

CIS 451/551 Final Project

Spring 2024

name(s): Isabella Cortez & Sequoia Anichini

project title: D&D Database - mySQL & PHP Final Project

Connection Information:

port number: 3791

hostname: ix.cs.uoregon.edu

guest account login/password: Username: guest; Password: 0306

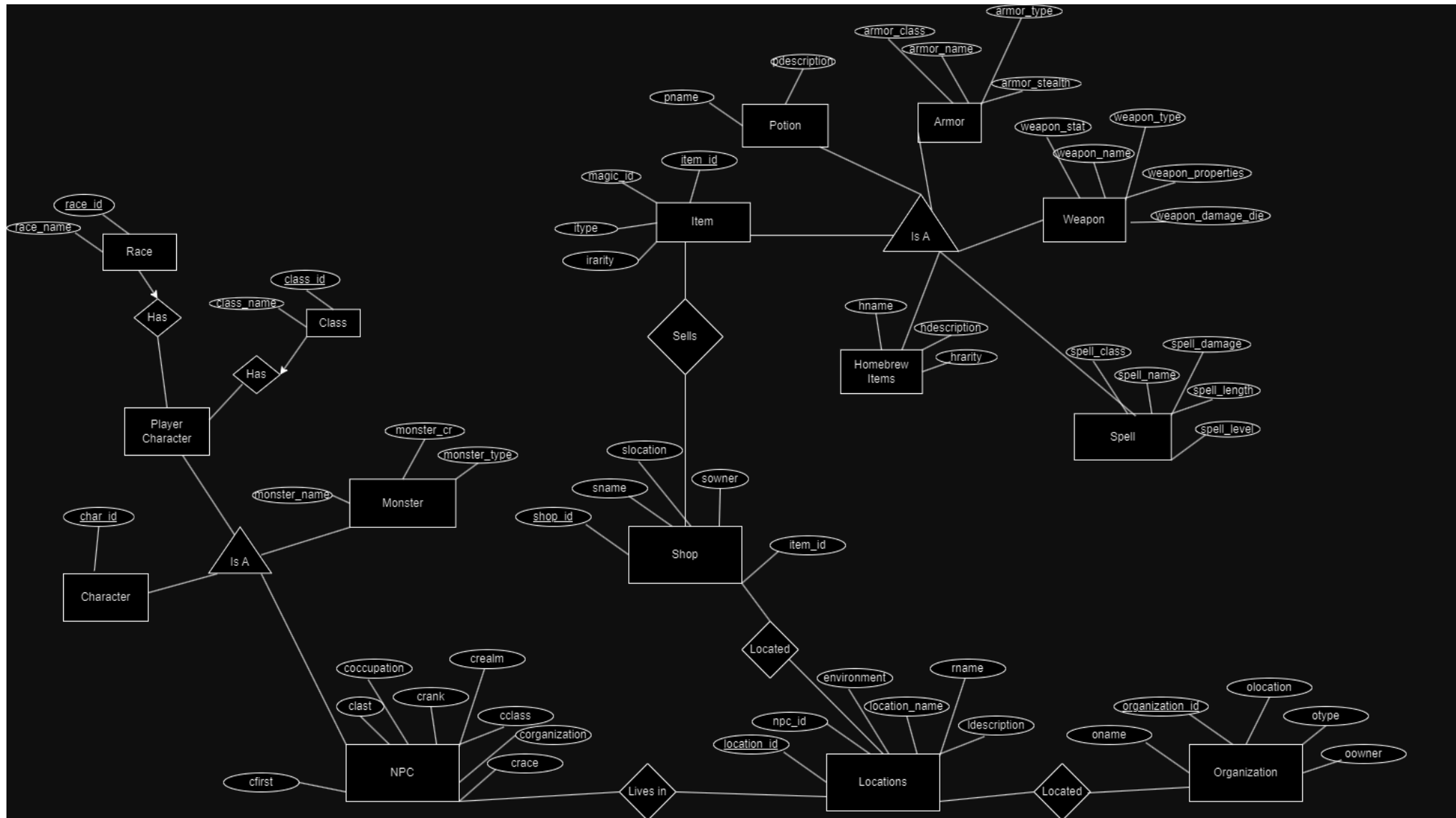
database name: DnD_Database

project URL: <https://ix.cs.uoregon.edu/~icortez6/finalProj/homePage.html>

Highlights: We enjoyed working on the schema and creating the applications after the schema was finished.

