**Inspirational Quote Generator Streamlit App: Final Report**

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**Abstract**

The Inspirational Quote Generator is a Streamlit web application that generates motivational quotes using the GPT-2 model, deployed on Streamlit Community Cloud. It supports comma-separated themes, user-specified quote lengths (Short, Medium, Long), dynamic theme-based images, and a beautified interface with custom CSS. This final report summarizes the project's objectives, implementation, outcomes, challenges, user impact, and future enhancements, concluding a successful development cycle from March to May 2025. The app delivers a user-friendly, AI-powered tool for inspiration, meeting all proposed goals.

**1. Introduction**

The Inspirational Quote Generator was developed to provide a customizable, AI-driven solution for generating motivational quotes. By integrating the GPT-2 model with Streamlit, the app allows users to input themes (e.g., hope, success), select quote lengths, and view quotes in a visually appealing format. Deployed on Streamlit Community Cloud, it is accessible globally, serving individuals, content creators, and educators. This report details the project's journey, from ideation to deployment, highlighting its technical achievements, user benefits, and areas for improvement.

**2. Objectives**

The project aimed to:

* Develop a web app for generating theme-based inspirational quotes using GPT-2.
* Support multiple themes and customizable quote lengths (Short: 40 tokens, Medium: 60 tokens, Long: 80 tokens).
* Enhance the UI with dynamic images and custom styling.
* Save quotes to a file (quotes.txt) with theme and author details.
* Deploy the app on Streamlit Community Cloud for public access.
* Provide comprehensive documentation for usage and maintenance.

**3. Implementation**

**3.1 Technical Stack**

* **Python**: 3.10
* **Libraries**:
  + streamlit==1.39.0: Web framework
  + transformers==4.44.2: GPT-2 model and tokenizer
  + torch==2.3.1: PyTorch for inference
* **IDE**: VS Code
* **Version Control**: Git/GitHub
* **Deployment**: Streamlit Community Cloud

**3.2 Features**

* **Quote Generation**: GPT-2 generates quotes based on user themes, with the "AI Sage" author.
* **Theme Support**: Handles comma-separated and multi-word themes (e.g., new hope, inner peace).
* **Quote Lengths**: Users select Short (~10–20 words), Medium (~20–30 words), or Long (~30–40 words).
* **Dynamic Images**: Unsplash images change based on the first theme (e.g., starry mountains for hope).
* **UI**: Custom CSS with quote cards, blue-white theme, rounded inputs, and responsive layout.
* **File Saving**: Quotes saved to quotes.txt (e.g., Theme: success | Quote: Success fuels bold dreams. — AI Sage).

**3.3 Development Phases**

* **Phase 1** : Proposed the idea, set up the environment, and planned features.
* **Phase 2** : Implemented core functionality, added features, and deployed the app.
* **Phase 3** : Conducted final testing, documented the project, and prepared reports.

**3.4 Deployment**

* **Repository**: [https://github.com/SaurabhIndi/quote-generator#](https://github.com/SaurabhIndi/quote-generator)
* **Platform**: Streamlit Community Cloud (<https://quote-generator-ec8vwst9gcraxqjfs6widb.streamlit.app/>
* **Setup**:
  + Branch: main
  + Main file: app.py
  + Dependencies: Installed via requirements.txt
* **URL**: <https://quote-generator-ec8vwst9gcraxqjfs6widb.streamlit.app/>
* **Build Time**: ~10 minutes
* **Testing**: Verified functionality and UI on the deployed app.

**4. Outcomes**

**4.1 Achievements**

* **Functional App**: Generates coherent quotes for single and multi-word themes.
* **Customizable**: Supports 1–5 quotes per theme and three length options.
* **Visual Appeal**: Dynamic images and styled UI enhance user engagement.
* **Persistence**: Quotes saved to quotes.txt on the server.
* **Accessibility**: Deployed for public access, with no subscription fees.
* **Documentation**: Comprehensive README and phase reports.

**4.2 User Impact**

* **Inspiration**: Users report increased motivation from personalized quotes.
* **Content Creation**: Writers use quotes for social media and blogs.
* **Education**: Coaches incorporate quotes in team-building exercises.
* **Tech Learning**: Students study the app's code to learn NLP and Streamlit.

**4.3 Evaluation**

Testing involved:

* **Functional Tests**: Verified quote generation, theme parsing, and file saving.
* **UI Tests**: Ensured responsiveness and styling across devices.
* **User Feedback**: Collected via informal surveys, praising ease of use and visuals.
* **Performance**: Quote generation takes ~1–3 seconds per quote; deployment is stable.

Example output:

* **Input**: Themes = hope, inner peace, Quotes = 1, Length = Long
* **Output**:
* Quotes for 'hope'
* Quote 1: Hope is the light that guides us through the darkest nights, illuminating paths to new beginnings. — AI Sage
* Quotes for 'inner peace'
* Quote 1: Inner peace flows like a river, calming the heart and soul in every moment of stillness. — AI Sage

**5. Challenges and Solutions**

**5.1 Dependency Installation**

* **Challenge**: torch==2.3.1 installation failed.
* **Solution**: Used CPU index:
* pip install torch==2.3.1 --index-url https://download.pytorch.org/whl/cpu

**5.2 Quote Quality**

* **Challenge**: Inconsistent quotes for complex themes.
* **Solution**: Optimized prompt and increased max\_length options.

**5.3 Deployment**

* **Challenge**: Ensuring dependency compatibility on Streamlit Cloud.
* **Solution**: Tested requirements.txt locally and fixed version conflicts.

**5.4 User Experience**

* **Challenge**: Default Streamlit UI was unappealing.
* **Solution**: Added custom CSS, dynamic images, and structured layout.

**6. Lessons Learned**

* **Technical Skills**: Gained expertise in NLP (GPT-2), web development (Streamlit), and cloud deployment.
* **Problem-Solving**: Learned to troubleshoot dependencies and optimize AI outputs.
* **User-Centric Design**: Prioritized intuitive inputs and visual feedback.
* **Documentation**: Recognized the importance of clear guides for users and developers.

**7. Future Improvements**

* **Download Button**: Add st.download\_button for quotes.txt.
* **Custom Images**: Allow users to upload theme images.
* **Advanced Model**: Use gpt2-medium for better quotes (requires more memory).
* **Analytics**: Track popular themes to inform enhancements.
* **Mobile App**: Develop a mobile version using Flutter or React Native.

**8. Conclusion**

The Inspirational Quote Generator successfully delivers a user-friendly, AI-powered tool for generating motivational quotes. It meets all objectives, offering customizable quotes, a polished UI, and global access via Streamlit Cloud. Challenges were overcome through technical solutions and iterative improvements, resulting in a robust app with strong user appeal. Future enhancements will further expand its functionality, ensuring continued value for users and developers.