Abstract Art Generator

Generated by Doxygen 1.8.17

Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 3

File Index

3.1 File List

Here is a list of all documented files with brief descriptions:

Chapter 4

Class Documentation

4.1 canvas.canvas Class Reference

The canvas class.

Public Member Functions

- def __init__ (self, x, y, width, height, display_width, display_height, window)

  Initializes the canvas.
- def draw (self)

  Draws the canvas to the ui.
- def draw_to_canvas (self)

  Draws layers to the canvas.
- def generate_bg (self, color)

  Fill the canvas background with a color.
- def get_canvas (self)

  Gets the pygame surface the canvas draws on.
- def **get_height** (self)
- def **get_width** (self)

4.1.1 Detailed Description

The canvas class.

Provides the canvas the program draws on along with functions for drawing layers to the canvas and drawing the canvas to the ui.

4.1.2 Constructor & Destructor Documentation

4.1.2.1 __init__()

```
def canvas.canvas.__init__ (
              self,
              x,
              y,
              width,
              height,
              display_width,
              display_height,
              window )
```

Initializes the canvas.

Parameters

x	Horizontal position to draw the canvas at on the ui.
y	Vertical position to draw the canvas at on the ui.
width	Width of the canvas surface.
height	Height of the canvas surface.
display_width	Width of the ui's canvas display port.
display_height	Height of the ui's canvas display port.
window	Ui window to draw the canvas to.

4.1.3 Member Function Documentation

4.1.3.1 draw_to_canvas()

```
def canvas.canvas.draw_to_canvas (
              self )
```

Draws layers to the canvas.

Calls any drawing widgets to draw to the canvas.

4.1.3.2 generate_bg()

```
def canvas.canvas.generate_bg (
              self,
              color )
```

Fill the canvas background with a color.

Parameters

color	Color to fill the background with.

4.1.3.3 get_canvas()

```
def canvas.canvas.get_canvas (
              self )
```

Gets the pygame surface the canvas draws on.

Returns

The pygame surface the canvas draws on.

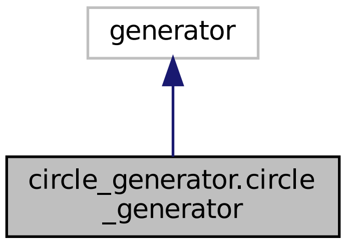
The documentation for this class was generated from the following file:

- canvas.py

4.2 circle_generator.circle_generator Class Reference

Class to draw circles.

Inheritance diagram for circle_generator.circle_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

  Draws cirlces to a layer.

4.2.1 Detailed Description

Class to draw circles.

4.2.2 Member Function Documentation

4.2.2.1 draw()

```
def circle_generator.circle_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws cirlces to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

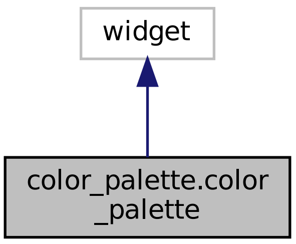
The documentation for this class was generated from the following file:

- circle_generator.py

4.3 color_palette.color_palette Class Reference

The color palette widget class.

Inheritance diagram for color_palette.color_palette:



Public Member Functions

- def __init__ (self, x, y, window, ui_manager)

  Initializes the color palette widget.
- def draw_ui_dynamic (self)

  Draws the dynamic ui elements for the color palette widget.
- def draw_ui_static (self)

  Draws the static ui elements for the color palette widget.
- def events (self, event)

  Processes pygame events for the color palette widget.
- def get_background_color (self)

  Get the background color in hex form.
- def get_colors_from_palette (self)

  Get the list of colors for the current palette in hex form.
- def get_foreground_colors (self)

  Get the list of foreground colors in hex form.
- def get_name_of_palette (self)

  Get the name of the current palette.
- def randomize (self)

  Randomize the current color palette and background color.
- def refresh_ui_static (self)

  Refreshes the static ui elements for the color palette widget.

Public Attributes

- **background_index_buttons**

4.3.1 Detailed Description

The color palette widget class.

Provides a ui and functionality to specify the current color palette and the background color.

4.3.2 Constructor & Destructor Documentation

4.3.2.1 __init__()