Summary: Sequoia and I will be modeling a Dungeons & Dragons database. We will be using base D&D information from the Player's Handbook and four of my friend's Homebrew D&D creations including: items, creatures, and world information. The database will contain both quantitative and qualitative data, as it will include qualitative descriptions of locations, npcs, monsters, magic items and quantitative descriptions of weapons and armor stats. As for the actual data stored in the database, there will be 14 tables. We split it up half-way where I will work on the first 7 tables and Sequoia will work on the last 7 tables. These tables are: potions, shops, npcs, locations, homebrew_items, organization, monsters, class, race, items, weapons, armor, spells, and character. Each table will have primary and/or foreign keys, names, types, and unique IDs for each table category. For the application programs desired, we would like the final PHP website to be a way of easily organizing the D&D information including both homebrew and base items. Sequoia is working on the non-homebrew and the queries they do are up to them. I worked on the homebrew queries. For the homebrew part, it will help filter the items made by each of my friends. I would like it to be similar to the Stores7 database, only you type in the name of the person that created the homebrew items we are using, and it prints out all items they have made as well as the query for it. As for the non-homebrew they will have queries for non-homebrew and it will have drop downs. The results will be based on what the person selects from the drop down menus. We want it to be useful for the Dungeon Masters and people interested in D&D and we want it to be an easier way of organizing their items. We would also like it to be useful for if other people interested in D&D can use it and learn from it. Therefore even though it is for a table top role play game, we would still like the database to have practical use for people in the real world rather than it be a database that is fun but not used. Since both of us enjoy D&D it will be a fun final project to do, as including both homebrew and base D&D items will be both useful, interesting, enjoyable, fun, and big.

Logical Design - ER Diagram:



Physical Design:

Isabella's Tables:

- homebrew_items
 - The homebrew items table is a table with a list of homebrew items (including potions), their rarity, a description of the homebrew items, and the organization name that made them. There is a homebrew id which is a unique identifier for this table and it is accessed in the potions table.
- locations
 - The locations table has a list of location names, the environment, the realm, the location description, and the organization that made it. There is a location id which is a unique identifier for this table and is accessed in the shops table.
- monsters
 - The monsters table consists of homebrew monsters including their names, description, cr, type, and the organization name that made them. There is a monster id which is a unique identifier for the monster table.
- npcs

- The npcs table is the list of npcs with their first name, last name, class, race, occupation, realm, and the organization that created the npcs. There is a unique identifier called npc id and it is accessed in the shops table. The shop id is accessed in the npc table as well because npcs own shops.
- organization
 - The organization table is just a table consisting of the organization name and the person that created that specific organization. There is an organization id which is a unique identifier for the organization table.
- potions
 - The potions table is a table consisting of only the homebrew potions. The information about the potions includes potion name, description, rarity, and the organization that made the potions. There is a potion id that is unique to this table. The homebrew id is referenced in this table that way the tables can be joined for larger queries and because potions are homebrew items but not all homebrew items are potions.
- shops
 - The shops table has a list consisting of shops within the homebrew worlds. There are attributes including the shop name, shop location, shop owner, and the organization that created the npcs and shop ideas. There is a unique identifier called shop id and it is accessed in the npc table. The location id is in this table since all shops have a location and it is used for joining tables. The npc id is in this table since the npcs own shops and it can be used for joining tables.

Sequoia's Tables:

- class
 - The class table stores information about the various character classes in Dungeons & Dragons. Each class has a unique identifier (class_id), a name (class_name), and up to three synergistic races (synergy_1, synergy_2, synergy_3) that are most compatible with the class. This allows players to identify which races work best with each class.
- race
 - The race table contains information about the different races available for characters in the game. Each race has a unique identifier (race_id) and a name (race_name). This table is used to store races from D&D and is mostly used for the character creator.
- items
 - The items table is a collection of items in the D&D database. Each item has a unique identifier (item_id), and it may reference specific weapon, armor, spell, or magic item identifiers (weapon_id, armor_id, spell_id, magic_id) as foreign keys. The table also includes the item's name (iname), type (itype), and rarity (irarity). This setup allows for categorization and easy retrieval of items.
- weapons
 - The weapons table has information about various D&D weapons. Each weapon has a unique identifier (weapon_id), references the item it belongs to (item_id), and includes attributes name (weapon_name), primary stat used

(weapon_stat), type (weapon_type), properties (weapon_properties), and damage die (weapon_damage_die). This table helps to manage and organize weapon data. It also contributes to the character creator.

