

Project 53: Vocabulary Explainer

Description:

This tool explains any word like a teacher—offering definition, pronunciation, part of speech, usage in a sentence, and even a visual metaphor when helpful. It's perfect for students, writers, or non-native speakers building vocabulary.

vocabulary_explainer.py

```
import openai
import os
import gradio as gr

# Load OpenAI API key from environment
openai.api_key = os.getenv("OPENAI_API_KEY")

# Function to explain vocabulary words
def explain_word(word):
    # Prompt the assistant to act like a dictionary + friendly tutor
    messages = [
        {
            "role": "system",
            "content": (
                "You are a friendly English tutor. For the word provided, return the following information:\n"
                "1. Definition\n"
                "2. Part of speech\n"
                "3. Pronunciation (using phonetics)\n"
                "4. Example sentence\n"
                "5. A metaphor or image to remember it\n"
                "Be clear and concise."
            )
        },
        {
            "role": "user",
            "content": word
        }
    ]
```

```

try:
    # Query OpenAI to explain the word
    response = openai.ChatCompletion.create(
        model="gpt-3.5-turbo",
        messages=messages
    )

    # Return detailed explanation
    return response["choices"][0]["message"]["content"].strip()

except Exception as e:
    return f"Error: {str(e)}"

# Gradio interface for vocabulary explanation
iface = gr.Interface(
    fn=explain_word,
    inputs=gr.Textbox(label="Enter a Word (e.g. ephemeral, audacity, benevolence)",
    outputs="text",
    title="📖 Vocabulary Explainer",
    description="Enter any word to get a clear definition, part of speech, pronunciation, and synonyms."
)

# Launch the app
iface.launch()

```