```
def color_palette.color_palette.__init__ (
              self,
              x,
              y,
              window,
              ui_manager )
```

Initializes the color palette widget.

Parameters

x	Horizontal position to draw the widget at on the ui.
y	Vertical position to draw the widget at on the ui.
window	Ui window to draw the widget to.
ui_manager	Pygame_gui element manager to tie pygame_gui elements to.

4.3.3 Member Function Documentation

4.3.3.1 draw_ui_dynamic()

```
def color_palette.color_palette.draw_ui_dynamic (
              self )
```

Draws the dynamic ui elements for the color palette widget.

Draws the text, lock icons, and color swatches.

4.3.3.2 draw_ui_static()

```
def color_palette.color_palette.draw_ui_static (
              self )
```

Draws the static ui elements for the color palette widget.

Draws the palette dropdown, lock buttons, and color swatch buttons.

4.3.3.3 events()

```
def color_palette.color_palette.events (
              self,
              event )
```

Processes pygame events for the color palette widget.

Handles the palette dropdown, lock buttons, and background color buttons.

Parameters

event	The pygame event being processed.

4.3.3.4 get_background_color()

```
def color_palette.color_palette.get_background_color (
              self )
```

Get the background color in hex form.

Returns

The background color.

4.3.3.5 get_colors_from_palette()

```
def color_palette.color_palette.get_colors_from_palette (
              self )
```

Get the list of colors for the current palette in hex form.

Returns

A list of the palette colors.

4.3.3.6 get_foreground_colors()

```
def color_palette.color_palette.get_foreground_colors (
              self )
```

Get the list of foreground colors in hex form.

Returns

A list of the palette colors excluding the background color.

4.3.3.7 get_name_of_palette()

```
def color_palette.color_palette.get_name_of_palette (
              self )
```

Get the name of the current palette.

Returns

The palette name.

4.3.3.8 refresh_ui_static()

```
def color_palette.color_palette.refresh_ui_static (
              self )
```

Refreshes the static ui elements for the color palette widget.

Changes how many color swatch buttons display based on the length of the color palette.

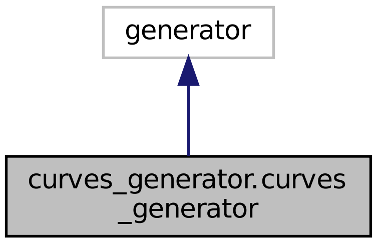
The documentation for this class was generated from the following file:

- color_palette.py

4.4 curves_generator.curves_generator Class Reference

Class to draw curves.

Inheritance diagram for curves_generator.curves_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

  Draws curves to a layer.

4.4.1 Detailed Description

Class to draw curves.

4.4.2 Member Function Documentation

4.4.2.1 draw()

```
def curves_generator.curves_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws curves to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

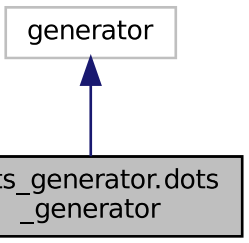
The documentation for this class was generated from the following file:

- curves_generator.py

4.5 dots_generator.dots_generator Class Reference

Class to draw dots.

Inheritance diagram for dots_generator.dots_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)
  Draws dots to a layer.

4.5.1 Detailed Description

Class to draw dots.

4.5.2 Member Function Documentation

4.5.2.1 draw()

```
def dots_generator.dots_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws dots to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

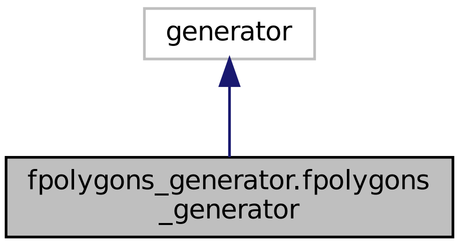
The documentation for this class was generated from the following file:

- dots_generator.py

4.6 fpolygons_generator.fpolygons_generator Class Reference

Class to draw filled polygons.

Inheritance diagram for fpolygons_generator.fpolygons_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

  Draws filled polygons to a layer.

4.6.1 Detailed Description

Class to draw filled polygons.

4.6.2 Member Function Documentation

4.6.2.1 draw()

```
def fpolygons_generator.fpolygons_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws filled polygons to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

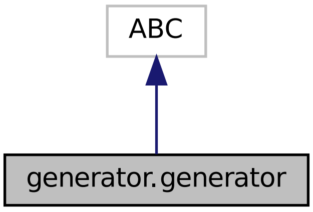
The documentation for this class was generated from the following file:

- fpolygons_generator.py

4.7 generator.generator Class Reference

Abstract class for generators to extend.

