

Window class

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1 Window Class

1.1 Description

The window class represents a window application. It is powered by pygame. The window has a tree of window elements which it uses to render the window elements each frame. The tree is traversed with each element receiving events occurring and are tagged to be rerendered when their state has changed.

1.2 Class fields

Field name	Type	Description
width	int	Defines the width of the window in pixels
height	int	Defines the height of the window in pixels
windowtitle	str	The title of the window(show in the bar)
event_loop	function	Event loop of the window application. If not specified differently just calls render on its window elements.
screen	surface object	Surface object(PyGame object) which window elements are drawn on
window_elements	window_element	Tree of window elements which is traversed whenever the new frame starts.

1.3 Class methods

Method name	Parameters	Description
__init__		Initializes the class and pygame
__str__		String representation of the window class object
__repr__		String representation of the window class object in iterable objects
run		Runs the event loop of the application.

2 Window elements

2.1 Description

Window elements is an abstract class of elements which are drawn onto the surface of the window application. They have a render method and an event handler, the event handler is called whenever a frame is done and a new frame is starting to be drawn. Each Window elements has an array of children which are rendered from first element to last. Events are handled from last to first. Event handler can return True if event should not be passed to other nodes(like mouse events that has been already handled, allowing for stacked elements without stacked events).

2.2 Class fields

Field name	Type	Description
width	int	Defines the width of the window element in pixels
height	int	Defines the height of the window element in pixels
x	int	absolute x-Position of the element
y	int	absolut y-Position of the element
children	list of window elements	Children window elements of itself. Elements that are out of the drawing field of itself are clipped.
state_changed	Bool	True if the inner state of window element has changed. Redraws itself and all its children on next render if set True.
surface	Pygame Surface	Surface on which the element draws

2.3 Class methods

Method name	Parameters	Description
<code>__init__</code>		Initializes the class
<code>__str__</code>		String representation of the window class object
<code>__repr__</code>		String representation of the window class object in iterable objects
<code>handle_events</code>	event	Handles incoming input events. event is a list of pygame events or single pygame event
<code>render</code>		renders itself and its children
<code>update</code>	force_update	Rerenders the component if state_chaged or force_update is set to True