Project 6: Coding Assistant Chatbot

Description:

This chatbot helps users write, understand, and debug code in various programming languages. It can explain syntax, generate functions, suggest improvements, or help with errors. Ideal for students, beginners, or developers looking for a quick second opinion.

`coding_assistant_bot.py`

```python
import openai
import os
import gradio as gr

# Set your OpenAI API key
openai.api_key = os.getenv("OPENAI_API_KEY")

# Function to interact with the LLM as a coding assistant
def code_helper(user_input):
    # Define assistant behavior using system role
    messages = [
        {
            "role": "system",
            "content": (
                "You are a skilled programming assistant. Help the user write,
                "Explain your answers in clear, beginner-friendly language and
                "Support Python, JavaScript, C++, HTML, and other popular lang
            )
        },
        {
            "role": "user",
            "content": user_input  # User's programming-related question or re
        }
    ]

    try:
        # Query the OpenAI API with the conversation history
        response = openai.ChatCompletion.create(
            model="gpt-3.5-turbo",  # You can upgrade to gpt-4 if needed
```

```python
        messages=messages
    )

    # Return the assistant's message content
    return response['choices'][0]['message']['content'].strip()

except Exception as e:
    # If there's an error (e.g., no API key or network), show it to the us
    return f"Error: {str(e)}"

# Define a Gradio interface
iface = gr.Interface(
    fn=code_helper,                          # Function that handles the logic
    inputs="text",                           # Textbox for user queries
    outputs="text",                          # Display the assistant's code respon
    title="💻 Coding Assistant Bot",          # App title
    description=(
        "Ask me to write, debug, or explain code. "
        "Try: 'Write a Python function to reverse a string', 'Explain async in
    )
)

# Launch the chatbot app in your browser
iface.launch()
```