- armor

- The armor table stores different types of armor. Each armor entry has a unique identifier (armor_id), references the item it belongs to (item_id), and includes attributes name (armor_name), type (armor_type), stealth properties (armor_stealth), and armor class (armor_class). This table provides data for the character creator.

- spells

- The spells table stores spell information. Each spell has a unique identifier (spell_id), references the item it belongs to (item_id), and includes attributes name (spell_name), class (spell_class), damage (spell_damage), duration (spell_length), and level (spell_level). This table also provides data for the character creator.

- characters

- This table maintains information about player characters. Each character has a unique identifier (character_id), a name (character_name), and references to their class (class_id), race (race_id), and optionally, their weapon (weapon_id), armor (armor_id), and spell (spell_id). This table integrates all aspects of a character's attributes and equipment, providing a comprehensive character profile. It is populated by the character creator application.

List of Applications:

I worked on three applications, one more complex, the other two less complex with a lot of information that shows up when you type in an organization name. Sequoia created two applications, one is a class drop down that suggests three races to choose based on the class. The other one is a character creator where you type in a character name, class, race, armor, spell, and weapon, and it creates a character.

Isabella's Applications:

- NPC Filter
 - This NPC application prints out the NPCs first name, last name, the shop they own, the location of the shop, and a description of that location. It does that by selecting information from the npc table and then joining the npc and shop table based on shop id and joining the location and shop table based on location id. The user can then type in an organization name, and it shows the NPCs from the organization the user submitted.
- Monster Filter
 - The monster application takes the organization name submitted by the user, and outputs the specific organization's monster information. It uses all the information from the monster table and that is it.
- Homebrew Items Filter

- The homebrew items application takes the organization name submitted by the user, and outputs the specific organization's homebrew items information. It uses all the information from the monster table and that is it.

Sequoia's Applications:

- Character Filter
 - The character creator application takes as input a string for character name, selections for a class, race, weapon, armor, and spell. The character is then inserted into the character table on the database end.
- Class Filter
 - The class synergy application takes a selection for a character class, and returns three races which provide complimentary qualities to that class. For example, choosing a cleric will return the recommendation of a dwarf race, since dwarves get constitution and durability bonuses. These bonuses provide extra time and sustainability during combat for casting helpful spells.

User's Guide: Instructions for Using Application

- 1.) Open this link: <https://ix.cs.uoregon.edu/~icortez6/finalProj/homePage.html>
- 2.) Select one of the applications under Homebrew or Non-Homebrew
 - a.) For Homebrew

- i.) Type in one of the organization names in the input field and hit submit. For the applications, there are three organization names you can choose from.

(1) For monsters:

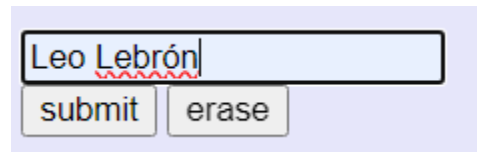
(a) The organization names are: **The Outcast Guild, Leo Lebrón, StarFrost**

(2) For npcs and homebrew items:

(a) The organization names are: **The Outcast Guild, Happy Beholder, StarFrost**

- ii.) Once a name is entered in the input field hit submit to see the results (they must be typed exactly as the bold names are shown (therefore the accent must be there too))

(1)

A screenshot of a web form. It features a text input field with the text "Leo Lebrón" inside. Below the input field are two buttons: "submit" and "erase". The input field has a red squiggly underline under the "ó" in "Lebrón".

(2)

The query:

```
SELECT monster_name, monster_cr, monster_type, monster_descr
FROM monsters
WHERE oname = 'Leo Lebrón';
```

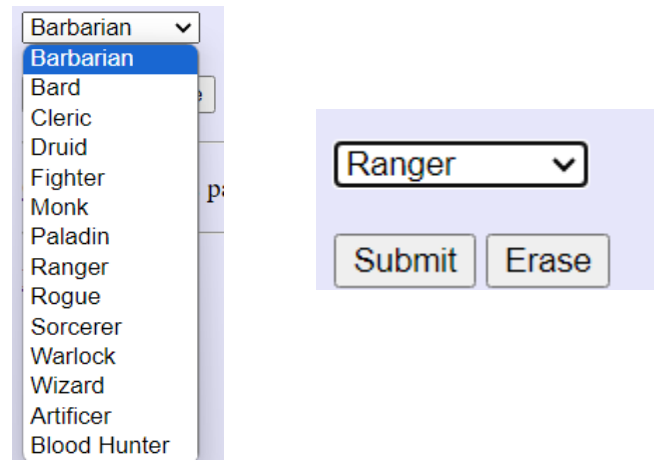
Result of query:

