

OpenAI Chatbot Implementation

With GPT-4o Mini & Streamlit

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Project Design

- Python Implementation
- Streamlit UI
- OpenAI API
- GPT-4o Mini Model

Streamlit

- An **open-source** app framework for data science
- **Quick to build** and deploy **interactive web apps**
- Installation Command: **pip install streamlit**

OpenAI API

- A platform to access state-of-the-art AI models
- Natural Language Processing (NLP)
- Versatility in applications
- Easy integration into projects
- Scalable solutions for developers

OpenAI API Parameters

- **Message Roles:** User, Assistant, System
- **Tokens:** roughly 80 words for 100 tokens
- **Temperature:** balance between reasoning and creativity
- **Streaming:** 'type out' message in real-time

GPT-4o Mini

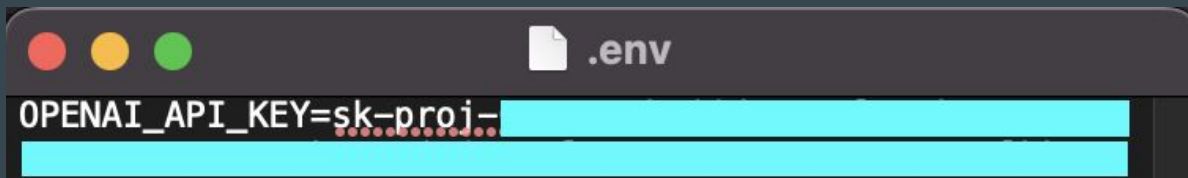
- A **lightweight** version of the GPT-4o model
- Text generation and understanding
- GPT-4o is smarter, GPT-4o Mini is **faster and cheaper**

Python Implementation

[Github link](#)

Prepare the Environment

- Install Python environment
- Create the OpenAI API key [here](#)
- Set up an `.env` file to store the API key



Install Necessary Packages

- OpenAI API: `openai` — the library to use OpenAI models via API calls
- Streamlit: `streamlit` — to create a User Interface for the chatbot
- Python Dotenv: `python-dotenv` — to load secret variables from the `.env` file
- Tiktoken: `tiktoken` — for counting tokens

Build the Chatbot

- Load environment variables: `load_dotenv()`
- Initialize the OpenAI client: `client = OpenAI()`
- Use `Streamlit` to create the chatbot UI
- Call the `GPT-4o Mini` model

Run the Application

```
(base) zhangzhiyu@shengchanligongju w3 % streamlit run chatbot.py
```

👋 **Welcome to Streamlit!**

If you'd like to receive helpful onboarding emails, news, offers, promotions, and the occasional swag, please enter your email address below. Otherwise, leave this field blank.

Email:

You can find our privacy policy at <https://streamlit.io/privacy-policy>

Summary:

- This open source library collects usage statistics.
- We cannot see and do not store information contained inside Streamlit apps, such as text, charts, images, etc.
- Telemetry data is stored in servers in the United States.
- If you'd like to opt out, add the following to ~/.streamlit/config.toml, creating that file if necessary:

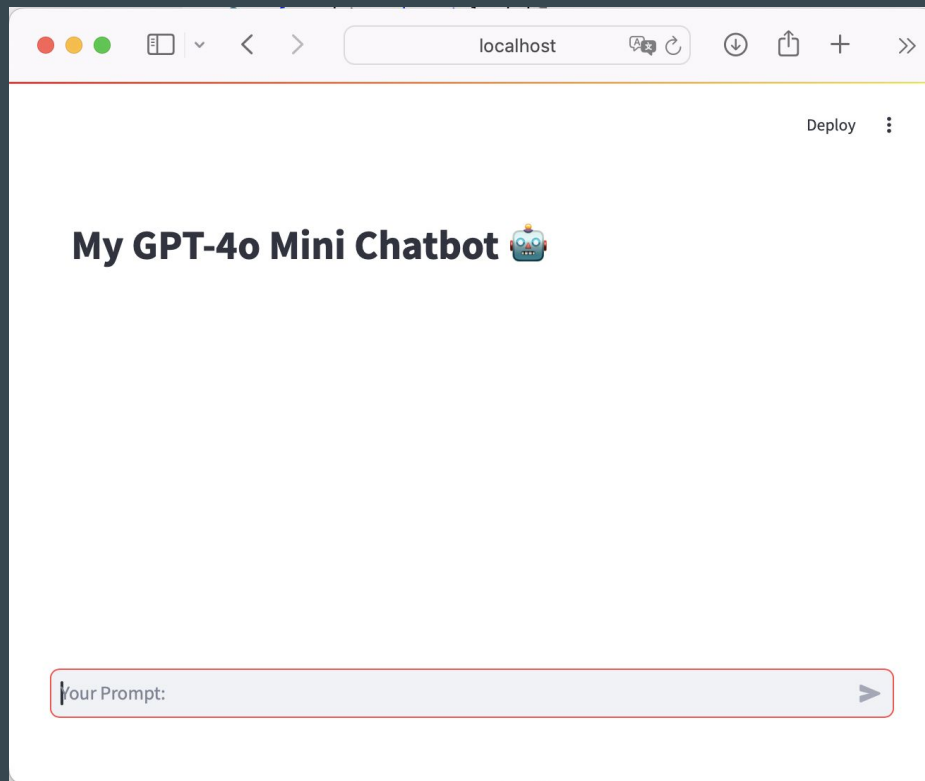
```
[browser]
gatherUsageStats = false
```

You can now view your Streamlit app in your browser.

Local URL: <http://localhost:8501>

Network URL: <http://172.16.9.140:8501>

Web Interface



Sample Use Cases

My GPT-4o Mini Chatbot



Write a 2-verse poem about summertime



Beneath the sun's warm, golden gaze,
Fields awaken in a vibrant blaze,
Children's laughter fills the air,
As butterflies dance without a care.

In gentle breezes, sweet scents glide,
Picnics spread by the riverside,
Evenings glow with skies aglow,
Embracing all the warmth we know.

Your Prompt:



Sample Use Cases



suggest a dessert for my birthday



How about a **chocolate mousse cake**? It's rich, indulgent, and has a light, airy texture that complements the intense chocolate flavor. You can layer it with a whipped cream topping or fresh berries for a delightful touch. Plus, it's perfect for celebrating a special occasion like your birthday! Enjoy!

Your Prompt:



Thanks

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