Capstone Three Proposal

Children's Bedtime Story Generator

I am inspired by niece, who loves having stories read to her, but can become bored with the same stories repeated over again. I want to create an app that will generate stories to keep her entertained without the constant need to go to the library for new books.

Goal:

Build a bot that will generate and have the option to read aloud a short children's story based on information from the user. The user can provide additional context, such as genre, setting, main character name, etc., which will be incorporated into the story.

The application will be built using DSPy and implement RAG techniques to better construct stories to align with user specifications.

General Approach:
1. Loading and Processing stories
   - Create embeddings in ChromaDB vector database and Neo4j graph database

2. Implement RAG using DSPy
   - If DSPy as the framework becomes too challenging, default to Langchain with prompt templates

3. Text-to-Speech using Coqui TTS
   - The speech to be read aloud will be an optional feature, specified in the UI

4. User interface via Gradio

Approach is subject to change as the project progresses.

Data:

Text or PDF files of children's stories sourced from https://archive.org/ and https://www.gutenberg.org/, organized by story category:
   - Fairytales: Grimm and Hans Christian Anderson collection of stories
   - Adventure: Peter Pan, Alice's adventures in Wonderland, Wizard of Oz
   - Animals: Peter Rabbit, Winnie the Pooh, The Wind in the Willow
   - Moral Fables: Aseop's Fables