## AI Dungeon Story Generator

### 1. Introduction

The **AI Dungeon Story Generator** is an interactive web application that uses natural language generation (NLG) to create fantasy and genre-based stories. Built using Streamlit and Hugging Face’s pretrained GPT-2 models, this app allows users to input a custom story prompt and generate multiple creative continuations in genres like Fantasy, Mystery, Sci-Fi, Moral and Horror.

The project simulates "choose-your-own-adventure" gameplay, empowering users to shape their own storylines with AI.

### 2. Abstract

Storytelling is a key use case of generative AI. This project leverages GPT-2—a powerful autoregressive language model—to generate narrative continuations from a user-provided prompt. With an intuitive Streamlit interface, the application lets users:

* Choose a genre
* Enter a story beginning
* Generate one or more AI-written continuations
* Save the story as a .txt file

This tool demonstrates how modern language models can support creativity, entertainment, and user engagement through simple, accessible interfaces.

### 3. Tools & Technologies Used

* **Python** – Main programming language
* **Streamlit** – For the web-based UI
* **Transformers (Hugging Face)** – For loading GPT-2 models
* **Torch** – For model inference backend
* **GitHub** – Version control and deployment integration
* **Streamlit Cloud** – For deploying the app publicly

4. Steps Involved in Building the Project

### ****Setup Environment****

Install required libraries: streamlit, transformers, torch

* **Load Pretrained Model**

Use AutoTokenizer and AutoModelForCausalLM to load GPT-2

* **Build Streamlit UI**

Prompt text box

Genre selector

Length slider

Buttons for generation and saving

* **Generate Story**

Tokenize input

Generate text with model.generate()

Display one or more story continuations

* **Save Feature**

Write generated output to a .txt file

* **Deploy**

Push code to GitHub

Deploy to Streamlit Cloud

### 5. Output Samples

**Prompt:** "The dragon guarded a secret cave deep in the mountains"  
**Genre:** Fantasy  
**Output:**  
The dragon stirred, smoke curling from its nostrils. No human had dared enter this cave in centuries. Until today

### 6. Conclusion

This project demonstrates the power of AI in storytelling. Using GPT-2 and a simple Streamlit interface, users can experience instant, creative story generation. The app can be extended to include branching logic, longer memory, or character selection, making it suitable for educational, entertainment, and creative applications.