



Massively Multiplayer Online Role Playing Dungeons and
Dragons (MMORPDND)
Manual & Programming Documentation

Developer: Antonius Torode

Version – 0.002

Latest update: August 25, 2023

© 2017 Antonius Torode
All rights reserved.

This work may be distributed and/or modified under the conditions of Antonius' General Purpose License (AGPL).

The Original Maintainer of this work is: Antonius Torode.

The Current Maintainer of this work is: Antonius Torode.

This document is designed for the sole purpose of providing a template for writing a manual/book in LaTeX.

This document is continuously under development.
Most Current Revision Date:

August 25, 2023

Torode, A.
Michigan State University –
Department of Physics & Astronomy.
2017, Student.
Includes Source Code and References
ISBN: NONE

Contents

1	Introduction	1
2	Installation And Setup	2
2.1	Windows	2
2.2	Linux	2
2.2.1	Semi-Automated Installation with Setup Script	2
2.2.2	Manual Installation	3
3	Tools And Scripts	4
3.1	mmorpdnd.py	4
3.1.1	Purpose	4
3.1.2	Use	4
3.1.2.1	GUI	4
3.1.2.2	Command Line	4
3.2	templates/creator.py	5
3.2.1	Purpose	5
3.2.2	Use	5
3.2.2.1	GUI	5
3.2.2.2	Input Files (.input)	6
3.2.2.3	dnd-image type	7
3.2.2.4	dnd-list type	7
3.2.2.5	dnd-info type	7
3.2.2.6	dnd-music type	7
3.2.2.7	Example Input File	8
3.2.2.8	Character Files (.char)	8
3.2.2.9	Required Keywords	8
3.2.2.10	Optional Keywords	9
3.2.2.11	Example Character File	10
3.2.2.12	Name Files (.names)	10
3.2.2.13	List Files (.list)	11
3.2.2.14	Command Line	11
	Programming Methods and Variables	12
3.3	MMORPPDND Programming Methods and Variables	12
3.4	Creator Programming Methods and Variables	21

This page intentionally left blank.

Introduction

Imagine having a toolkit that makes crafting an entire Dungeons and Dragons world an effortless adventure. This collection of tools and scripts has been meticulously designed to simplify the process, aiding in the creation of visually appealing HTML files and automating the linkage of files in a user-friendly wiki-style layout.

At its core, this project serves as a collaborative haven for D&D enthusiasts. Within this dynamic universe, players are invited to claim their own territories, assuming control and adding their creative essence to the ever-expanding lore. Moreover, the existing components are at the disposal of all participants, allowing for a seamless integration of established content into their unique narratives and imaginative designs.

In essence, this endeavor mirrors the essence of a massively multiplayer online role-playing experience, with a D&D twist. It's an invitation to embark on an interconnected journey, where each player becomes a co-author of a sprawling and vibrant MMORPDND universe.

Installation And Setup

In this chapter, we delve into the essential technical aspects of getting your MMORPDND project up and running. From tool installation to environment configuration, this section provides the necessary groundwork for a seamless initiation into the world of D&D universe creation.

2.1 Windows

TODO - Write this section.

2.2 Linux

2.2.1 Semi-Automated Installation with Setup Script

To expedite the installation and setup process, a convenient setup script has been provided. The provided setup script currently supports Linux environments. This script automates the installation of required dependencies and prepares your environment for the MMORPDND project. Follow these steps to get started quickly:

1. Open a terminal window.
2. Install Git if it's not already present on your system. Run the appropriate command for your operating system:

```
sudo apt-get install git
```

3. Clone the MMORPDND repository by running the following command:

```
git clone https://github.com/torodean/DnD.git
```

4. Navigate to the cloned repository directory:

```
cd DnD/
```

5. Make the setup script executable by running:

```
chmod +x mmorpdnd-setup.sh
```

6. Execute the script with administrative privileges to initiate the installation process:

```
sudo ./mmorpdnd-setup.sh
```

The script will automatically install the necessary dependencies.

7. Once the script completes, your system will be set up with all required components for the MMORPDND project. If there are any dependencies that did not install via the script, you may need to follow the manual installation guidelines in the below section.

By utilizing Git and the setup script from the cloned repository, you can significantly streamline the installation and setup process, ensuring a swift start to your MMORPDND adventure.

2.2.2 Manual Installation

Before using the MMORPDND project, it's crucial to ensure that your system meets the necessary requirements. The following prerequisites must be satisfied to facilitate a smooth installation and setup process:

- **Git:** Install Git if it's not already present on your system. Run the appropriate command for your operating system:

```
sudo apt-get install git
```

- **:** Clone the MMORPDND repository by running the following command:

```
git clone https://github.com/torodean/DnD.git
```

- **Python 3:** Ensure that Python 3 is installed on your system. If it's not already installed, you can use the following commands to install it:

```
sudo apt-get update
sudo apt-get install python3
```

- **Python Package Installer (pip):** Install pip, the package installer for Python, using the following command:

```
sudo apt-get install python3-pip
```

- **Python Tkinter:** This package is used for creating graphical user interfaces in Python. Install it with:

```
sudo apt-get install python3-tk
```

- **Python Libraries:** The MMORPDND project relies on the following Python libraries:

- **bs4, BeautifulSoup:** These libraries are used for web scraping and HTML parsing. Install them with:

```
pip3 install bs4
pip3 install BeautifulSoup
```

- **regex:** This library provides advanced regular expression capabilities. Install it with:

```
pip3 install regex
```

- **cssbeautifier:** This library is used for formatting CSS files. Install it with:

```
pip3 install cssbeautifier
```

- **tqdm:** This library provides a fast, extensible progress bar. Install it with:

```
pip3 install tqdm
```

To ensure a streamlined installation and setup experience, make sure these prerequisites are met before proceeding with the MMORPDND project.

Tools And Scripts

3.1 mmorpdnd.py

3.1.1 Purpose

This script serves as the backbone for an array of automatic linking and logistical features within MMORPDND. These functionalities typically operate on all files, encompassing crucial elements such as the generation of directories, HTML index files at the directory summits, establishment of uniform headers and navigation for all HTML documents, seamless interlinking between files, refinement of both HTML and CSS code, and an array of additional capabilities. When ran, this script will perform the following actions in the following order:

1. Create Directory Structures if not already existing.
2. Create index files for each directory.
3. Update each index file to link to all files and images within the directory.
4. Update the headers of all html files to the template html header.
5. Update the navigation of all html files to the template navigation html.
6. Search and hyperlink all words found in all html files to the appropriate html file whose name matches the words found.
7. Beautify the code.

3.1.2 Use

The mmorpdnd.py script can be ran as a gui window or using the command line options. The two main features are 'test' and 'update'. The 'test' feature will create fake files and then perform the update command on them. This is useful for testing if the features and newly added features are working properly. The 'update' feature will perform a combination of tasks which updates all appropriate files to do the steps mentioned in the list above.

3.1.2.1 GUI

The GUI window is somewhat self explanatory. The two main features are represented by red buttons - the 'test' and 'update' features. There are also other buttons to simple perform and of the individual tasks using the appropriately associated button.

3.1.2.2 Command Line

The MMORPDND application supports some command line features.

```
usage: mmorpdnd.py [-h] [-t] [-u]
```

MMORPDND Tools and apps.

optional arguments:

```
-h, --help      show this help message and exit
-t, --test      Runs the test-all feature then exit.
-u, --update    Runs the update-all feature then exit.
```

