Dungeons Without Dragons Explained

Austin Brown and Daniel Paredes

The **Character** class is the class for any character in the game. Every character has a:

* State
* Weapon (optional)
* List of modifiers (is empty if the character has none)
* Damage attack() which is the total damage it can deal to an enemy (the weapon's damage + character's individual damage)
* Upkeep function that applies any Boons or Curses the Character has
* Heal function
* takeDamage function changes the characters state depending on the input damage parameter

The **Player** class is derived from the character class, this is the main character/player of the game.

This class has everything that the Character class as well as a:

* name, can be chosen, or by default it is “Stevie”
* Level, an int variable that keeps track of the players level and increases when the experience bar is full
* Experience, an int variable that tracks the amount of experience a player has,
* Boolean hasKey that is True if the Player has the key, and false otherwise, if this Boolean becomes true, the game is won
* levelup() function that is called when player levels up, this function randomly gives the player the key
* Upkeep is the same as the Parent class but also updates player level and can call levelup()

The **NPC** class is derived from the character class, this is any character that is not the player or a monster. The NPC class has everything a character has as well as name, by default it is “”.

(**HELP** Are NPC’s able to harm main character or are they only allies?)<- ONLY ALLIES

The **Monster** class is derived from the character class. It is an enemy of the player. The monster class has everything that a character has as well as a name, by default it is “Carl”.

The **Weapon** class is the class for any weapon in the game. This class has:

* Damage attack() which is the total damage it can deal
* Type Advantage which does bonus damage against certain enemies

The **Damage** class is an amount of damage, this class has:

* Integer damage, the minimum amount of damage
* A list of Modifiers, typeadvantages. These modifiers can increase the damage passed to certain objects that share the same modifiers
* Damage +Operators, this allows multiple Damages to be combined for one attack, for example the Player’s Damage + Player’s Weapon Damage + Ally’s Damage.
* Integer numMods, the number of modifiers a damage has.

The **State** class contains information that describes the character’s health and damage that it can deal (without a weapon). This class has:

* Integer baseHealth, the health that a character currently has
* Integer maxHealth, the maximum health a character can have
* Integer healthMod, the amount of health that is given or taken from the upkeep() function
* Damage that the character can deal without a weapon
* Integer damageMod, the amount of damage reduced or added to the character

The **Modifier** class: The base class for all modifiers. This class has:

* Integer Effect that determines how much this modifies a stat
* Integer Duration that determines how many “Turns” it will stay in effect
* Upkeep function that decreases duration by 1 and returns true if the duration is less than 0. This is called inside of a character’s upkeep function.
* Apply function that modifies an integer of a state class, called in character upkeep functions

The **DoT** class: This class is a modifier that will harm a character over time. This class has:

* Overridden apply function

The **Curse** class: This class is a modifier that will lower the attack of a character. This class has:

* Overridden apply function

The **Boon** class: This class is a modifier that will heal a character over time. This class has:

* Overridden apply function

The **TypeAdvantage** class: This class is a modifier that will increse the damage of a character. This class has:

* Overridden apply function
* A string member called type that determines if the effect is applied.