Capyhorror	1	beast	a creature that conceals its true nature beneath the innocent guise of a capybara.
H.A.L. Draco	16	construct	Also known as the Hallucination-inducing Automated Locomotive Dragon, this is a variant on
Phrump	1	beast	The Phrump is a truly extraordinary creature, a whimsical creation born from the mystical e
Fate Weaver Scarab	10	monstrosity	The Fate Weaver Scarab is a mesmerizing creature that exudes an aura of mystery and power.

b.) For Non-Homebrew

i.) Class Selector

(1) Select a class from the drop down menu and hit submit



(2) The results

Query based on class:

```
SELECT class_name, synergy_1, synergy_2, synergy_3
FROM class
WHERE class_name = 'Ranger'
```

Resulting synergies:

- Class: Ranger
- Synergy 1: Elf
- Synergy 2: Halfling
- Synergy 3: Human

ii.) Character Creator

(1) Type in a character name, select both a class and a race, then a weapon, armor, and spell

The image shows three separate dropdown menus for character creation. The first menu, labeled 'Class', has 'Barbarian' selected. The second menu, labeled 'Race', has 'Elf' selected. The third menu, labeled 'Weapon:', has 'Club' selected. Below 'Weapon:', there is an 'Armor:' dropdown with 'Padded Armor' selected, and a 'Spell:' dropdown with 'Fireball' selected.

Create your character by selecting a class, race, weapon, armor, and spell:

Character Name:

Class:

Race:

Weapon:

Armor:

Spell:

(2) See the results

You have created Stella, the Elf Warlock, equipped with Quarterstaff, Leather Armor, and the spell Fly. Adventure awaits!

[Contents](#) of the PHP program that created this page.

[Home Page](#)

3.) Click on Home Page to go back to the home page (which is the link in step 1)

[Home Page](#)

Contents of Tables: <https://drive.google.com/file/d/1GJZQMNhzKANcIc9o9mFxUqc0I-SqvyCd/view?usp=sharing>

Implementation Code:

Schema:

<https://docs.google.com/document/d/1MPBRhE4WKmZg3sqmyyiaFn8I7k0JVx88aYPZCUr1MVM/edit?usp=sharing>

Application (php) and HTML code:

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homePage.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/npcHome.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/npcFilter.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/monsterHome.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/monsterFilter.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/hiHome.txt>

<https://ix.cs.uoregon.edu/~icortez6/finalProj/homebrew/hiFilter.txt>

<https://ix.cs.uoregon.edu/~sanichin/finalProj/baseDND/classHome.txt>

<https://ix.cs.uoregon.edu/~sanichin/finalProj/baseDND/classFilter.txt>

<https://ix.cs.uoregon.edu/~sanichin/finalProj/baseDND/character.txt>

<https://ix.cs.uoregon.edu/~sanichin/finalProj/baseDND/characterFilter.txt>

Conclusion: Sequoia and I created 14 different tables that relate to Dungeons and Dragons. Once we finished the schema with all of the tables, we then worked on our applications splitting it up to where I did three and Sequoia did two. My applications are ones where you type in a name, hit submit, and a list of items, npcs, or monsters that were manually placed into the database shows up based on the name that is typed in the field. Sequoia's applications have drop downs and a text input for a character name. In the first one, you select a class and it gives you three races that work well with the chosen class. In the next one, you type in your character name, then give it a class, race, armor, weapon, and spell, and it gives you a message saying your character was created. This could be the basis for a helpful and simple tool to assist players with tracking information about their campaign. If we had more time I think we would

have added an ability table with the different ability checks that can be done within Dungeons and Dragons and add that to the character creator or class selector. Another thing to add if we had more time, would be more complex queries to present even more of the homebrew information that was put into the database. In both sets of applications, with more time we would have formatted the pages with custom css and php to provide a dynamic web experience with D&D imagery. Overall, this project was a lot of fun and Sequoia and I enjoyed it a lot.

