**GenA11yHelper**

Smarter Prompt Testing for GenAI – Deployed with Terraform and AWS

**## Project Overview**

“GenA11yHelper” is a tool that helps teams test different AI prompts, give feedback on the responses, and automatically keep the best ones. It makes it easier to improve GenAI systems by putting user feedback at the heart of the process.  
  
“GenA11yHelper” is a lightweight DevOps-powered GenAI tool that helps teams experiment with different large language model (LLM) prompts. Users can test prompts, rate the AI’s responses, and automatically promote the best-performing ones. This workflow makes it easier to improve prompt quality over time by using real user feedback, helping teams build smarter, more effective GenAI applications.

**## How It Works**

* **Frontend Interface:** A Streamlit + LangChain app inside a Docker container allows users to input data and test prompts.
* **LLM Querying:** Prompts are processed via the OpenAI API to generate responses.
* **User Rating:** Each response is rated (e.g., thumbs up/down), simulating real user feedback.
* **Prompt Versioning:** Prompt templates are versioned and stored in an AWS S3 bucket.
* **Feedback Logging:** Ratings are logged (planned via Weights & Biases).
* **DevOps Automation:** GitHub Actions CI/CD is used to update the best-performing prompts in a GitHub repo (`prompt-templates/`).

**## Technologies Used**

* **Terraform** – Infrastructure as Code (IaC)
* **AWS EC2** – Hosts the containerized app
* **AWS S3** – Stores versioned prompt templates
* **Streamlit + LangChain** – Web app frontend
* **Docker** – Container environment
* **OpenAI API** – LLM querying
* **GitHub Actions** – Prompt promotion via CI/CD
* **Weights & Biases (planned)** – Feedback visualization and logging

**## AWS Infrastructure (via Terraform)**

* Sets up a secure S3 bucket to store prompt versions
* Launches a small Ubuntu server (EC2) using the free tier
* Installs Docker on the server to run the app
* Opens ports for the app (8501) and SSH access (22)
* Creates SSH keys for secure login
* Displays the server's public IP and login details

**## Repository Structure**/terraform/ → Infrastructure code

flowchart.png → System architecture

prompt-templates/ → (Planned) Prompt storage

README.md → This file

**## Notes**Hackathon: DevOps for GenAI 2025

Track 5: Prompt Testing & Experimentation

AWS cloud environment provided by the organizers

Project built within an 8-hour hackathon window