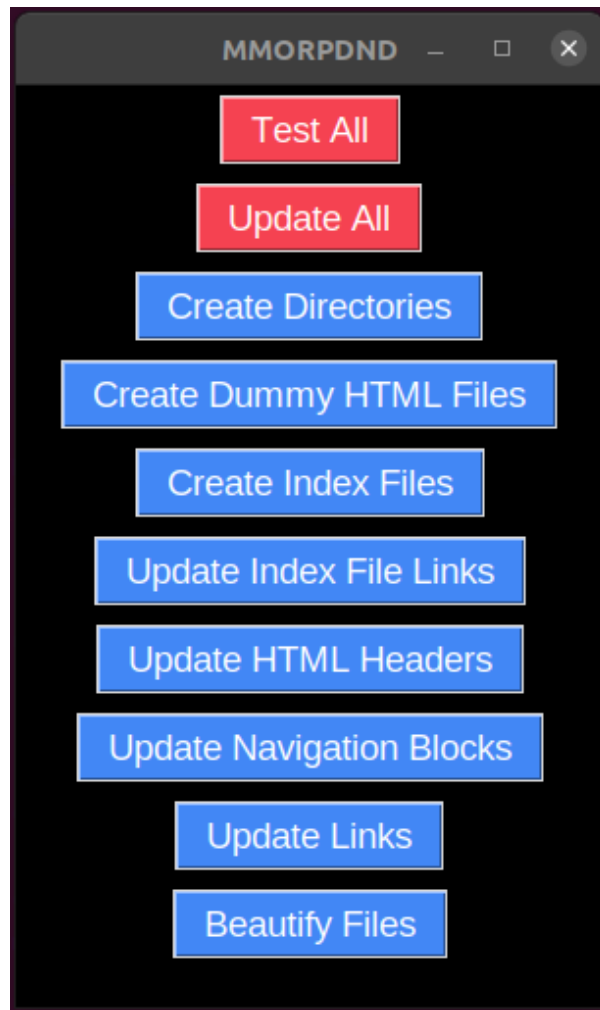



Figure 3.1: The MMORPDND Main GUI

3.2 templates/creator.py

3.2.1 Purpose

The creator tool is a practical solution for converting basic template text files into functional HTML pages. It takes care of the technical aspects by automatically creating HTML files and filling in missing details, like character stats or other content. The tool understands the structure of your template files, recognizes placeholders, and replaces them with accurate data. Whether you're building character profiles, story summaries, or any content with consistent formatting, this tool ensures your HTML documents are correctly formatted and ready for use. It simplifies the process, letting you focus on content creation while it handles the conversion from templates to HTML.

3.2.2 Use

The creator tool is a powerful tool that contains many subtle features. It is important to understand these subtleties before using the tool and therefore I encourage the reader to read this entire section before use.

3.2.2.1 GUI

The main GUI of the creator tool has a few components. These include text boxes, buttons, and check boxes.

The "Input File" text box field is used to specify the input file that is to be processed by the tool.

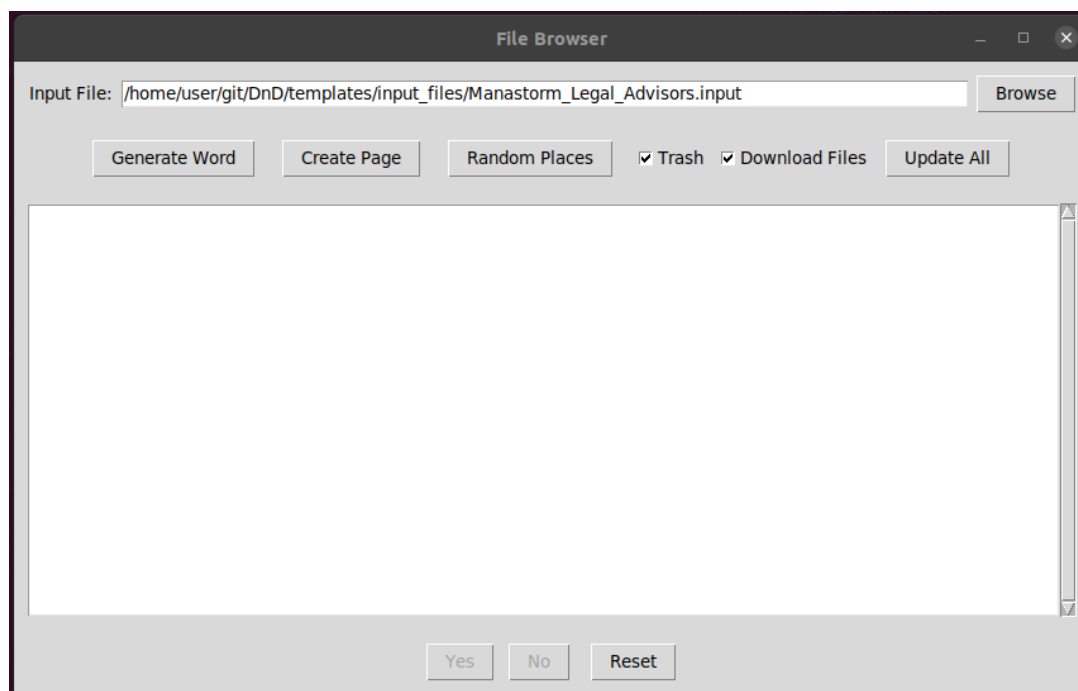


Figure 3.2: The MMORPDND Main GUI

This file can be an ‘.input’, ‘.char’ or ‘.names’ file. Ensure the file is in the proper format (see below sections) or unexpected behavior may occur. The ‘Browse’ button is used to open a file explorer window for selecting a file and will automatically populate the “Input File” text field when a file is selected. The large text box in the center of the GUI is where output generated from the tool as well as status messages are displayed.

The “Generate Word” button is used for random word generation. This feature takes a list of words (whether names, places, or other) and generates a similar random word using the data in the input ‘.names’ file. This is explained in more detail later in section 3.2.2.12. The “Create Page” button is used to generate an HTML file based on a ‘.input’ or ‘.char’ file and is explained in more details in the following sections. the “Random Places” file is used to generate place names based on an input ‘.names’ file along with a ‘.list’ file. These are explained more in later sections. The “Yes”, “No”, and “Reset” buttons are used when user input is asked for. The “Update All” button performs the same functions as the mmorpdnd.py update function (see the previous sections).

The “Trash” checkbox will determine if processed files will be moved to the trash folder after processing and if duplicate files are to be deleted. Typically, the user will want this to be checked, but it is useful to leave unchecked for testing and if files will be processed multiple times. The “Download Files” button determines if music files should be downloaded when ‘.input’ files containing a dnd-music section are processed (this is explained more in later sections).

3.2.2.2 Input Files (.input)

The input files are essentially just text files with the file extension ‘.input’. The main feature of the creator.py tool is to read in these input files, parse them, and generate the appropriate html files from them. These input files must follow a strict formatting but offer a few various helpful features. Each line of the input file represents a ‘section’ of the html file that will be generated. Each line follows the following format:

```
Heading Text [type]=Information text
```

The “Heading Text” is what will appear as the header for that html section. The “type” value is what determines the properties of this section and how it is interpreted by the creator tool. The “Information text” is the actual information for that section. The only exception to this rule is the first line which defines the “folder” that the html file generated from the input file will be placed into. This “folder” line is special in that it has no type and the creator tool will recognize the folder keyword and store this information separately. This folder line must be formatted as follows:

```
folder=path/to/where/I/want/my/generated/file
```

The various types determine the formatting and decoding of the input file, and each type has small subtleties. The various types are

1. **dnd-image**: This type is used to display an image or multiple images.
2. **dnd-list**: This is used to display a list of items.
3. **dnd-info**: This is used for general information and sections. It also supports listing information between paragraphs.
4. **dnd-music**: This is a section for storing various music for the regions.

3.2.2.3 dnd-image type

The **dnd-image** type is used to display images specific to the file. The information text must contain three parameters separated by a semi-colon delimiter. These parameters are **img/image-name.jpg;image source;image caption**. The first parameter is simply the location of the image and the image name. These are typically placed in 'templates/img'. The second is the source of the image, this is simply a string but is there to keep all images properly sourced. The third is a caption that will be displayed with an image. This caption is also a string and can be whatever the user desires. As an example, here's a proper dnd-image block:

```
Coconatus Marmotta[dnd-image]=img/coconatus_marmotta.jpg;Created by Bing AI image creator;Coconatus Marmotta.
```

One unique feature of this is that if the image name does not exist (i.e. 'img/coconatus_marmotta.jpg'), the tool will append a '(1)' to the name and search again (i.e. 'img/coconatus_marmotta (1).jpg'). If this new name is found, the tool will search for image names with the index incremented and include all such images (i.e. 'img/coconatus_marmotta (2).jpg', 'img/coconatus_marmotta (3).jpg', etc) in the output html block.

3.2.2.4 dnd-list type

The **dnd-list** type is used to display a simple list of items. The information text must contain one or more parameters separated by a semi-colon delimiter. As an example, here's a proper dnd-list block:

```
Landmarks and Other Features[dnd-list]=Talleril: A small island far off the coast of Alderpine.;Enthilma: A small island off the coast of Alderpine.;Lomelindei: The large world tree deep within Alderpine.
```

3.2.2.5 dnd-info type

SECTION IN PROGRESS!