Inheritance diagram for generator.generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

    Draws to a layer.

4.7.1 Detailed Description

Abstract class for generators to extend.

4.7.2 Member Function Documentation

4.7.2.1 draw()

```
def generator.generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

The documentation for this class was generated from the following file:

- generator.py

4.8 generator_storage.generator_storage Class Reference

Storage for program generators .

Public Member Functions

- def **__init__** (self)

Public Attributes

- circle_generator

  The color palette widget.

4.8.1 Detailed Description

Storage for program generators .

Allows all other modules to access program generators.

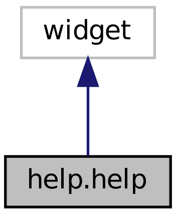
The documentation for this class was generated from the following file:

- generator_storage.py

4.9 help.help Class Reference

The help widget class.

Inheritance diagram for help.help:



Public Member Functions

- def __init__ (self, x, y, window, ui_manager)

  Initializes the help widget.
- def draw_ui_dynamic (self)

  Draws the dynamic ui elements for the help widget.
- def draw_ui_static (self)

  Draws the static ui elements for the help widget.
- def events (self, event)

  Processes pygame events for the help widget.

4.9.1 Detailed Description

The help widget class.

Displays a ui help button that displays the program instructions when clicked.

4.9.2 Constructor & Destructor Documentation

4.9.2.1 __init__()

```
def help.help.__init__ (
              self,
              x,
              y,
              window,
              ui_manager )
```

Initializes the help widget.

Parameters

x	Horizontal position to draw the widget at on the ui.
y	Vertical position to draw the widget at on the ui.
window	Ui window to draw the widget to.
ui_manager	Pygame_gui element manager to tie pygame_gui elements to.

4.9.3 Member Function Documentation

4.9.3.1 draw_ui_dynamic()

```
def help.help.draw_ui_dynamic (
              self )
```

Draws the dynamic ui elements for the help widget.

Draws a dialog with the instructions for using the program.

4.9.3.2 draw_ui_static()

```
def help.help.draw_ui_static (
              self )
```

Draws the static ui elements for the help widget.

Draws a button with "help" written on it.

4.9.3.3 events()

```
def help.help.events (
              self,
              event )
```

Processes pygame events for the help widget.

If event in the help button being pressed display the instructions dialog.

Parameters

event	The pygame event being processed.

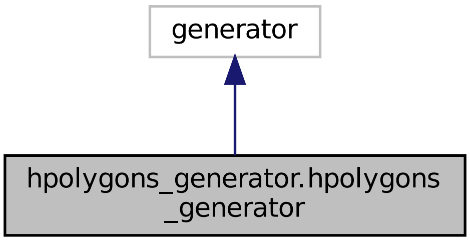
The documentation for this class was generated from the following file:

- help.py

4.10 hpolygons_generator.hpolygons_generator Class Reference

Class to draw hollow polygons.

Inheritance diagram for hpolygons_generator.hpolygons_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)
  Draws hollow polygons to a layer.

4.10.1 Detailed Description

Class to draw hollow polygons.

4.10.2 Member Function Documentation

4.10.2.1 draw()

```
def hpolygons_generator.hpolygons_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws hollow polygons to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

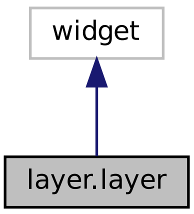
The documentation for this class was generated from the following file:

- hpolygons_generator.py

4.11 layer.layer Class Reference

The layer widget class.

Inheritance diagram for layer.layer:



Public Member Functions

- def __init__ (self, x, y, window, ui_manager, layer_num)

  Initializes the layer widget.
- def clean_layer (self)

  Clean the layer by setting it to be blank and see-through.
- def draw_canvas (self)

  Draw the layer to self.layer based on the current widget settings.
- def draw_ui_dynamic (self)

  Draws the dynamic ui elements for the layer widget.
- def draw_ui_static (self)

  Draws the static ui elements for the layer widget.
- def events (self, event)

  Processes pygame events for the layer widget.
- def get_layer_complexity (self)
- def get_layer_shape (self)
- def get_layer_size (self)
- def get_layer_style (self)
- def randomize (self)

  Randomize the shape, style, complexity, and size of the layer drawing algorithm.

