DNDutils

A Python CLI Application that provides utilities for playing the Tabletop RPG 'Dungeons and Dragons'

DNDutils is a simple python program that operates in a terminal and provides various utilities for playing Dungeons and Dragons.

It contains two main features:

DiceRoll - A dice rolling tool that allows users to roll a dice based on the standard xdy + m format (e.g. 1d6 + 2)

Fluff - A content generation tool that generates NPCs (non-player characters) or places based on a series of tags. The program will then allow the user to copy the NPC or place to their clipboard for pasting in to other documents, and will convert the character to an object to allow various methods to be used on them.

User Stories

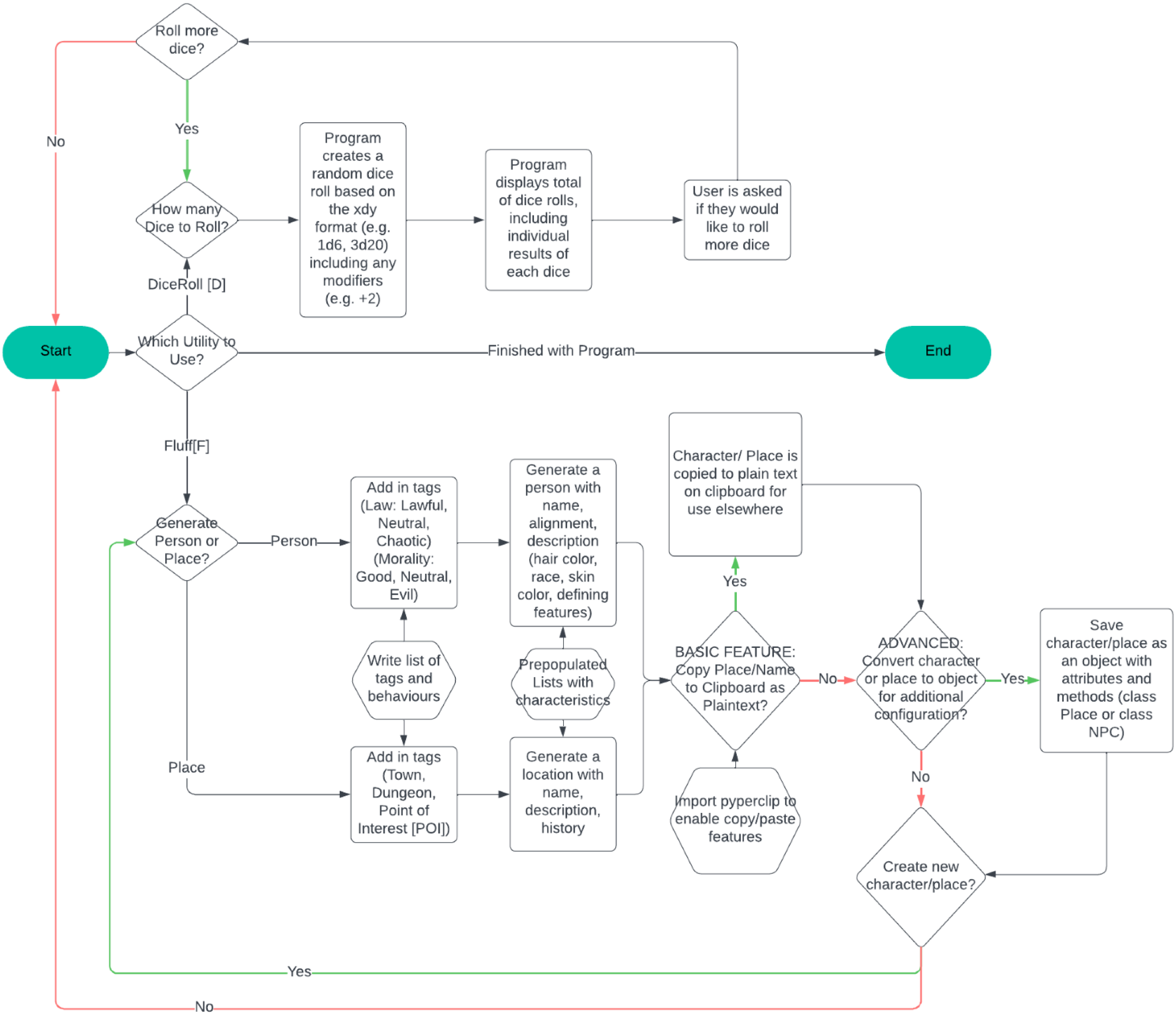
DnD Players:

- As a DnD Player, I want it to be immediately obvious what the program is able to do.
- As a DnD Player, I want navigation through the program's functions to be simple and easy to control, so I can use it while in the middle of a game of DnD without any issues.
- As a DnD Player, I want the information provided by the program to be in a clear and readable format.
- As a DnD Player, I want to be able to see how the program has reached its conclusions as a result of its functions. (e.g. I want the diceroll function to give me the results of individual dice, as well as the sum total across all rolled dice) to ensure that it is working correctly.
- As a DnD Player, I want to be able to understand what inputs the program is requesting of me (for example, when rolling dice or selecting tags for Fluff) for ease of use.