3.2.2.6 dnd-music type

The **dnd-music** type is used to display a simple list of music items. The information text must contain one or more parameters separated by a semi-colon delimiter. Currently, this is primarily designed to work with youtube links. Given a simple youtube link, the code will find the name of the video and use that as the list information as well as keeping a link to the video itself. If the "Download Links" checkbox in the GUI is enabled, the files will be downloaded as mp3 files and the folder next to the list item will be hyperlinked to the local file. These files will be located in a music folder. As an example, here's a proper dnd-music block (except with fake URL's):

```
Music And Ambiance[dnd-music]=https://youtube_link_1;https://youtube_link_2;https://youtube_link_3
```

3.2.2.7 Example Input File

For example input files, you can look inside the templates/trash folder. This is where input files get placed after they are finished processing. The following is an example input file with an example of many different elements. The associated image files ‘foobar.jpg’, ‘foobars (1).jpg’ and ‘foobars (2).jpg’ should be located in the templates/img folder for the below file to process correctly.

```
folder=items

A Single Image[dnd-image]=img/foobar.jpg;Created by Someone;A foobar image.

Information Section[dnd-info]=Here is a paragraph of text.;Here is a second paragraph.

Information Section With Smaller Headers[dnd-info]=Here is a paragraph of text.;*Small
    Header* Here is a second paragraph.

A List Of Items[dnd-list]=item A; Item B; Item C; Item D

Multiple Images[dnd-image]=img/foobars.jpg;Created by Someone;Multiple foobar images.

Information Section with List[dnd-info]=Here is a paragraph of text followed by a list;-
    List_item_A;-List_item_B;-List_item_C;Followed by a paragraph.

Music And Ambiance[dnd-music]=https://youtube.link_1;https://youtube.link_2;https://
    youtube.link_3
```

The above file will create a file in the ‘items’ folder found in ‘campaign/items’. The file will start with a header “A Single Image”, where the foobar.jpg image is displayed. A caption of “A foobar image.” will be under the image. Next will be a heading “Information Section” That has two paragraphs. Next a similar section with a header “Information Section With Smaller Headers”, a paragraph, then a smaller header “Small Header”, followed by another paragraph. Next, another heading “A List Of Items” with 4 items in the list. Following this, a “Multiple Images” heading with 2 images ‘foobars (1).jpg’ and ‘foobars (2).jpg’¹ with a caption “Multiple foobar images.” Next, another heading “Information Section with List”, with a paragraph, a list, and then another paragraph. Finally, a heading “Music And Ambiance” with links to three youtube videos. If the “download links” checkbox is enabled, these video’s will be downloaded as mp3 files and the folder icon will link to the local files.

3.2.2.8 Character Files (.char)

The character files are text files with the “.char” extension. These are a special type of input file that generates an html page specific for DnD character information. This was actually designed before the more general input file formatting outlined in the sections above and therefore lacks some of the versatility and extra features that can be included in the input files. Nevertheless, the character format creates an html page that should more than suffice for any npc characters and has many of its own unique features and capabilities. The .char file contains lines that define the various elements of a character. These lines do not currently support the types that are supported with the input files. Each line has a specific output format in the generated html file based on a template and the information itself. Some lines in the file are required while others are optional. The required lines must be present for the character file generated to be completed, while the optional lines will automatically be randomized and generated in the event that they are missing. Each line of the character file must be formatted in the following way:

```
Keyword = Value
```

The “Keyword” is used by the creator tool to determine which type of information is being input, and the “Value” is the value of the information. For example “level = 3” would let the creator know that the character level is 3, and it will use that information appropriately.

Once the character file is appropriately filled out and created, it should be saved/placed in the templates/input_files folder for processing by the creator tool just like the .input files. The creator tool will search the templates/img folder for any image references within the character files.

3.2.2.9 Required Keywords

The required keywords for a character file are the following:

¹If an image is not found, it will automatically search for files with that image name with an appended (1), (2), (3),... If ‘(1)’ is found, this image will be used and the number incremented until no other images are found.

1. folder: This defines the folder that the output html character file will be placed. This should be a valid file path to a folder.
2. name: This defines the name of the character.
3. image: This is an image for the character. This should be just the image file name and extension (no path) and the image itself should be placed in the "templates/img" folder for automatic detection.
4. class: This defines the DnD class. This must be a valid class from the following list:

• barbarian	• fighter	• rogue
• bard	• monk	• sorcerer
• cleric	• paladin	• warlock
• druid	• ranger	• wizard
5. abilities: The abilities of the character. This field is a list and should be entered using a comma (',') as the delimiter.
6. equipment: The equipment of the character. This field is a list and should be entered using a comma (',') as the delimiter.
7. proficiencies: These are the proficiencies of the character. This field is a list and should be entered using a comma (',') as the delimiter. The proficiency bonus will automatically be calculated based on level and applied to proficiencies.
8. information: General information and description of the character.

The above list of keywords are all required and if they are missing or ill-formatted, unexpected behavior can occur.

3.2.2.10 Optional Keywords

The optional keywords for a character file are the following:

1. level: This is the level of the character. If the level is not defined, it will default to 1. This must be an integer.
2. hp: This will be generated automatically if not included based on the character class, level, and constitution² value.
3. ac: The Armor class value.
4. size: The size of the character.
5. type: The type of the character (creature, humanoid, animal, etc)
6. alignment: The alignment of the character.
7. speed: The speed of the character.
8. resistances: The resistances the character has (if any).
9. immunities: The immunities the character has (if any)
10. senses: The senses. A ", Passive Perception: #" will automatically be appended to this value based on a calculated passive perception.
11. languages: Languages of the character.
12. race: The race of the character.
13. background: The background of the character.

²The constitution value is automatically generated based on the character class and level if not included.

14. strength: This represents the character's physical strength and ability to exert force. This must be an integer.
15. dexterity: This represents the character's agility, reflexes, and fine motor skills. This must be an integer.
16. constitution: This measures the character's health, stamina, and resistance to illness and fatigue. This must be an integer.
17. intelligence: This reflects the character's mental acuity, memory, and problem-solving skills. This must be an integer.
18. wisdom: This represents the character's perception, intuition, and common sense. This must be an integer.
19. charisma: This measures the character's charm, persuasion, and ability to influence others. This must be an integer.
20. notes: Notes to add about the character that aren't contained in the 'information' section.

It is recommended to include all values in the character file and just use "None" for any string values that are not needed. This will prevent any un-expected bugs. Many of the values replace a string in a template file based on the values input, so if they are not specified, a correlated 'search string' will appear in the final html file that serves as a placeholder for the information.

3.2.2.11 Example Character File

For example character files, you can look inside the templates/trash/chars folder. This is where input files get placed after they are finished processing. The following is an example character file. The associated image file foobar.jpg should be located in the templates/img folder for the below file to process correctly.

```
folder = characters/player
name = fooBar
ac = 16 (natural armor)
hp = 84
level = 13
size = small
type = humanoid
alignment = neutral good
speed = 30 ft.
resistances = None
immunities = None
senses = Darkvision 60ft
languages = Common, Elvish
image = foobar.jpg
race = Fooling
class = wizard
background = Barber
strength = 15
dexterity = 13
constitution = 18
intelligence = 22
wisdom = 4
charisma = 14
abilities = basic attack: A basic attack with nothing special; prestidigitation
equipment = torch; small sword, a potato
proficiencies = strength, acrobatics, history
information = This is some info for foobar, the template character.
notes = No notes needed for template dude.
```

Once created, the file should be placed in the templates/input_files folder and then processed via the creator.py tool.

3.2.2.12 Name Files (.names)

SECTION IN PROGRESS!

3.2.2.13 List Files (.list)

SECTION IN PROGRESS!

3.2.2.14 Command Line

The creator application does NOT currently support command line features.

Programming Methods and Variables

3.3 MMORPPDND Programming Methods and Variables

```

class MMORPDND_VARS
1  """
2  This is a class for storing variables used by MMORPDND* classes.
3
4  Methods:
5      __init__(self)
6
7  Variables:
8      # Define the directory structure
9      self.directory_structure = { ... }
10
11     # Define the number of HTML files to create in each subdirectory
12     self.num_dummy_files_per_subdir = 3 # Stores all files created so far.
13     self.all_index_files = []
14
15     # Define the root directory
16     self.root_dir = os.getcwd()
17     self.script_dir = os.path.dirname(os.path.abspath(__file__))
18
19     # Directories to exclude when processing.
20     self.directories_to_exclude = ["templates", "css", ".git", ".idea", ".
    github", "scripts", "docs"]
21
22     # Define the regular expression to match the header section
23     self.header_regex = re.compile(r"<head>.*?</head>", re.DOTALL)
24
25     # Define the regular expression to match the header section
26     self.title_regex = re.compile(r"<title>.*?</title>", re.DOTALL)
27
28     # Define the template file paths
29     self.header_template_file = "templates/headerTemplate.html"
30     self.nav_template_file = "templates/navTemplate.html"
31     self.css_path = "css/mmorpdnd.css"
32 """

```

```
global_vars = MMORPDND_VARS()
```

```

1  """
2  Define a global variable containing the declared vars. Use this so they are
    all only defined once and can be updated/stored throughout the
    applications lifetime.
3  """