Public Attributes

- layer

  The pygame surface the layer draws to.

4.11.1 Detailed Description

The layer widget class.

Provides a ui and functionality to specify a drawing algorithm and draw to a pygame surface.

4.11.2 Constructor & Destructor Documentation

4.11.2.1 __init__()

```
def layer.layer.__init__ (
              self,
              x,
              y,
              window,
              ui_manager,
              layer_num )
```

Initializes the layer widget.

Parameters

x	Horizontal position to draw the widget at on the ui.
y	Vertical position to draw the widget at on the ui.
window	Ui window to draw the widget to.
ui_manager	Pygame_gui element manager to tie pygame_gui elements to.

4.11.3 Member Function Documentation

4.11.3.1 draw_ui_dynamic()

```
def layer.layer.draw_ui_dynamic (
              self )
```

Draws the dynamic ui elements for the layer widget.

Draws the text and lock icons.

4.11.3.2 draw_ui_static()

```
def layer.layer.draw_ui_static (
              self )
```

Draws the static ui elements for the layer widget.

Draws the shape and style dropdowns, the complexity and size sliders, and lock button.

4.11.3.3 events()

```
def layer.layer.events (
              self,
              event )
```

Processes pygame events for the layer widget.

Handles the shape and style dropdowns, the complexity and size sliders, and lock button.

Parameters

event	The pygame event being processed.

4.11.3.4 get_layer_complexity()

```
def layer.layer.get_layer_complexity (
              self )
```

Returns

The layer complexity.

4.11.3.5 get_layer_shape()

```
def layer.layer.get_layer_shape (
              self )
```

Returns

The layer shape.

4.11.3.6 get_layer_size()

```
def layer.layer.get_layer_size (
              self )
```

Returns

The layer size.

4.11.3.7 get_layer_style()

```
def layer.layer.get_layer_style (
              self )
```

Returns

The layer style.

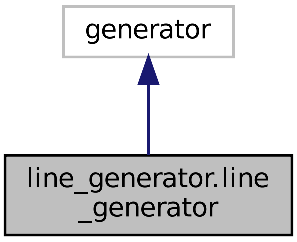
The documentation for this class was generated from the following file:

- layer.py

4.12 line_generator.line_generator Class Reference

Class to draw lines.

Inheritance diagram for line_generator.line_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

    Draws lines to a layer.

4.12.1 Detailed Description

Class to draw lines.

4.12.2 Member Function Documentation

4.12.2.1 draw()

```
def line_generator.line_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws lines to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

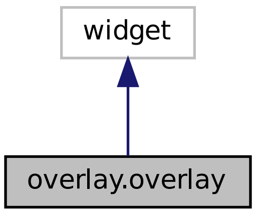
The documentation for this class was generated from the following file:

- line_generator.py

4.13 overlay.overlay Class Reference

The overlay widget class.

Inheritance diagram for overlay.overlay:



Public Member Functions

- def __init__ (self, x, y, window, ui_manager, layer_num)

  Initializes the overlay widget.
- def clean_layer (self)

  Clean the overlay by setting it to be blank and see-through.
- def draw_canvas (self)

  Draw the currently selected overlay image to self.overlay_layer.
- def draw_ui_dynamic (self)

  Draws the dynamic ui elements for the overlay widget.
- def draw_ui_static (self)

  Draws the static ui elements for the overlay widget.
- def events (self, event)

  Processes pygame events for the overlay widget.

Public Attributes

- overlay_layer

  The pygame surface the overlay draws to.

4.13.1 Detailed Description

The overlay widget class.

Provides a ui and functionality to specify an overlay and draw to a pygame surface.

4.13.2 Constructor & Destructor Documentation

4.13.2.1 __init__()

