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```
# Chat loop
print("Chatbot is ready! Type 'quit' to exit.")
chat_history_ids = None

while True:
    user_input = input("You: ")
    if user_input.lower() == 'quit':
        break

    new_input_ids = tokenizer.encode(user_input + tokenizer.eos_token, return_tensors='pt')

bot_input_ids = torch.cat([chat_history_ids, new_input_ids], dim=-1) if chat_history_ids is not N
    chat_history_ids = model.generate(bot_input_ids, max_length=1000, pad_token_id=tokenizer.eos_toke

    response = tokenizer.decode(chat_history_ids[:, bot_input_ids.shape[-1]:][0], skip_special_tokens|
    print("Bot:", response)

**Chatbot is ready! Type 'quit' to exit.
You: quit
```



!pip install transformers
!pip install datasets
!pip install sentence-transformers
!pip install nltk

```
!pip install transformers sentencepiece
from transformers import pipeline

# Use 'question-answering' instead of 'retrieval-qa'
retriever_chatbot = pipeline("question-answering", model="deepset/roberta-base-squad2")

# Add your FAQ as context
faq_context = "\n".join([f"Q: {q}\nA: {a}" for q, a in zip(faq_data["questions"], faq_data["answers"])

# Chatbot query
question = "Can I return an item I bought last week?"
response = retriever_chatbot(question=question, context=faq_context)
print(response["answer"])
```

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Device set to use cpu

You can return your product within 30 days of purchase
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```
[30] from sentence_transformers import SentenceTransformer, util

model = SentenceTransformer('all-MiniLM-L6-v2')
faq_embeddings = model.encode(faq_data["questions"], convert_to_tensor=True)

# Query
query = "How can I change my password?"
query_embedding = model.encode(query, convert_to_tensor=True)

# Compute similarity
import torch
cos_scores = util.pytorch_cos_sim(query_embedding, faq_embeddings)[0]
best_match_idx = torch.argmax(cos_scores).item()

# Return best match
print("Matched FAQ:", faq_data["questions"][best_match_idx])
print("Answer:", faq_data["answers"][best_match_idx])
```

Answer: To reset your password, click on 'Forgot password' link on the login page.

Matched FAQ: How do I reset my password?

```
[31] from sentence_transformers import SentenceTransformer, util

model_embed = SentenceTransformer('all-MiniLM-L6-v2')

faq_questions = faq_data['questions']
    faq_answers = faq_data['answers']
    faq_embeddings = model_embed.encode(faq_questions, convert_to_tensor=True)

def get_answer(user_query):
    query_embedding = model_embed.encode(user_query, convert_to_tensor=True)
    scores = util.pytorch_cos_sim(query_embedding, faq_embeddings)
    best_idx = torch.argmax(scores)
    return faq_answers[best_idx]

# Test
print(get_answer("How can I change my password?"))
To reset your password, click on 'Forgot password' link on the login page.
```

```
def intelligent_chat(user_query):
    # Try FAQ matching first
    answer = get_answer(user_query)
    if answer:
        return answer

# Fallback to chatbot model
    input_ids = tokenizer.encode(user_query + tokenizer.eos_token, return_tensors='_Loading...
    output_ids = model.generate(input_ids, max_length=1000, pad_token_id=tokenizer.eos_token_id)
    return tokenizer.decode(output_ids[:, input_ids.shape[-1]:][0], skip_special_tokens=True)

# Chat loop
while True:
    query = input("You: ")
    if query.lower() == 'quit':
        break
    print("Bot:", intelligent_chat(query))
```

You: hi

Bot: To reset your password, click on 'Forgot password' link on the login page.

You: ok

Bot: You can return your product within 30 days of purchase.

You: sure

Bot: You can return your product within 30 days of purchase.

You: quit

```
import gradio as gr

def chatbot_interface(user_input):
    return intelligent_chat(user_input)

gr.Interface(fn=chatbot_interface, inputs="text", outputs="text", title="Customer Support Chatbot").

def chatbot_interface(user_input):
    return intelligent_chat(user_input)

gr.Interface(fn=chatbot_interface, inputs="text", outputs="text", title="Customer Support Chatbot").
```



