Double-click (or enter) to edit

```
!pip uninstall accelerate peft bitsandbytes transformers trl gcsfs fsspec -y

!pip install accelerate peft==0.13.2 bitsandbytes transformers trl==0.12.0 \
fsspec==2024.12.0 gcsfs==2024.12.0
```

Show hidden output

```
!pip install flask huggingface_hub
```

Show hidden output

```
import torch
from trl import SFTTrainer
from peft import LoraConfig
from datasets import load_dataset
from transformers import (AutoModelForCausalLM, AutoTokenizer, BitsAndBytesConfig, TrainingArguments, pipeline)
from flask import Flask, request, jsonify
from transformers import (
   AutoModelForCausalLM,
   AutoTokenizer,
   BitsAndBytesConfig,
   pipeline
)

llama_model = AutoModelForCausalLM.from_pretrained(
    pretrained_model_name_or_path="aboonaji/llama2finetune-v2",
    quantization_config=BitsAndBytesConfig(
        load_in_4bit=True,
        bnb_4bit_compute_dtype=torch.float16
    ),
    device_map="auto"
)
llama_model.config.use_cache = False
llama_model.config.pretraining_tp = 1
llama_model.gradient_checkpointing_enable()
llama_model.enable_input_require_grads()

llama_tokenizer = AutoTokenizer.from_pretrained(
    pretrained_model_name_or_path="aboonaji/llama2finetune-v2",
    trust_remote_code=True
)
llama_tokenizer.pad_token = llama_tokenizer.eos_token
llama_tokenizer.padding_side = "right"
```

Show hidden output

```
text_generation_pipeline = pipeline(
    task="text-generation",
    model=llama_model,
    tokenizer=llama_tokenizer,
    max_length=500
)
```

Show hidden output

```
def generate_medical_response(user_prompt):
    formatted_prompt = f"""<s>[INST] You are a helpful and knowledgeable medical assistant.
Answer the user's question with medically accurate and clear information.
If the question is outside your scope, politely say so.
Question: {user_prompt} [/INST]"""

    response = text_generation_pipeline(formatted_prompt)
    return response[0]["generated_text"]
if __name__ == "__main__":
    # Sample user query
    user_prompt = "Please tell me about Bursitis"
    answer = generate_medical_response(user_prompt)

    # Optional: Start the REST API server
    app = Flask(__name__)
```

```
@app.route("/chat", methods=["POST"])
def chat():
    data = request.get_json()
    user_message = data.get("message", "")

    if not user_message:
        return jsonify({"error": "No message provided"}), 400

    try:
        answer = generate_medical_response(user_message)
        return jsonify({"response": answer})
    except Exception as e:
        return jsonify({"error": str(e)}), 500

print("\Starting API server at http://localhost:8000/chat")
app.run(debug=True, host="0.0.0.0", port=8000)
```

```
Device set to use cuda:0
/usr/local/lib/python3.11/dist-packages/torch/utils/checkpoint.py:87: UserWarning: None of the inputs have requires_grad=True. Gradients
  warnings.warn(
<s>[INST] Please tell me about Bursitis [/INST]  Bursitis is a condition where the bursae, small fluid-filled sacs that cushion and redu

Causes:



* Overuse or repetitive motion of a joint can cause bursitis.

* Trauma or injury to a joint can also cause bursitis.

* Age-related wear and tear on the joints can lead to bursitis.

* Medical conditions such as rheumatoid arthritis, gout, and pseudogout can cause bursitis.

* Infection or infection can also cause bursitis.



Symptoms:



* Pain and tenderness in the affected joint.

* Swelling and warmth in the affected area.

* Limited mobility or stiffness in the affected joint.

* Redness or discoloration of the skin around the affected joint.

* Fever or chills.



Types of bursitis:



* Achilles tendon bursitis: Inflammation of the bursa located at the back of the ankle, near the Achilles tendon.

* Hip bursitis: Inflammation of the bursa located in the hip joint.

* Knee bursitis: Inflammation of the bursa located in the knee joint.

* Patellar bursitis: Inflammation of the bursa located in the front of the knee, near the kneecap.

* Retro-patellar bursitis: Inflammation of the bursa located behind the knee.

* Shoulder bursitis: Inflammation of the bursa located in the shoulder joint.

* Elbow bursitis: Inflammation of the bursa located in the elbow joint.



Treatment:



* Rest and avoidance of activities that aggravate the condition.

* Ice and heat applications to reduce pain and inflammation.
```