📄 Documentation: slidegen_streamlit_app.py

🧩 Overview

This is a **Streamlit-based web application** that lets users generate PowerPoint presentations from GPT-generated content with optional AI-generated images (using DALL·E). It supports:

- Generating a deck from a single topic input.
- Batch uploading .csv or .txt files with multiple topics.
- Per-slide image generation.
- Download of the final .pptx.
- Logging to monitor progress/errors.

🗂️ Code Structure

```
slidegen_streamlit_app.py
├── UI Layout
│   ├── Topic input or batch upload
│   ├── Buttons for trigger/download
│   └── Log display
├── Functions
│   ├── generate_slide_content(topic)
│   ├── generate_image(prompt)
│   ├── parse_and_create_ppt(text, topic)
│   └── batch_generate_from_file(file)
├── Streamlit Handlers
│   ├── st.button triggers
│   └── st.file_uploader + st.download_button
```

⚙️ Setup Instructions

1. 🐍 Environment Setup

Install required packages:

pip install openai streamlit python-pptx pillow requests

2. 🔑 API Keys Required

- **OpenAI**: For both ChatCompletion and DALL·E image generation.

Set these securely in your environment:

export OPENAI_API_KEY="your-openai-api-key"

Or insert directly in the script (not recommended for prod):

openai.api_key = "your-openai-api-key"

🚀 Running Locally

In terminal:

streamlit run slidegen_streamlit_app.py

Then open the local server in your browser (http://localhost:8501).

🧪 How to Use

Option A: Generate Deck from Single Topic

1. Enter a topic name.
2. Click **"Generate Presentation"**.
3. Wait while it queries GPT and generates slides + images.
4. Click the download button when the .pptx is ready.

Option B: Batch Upload

1. Upload a .csv or .txt file containing one topic per line.
2. Click **"Batch Generate"**.
3. Each deck is generated and zipped (or available individually).
4. Log messages are displayed in real-time in the app.

💡 Features

Feature	Supported?
GPT-4 Slide Content	✅
DALL·E Image per Slide	✅
Manual + Batch Modes	✅
File Upload + Download	✅
Streamlit GUI	✅
Live Logs	✅

🛠 Deployment Options

✅ Local Deployment

Fastest for prototyping or personal use.

streamlit run slidegen_streamlit_app.py

🌐 Cloud Deployment

You can deploy via:

- **Streamlit Cloud** (https://share.streamlit.io)
- **Render** or **Railway**
- **Docker + VPS**

Steps for Streamlit Cloud:

1. Push your code to GitHub.
2. Go to Streamlit Cloud.
3. Connect your repo.
4. Set environment variable OPENAI_API_KEY.
5. Deploy!

🧩 Customization Ideas

- Add support for PowerPoint themes/templates.

- Add topic categories for slide styling.

- Add email export after generation.

- Add translation or multilingual GPT output.

- Add user authentication for privacy/multi-user.

🐞 Troubleshooting

- **No image?** DALL·E generation may fail silently if OpenAI quota exhausted.

- **GPT timeout?** Use temperature=0.5 and shorter prompts.

- **Streamlit crashes?** Check file size and concurrent runs.