# Documentation



**Explanation of purpose of each file:**
DnD.py: Main program; creates and runs the game
GameState.py: GameState class; a game of DnD
Items.py: Items class; allows the different interactions/uses of different items by players
Player.py: Player class; dictates what a player can and cannot do in the game
dice.py: DnDRoller class; all the different die used in game
items.json: Json of all items in the game
locations.json: json for map locations and travel, also contains the end_location and ASCII art for starting and ending locations

# Instructions

**How to run program from command line**
```
python DnD.py [items.json path] [locations.json path] [number of players]
```
Follow input prompts and watch the spelling and case based on the options displayed. The fastest way to the final dungeon is Wailing Woods -> Lost Labyrinth -> Dungeon of Doom

Quick rundown of action options:
Travel - gives you the option of traveling to any of the locations connected to your current map location
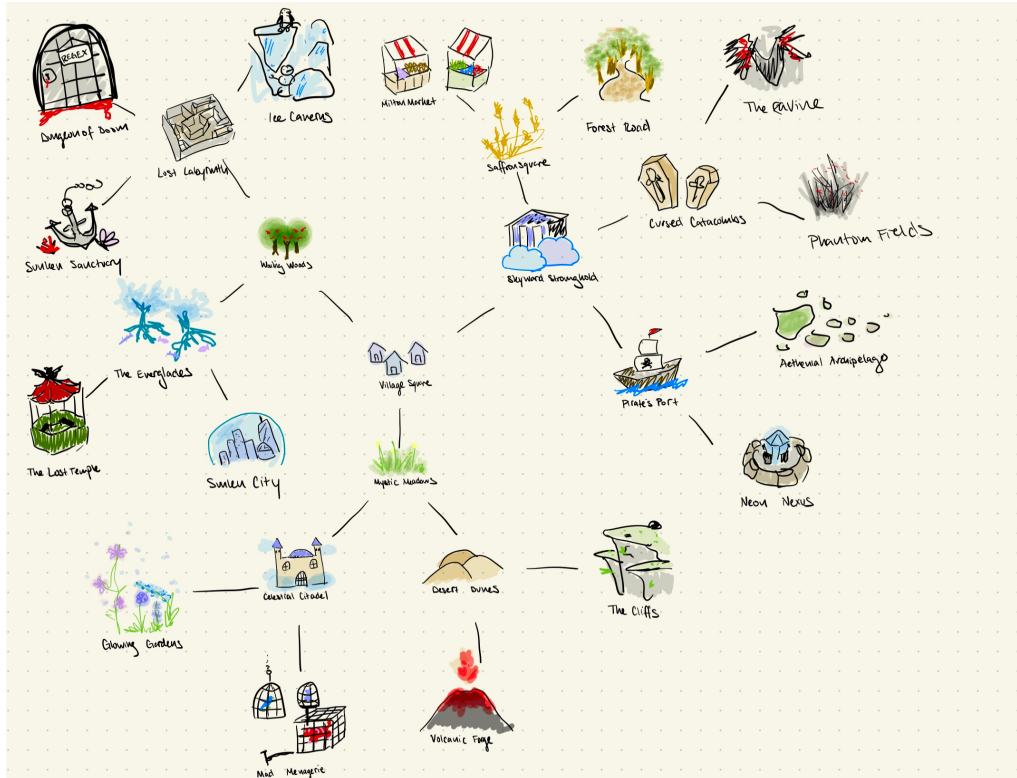
Drink - drink something from your bag

Shop, encounter, battle - only available at certain locations.
- Shop lets you buy an item with your gold, which you can earn by either positive encounters with NPCs or by winning a battle
- Encounter lets you encounter an npc, who can either heal you, give you items and money, give you a hint to the final location, or try to attack you (you can try to run but if you fail speed check you get a debuff in battle)
- Battle lets you directly battle an npc

Roll for favor - only available at first location, you can get a luck boost in your dice or a debuff
View stats - look at stats for the whole party or for one specified player

Battle action options:
- Attack - hit the npc using your weapons if you have any
- Defend - defend against the npc for the next round using your armor if you have any
- Heal - heal yourself or an ally, only heals 1 if you're not a healer
- Drink - drink a potion or an item if you're feeling silly
- Run - try to escape battle, if you succeed we remove you from the queue, otherwise you lose 5 hp and stay

If you die at any point (hp hits 0) you are removed from the party.
At the end of a battle, a wizard magical man will show up and magically matplotlib the hp of the battle.
Please close the image that pops up to continue with the game.

**How to use program and/or interpret output of programs (as applicable)**

Pro tip: Don't use Aric, Jenny, Nicole, or Ariel as a player name, you'll get confused with the boss names.

When prompted with "Now entering Boss Battle! Prepare yourselves" hit enter, it's just an input statement that I put in to create a break between the previous action and the boss battle. It should then launch the boss battle.

# Attribution

Attribution:

| Method/function | Primary author | Techniques demonstrated |
|---|---|---|
| GameState→ npc_generator | Nicole Tran | conditional expressions |
| dice.py→ __init__ | Jenny Lee | optional parameters and/or keyword arguments |
| Item.py→ __str__ | Nicole Tran | Magic methods other than __init__() |
| DnD.py→ load locations in function main | Ariel Hong | with statements |
| DnD.py→ parse_args | Nicole Tran | the ArgumentParser class from the argparse module |
| Player.py → __init__ | Nicole Tran | sequence unpacking |
| Player.py → bag_check | Nicole Tran | comprehensions or generator expressions |
| Gamestate.py→ battle | Nicole Tran | use of a key function (which can be a lambda expression) with one of the following commands: list.sort(), sorted(), min(), or max() super() |
| Gamestate.py and Player.py | Nicole Tran | composition of two custom classes |
| DnD.py → def main | Ariel Hong | use of json.dumps(), json.loads(), json.dump(), or json.load() |
| DnD.py→ def main | Jenny Lee | regular expressions |
| GameState.py → new_turn() | Ariel Hong | f-strings containing expressions |
| GameState.py→ def mathematician | Jenny Lee | visualizing data with pyplot or seaborn |