```


is_image_file(file_name)

```

1  """
2      Checks if a file name is an image file based on its extension.
3
4  Args:
5      file_name (str): The name of the file to check.
6
7  Returns:
8      bool: True if the file name has an image extension, False otherwise.
9
10 Example:
11     >>> is_image_file('myphoto.jpg')
12     True
13     >>> is_image_file('document.pdf')
14     False
15 """

```

get_relative_path(from_file, to_file)

```

1  """
2  Returns the relative path from one file to another.
3
4  Args:
5      from_file (str): The path of the source file.
6      to_file (str): The path of the target file.
7
8  Returns:
9      str: The relative path from the source file to the target file.
10
11 Raises:
12     None.
13
14 This method takes two file paths, 'from_file' and 'to_file', and calculates
15 the relative path from 'from_file'
16 to 'to_file'. The relative path represents the path that, when followed from
17 'from_file', leads to 'to_file'.
18
19 Example:
20     Assuming from_file = '/path/to/source/file.html' and to_file = '/path/to/
21     target/image.jpg',
22     the method will return '../..target/image.jpg' as the relative path.
23
24 Note:
25     The method uses the 'os.path.relpath()' function to calculate the
26     relative path.
27
28 Example usage:
29     get_relative_path('/path/to/source/file.html', '/path/to/target/image.jpg
30     ')
31     print(relative_path) # Output: '../..target/image.jpg'
32 """

```

create_dummy_html_files(directory=global_vars.root_dir)

```

1  """
2  Creates dummy HTML files in all directories and subdirectories for testing
3  purposes.
4
5  Args:

```

```

5     directory (str): The directory path to start creating dummy HTML files
        from. Defaults to global_vars.root_dir.
6
7     Returns:
8         None.
9
10    Raises:
11        None.
12
13    This method recursively walks through the directory structure, creates an
        index.html file in each directory,
14    and creates additional HTML files with random links in each subdirectory.
15
16    The method performs the following steps:
17        1. Creates an index.html file in the specified directory with a basic
            HTML structure.
18        2. Recursively walks through the directory structure using 'os.walk'.
19        3. For each subdirectory, excluding any directories listed in '
            global_vars.directories_to_exclude':
20            - Creates an index.html file in the subdirectory with a basic HTML
                structure.
21            - Generates a specified number of dummy HTML files in the subdirectory
                , each containing a random link to another dummy file.
22            - Prints a message indicating the successful creation of each HTML
                file.
23        4. Creates additional dummy HTML files in the script directory (specified
            by the 'directory' argument), each containing a random link to
            another dummy file.
24        5. Prints a message indicating the successful creation of all HTML files.
25
26    Note:
27        The content of the generated HTML files consists of a basic HTML
            structure with a header and body.
28    Each dummy file includes a link to two randomly chosen dummy files,
            facilitating testing scenarios.
29
30    Example usage:
31        create_dummy_html_files()
32    """

```

alphabetize_links(list_of_links)

```

1    """
2    Alphabetizes the items in a list of links.
3
4    Args:
5        list_of_links (str): A multiline string representing a list of links in
            the format
6        "<li><a href="url">link_text</a></li>". Each link should be on a separate
            line.
7
8    Returns:
9        str: A multiline string representing the alphabetized list of links.
10
11    Example:
12        links = '''<li><a href="valen_shadowborn.html">valen_shadowborn</a></li>
13        <li><a href="kaelar_stormcaller.html">kaelar_stormcaller</a></li>
14        <li><a href="thorne_ironfist.html">thorne_ironfist</a></li>
15        <li><a href="foobar.html">foobar</a></li>
16        <li><a href="aria_thistlewood.html">aria_thistlewood</a></li>
17        <li><a href="stoneshaper_golem.html">stoneshaper_golem</a></li>
18        <li><a href="elara_nightshade.html">elara_nightshade</a></li>'''

```

```

19
20     sorted_list = alphabetize_links(links)
21
22     print(sorted_list)
23 """

```

class MMORPDND

```

1 """
2 A class for all the main MMORPDND features.
3
4 Methods:
5     __init__(self)
6     create_directories(self, path: str, structure: dict) -> None
7     create_index_files(self, directory=global_vars.root_dir)
8     move_dir_items_to_end(self, string)
9     move_img_items_to_end(self, string)
10    update_index_files(self)
11    update_headers(self, directory=global_vars.root_dir)
12    update_navigation(self, directory=global_vars.root_dir)
13    beautify_files(self, directory=global_vars.root_dir)
14    find_all_html_files(self, directory=global_vars.root_dir)
15    update_html_links(self, directory=global_vars.root_dir)
16 """

```

MMORPDND.__init__(self)

```

1 """
2 Initialization method.
3 """

```

MMORPDND.create_directories(self, path: str, structure: dict) -> None

```

1 """
2 Recursively creates directories in the given path according to the structure
   specified in the dictionary.
3
4 Args:
5     path (str): The root path where directories will be created.
6     structure (dict): A dictionary representing the structure of the
   directories to be created.
7
8 Returns:
9     None
10 """

```

MMORPDND.create_index_files(self, directory=global_vars.root_dir)

```

1 """
2 Creates index files for all subdirectories within the specified directory.
3
4 Args:
5     directory (str): The directory path to start creating index files from.
   Defaults to global_vars.root_dir.
6
7 Returns:
8     None.
9
10 Raises:
11     None.

```

```

12
13 This method traverses through all subdirectories and files starting from the
    specified directory and creates an
14 index file named "index.html" in each directory that doesn't already have
    one.
15
16 The method performs the following steps:
17     1. Loop through all directories and files using 'os.walk' starting from
        the specified directory.
18     2. Check if an index file named "index.html" already exists in the
        current directory. If so, skip that directory.
19     3. Check if the current directory matches any of the excluded directories
        defined in 'global_vars.directories_to_exclude'.
20     If so, skip that directory.
21     4. Create an index.html file in the current directory.
22     5. Write the HTML content to the index.html file, including the directory
        name in the title and header.
23     6. Print a message indicating the creation of the index file.
24
25 Note:
26     The index.html file created contains a basic HTML structure with the
        title and header set to "Index of [directory_name]".
27
28 Example usage:
29     create_index_files()
30     """

```

MMORPDND.move_dir_items_to_end(self, string)

```

1     """
2     Moves directory items (lines containing "/index.html") to the end of the
        input string.
3
4     This method takes a multi-line string as input and separates lines that
        contain "/index.html"
5     (directory items) from other lines (non-directory items). It then rearranges
        the lines by moving
6     the directory items to the end while maintaining the order of non-directory
        items.
7
8     Args:
9         string (str): The input multi-line string to be processed.
10
11     Returns:
12         str: A modified string with directory items moved to the end.
13
14     Example:
15         input_string = "Line 1\n/index.html\nLine 2\nLine 3\n/index.html"
16         result = move_dir_items_to_end(input_string)
17         # result will be "Line 1\nLine 2\nLine 3\n/index.html\n/index.html"
18     """

```

MMORPDND.move_img_items_to_end(self, string)

```

1     """
2     Moves items containing "img/" to the end of the string while preserving
        their original order.
3
4     Args:
5         string (str): A string containing items in the format '<li><a href="url">
        link_text</a></li>'.

```

```

6
7 Returns:
8     str: A new string with items containing "img/" moved to the end while
          preserving their original order.
9
10 Example:
11     >>> string = '''<li><a href="valen_shadowborn.html">valen_shadowborn</a>
12         </li>
13         <li><a href="kaelar_stormcaller.html">kaelar_stormcaller</a></li>
14         <li><a href="thorne_ironfist.html">thorne_ironfist</a></li>
15         <li><a href="foobar.html">img/foobar</a></li>
16         <li><a href="aria_thistlewood.html">img/aria_thistlewood</a></li>
17         <li><a href="stoneshaper_golem.html">stoneshaper_golem</a></li>
18         <li><a href="elara_nightshade.html">elara_nightshade</a></li>
19         </li>'''
20     >>> new_string = move_img_items_to_end(string)
21     >>> print(new_string)
22     <li><a href="valen_shadowborn.html">valen_shadowborn</a></li>
23     <li><a href="kaelar_stormcaller.html">kaelar_stormcaller</a></li>
24     <li><a href="thorne_ironfist.html">thorne_ironfist</a></li>
25     <li><a href="aria_thistlewood.html">img/aria_thistlewood</a></li>
26     <li><a href="stoneshaper_golem.html">stoneshaper_golem</a></li>
27     <li><a href="elara_nightshade.html">elara_nightshade</a></li>
28     <li><a href="foobar.html">img/foobar</a></li>
29     </li>'''

```

MMORPDND.update_index_files(self)

```

1  """
2  Updates all index files in the directory and subdirectories to include links
3  to other files in the same directory.
4
5  Returns:
6      None.
7
8  Raises:
9      None.
10
11  This method performs the following steps:
12      1. Prints a message indicating that index files are being updated.
13      2. Retrieves a list of all HTML index files in the current directory and
14         subdirectories, excluding any directories listed in 'global_vars.
15         directories_to_exclude'.
16      3. For each index file found:
17         - Reads the file data.
18         - Identifies the HTML files present in the same directory as the
19           current index file.
20         - If the index links div section does not exist in the file, it adds
21           the div section just before the closing </body> tag.
22         - Updates the index links by generating HTML code for each HTML file
23           in the directory (excluding the index.html file) and appending it
24           to the index links div.
25         - Replaces the old index links section in the file with the updated
26           index links div.
27         - Writes the updated file data back to the file.
28         - Prints a message indicating that the index file has been updated.
29      4. Prints a message indicating that all index.html files have been
30         updated.