```
def overlay.overlay.__init__ (
              self,
              x,
              y,
              window,
              ui_manager,
              layer_num )
```

Initializes the overlay widget.

Parameters

x	Horizontal position to draw the widget at on the ui.
y	Vertical position to draw the widget at on the ui.
window	Ui window to draw the widget to.
ui_manager	Pygame_gui element manager to tie pygame_gui elements to.

4.13.3 Member Function Documentation

4.13.3.1 draw_ui_dynamic()

```
def overlay.overlay.draw_ui_dynamic (
              self )
```

Draws the dynamic ui elements for the overlay widget.

Draws the text and overlay thumbnails.

4.13.3.2 draw_ui_static()

```
def overlay.overlay.draw_ui_static (
              self )
```

Draws the static ui elements for the overlay widget.

Draws the overlay selection buttons.

4.13.3.3 events()

```
def overlay.overlay.events (
              self,
              event )
```

Processes pygame events for the overlay widget.

Handles the overlay selection buttons.

Parameters

event	The pygame event being processed.

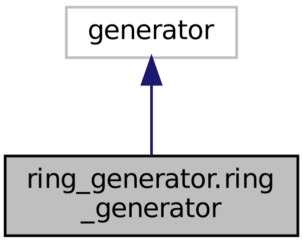
The documentation for this class was generated from the following file:

- overlay.py

4.14 ring_generator.ring_generator Class Reference

Class to draw rings.

Inheritance diagram for ring_generator.ring_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)
  Draws rings to a layer.

4.14.1 Detailed Description

Class to draw rings.

4.14.2 Member Function Documentation

4.14.2.1 draw()

```
def ring_generator.ring_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws rings to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

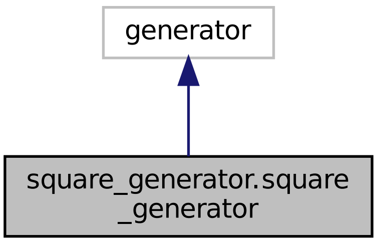
The documentation for this class was generated from the following file:

- ring_generator.py

4.15 square_generator.square_generator Class Reference

Class to draw squares.

Inheritance diagram for square_generator.square_generator:



Public Member Functions

- def draw (layer, complexity, cp, style, magnitude)

  Draws squares to a layer.

4.15.1 Detailed Description

Class to draw squares.

4.15.2 Member Function Documentation

4.15.2.1 draw()

```
def square_generator.square_generator.draw (
              layer,
              complexity,
              cp,
              style,
              magnitude )
```

Draws squares to a layer.

Parameters

layer	The layer to draw to.
complexity	The complexity of the layer.
cp	The color palette to draw with.
style	The style of the layer.
magnitude	The magnitude of the layer.

The documentation for this class was generated from the following file:

- square_generator.py

4.16 ui_controller.ui_controller Class Reference

The ui_controller class.

Public Member Functions

- def __init__ (self)

  Initializes ui_controller.
- def draw_ui_dynamic (self)

  Draws the dynamic ui.
- def draw_ui_static (self)

  Draws the static ui.
- def export_art (self)

  Exports the canvas to a png image.
- def process_events (self)

  Processes pygame events.
- def run (self)

  Main loop.

Public Attributes

- canvas

  The canvas to draw the generated art on.
- isrunning

  A boolean that specifies if the program is running, program terminates if False.
- ui_manager

  Manages pygame_gui elements and events.
- window

  Program window.

Static Public Attributes

- tuple canvas_display_size = (int(SW//1.8), int(SH//1.8))
  Canvas ui display port size.
- tuple canvas_pos = ((SW - canvas_display_size[0])//2, (SH - canvas_display_size[1])//2)
  Position of the canvas on the ui.
- tuple canvas_size = (3840, 2160)
  Canvas internal size.
- list export_resolution = resolutions_list[0]
  Current canvas export resolution.
- tuple help_pos = (284, 60)
  Position of the help widget.
- tuple layer_one_pos = (_ui_menus_left, 60)
  Position of the layer one widget.
- tuple layer_three_pos = (_ui_menus_left, layer_two_pos[1]+200)
  Position of the layer three widget.
- tuple layer_two_pos = (_ui_menus_left, layer_one_pos[1]+200)
  Position of the layer two widget.
- tuple overlay_pos = (0, palette_pos[1]+155)
  Position of the overlay widget.
- tuple palette_pos = (_ui_menus_right, 60)
  Position of the color palette widget.
- list resolutions_list
  Possible canvas export resolutions.
- int SH = 720
  Application window height.
- int SW = 1280
  Application window width.

