FattyPy

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# General Concept

FattyPy is a fork of the popular VN engine RenPy with modifications to assist with games with a weight gain, expansion, and transformation aspect. The main feature added is what is being called the Dynamic Displayable Character or DDCharacter. This system aims to add logic to the character object that can intelligently decide on what displayable should be displayed for that character based on set of properties set by the developer.

The general plan of implementation is simple. Modify the existing show functionality to call a show function when passed a DDCharacter derived object. When the DDCharacter show method is called it will recall show with the image tag that the character object decided was appropriate based on the currently set properties in that object.

# API/System

## RenPy Statements

### Show

A modified show command that will check if the passed image tag is instead a DDCharacter type. The first part of the tuple must be the character which means all character object names must be one word. When called on a DDCharacter object it will call that DDCharacter’s show method to determine the image tag to pass to the proper show method.

### Hide

Will hide the last displayed displayable as stored within the DDCharacter object.

### Add-Attribute

Adds a user defined attribute the DDCharacter object’s attribute list.

### Remove-Attribute

Removes a user defined attribute from the DDCharacter object’s attribute list.

### Set

Sets the passed attribute of the DDCharacter object with the given value.

### Get

Get the current value of the passed attribute from the DDCharacter object.

### Add-Comparitor

Adds a comparator/image tuple to a character object.

## Python Objects

### Dynamic Displayable Character (DDCharacter)

This character is the backbone of the dynamic displayable system. It works as a common class for other more specialized objects to inherit from. The attributes of a DDCharacter will be created dynamically using an underlying dictionary to store the values. The dictionary will be in the form of name, value pairs where the name is the attribute that the value should be tied to.

The DDCharacter object is more of an entry point and storage object and will not contain any of the logic to decide what image tag should be passed to show. This will instead be dealt with using comparator objects that have been stored in an array of tuples where each tuple will contain the image tag and all comparators that must be true to display that image. The image tag can be specified to specify a default image to display when no comparator image tuple evaluates to true.

There are also a few planned preconfigured DDCharacters

#### Size Based Weight Gain Character

This variant of DDCharacters will contain a single size attribute that will be directly mapped to an image.

#### Weight Based Character

This variant of DDCharacters will use a range comparator that will map an image to a range of weights in the weight attribute.

### Comparitors

Comparators are a simple logic object that take in a DDCharacter and an attribute and preform an evaluation that will return true or false. Comparators will be used by the DDCharacter object to determine the image tag to use.

#### Equivalence Comparator

This comparator checks if an attribute is equal to the set value.

#### Range Comparator

A range comparator takes in an attribute and checks inclusively if the values falls between two set values.

#### Less Than Comparator

Exclusively checks if the passed attribute is less than the set value.

#### More Than Comparator

Exclusively checks if the passed attribute is more than the set value.