```

```

22
23 Note: The method relies on regular expressions for searching and updating
    the index links section in each index file.
24
25 Example usage:
26     update_index_files()
27     """

```

MMORPDND.update_headers(self, directory=global_vars.root_dir)

```

1  """
2  Updates the headers of HTML files in the specified directory and its
    subdirectories to match a predefined template.
3
4  Args:
5      directory (str): The directory path to update the HTML files in. Defaults
        to global_vars.root_dir.
6
7  Returns:
8      None.
9
10 Raises:
11     None.
12
13 This method performs the following steps:
14     1. Loop through all HTML files in the specified directory and its
        subdirectories.
15     2. For each HTML file found that does not contain "Template" in its
        filename:
16         - Read the contents of the HTML file.
17         - Check if the file is in the list of directories to exclude.
18         - Read the contents of the header template file.
19         - Replace the header section in the HTML file with the contents of the
            template.
20         - Generate a title based on the filename and replace the title section
            in the HTML file.
21         - Determine the relative path to the CSS file.
22         - Calculate the number of subdirectories between the HTML file and the
            CSS file.
23         - Create the correct link path for the CSS file.
24         - Replace the placeholder in the HTML file with the link to the CSS
            file.
25         - Overwrite the HTML file with the updated contents.
26         - Print a progress update indicating the file that has been updated.
27     3. Print a message indicating that the headers and CSS have been updated
        in all relevant HTML files.
28
29 Note:
30     The method relies on regular expressions for pattern matching and
        modification.
31
32 Example usage:
33     update_headers()
34     """

```

MMORPDND.update_navigation(self, directory=global_vars.root_dir)

```

1  """
2  Updates the navigation block of HTML files in the specified directory and
    its subdirectories to match a predefined template.
3

```

```

4  Args:
5      directory (str): The directory path to update the HTML files in. Defaults
        to global_vars.root_dir.
6
7  Returns:
8      None.
9
10 Raises:
11     None.
12
13 This method performs the following steps:
14     1. Loop through all HTML files in the specified directory and its
        subdirectories.
15     2. For each HTML file found that does not contain "Template" in its
        filename:
16         - Read the contents of the HTML file.
17         - Check if the file is in the list of directories to exclude.
18         - Print a progress message indicating the file being processed.
19         - Read the contents of the navigation template file.
20         - Find the navigation block in the original HTML file using a regular
            expression.
21         - If a navigation block is found:
22         - Replace the navigation block in the HTML file with the contents of
            the template.
23         - Write the modified HTML back to the file.
24         - Print a message indicating that the navigation block has been
            replaced.
25         - If no navigation block is found:
26         - Print a message indicating that the navigation block was not found.
27         - Insert the navigation contents at the start of the body tag in the
            HTML file.
28         - Overwrite the file with the updated contents.
29         - Print a message indicating that the navigation contents have been
            inserted.
30
31 Note:
32     The method relies on regular expressions for pattern matching and
        modification.
33
34 Example usage:
35     update_navigation()
36     """

```

```

MMORPDND.beautify_files(self, directory=global_vars.root_dir)

1  """
2  Beautifies HTML and CSS files in the specified directory and its
        subdirectories.
3
4  Args:
5      directory (str): The directory path to beautify the files in. Defaults to
        global_vars.root_dir.
6
7  Returns:
8      None.
9
10 Raises:
11     None.
12
13 This method performs the following steps:
14     1. Modifies the directories_to_exclude list to include template and CSS
        files.

```

```

15     2. Loops through all files and subdirectories in the specified directory.
16     3. For each HTML or CSS file found (excluding those in the modified
17         directories_to_exclude list):
18         - Constructs the file path.
19         - Checks if the file is an HTML or CSS file, and skips it if not.
20         - Reads the contents of the file.
21         - If the file is an HTML file:
22         - Uses BeautifulSoup to parse the HTML and prettify it.
23         - If the file is a CSS file:
24         - Uses cssbeautifier to prettify the CSS code.
25         - Writes the prettified code back to the file.
26         - Prints a message indicating that the file has been prettified.
27
28     Note:
29         The method relies on BeautifulSoup for HTML parsing and prettifying, and
30         cssbeautifier for CSS prettifying.
31
32     Example usage:
33     navigator = Navigator()
34     navigator.beautify_files()
35 """

```

MMORPDND.find_all_html_files(self, directory=global_vars.root_dir)

```

1  """
2  Finds all HTML files (not index.html files) in a directory and its
3  subdirectories.
4
5  Args:
6      directory: The directory to search. Defaults to the current directory.
7
8  Returns:
9      A list of dictionaries containing the name (without extension), name (
10         with extension), and full path
11         of each HTML file found.
12 """

```

MMORPDND.update_html_links(self, directory=global_vars.root_dir)

```

1  """
2  Update the links in the various HTML files to link to the appropriate file.
3
4  Args:
5      directory (str): The directory to search for HTML files. Defaults to
6         global_vars.root_dir.
7
8  Returns:
9      None
10 """

```

class MMORPDND_GUI

```

1  """
2  Class to store GUI functions and operations. The majority of the methods in
3  this class simply connect the UI elements to the associated MMORPDND
4  class methods.
5
6  Methods:
7      __init__(self)
8      run(self)
9      test_all(self)

```



```

8     update_all(self)
9     create_directories(self)
10    create_dummy_html_files(self)
11    create_index_files(self)
12    update_index_links(self)
13    update_headers(self)
14    update_navigation(self)
15    beautify_files(self)
16    update_html_links(self)
17    """

```

main()

```

1    """
2    Main method to start the gui and take optional arguments/parameters for
    running via command line.
3    """

```

3.4 Creator Programming Methods and Variables

output_text(text, option = "text")

```

1    """
2    Print text in different colors based on the provided option.
3
4    Args:
5        text (str): The text to be printed.
6        option (str): The color option for the text. Valid options are "text", "
    warning", "error", "note", and "success".
7
8    Returns:
9        None
10
11    Note:
12        This function uses ANSI escape codes for color formatting. Colors may
    not be displayed correctly in all environments.
13    """

```

get_youtube_video_name(url)

```

1    """
2    Retrieves the title of a YouTube video based on the provided URL.
3
4    Args:
5        url (str): The URL of the YouTube video.
6
7    Returns:
8        str or None: The title of the YouTube video if it can be retrieved
    successfully,
9        None if there was an error.
10
11    Raises:
12        None
13
14    Example:
15        >>> url = "https://www.youtube.com/watch?v=dQw4w9WgXcQ"
16        >>> title = get_youtube_video_name(url)
17        >>> print(title)

```

```

18     "Rick Astley - Never Gonna Give You Up (Official Music Video)"
19     """

```

find_longest_and_shortest(words)

```

1     """
2     Find the lengths of the longest and shortest words in a given list.
3
4     Args:
5         words (list): A list of words.
6
7     Returns:
8         tuple: A tuple containing the lengths of the longest and shortest words.
9
10    Raises:
11        ValueError: If the input list is empty.
12
13    Examples:
14        >>> word_list = ["one", "two", "three", "four", "five"]
15        >>> longest_length, shortest_length = find_longest_and_shortest(
16            word_list)
17        >>> print("Longest word length:", longest_length)
18        >>> print("Shortest word length:", shortest_length)
19        Longest word length: 5
20        Shortest word length: 3
21    """

```

remove_numbers_at_start(string)

```

1     """
2     Remove numbers at the start of a string.
3
4     Args:
5         string (str): The input string.
6
7     Returns:
8         str: The string with numbers removed from the start.
9     """

```

append_to_file(file_path, string_to_append)

```

1     """
2     Append a string to a file.
3
4     Parameters:
5         file_path: The path to the file to append to.
6         string_to_append: The string to append to the file.
7     """

```

read_lines_from_file(file_name)

```

1     """
2     Reads lines from a file and returns them as a list.
3
4     Parameters:
5         file_name (str): The name of the file to read.
6
7     Returns:
8         A list of strings, where each string represents a line from the file.
9         Any leading and trailing whitespace is stripped from each line.

