🔔

Step 6: Send Email - Optional

With the generated email, we can send the response email to the consumer who made the comment. For this to be possible, we have to enter the email address and password of the sender's email and the email of the consumer who made the comment. By clicking on the "Send Email" button we send the email to the consumer. When the email is sent an alert is shown stating that the email has been sent. To be able to send email you need to install the Flask-Mail module using the command: `pip install Flask-Mail`.

Step 6: Send Email - Optional

Enter the
sender's email
and password
and the
customer's
email

Browser address bar: <http://localhost:5000>

Question:

I recently purchased the TechPro Ultrabook from this electronic company and I must say, I am extremely satisfied with my purchase. The sleek and lightweight design makes it perfect for my everyday use. The 13.3-inch display provides a clear and vibrant viewing experience, and the 8GB RAM and 256GB SSD ensure smooth performance and ample storage space. The Intel

Answer:

Dear [Customer's Name],

Thank you for taking the time to provide us with your feedback on your recent purchase of the TechPro Ultrabook from our electronic company. We are delighted to hear that you are extremely satisfied with your purchase and that it has exceeded

Send Email

Sender Email:

ademilton.marcelo1@gm;

Recipient Email:

cristianenunes_8@hotmail

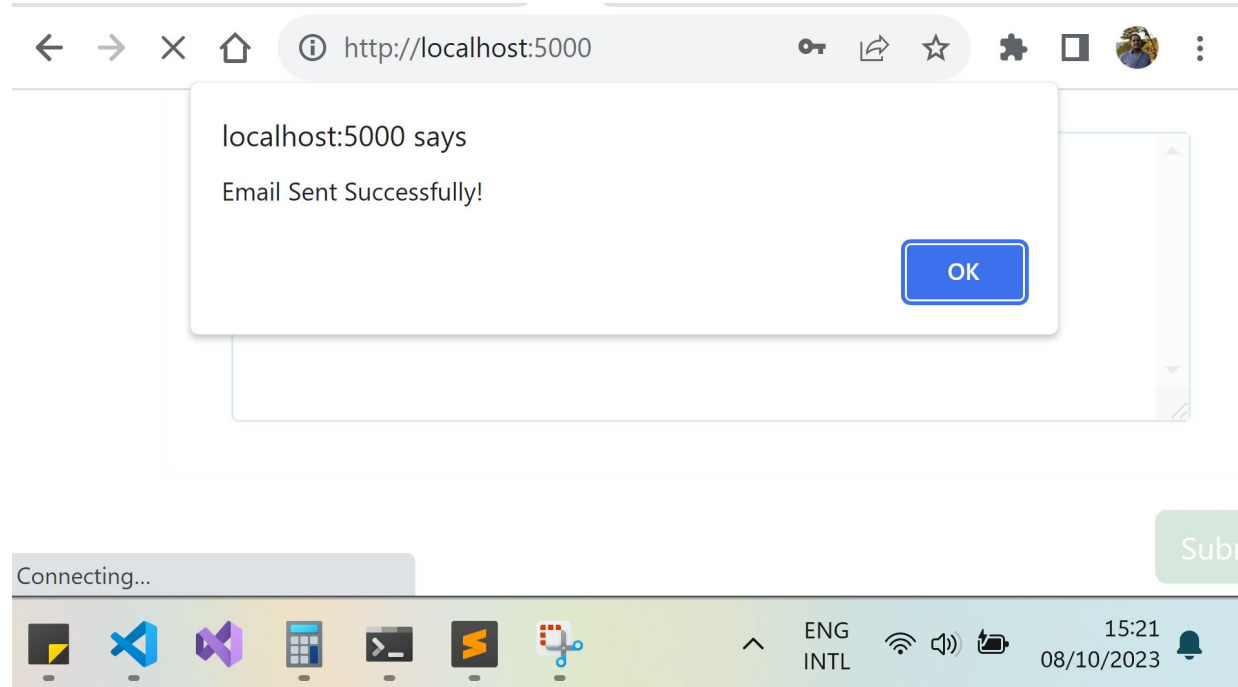
Sender Email Password:

.....

Windows taskbar: 15:12 08/10/2023

Step 6: Send Email - Optional

Email Sent!



Step 6: Send Email - Optional

Email Content

```
Msg: Content-Type: text/plain; charset="utf-8"  
MIME-Version: 1.0  
Content-Transfer-Encoding: 7bit  
Subject: Thank you for your feedback on the TechPro Ultrabook!  
From: ademilton.marcelo1@gmail.com  
To: cristianenunes_8@hotmail.com  
Date: Sun, 08 Oct 2023 15:37:20 -0700  
Message-ID: <169680464046.31436.261485720884911838@Ademilton-Marcelos-PC.hsd1.ca.comcast.net>
```

Dear [Customer],

Thank you for choosing our company and for your recent purchase of the TechPro Ultrabook. We greatly appreciate your feedback and are thrilled to hear that you are extremely satisfied with your purchase.

It's wonderful to know that the sleek and lightweight design of the Ultrabook is perfect for your everyday use. We understand the importance of clear and vibrant visuals, and we're glad to hear that the 13.3-inch display delivers on that front. The combination of 8GB RAM and 256GB SSD ensures smooth and fast performance, allowing you to multitask effortlessly with the Intel Core i5 processor.

We understand that peace of mind is essential when investing in a new electronic device, and we're glad that our 1-year warranty provides that for you. We strive to offer high-quality products at reasonable prices, and we're pleased to hear that you find the price of \$799.99 to be reasonable for the quality of the TechPro Ultrabook.

Conclusion

This project aimed to develop a web application for a customer service assistant system for a large electronics store that sends responses by email to customers implementing in Python Flask. I presented processes to achieve the objective of sending an email response to the consumer, which was successfully achieved. The processes were achieved successfully. The process for sending emails to the customer needs to be improved as this is only sending emails to the gmail.com domain.