Practical-3

Aim: Create a chatbot using advanced techniques like transformer models.

Code:
```
import torch
from transformers import GPT2LMHeadModel, GPT2Tokenizer

#Load the pre-trained GPT-2 model and tokenizer
model_name= "gpt2"
tokenizer = GPT2Tokenizer.from_pretrained(model_name)
model = GPT2LMHeadModel.from_pretrained(model_name)

#Set the model to evaluate mode
model.eval()

#Defines a function to generate a response given an input prompt, with a default maximun response length of 50 tokens
def generate_response(prompt, max_length=50):
    #Encodes the input prompt into token IDs and converts it into Pytorch tensor for processing by thr model.
    input_ids = tokenizer.encode(prompt, return_tensors = "pt")

    #Generate response
#Disables gradient calculation to save memory and computational resources during inference.
    with torch.no_grad():
 #Generates a response using the model, limiting the output to max_length tokens andhandling padding with the specified
 #token ID

        output = model.generate(input_ids, max_length=max_length, num_return_sequences=1, pad_token_id=50256)

#Decodes the generated token IDs back into a human-readable string, skipping any special tokens
    response = tokenizer.decode(output[0], skip_special_tokens= True)
    return response

print("Chatbot: Hi there! How can I help you?")

while True:
    user_input = input("You:")
    if user_input.lower() == "exit":
        print("Chatbot: Goodbye!!!")
        break
    response = generate_response(user_input)
    print("Chatbot:", response)
```
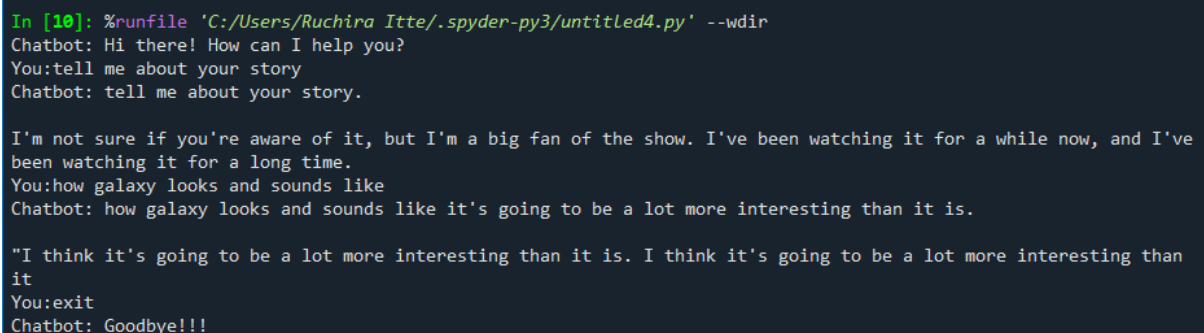
Output:

```
In [10]: %runfile 'C:/Users/Ruchira Itte/.spyder-py3/untitled4.py' --wdir
Chatbot: Hi there! How can I help you?
You:tell me about your story
Chatbot: tell me about your story.

I'm not sure if you're aware of it, but I'm a big fan of the show. I've been watching it for a while now, and I've
been watching it for a long time.
You:how galaxy looks and sounds like
Chatbot: how galaxy looks and sounds like it's going to be a lot more interesting than it is.

"I think it's going to be a lot more interesting than it is. I think it's going to be a lot more interesting than
it
You:exit
Chatbot: Goodbye!!!
```

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