DnD Dungeon Masters

- As a DnD Dungeon Master, I want to be able to modify my created places and NPCs using methods so I can customize them to my liking.
- As a DnD Dungeon Master, I want to be able to copy my created places and NPCs to other sources and files for later use.
- As a DnD Dungeon Master, I would like built-in export functionality to include CSV and JSONs for ease of use in other programs.

Logic Flowchart


Roll more dice?
No
Yes
How many Dice to Roll?
Program creates a random dice roll based on the xdy format (e.g. 1d6, 3d20) including any modifiers (e.g. +2)
Program displays total of dice rolls, including individual results of each dice
User is asked if they would like to roll more dice
DiceRoll [D]
Start
Which Utility to Use?
Finished with Program
End
Fluff[F]
Generate Person or Place?
Person
Add in tags (Law: Lawful, Neutral, Chaotic) (Morality: Good, Neutral, Evil)
Generate a person with name, alignment, description (hair color, race, skin color, defining features)
Character/ Place is copied to plain text on clipboard for use elsewhere
Yes
Write list of tags and behaviours
Prepopulated Lists with characteristics
BASIC FEATURE: Copy Place/Name to Clipboard as Plaintext?
No
ADVANCED: Convert character or place to object for additional configuration?
Yes
Save character/place as an object with attributes and methods (class Place or class NPC)
Place
Add in tags (Town, Dungeon, Point of Interest [POI])
Generate a location with name, description, history
Import pyperclip to enable copy/paste features
No
Create new character/place?
Yes
No

Mockups

DiceRoll
Fluff - Place
Fluff - NPC

```
Welcome to DNDutils! Please select a function below.

DiceRoll [D] - A tool that allows you to roll several dice to determine the outcome of an event.
Fluff [F] - Create a randomly generated NPC or place using prepopulated lists of characteristics.

<input letter (D or F) for desired function here>
```

```
Please provide the dice you want to roll in the following format, separated by commas:
Number of dice, number of sides on each side (e.g. 6, 8, 12), any modifiers (e.g. for +2: 2, for -2: -2)

<2,6,5>

Your dice total is: 17
### Dice Summary ###
Individual Rolls:- 5, 7 = 12
Plus modifier: 5

Would you like to roll more dice? (Y/N)

<Y/N>
```

```
Would you like to generate an NPC or a Place?

<Place>

Please enter the type of place you would like to generate.
The list of available types are as follows:
[Town, Dungeon, PoI]

<Town>

Generating Town...

Your town is called "Slatehall".
It was founded by a nomadic tribe of humans 250 years ago.
It is currently led by a council of elders.
Notable landmarks include: The Lion's Head Tavern, a Blacksmith, a shrine to Bahamut
It is near to a goblin fortress.
Notable rumors include: An unsolved murder, cattle illness, strange lights

Would you like to copy this description to the clipboard? (Y/N)

<Y>

Description copied to clipboard!

Would you like to convert this place to an object? (Y/N)

<Y>

slatehall object created in class Town.

<print(slatehall.leadership)>

council of elders

<slatehall.add_rumor("poisoned well")>

<print(slatehall.getrumors())>

Rumors for Slatehall:

["an unsolved murder", "cattle illness", "strange lights", "poisoned well"]
```

```
Would you like to generate an NPC or a Place?

<NPC>

Please enter the tags you would like your NPC to have from the list below:
[Lawful, LNeutral, Chaotic, Good, MNeutral, Evil, CivOccupation, AdvOccupation]

<LNeutral, Good, CivOccupation>

Generating NPC...

Your NPC is named "Bingles McGraw"
He is a male Orc. They are 32 years old.
He is lawfully neutral. He is morally good.
He was born in Slatehall. He is a Carpenter.
They have recently been distracted by a family illness.
He likes dragons, violets, and precious gems.
He dislikes mushrooms, alchemists and wheat bread.

<Y>

Description copied to clipboard!

Would you like to convert this NPC to an object? (Y/N)

<Y>

bingles_mcgraw object created in class NPC.

<print(bingles_mcgraw.alignment)>

Bingles Mcgraw's alignment is Neutral Good.

<bingles_mcgraw.set_stats(13, 8, 10, 9, 7, 14)>

Bingles Mcgraw's stats are as follows:

Strength - 13 (1)
Dexterity - 8 (-1)
Constitution - 10 (0)
Intelligence - 9 (-1)
Wisdom - 7 (-2)
Charisma - 14 (2)

<bingles_mcgraw.roll(1, 20, strength)>

Bingles McGraw rolls a 1d20, adding their strength modifier of +1.

Dice result: 17
Total: 18
```

Challenges

Massive Amounts of Nested Data

As Fluff requires large amounts of individual list items as strings, it's important to understand:

- Where am I sourcing the data from?
  - Possible answers: ChatGPT, lists of characteristics found online

- Where am I storing the data?
  -Possible answers: constants, importing lists from external files (CSV, JSON)

Import/Export of Objects

Fluff can create NPCs and places that would be useful to export in a supported format. The obvious choices would be CSV and JSON files for use in excel sheets/databases.

Interface Usability

Fluff allows a great amount of functionality through the use of methods and attributes. Trying to use these within the main program may be unwieldy.

- Fluff potentially as a write-only tool - possibly another module for reading the data in a more usable way?

Libaries

pyperclip - Copy & Paste Functionality

json - Reading/Writing files to JSON format