Project - 7: Develop an automated email response chatbot that can handle common customer inquiries and generate appropriate responses

Develop an Automated Email Response Chatbot

Abstract:

This project focuses on developing a chatbot that can automate email responses by handling common customer inquiries and generating appropriate responses. The chatbot will utilize Natural Language Processing (NLP) techniques to understand the content of incoming emails and respond with relevant, pre-defined templates or dynamically generated responses based on the inquiry.

Outcome of the Project:

The primary goal is to create a chatbot capable of reducing the workload on customer support teams by automatically answering routine questions, thereby improving response times and customer satisfaction.

Project Prerequisites:

1. Python 3.7.4
2. IDE: Jupyter

Required Frameworks:

1. **Python:** General programming

2. **numpy:** Data manipulation

3. **pandas:** Data handling

4. **nltk:** Natural Language Processing

5. **scikit-learn:** Machine Learning

6. **Flask:** Web framework for deployment

7. **smtplib:** Email handling

Project Implementation:

1. **Data Collection and Preprocessing:**
   - Collect a dataset of common customer inquiries and their corresponding responses.
   - Preprocess the text data by tokenizing, removing stop words, and converting the text to lowercase.

2. **Model Training:**
   - Implement a text classification model using algorithms like Naive Bayes or Support Vector Machine (SVM) to categorize the type of inquiry.
   - Use NLP techniques to match the inquiry with the most appropriate response.

3. **Chatbot Development:**
   - Integrate the model with a chatbot framework that can interface with an email server.
   - Develop the chatbot logic to read incoming emails, process the content, and generate a response.

4. **Deployment:**
   - Deploy the chatbot using Flask or another web framework.
   - Set up the chatbot to automatically respond to emails by connecting it to an email server using SMTP.

5. **Testing and Evaluation:**
   - Test the chatbot's accuracy in categorizing inquiries and generating appropriate responses.
   - Evaluate the chatbot's performance in terms of response time and customer satisfaction.

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