```

```

10
11 Raises:
12     FileNotFoundError: If the specified file does not exist.
13     PermissionError: If the specified file cannot be opened due to
14         insufficient permissions.
15 """

```

calculate_hp(class_type: str, level: int, constitution: int) -> int

```

1 """
2 Calculate the hit points (hp) of a Dungeons & Dragons (DnD) 5th edition
3 character
4 based on their class, level, and constitution modifier.
5
6 Args:
7     class_type (str): The character's class (e.g. 'fighter', 'wizard', '
8         rogue').
9     level (int): The character's level, between 1 and 20.
10    constitution (int): The character's constitution score, between 1 and
11        30.
12
13 Returns:
14     int: The character's hit points, based on their class and level,
15         modified by their
16         constitution modifier.
17
18 Raises:
19     ValueError: If the given class_type is not recognized.
20 """

```

calculate_proficiency_bonus(level)

```

1 """
2 Calculate the proficiency bonus based on character level.
3
4 Parameters:
5     level (int): The character's level.
6
7 Returns:
8     int: The character's proficiency bonus.
9 """

```

roll_4d6_drop_lowest()

```

1 """
2 Rolls 4d6 and returns the sum of the highest 3 dice.
3 Returns:
4     int: The sum of the highest 3 dice.
5 """

```

get_stat_priority(character_class)

```

1 """
2 Returns a list of attributes ordered by the stat priority for a given class.
3 Args:
4     character_class (str): The class to get the stat priority for.
5 Returns:
6     list: The list of attributes ordered by the stat priority.
7 """

```

adjust_stats_for_level(assigned_stats, level)

```

1  """
2  Adjusts the stats for a character based on their level.
3
4  Args:
5      assigned_stats (dict): A dictionary representing the character's current
6                             stats, where keys are
7                             the stat names and values are the corresponding stat values.
8      level (int): The level of the character.
9
10 Returns:
11     dict: A dictionary representing the adjusted stats based on the
12           character's level.
13
14 Raises:
15     None.
16
17 This method takes the current stats of a character, represented by the '
18 assigned_stats' dictionary,
19 and adjusts the stats based on the character's level. The adjusted stats are
20 returned as a new dictionary.
21
22 The adjustment of stats is determined by the character's level:
23 - For levels below 4, no adjustments are made, and the original stats are
24   returned.
25 - For levels 4 to 7, 2 bonus attribute points are awarded.
26 - For levels 8 to 11, 4 bonus attribute points are awarded.
27 - For levels 12 to 15, 6 bonus attribute points are awarded.
28 - For levels 16 to 18, 8 bonus attribute points are awarded.
29 - For levels 19 and above, 10 bonus attribute points are awarded.
30
31 The method prints the awarded bonus points and the original and updated
32 attributes for informational purposes.
33
34 Note: The stats dictionary is assumed to have numeric values for each stat.
35
36 Example usage:
37     assigned_stats = {'strength': 10, 'dexterity': 12, 'intelligence': 14}
38     adjusted_stats = adjust_stats_for_level(assigned_stats, 8)
39 """

```

generate_character_stats(character_class, level=1)

```

1  """
2  Generates a list of six stats for a character based on their class and level
3  .
4  Args:
5      character_class (str): The character's class.
6  Returns:
7      list: The list of six stats.
8  """

```

calculate_modifier(attribute_value)

```

1  """
2  Calculate the DnD attribute modifier based on the value of the attribute.
3
4  Args:
5      attribute_value (int): The value of the attribute.
6

```

```

7 Returns:
8     int: The modifier value for the attribute.
9
10 Example:
11     >>> calculate_modifier(15)
12         2
13     """

```

copy_file_to_directory(file_path, directory_path)

```

1 """
2 Copy a file to a directory.
3
4 Args:
5     file_path (str): The path to the file to copy.
6     directory_path (str): The path to the directory to copy the file to.
7
8 Raises:
9     ValueError: If the file or directory doesn't exist.
10
11 Returns:
12     None
13 """

```

move_file_to_directory(file_path, directory_path)

```

1 """
2 Move a file to a directory.
3
4 Args:
5     file_path (str): The path to the file to move.
6     directory_path (str): The path to the directory to move the file to.
7
8 Raises:
9     ValueError: If the file or directory doesn't exist.
10
11 Returns:
12     None
13 """

```

print_prob_matrix(prob_matrix)

```

1 """
2 Prints a probability matrix to the console in JSON format.
3
4 Parameters:
5     prob_matrix (dict): A dictionary representing the probability matrix,
6     where each key is an input character and the corresponding value is a
7     dictionary
8     of output characters and their probabilities.
9 """

```

generate_prob_matrix(words)

```

1 """
2 Generates a probability matrix based on a list of words.
3
4 Parameters:
5     words (list of str): A list of words to use in generating the
6     probability matrix.

```

```

6
7 Returns:
8     A dictionary representing the probability matrix, where each key is an
9     input character
10    and the corresponding value is a dictionary of output characters and
11    their probabilities.
12
13 Example:
14 >>> words = ["cat", "dog", "cut", "cog", "cot", "caught"]
15 >>> prob_matrix = generate_prob_matrix(words)
16 >>> prob_matrix
17 {
18     'c': {'a': 0.4, 'u': 0.2, 'o': 0.4},
19     'a': {'t': 0.5, 'u': 0.5},
20     't': {},
21     'd': {'o': 1.0},
22     'o': {'g': 0.6666666666666666, 't': 0.3333333333333333},
23     'g': {'h': 1.0},
24     'u': {'t': 0.5, 'g': 0.5},
25     'h': {'t': 1.0}
26 }
27
28 Note that the probabilities for each output character are normalized so that
29 they sum to 1.0.
30 """

```

`generate_word(prob_matrix, min_length=4, max_length=10)`

```

1 """
2 Generate a random word using a probability matrix.
3
4 Parameters:
5     prob_matrix (dict): A dictionary representing the probability matrix for
6     generating words.
7     min_length (int): The minimum length of the generated word. Default
8     value is 4.
9     max_length (int): The maximum length of the generated word. Default
10    value is 10.
11
12 Returns:
13     A string representing the generated word.
14
15 Algorithm:
16     1. Choose a random length between min_length and max_length.
17     2. Initialize the word with a random input character.
18     3. Generate the next characters based on the probabilities in the matrix
19     .
20     a. Get the output probabilities for the current input character.
21     b. Create a list of possible next characters based on their
22     probabilities.
23     c. Choose a random next character from the list.
24     d. Update the word and the input character for the next iteration.
25     4. Return the generated word.
26 """

```

`move_file(source_file_path, destination_folder_path)`

```

1 """
2 Move a file from the source path to the destination folder.
3
4 Args:

```

```

5     source_file_path (str): The path to the file to be moved.
6     destination_folder_path (str): The path to the destination folder.
7
8 Returns:
9     None
10 """

```

class Variables

```

1 """
2 A class to store app wide variables.
3
4 Variables:
5     self.current_prob_matrix = None
6     self.current_file = ""
7     self.current_list = []
8     self.output_file_folder = ""
9     self.character_template_file = "characterTemplate.html"
10
11 # Define directories to exclude
12 self.directories_to_exclude = ["templates", "css", ".git", ".idea", ".
    github", "scripts", "docs"]
13
14 # Define the root directory
15 self.root_dir = os.getcwd()
16 self.trash_dir = self.root_dir + "/trash"
17
18 Methods:
19     __init__(self)
20     trash_file(self, file)
21     reset(self)
22 """

```

Variables.__init__(self)

```

1 """
2 Initializes the Variables class by setting initial variable status'.
3 """

```

Variables.trash_file(self, file)

```

1 """
2 Move a file to the trash folder.
3
4 Parameters:
5     file: The file to move.
6
7 Returns:
8     None
9 """

```

Variables.reset(self)

```

1 """
2 Reset the state of some objects to their initial values.
3
4 This method resets the state of the object by clearing the values of the
    current_file, current_list,
5 and current_prob_matrix attributes. After calling this method, the object is
    restored to its initial

```

```

6 state, ready for new data to be processed and stored.
7
8 Example:
9     my_object = Variables()
10     my_object.current_file = "data.txt"
11     my_object.current_list = [1, 2, 3]
12     my_object.current_prob_matrix = {"A": 0.2, "B": 0.3}
13     my_object.reset()
14     # After resetting, my_object's attributes are cleared and ready for new
        data.
15 """

```

global_vars = Variables()

```

1 """
2 Define a global variable containing the declared vars. Use this so they are
        all only defined once and can be updated/stored throughout the
        applications lifetime.
3 """

```

get_character_fields(file)

```

1 """
2 Read a file containing character fields and their values, and return a
        dictionary of the fields.
3
4 Args:
5     file (str): The path to the file containing character fields.
6
7 Returns:
8     dict: A dictionary mapping character fields to their corresponding
        values.
9
10 Raises:
11     None.
12
13 The method opens the specified file and reads its contents. Each line in the
        file is expected to
14 represent a character field and its value, separated by an equals sign (=).
        The method parses each
15 line, extracts the field name and value, converts them to lowercase, and
        stores them in a dictionary.
16 The resulting dictionary is returned.
17
18 If the 'class' field is not found in the character fields, an error message
        is printed, and an
19 empty dictionary is returned.
20
21 Example usage:
22     character_fields = get_character_fields('character_data.txt')
23 """

```

split_list(lst, n)

```

1 """
2 Split a list into n sublists of approximately equal size.
3
4 Args:
5     lst (list): The input list to be split.
6     n (int): The number of sublists to create.

