**Project Title**

**AI Dungeon Story Generator Using GPT-2**

**Introduction**

The AI Dungeon Story Generator project leverages the power of transformer-based language models to create interactive and engaging fantasy-style narratives. This project is inspired by text-based adventure games and aims to allow users to explore creative storytelling using AI.

**Abstract**

This project utilizes a pretrained GPT-2 language model to generate context-aware story continuations based on user input. By selecting a genre and entering an initial prompt, users can guide the direction of the story. The application provides multiple continuations, encouraging creativity and interactivity. Built using Python and Streamlit, the project delivers a user-friendly web interface for real-time story generation.

**Tools Used :-**

* Python
* Hugging Face Transformers (GPT-2)
* Torch (PyTorch)
* Streamlit
* Datetime, OS Libraries

**Steps Involved in Building the Project :-**

1. **Model Loading**: Imported and initialized the GPT-2 model and tokenizer from Hugging Face. Set the eos\_token and pad\_token for compatibility.
2. **Prompt Generation**: Designed genre-based prompts (Fantasy, Mystery, Sci-Fi, etc.) to give story context.
3. **User Input**: Took input from the user through Streamlit for both genre and starting line.
4. **Story Continuation**: Generated continuations using the GPT-2 model with top-k sampling to produce varied outputs.
5. **Multiple Outputs**: Displayed several generated options to encourage interactive selection.
6. **Save Feature**: Enabled users to download and save their generated stories as .txt files.
7. **Deployment**: Created a full-fledged Streamlit app with interactive widgets and real-time story generation.

**Conclusion**

The AI Dungeon Story Generator demonstrates the creative capabilities of AI in the domain of storytelling. It provides an intuitive and engaging experience for users who want to co-create fantasy narratives with AI. The combination of GPT-2 and Streamlit proves effective for rapid prototyping and interactive deployment.