4.16.1 Detailed Description

The ui_controller class.

A high level class that calls all other modules. Orchestrates pygame event handling, ui drawing, art generation, randomization, and art exporting.

4.16.2 Constructor & Destructor Documentation

4.16.2.1 __init__()

```
def ui_controller.ui_controller.__init__ (
              self )
```

Initializes ui_controller.

Initializes pygame, the application window, the canvas, and all widgets.

4.16.3 Member Function Documentation

4.16.3.1 draw_ui_dynamic()

```
def ui_controller.ui_controller.draw_ui_dynamic (
              self )
```

Draws the dynamic ui.

Draws the background color and some text itself and calls canvas and widgets for all other drawing.

4.16.3.2 draw_ui_static()

```
def ui_controller.ui_controller.draw_ui_static (
              self )
```

Draws the static ui.

Draws generation and export controls itself and calls widgets for all other drawing.

4.16.3.3 process_events()

```
def ui_controller.ui_controller.process_events (
              self )
```

Processes pygame events.

Handles generation and export controls itself and calls events() in widgets for all other event processing.

4.16.3.4 run()

```
def ui_controller.ui_controller.run (
              self )
```

Main loop.

Draws static ui then enters loop where it processes events and draws the dynamic ui.

4.16.4 Member Data Documentation

4.16.4.1 resolutions_list

```
list ui_controller.ui_controller.resolutions_list  [static]
```

Initial value:

```
=  [
        "4K: 3840x2160",
        "Full HD: 1920x1080",
        "HD: 1280x720"
    ]
```

Possible canvas export resolutions.

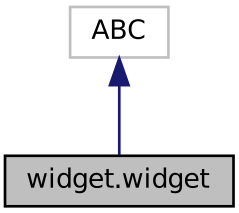
The documentation for this class was generated from the following file:

- ui_controller.py

4.17 widget.widget Class Reference

An abstract class for widgets to extend.

Inheritance diagram for widget.widget:



Public Member Functions

- def __init__ (self, x, y, window, ui_manager)

    Initializes the widget.
- def draw_canvas (self)

    Draw to the canvas.
- def draw_ui_dynamic (self)

    Draw ui elements that need to be refreshed each frame.
- def draw_ui_static (self)

    Draw ui elements that only need to be drawn once.
- def events (self, event)

    Handle pygame events for the widget.
- def randomize (self)

    Randomize the widget settings.
- def refresh_ui_static (self)

    Refresh the static ui elements.

4.17.1 Detailed Description

An abstract class for widgets to extend.

Provides an interface widgets typically use.

4.17.2 Constructor & Destructor Documentation

4.17.2.1 __init__()

```
def widget.widget.__init__ (
              self,
              x,
              y,
              window,
              ui_manager )
```

Initializes the widget.

Parameters

x	Horizontal position to draw the widget at on the ui.
y	Vertical position to draw the widget at on the ui.
window	Ui window to draw the widget to.
ui_manager	Pygame_gui element manager to tie pygame_gui elements to.

4.17.3 Member Function Documentation

4.17.3.1 draw_ui_dynamic()

```
def widget.widget.draw_ui_dynamic (
              self )
```

Draw ui elements that need to be refreshed each frame.

For our purposes draws everything that isn't a pygame_gui element.

4.17.3.2 draw_ui_static()

```
def widget.widget.draw_ui_static (
              self )
```

Draw ui elements that only need to be drawn once.

For our purposes draws pygame_gui elements.

4.17.3.3 events()

```
def widget.widget.events (
              self,
              event )
```

Handle pygame events for the widget.

Parameters

event	The event to be processed.

The documentation for this class was generated from the following file:

- widget.py

4.18 widget_storage.widget_storage Class Reference

Storage for program widgets.

Public Member Functions

- def **__init__** (self)

Public Attributes

- color_palette
  The color palette widget.
- help
  The help button widget.
- layer_one
  The layer one widget.
- layer_three
  The layer three widget.
- layer_two
  The layer two widget.

4.18.1 Detailed Description

Storage for program widgets.

Allows all other modules to access program widgets.

