

cedargrove_palettefilter

PaletteFilter is a CircuitPython helper class for replacing color index values in a `displayio.Palette` object. A target color along with a tolerance parameter determine the range of color values to be replaced. The class creates a new palette object with the changes. The replacement color value (or `None` for transparency) is substituted for the original palette entry and placed into the new palette object, `TransparencyFilter.palette`.

The filter uses a linear Euclidean comparison incorporating vision perception ('redmean') approximation to test palette color values with the specified transparent color. https://en.wikipedia.org/wiki/Color_difference

For comparing a single color value, use the `cedargrove_palettefilter.compare_colors()` helper function.

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Implementation Notes

Hardware:

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: <https://circuitpython.org/downloads>

```
class cedargrove_palettefilter.PaletteFilter(*, source_palette, target_color, fill_color=None, tolerance=0, invert=False)
```

Class representing the CedarGrove PaletteFilter, a **displayio** palette filter for palette color replacement. Creates an adjusted **displayio** palette object property.

Parameters:	<ul style="list-style-type: none">• source_palette – The displayio source palette object. No default.• target_color – The 24-bit RGB color integer value to be replaced. No default.• fill_color – The 24-bit RGB color replacement integer value. Defaults to None for transparent.• tolerance – The difference value used to detect color similarity. Value range is 0 to 765; 0 detects a single color. Default is 0 (makes one color transparent across the palette).• invert – The boolean inversion state. Inverts the color comparison logic so that only colors outside of the target color range are changed. Default is False.
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palette

A class getter property.

Parameters:	palette – The adjusted displayio palette object.
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target_color

A class getter and setter property.

Parameters:	target_color – The target integer color value to be replaced.
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fill_color

A class getter and setter property.

Parameters: **fill_color** – The replacement integer color value or transparent (*None*).

tolerance

A class getter and setter property.

Parameters: **tolerance** – The float color value difference tolerance, 0 to 765.

invert

A class getter property.

Parameters: **invert** – The boolean inversion state. *True* for the inverted the color replacement process; *False* for normal mode.