

Morgan Maumus
Final Project Report

I. Problem Domain

- a. Worldbuilding has its issues in the amount of information one can create within the world: customs, cultures, races, states, governments, leaders, assassins, seas, mountains, roads, cities, history, beliefs, etc; thus, organizing and searching for details and information on your world can be messy, time-consuming, and ultimately frustrating
- b. To better the overall access to a world's information, this AI chatbot can be loaded with all your worldbuilding details in the forms of pdfs or .txt files and used to search for any detail you need to run your game or expand your worldbuilding more.
- c. I've been worldbuilding on-and-off for years now, and the major reason why I kept losing interest and motivation was the difficulty of organizing information, so I wanted to create something that would motivate me to continue my worldbuilding.

II. Methodology

- a. I took a high-level approach for this project. I wanted to create a solution that caters to D&D players and game masters as well as just worldbuilders; the system would ideally be quick, reliable, easy to use, multi-functional in storage and access of data, and worth the user's time
- b. For my test data, I imported the Dungeons and Dragons's 5th edition core rulebooks, four of the popular expansion books, and some of my friend's homebrew lore and notes. I used OpenAI's large language model API to run the chat bot functionality while tkinter, a standard Python interface, is used to implement GUI.
- c. Data is loaded and vectorized from the imported PDFs. When a user asks a question, the AI will take the question and use the BM25 algorithm to compile the top seven most relevant chunks from the data. The AI then uses Cohere Rerank to compress the relevant information into a single data point and present that data found to the user.

III. Outcome

- a. For the simplest uses, the system performs as intended. Users can search imported information with ease and retrieve relevant information, allowing them to run their games or worldbuild more efficiently. The system, however, fails to operate at a higher level of inference and calculation. For example (see below), when asking a question involving multiple specific data points—level, how many magic items, high level campaign—it identifies some seemingly relevant information but does not provide accurate information. 5th level players in a high magic campaign should have at least one uncommon magic item—a stark contrast to the AI's answer of 10 minor magic items and 12 major magic items. The system also fails to identify any homebrew information, despite the data being imported.

Tower of Inquiry

User: What is a gold dragons bonus to a dexterity saving throw?

Lorekeeper: A gold dragon has a Dexterity saving throw bonus of +6. This information can be found in the document titled "YOUNG GOLD DRAGON" under the section "Saving Throws." The source of this information is a PDF document related to Dungeons and Dragons 5th edition rules and stats.

User: How many magic items should a level 5 player have in a high-magic campaign?

Lorekeeper: In a high-magic campaign, a level 5 player should have a total of 10 magic items according to the Magic Items Awarded by Rarity table. This includes 10 minor magic items and 12 major magic items. This information was found in the document titled "AWARDING MAGIC ITEMS" from the Dungeon Master's Guide.

User: What is a vampire lord's ac?

Lorekeeper: The Armor Class (AC) of a vampire lord is 16 (natural armor). This information can be found in the document that describes the stats and details of a vampire lord in Dungeons and Dragons 5th edition.

User: who is finn soryn?

Lorekeeper: Finn Soryn is not mentioned in the provided documents. Therefore, based on my knowledge as a language model AI, Finn Soryn does not appear to be a character or entity from official Dungeons and Dragons 5th edition rule books or supplements. It is possible that Finn Soryn is a character from a homebrew campaign or setting created by a Dungeon Master or player.

Enter your inquiry:

Inquire

b.

Worldview/.env:

```
#Environment Variables

#OpenAI API Key
OPENAIKEY=sk-proj-tNP7Vnu7BbwUEFCJ6HjDT3B1bkFJMSochvTWayhj0tuxLKsp

#Cohere API Key
COHEREKEY=1JFzujZ48tZDZj2Uk3QTYdebYFiCNmczn8hxvCgu
```