The documentation for this class was generated from the following file:

- widget_storage.py

Chapter 5

File Documentation

5.1 assets.py File Reference

Stores various assets useful to other modules.

Functions

- def assets.text_to_screen (window, text, color, pos, font_size)

  Draws text to ui.

Variables

- tuple assets.active_color = (90, 90, 90)

  Color used to indicate active settings.
- assets.background_color = pg.Color("#322f3d")

  Background_color of ui.
- list assets.font_sizes = [12, 14, 18, 24, 30, 40]

  Font size numbers that correspond with defined font sizes.
- list assets.fonts = [xs_font, small_font, medium_font, large_font, xl_font, xxl_font]

  List of font sizes.
- tuple assets.inactive_color = (20, 20, 20)

  Color used to indicate inactive settings.
- assets.large_font = pg.freetype.Font("Basic-Regular.ttf", 24)

  Large font.
- assets.lock_disabled = pg.transform.scale(pg.image.load("assets/lock_disabled.png"), (20, 20))

  Lock disabled graphic.
- assets.lock_enabled = pg.transform.scale(pg.image.load("assets/lock_enabled.png"), (20, 20))

  Lock enabled graphic.
- assets.logo = pg.image.load("assets/logo.png")

  Program logo.
- assets.medium_font = pg.freetype.Font("Basic-Regular.ttf", 18)

  Medium font.
- assets.small_font = pg.freetype.Font("Basic-Regular.ttf", 14)

  Small font.

- assets.ui_color = pg.Color("#DFD6FF")

  Color used for smaller text elements.
- tuple assets.ui_h1_color = (250, 250, 250)

  Color used for larger text elements.
- assets.xl_font = pg.freetype.Font("Basic-Regular.ttf", 30)

  Extra large font.
- assets.xs_font = pg.freetype.Font("Basic-Regular.ttf", 12)

  Extra small font.
- assets.xxl_font = pg.freetype.Font("Basic-Regular.ttf", 40)

  Extra extra large font.

5.1.1 Detailed Description

Stores various assets useful to other modules.

5.1.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.1.3 Function Documentation

5.1.3.1 text_to_screen()

```
def assets.text_to_screen (
              window,
              text,
              color,
              pos,
              font_size )
```

Draws text to ui.

Parameters

window	Ui window to draw to.
text	Text to draw.
color	Color of text.
pos	Position of text.
font_size	Size of text.

5.2 canvas.py File Reference

Defines the canvas class.

Classes

- class canvas.canvas

  The canvas class.

5.2.1 Detailed Description

Defines the canvas class.

5.2.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.3 circle_generator.py File Reference

Defines the circle_generator class.

Classes

- class circle_generator.circle_generator

  Class to draw circles.

Variables

- list **circle_generator.art_styles_list**

5.3.1 Detailed Description

Defines the circle_generator class.

5.3.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.3.3 Variable Documentation

5.3.3.1 art_styles_list

```
list circle_generator.art_styles_list
```

Initial value:

```
= [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.4 color_palette.py File Reference

Defines the color_palette class.

Classes

- class color_palette.color_palette

  The color palette widget class.

5.4.1 Detailed Description

Defines the color_palette class.

5.4.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.5 curves_generator.py File Reference

Defines the curves_generator class.

Classes

- class curves_generator.curves_generator

  Class to draw curves.

Variables

- list **curves_generator.art_styles_list**

5.5.1 Detailed Description

Defines the curves_generator class.

5.5.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.5.3 Variable Documentation

5.5.3.1 art_styles_list

```
list curves_generator.art_styles_list
```

Initial value:

```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.6 dots_generator.py File Reference

Defines the dots_generator class.

Classes

- class dots_generator.dots_generator

  Class to draw dots.

Variables

- list **dots_generator.art_styles_list**

5.6.1 Detailed Description

Defines the dots_generator class.

5.6.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.6.3 Variable Documentation

5.6.3.1 art_styles_list

`list dots_generator.art_styles_list`

Initial value:
```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.7 fpolygons_generator.py File Reference

Defines the fpolygons_generator class.

Classes

- class fpolygons_generator.fpolygons_generator
  Class to draw filled polygons.

Variables

- list **fpolygons_generator.art_styles_list**

5.7.1 Detailed Description

Defines the fpolygons_generator class.

5.7.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.7.3 Variable Documentation

5.7.3.1 art_styles_list

```
list fpolygons_generator.art_styles_list
```

Initial value:

```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.8 generator.py File Reference

Defines the abstract class generator.