```



```

7
8 Returns:
9     list: A list containing n sublists.
10
11 Example:
12     >>> my_list = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
13     >>> sublists = split_list(my_list, 3)
14     >>> print(sublists)
15     [[1, 2, 3, 4], [5, 6, 7], [8, 9, 10]]
16     """

```

create_html_list(values)

```

1     """
2     Create an HTML list from a string of semi-colon-separated values.
3
4     Args:
5         values (str): The string of semi-colon-separated values.
6
7     Returns:
8         str: The HTML list generated from the values.
9
10    Example:
11        >>> create_html_list("Item 1; Item 2; Item 3")
12        '<ul>\n<li>Item 1</li>\n<li>Item 2</li>\n<li>Item 3</li>\n</ul>\'
13    """

```

separate_header_and_info(string)

```

1     """
2     Separates the header value and information from a string in the format "*
3     header* Information here".
4
5     Args:
6         string (str): The input string in the specified format.
7
8     Returns:
9         tuple: A tuple containing the title value and the information.
10
11    Example:
12        >>> separate_title_and_info("*header* Information here")
13        ('header', 'Information here')
14    """

```

create_html_info(values)

```

1     """
2     Create an HTML info block from a string of semi-colon-separated values.
3
4     Args:
5         values (str): The string of semi-colon-separated values.
6
7     Returns:
8         str: The HTML info block generated from the values.
9
10    Example:
11        >>> create_html_info("Item 1; - Item 2; - Item 3; Item 4")
12        '<p class="first-paragraph">Item 1</p>\n<p><ul><li>Item 2</li>\n<li>Item
13        3</li>\n</ul></p>\n<p>Item 4</p>\n\'
14    """

```

create_html_table(input_line)

```

1  """
2  Convert a single line input to an HTML table format.
3
4  Args:
5      input_line (str): Single line input containing semi-colon-separated
6                          values.
7
8  Returns:
9      str: HTML table structure representing the input values.
10
11 Example:
12     For a table of the form:
13
14     -----
15     | a1 | a2 |
16     |-----|
17     | b1 | b2 |
18     |-----|
19     | c1 | c2 |
20     -----
21
22     input: "2,a1,a2,b1,b2,c1,c2"
23     output: '<table><tr><td>Value 1</td><td>Value 2</td></tr><tr><td>Value
24             3</td><td>Value 4</td></tr><tr><td>Value 5</td><td>Value 6</td></tr
25             ></table>'
26 """

```

download_image(url, file_path)

```

1  """
2  Download an image from a URL and save it to a file path.
3
4  Args:
5      url (str): The URL of the image to download.
6      file_path (str): The file path to save the downloaded image.
7
8  Returns:
9      bool: True if the image was successfully downloaded and saved, False
10            otherwise.
11 """

```

add_number_to_filename(filename, number)

```

1  """
2  Add a number to the filename before the extension.
3
4  Args:
5      filename (str): The original file name.
6      number (int): The number to add.
7
8  Returns:
9      str: The updated file name with a number added before the extension.
10
11 Example Usage:
12     >>> new_filename = add_number_to_filename("document.txt")
13     >>> print(new_filename, 3)
14     document (3).txt
15 """

```

is_image_file(file_name)

```

1  """
2  Checks if a file name is an image file based on its extension.
3
4  Args:
5      file_name (str): The name of the file to check.
6
7  Returns:
8      bool: True if the file name has an image extension, False otherwise.
9
10 Example:
11     >>> is_image_file('myphoto.jpg')
12     True
13     >>> is_image_file('document.pdf')
14     False
15 """

```

create_html_img(input_line)

```

1  """
2  Create an HTML block for an image section.
3
4  Args:
5      input_line (str): The input string of the form "image_file, image_source
6                        , caption".
7
8  Returns:
9      str: The HTML block representing the image section.
10
11 Notes:
12     - If the image file already exists, it will be used. Otherwise, the
13       image will be downloaded from the provided image source URL.
14     - The image file, image source URL, and caption are extracted from the
15       input line.
16
17 Example:
18     input_line = "image.jpg; https://www.example.com/image.jpg; A beautiful
19                 sunset"
20     html_block = create_html_img(input_line)
21 """

```

fix_image_extensions()

```

1  """
2  Updates all image extensions by running the fix_image_extensions.py script.
3
4  Example usage:
5      fix_image_extensions()
6  """

```

update_all()

```

1  """
2  Updates all components of the MMORPDND system.
3
4  This function updates the MMORPDND system by performing the following steps:
5      1. Retrieves the current working directory.
6      2. Changes the current working directory to the parent directory.

```

```

7     3. Constructs a command to update the system by running './mmorpdnd.py -u
      '
8     4. Executes the update command using the system shell.
9     5. Changes the current working directory back to the original directory.
10
11 Note: This function assumes that the 'mmorpdnd.py' script is located in the
      parent directory.
12
13 Example usage:
14     update_all()
15 """

```

get_random_line(file_path)

```

1 """
2 Return a random line from a file.
3
4 Args:
5     file_path (str): The path to the file.
6
7 Returns:
8     str: A random line from the file.
9
10 Raises:
11     FileNotFoundError: If the file does not exist.
12     IOError: If there is an error reading the file.
13 """

```

extract_first_integer(string)

```

1 """
2 Extracts the first integer from a given string.
3
4 Args:
5     string (str): The input string.
6
7 Returns:
8     int or None: The first integer found in the string, or None if no
9                 integer is found.
10
11 Example:
12     >>> string = "'6 (barbarian 3, rogue 3)'"
13     >>> first_integer = extract_first_integer(string)
14     >>> print(first_integer)
15     6
16 """

```

class Creator

```

1 """
2 This is the main class for the Crteator GUI and functionality.
3
4 Variables:
5     self.last_user_input = None
6     self.gui = tk.Tk()
7     self.gui.geometry("850x500")
8     self.gui.title("File Browser")
9     self.gui.tk.call('wm', 'iconphoto', self.gui._w, icon)
10     # Other GUI variables.
11
12 Methods:

```

```

13     __init__(self)
14     create_html_music(self, urls)
15     download_youtube_video_as_mp3(self, url, output_path="../music")
16     random_place(self, number=100)
17     create_pages(self)
18     create_page(self, file=global_vars.current_file)
19     checkbox_changed(self)
20     generate_char(self, file=global_vars.current_file)
21     output_text(self, text)
22     test(self)
23     get_user_choice(self)
24     yes(self)
25     no(self)
26     reset(self)
27     browse_files(self)
28     update_input_file(self)
29     generate_word(self)
30     run(self)
31 """

```

Creator.create_html_music(self, urls)

```

1 """
2 Creates an HTML list with links to the provided URLs and a folder icon.
3
4 Args:
5     urls (str or list): The URL or list of URLs as a semicolon-delimited
6         string or a list of strings.
7
8 Returns:
9     str: The HTML list portion with links and folder icons.
10
11 Example:
12 >>> urls = "https://www.youtube.com/watch?v=dQw4w9WgXcQ;https://www.
13     youtube.com/watch?v=VIDEO2_ID"
14 >>> html_list = self.create_html_music(urls)
15 >>> print(html_list)
16 <ul>
17 <li><a href="https://www.youtube.com/watch?v=dQw4w9WgXcQ">Video 1</a><a
18     href="local/path/video1.mp3"><i class="fas fa-folder"></i></a></li>
19 <li><a href="https://www.youtube.com/watch?v=VIDEO2_ID">Video 2</a><a
20     href="local/path/video2.mp3"><i class="fas fa-folder"></i></a></li>
21 </ul>
22 """

