

Stand-up Comedian Web App Project Report

1. Project Overview

The Stand-up Comedian Web App is an interactive application that allows users to generate and perform stand-up comedy scripts on any topic. It combines **Generative AI (GPT-4o-mini)** for creating unique jokes with **Text-to-Speech (TTS)** and an animated avatar for performance.

The main goal of the project is to showcase how AI can simulate creativity and perform entertainment in real-time, giving users an engaging and humorous experience.

2. Objectives

- Generate original comedy scripts based on user-provided topics, styles, and lengths.
- Convert AI-generated text into speech using TTS.
- Animate a virtual comedian avatar performing the script.
- Provide an interactive web interface for easy user interaction.

3. Technologies Used

Frontend

- HTML, CSS, JavaScript

- Avatar animation and user interaction
- Browser **Web Speech API** for TTS

Backend

- Python Flask (server.py)
- Handles API requests from frontend
- Calls **OpenAI Chat Completion API** to generate scripts

Generative AI

- **Model:** GPT-4o-mini
- **API:** OpenAI Chat Completion API (/v1/chat/completions)
- Generates humorous stand-up scripts dynamically

Libraries / Dependencies

- Flask
- Requests
- Python-dotenv
- OpenAI SDK (optional)

4. System Architecture & Flow

1. User inputs a **topic, style, and length** in the frontend.
2. Frontend sends a **POST request** to the backend (/generate).
3. Backend receives the request, formats a prompt, and calls **OpenAI API**.

4. AI generates a unique **comedy script** and sends it back to the frontend as JSON.
5. Frontend displays the script.
6. When the user clicks **Perform**, the script is converted to **speech** via Web Speech API.
7. Avatar animation is synchronized with the speech to simulate a live performance.

Flow Diagram (simplified):

User Input → Frontend → Backend Flask → OpenAI GPT-4o-mini
→ Backend → Frontend → TTS & Avatar Performance

5. Generative AI (GenAI) Details

- **Purpose:** Generate creative and humorous stand-up scripts.
- **How it works:**
 - User enters topic, style, and length.
 - Backend sends the formatted prompt to GPT-4o-mini API.
 - AI generates text that mimics a stand-up comedian's performance.
- **Importance:** Provides creativity that traditional code cannot. Each script is unique.

Viva Talking Points: “Generative AI provides the intelligence — it creates the comedy script based on user input. Without it, the system couldn't generate original jokes.”

6. Text-to-Speech (TTS) Details

- **Purpose:** Convert AI-generated text into spoken audio.
- **Implementation:** Browser's **Web Speech API** (`speechSynthesis`)
- **How it works:**
 - User clicks **Perform**
 - Script is converted into speech via **`SpeechSynthesisUtterance`**
 - Voice, pitch, and rate are set for realism
 - Avatar's mouth is animated to synchronize with speech

Viva Talking Points: “TTS provides the expression — it performs the script like a real comedian, synchronized with an avatar for realism.”

7. How to Run the Project

1. Activate virtual environment:
`venv\Scripts\activate` # Windows
2. Install dependencies:
`pip install -r requirements.txt`
3. Create `.env` file:
`OPENAI_API_KEY=your_api_key_here`
4. Run backend server:
`python server.py`
5. Open browser: <http://127.0.0.1:5000>
6. Enter topic → Click **Generate** → Click **Perform** → Watch & listen to AI comedian performance

8. Key Features

- AI generates original comedy scripts on any topic.
 - Scripts are converted to natural-sounding speech in real-time.
 - Avatar animation mimics live stand-up performance.
 - Web interface is user-friendly and interactive.
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9. Advantages of the Project

- Real-time AI creativity for entertainment purposes.
 - Provides an interactive way to experience AI-generated humor.
 - Demonstrates integration of GenAI, TTS, and frontend animation.
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10. Conclusion

The Stand-up Comedian Web App successfully combines **Generative AI** and **Text-to-Speech** to create an interactive entertainment system. It demonstrates how AI can generate content and perform it in a lifelike manner, bridging creativity and technology in a fun, engaging way.

11. Application in Action

 **AI Stand-up Comedian**
Generate jokes, hear the set, and watch a virtual comic perform.

Setup


Topic

Style

Length

[Generate Set](#) [Perform](#) [Stop](#)

Tip: You can replace the local script engine with your backend later.

Stage

Script

When study happens, my brain just updates its privacy policy.
Here's the weird part- I tried to master study. Turns out the trick is... lower your standards. Boom. Success.

Long story short- People say "just be yourself" with study. Bold of them to assume that's legal.

But wait, it gets better- The secret to study is confidence. And when that falls, Wi-Fi and a pretend smile.

Thanks folks! Be kind, hydrate, and avoid group projects about study.