Classes

- class generator.generator

  Abstract class for generators to extend.

5.8.1 Detailed Description

Defines the abstract class generator.

5.8.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.9 generator_storage.py File Reference

Defines and initializes the generator_storage class.

Classes

- class generator_storage.generator_storage

  Storage for program generators .

Variables

- generator_storage.generator_storage = None

  Instance of generator_storage to access generators through.

5.9.1 Detailed Description

Defines and initializes the generator_storage class.

5.9.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.9.3 Variable Documentation

5.9.3.1 generator_storage

```
generator_storage.generator_storage = None
```

Instance of generator_storage to access generators through.

Import this instance and access widgets with widgets.widget_name()

5.10 help.py File Reference

Defines the help class.

Classes

- class help.help

  The help widget class.

5.10.1 Detailed Description

Defines the help class.

5.10.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.11 hpolygons_generator.py File Reference

Defines the hpolygons_generator class.

Classes

- class hpolygons_generator.hpolygons_generator

  Class to draw hollow polygons.

Variables

- list **hpolygons_generator.art_styles_list**

5.11.1 Detailed Description

Defines the hpolygons_generator class.

5.11.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.11.3 Variable Documentation

5.11.3.1 art_styles_list

```
list hpolygons_generator.art_styles_list
```

Initial value:

```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.12 layer.py File Reference

Defines the layer class.

Classes

- class layer.layer

  The layer widget class.

5.12.1 Detailed Description

Defines the layer class.

5.12.2 Author(s)

- Created by Aamina Hussain on 03/17/2022.

5.13 line_generator.py File Reference

Defines the line_generator class.

Classes

- class line_generator.line_generator
  Class to draw lines.

Variables

- list **line_generator.art_styles_list**

5.13.1 Detailed Description

Defines the line_generator class.

5.13.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.13.3 Variable Documentation

5.13.3.1 art_styles_list

```
list line_generator.art_styles_list
```

Initial value:

```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.14 overlay.py File Reference

Defines the overlay class.

Classes

- class overlay.overlay

  The overlay widget class.

5.14.1 Detailed Description

Defines the overlay class.

5.14.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.15 square_generator.py File Reference

Defines the square_generator class.

Classes

- class square_generator.square_generator

  Class to draw squares.

Variables

- list **square_generator.art_styles_list**

5.15.1 Detailed Description

Defines the square_generator class.

5.15.2 Author(s)

- Created by Jessica Dawson on 03/17/2022.

5.15.3 Variable Documentation

5.15.3.1 art_styles_list

```
list square_generator.art_styles_list
```

Initial value:

```
=  [
    "Chaotic",
    "Striped Horizontal",
    "Striped Vertical",
    "Mosaic",
    "Cornered",
    "Centered",
    "Empty"
]
```

5.16 ui_controller.py File Reference

Defines and initializes the ui_controller class.

Classes

- class ui_controller.ui_controller

    The ui_controller class.

Variables

- **ui_controller.controller** = ui_controller()

5.16.1 Detailed Description

Defines and initializes the ui_controller class.

5.16.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.
- Modified by Aamina Hussain on 03/17/2022.

5.17 widget.py File Reference

Defines the widget abstract class.

Classes

- class widget.widget

    An abstract class for widgets to extend.

5.17.1 Detailed Description

Defines the widget abstract class.

5.17.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.

5.18 widget_storage.py File Reference

Defines and initializes the widget_storage class.

Classes

- class widget_storage.widget_storage
  Storage for program widgets.

Variables

- widget_storage.widgets = None
  Instance of widget_storage to access widgets through.

5.18.1 Detailed Description

Defines and initializes the widget_storage class.

5.18.2 Author(s)

- Created by Jessica Dawson on 03/16/2022.
- Modified by Aamina Hussain on 03/17/2022.

5.18.3 Variable Documentation

5.18.3.1 widgets

```
widget_storage.widgets = None
```

Instance of widget_storage to access widgets through.

Import this instance and access widgets with widgets.widget_name

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