```

Creator.download_youtube_video_as_mp3(self, url, output_path="../music")

```

1 """
2 Downloads a YouTube video as a high-quality MP3 file.
3
4 Args:
5     url (str): The URL of the YouTube video.
6     output_path (str): The path to the directory where the MP3 file will be
7         saved.
8
9 Returns:
10     str or None: The path of the downloaded MP3 file if the download and
11         conversion
12         are successful, None if there was an error.
13
14 Raises:

```

```

13     None
14
15 Example:
16     >>> url = "https://www.youtube.com/watch?v=dQw4w9WgXcQ"
17     >>> output_path = "/path/to/output/directory"
18     >>> mp3_path = download_youtube_video_as_mp3(url, output_path)
19     >>> print(mp3_path)
20     "/path/to/output/directory/output.mp3"
21     """

```

Creator.random_place(self, number=100)

```

1     """
2     Generates random place names along with their corresponding types.
3
4     Args:
5         number (int, optional): The number of random place names to generate.
6                                 Defaults to 50.
7
8     Returns:
9         None
10    """

```

Creator.create_pages(self)

```

1     """
2     Generate page files for a file or each file within a directory.
3
4     This method checks if the current file (global_vars.current_file) is a
5     directory.
6     If it is a file, it calls the generate_char() or create_page() method based
7     on the file extension.
8     If it is a directory, it iterates through each file within the directory and
9     calls the generate_char()
10    or create_page() method for each individual file.
11
12    Returns:
13        None
14
15    Raises:
16        None
17    """

```

Creator.create_page(self, file=global_vars.current_file)

```

1     """
2     Create an HTML page based on the input file.
3
4     Reads the input file specified by global_vars.current_file and extracts the
5     content to generate an HTML page.
6     The input file should have a '.input' extension.
7     The output HTML file is created in the specified destination folder or the
8     current directory if not specified.
9
10    Returns:
11        None
12    """

```

Creator.checkbox_changed(self)

```

1  """
2  This method is called when checkboxes are checked or unchecked.
3  It retrieves the values of the checkboxes and prints a message indicating
   whether they are enabled or disabled.
4  """

```

Creator.generate_char(self, file=global_vars.current_file)

```

1  """
2  Generate a character file based on the provided input file.
3
4  This method updates the input file, checks if it has the correct file type
   (.char),
5  generates character statistics and fields if they are not defined, replaces
   the fields
6  in the template file with the character information, and writes the new
   character file.
7
8  The process involves the following steps:
9      1. Verifies if the input file has the correct file type (.char). If not,
   it displays an error message and exits.
10     2. Retrieves the character fields from the input file.
11     3. Determines the character class and level.
12     4. If any fields are missing, generates default values for certain
   attributes and displays them.
13     5. Calculates the character's hit points (hp) if not already defined.
14     6. Generates the character file path and filename based on the character's
   name.
15     7. Reads the character template file.
16     8. Processes and replaces the fields in the template with the character
   information.
17         - Replaces general character fields.
18         - Calculates and inserts modifier values for certain attributes.
19         - Handles proficiencies and adds proficiency bonus to corresponding
   skills.
20         - Populates information, notes, and image blocks.
21         - Updates abilities and equipment lists.
22     9. Writes the new character file at the specified filepath.
23     10. If the option is selected, moves the input file to the trash.
24
25 Returns:
26     None
27 """

```

Creator.output_text(self, text)

```

1  """
2  Output the given text to the GUI window and the large_text widget.
3
4  This method displays the provided text in the GUI window and appends it to
   the large_text widget.
5  It also ensures that the text is visible by scrolling to the bottom of the
   widget and updates
6  the GUI window to reflect the changes.
7
8  Args:
9      text (str): The text to be displayed and appended to the large_text
   widget.
10

```

```

11 Example:
12     gui_instance = MyGUI()
13     gui_instance.output_text("Processing completed successfully.")
14     # The text "Processing completed successfully." is displayed in the GUI
15     window.
16 """

```

Creator.test(self)

```

1 """
2 Method for testing.
3
4 Returns:
5     None
6 """

```

Creator.get_user_choice(self)

```

1 """
2 Displays a graphical user interface with yes/no buttons and returns the user
3 's choice.
4
5 Args:
6     None.
7
8 Returns:
9     bool: The user's choice. True represents "yes" and False represents "no".
10
11 Raises:
12     None.
13
14 This method displays a graphical user interface (GUI) with "yes" and "no"
15 buttons and waits for the user to make a choice.
16 The GUI is implemented using a main event loop.
17
18 The method performs the following steps:
19 1. Enables the "yes" and "no" buttons.
20 2. Creates a BooleanVar to store the user's choice.
21 3. Defines the callback functions that will be called when the buttons
22    are clicked. These functions call the appropriate
23    methods (e.g., 'self.yes()', 'self.no()', 'self.reset()') and set the
24    user_choice variable accordingly.
25 4. Configures the buttons to call the respective callback functions.
26 5. Starts the main event loop using 'self.gui.mainloop()'.
27 6. Disables the "yes" and "no" buttons after the user has made a choice.
28 7. Returns the user's choice as a boolean value.
29
30 Note: The specific details of the GUI implementation, such as the actual
31 buttons and their configuration, may depend on
32 the underlying GUI framework used.
33
34 Example usage:
35     get_user_choice()
36 """

```

Creator.yes(self)

```

1 """
2 Set last_user_input to "yes".

```



```

3
4 This method updates the last_user_input attribute to "yes" and displays a
  message indicating the change.
5
6 Example:
7     gui_instance = MyGUI()
8     gui_instance.yes()
9     # The last_user_input attribute is updated to "yes".
10 """

```

Creator.no(self)

```

1 """
2 Set last_user_input to "no".
3
4 This method updates the last_user_input attribute to "no" and displays a
  message indicating the change.
5
6 Example:
7     gui_instance = MyGUI()
8     gui_instance.no()
9     # The last_user_input attribute is updated to "no".
10 """

```

Creator.reset(self)

```

1 """
2 Reset last_user_input and provide status.
3
4 This method resets the last_user_input attribute to "reset", displays a
  reset message using the output_text
5 method, and confirms the change with a print statement.
6
7 Example:
8     gui_instance = MyGUI()
9     gui_instance.reset()
10    # The last_user_input attribute is reset to "reset", and the GUI
  provides a reset status.
11 """

```

Creator.browse_files(self)

```

1 """
2 Open a file dialog to select a file path.
3
4 This method opens a file dialog to allow the user to select a file path. The
  selected file path is then
5 displayed in the editable box on the GUI.
6
7 Example:
8     gui_instance = MyGUI()
9     gui_instance.browse_files()
10    # The user selects a file path using the file dialog, and the selected
  path is displayed in the GUI.
11 """

```

Creator.update_input_file(self)

```

1 """
2 Update the current input file and associated data.

```

```

3
4 This method updates the current input file based on the path entered in the
   GUI. If no file path
5 is provided, an appropriate message is displayed using the output_text
   method. If the provided
6 file path is different from the current file path, the global_vars object is
   reset, and the new
7 file path is set as the current file. Additionally, if the file's extension
   matches certain
8 predefined extensions (such as '.char', '.names', or '.list'), the lines
   from the file are read
9 and stored in the current_list attribute.
10
11 Example:
12     gui_instance = MyGUI()
13     gui_instance.path_text.set("data.txt")
14     gui_instance.update_input_file()
15     # The current input file is updated to 'data.txt', and associated data
       is adjusted.
16 """

```

Creator.generate_word(self)

```

1 """
2 Generates a word based on a probability matrix and offers the option to
   append it to a file.
3
4 Args:
5     None.
6
7 Returns:
8     None.
9
10 Raises:
11     None.
12
13 This method generates a word using a probability matrix and prompts the user
   whether to append the generated word
14 to a file.
15
16 The method performs the following steps:
17     1. Prints a message indicating that a word is being generated.
18     2. Updates the input file.
19     3. Generates a probability matrix based on the current list.
20     4. Prints the generated probability matrix.
21     5. Enters a loop that continues until the last user input is "reset".
22         a. Generates a word using the current probability matrix.
23         b. Outputs the generated word.
24         c. Asks the user if they want to append the word to the file.
25         d. Retrieves the user's choice.
26         e. If the user chooses "yes", the word is appended to the file.
27         f. If the user chooses "no", a message is outputted indicating that
           the word was not appended to the file.
28         g. If the user's choice is neither "yes" nor "no", the loop continues
           .
29
30 Note: The specific details of how the probability matrix is generated and
       how the word is outputted may depend on
31 the implementation of the methods used within this method.
32
33 Example usage:
34     generate_word()

```

```
35 """
```

```
Creator.run(self)
```

```
1 """
```

```
2 Runs the main GUI.
```

```
3 """
```

References

[1]