

```
!pip install transformers sentence-transformers
```

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```

```
from sentence_transformers import SentenceTransformer, util
```

```
faq = {
    "latest smartphone specs": "Our latest smartphone features a 6.5-inch OLED display, 128GB storage, and a 48MP camera.",
    "order tracking": "You can track your order using the tracking link sent to your email after purchase.",
    "return policy": "Returns accepted within 30 days with the original receipt and packaging.",
    "payment methods": "We accept credit cards, debit cards, PayPal, and Apple Pay.",
    "warranty": "All products come with a 1-year limited warranty covering manufacturing defects."
}
```

```
embedder = SentenceTransformer('all-MiniLM-L6-v2')
```

```
faq_questions = list(faq.keys())
faq_embeddings = embedder.encode(faq_questions, convert_to_tensor=True)
```

```
def find_best_faq_answer(user_query):
    query_embedding = embedder.encode(user_query, convert_to_tensor=True)
    hits = util.semantic_search(query_embedding, faq_embeddings, top_k=1)
    best_match_idx = hits[0][0]['corpus_id']
    score = hits[0][0]['score']
    if score > 0.5:
        return faq[faq_questions[best_match_idx]]
    return None
```

```

modules.json: 100% 349/349 [00:00<00:00, 24.9kB/s]

config_sentence_transformers.json: 100% 116/116 [00:00<00:00, 5.22kB/s]

README.md: 100% 10.5k/10.5k [00:00<00:00, 651kB/s]

sentence_bert_config.json: 100% 53.0/53.0 [00:00<00:00, 2.90kB/s]

config.json: 100% 612/612 [00:00<00:00, 54.4kB/s]

Xet Storage is enabled for this repo, but the 'hf_xet' package is not installed. Falling back to regular HTTP download. For better performance,
WARNING:huggingface_hub.file_download:Xet Storage is enabled for this repo, but the 'hf_xet' package is not installed. Falling back to regular HTTP download.

tokenizer = AutoTokenizer.from_pretrained("microsoft/DialoGPT-small")
model = AutoModelForCausalLM.from_pretrained("microsoft/DialoGPT-small")

# Store chat history IDs for multi-turn conversation
chat_history_ids = None

special_tokens_map.json: 100% 112/112 [00:00<00:00, 7.59kB/s]

print("Chatbot is ready! Type 'exit' or 'quit' to stop.")

while True:
    user_input = input("You: ")
    if user_input.lower() in ["exit", "quit"]:
        print("Bot: Goodbye!")
        break

    # Check FAQ first
    faq_answer = find_best_faq_answer(user_input)
    if faq_answer:
        print("Bot (FAQ):", faq_answer)
        continue

    # If no FAQ answer, use the LLM conversational model
    # Encode user input + chat history
    new_input_ids = tokenizer.encode(user_input + tokenizer.eos_token, return_tensors='pt')
    if chat_history_ids is not None:
        bot_input_ids = torch.cat([chat_history_ids, new_input_ids], dim=-1)
    else:
        bot_input_ids = new_input_ids

    # Generate response
    chat_history_ids = model.generate(bot_input_ids, max_length=1000, pad_token_id=tokenizer.eos_token_id)
    bot_response = tokenizer.decode(chat_history_ids[:, bot_input_ids.shape[-1]:][0], skip_special_tokens=True)

    print("Bot:", bot_response)

Chatbot is ready! Type 'exit' or 'quit' to stop.
You: "Tell me about the warranty and how to track orders.
Bot (FAQ): All products come with a 1-year limited warranty covering manufacturing defects.
You: exit
Bot: Goodbye!

```