
tamcolors

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CHAPTER 1

about

tamcolors is a terminal game library which supports multiplayer and audio. tamcolors gives a buffer which lets the user set the character, foreground color and background color which can draw at a stable FPS of 25 on all supported console.

CHAPTER 2

`pip install tamcolors`

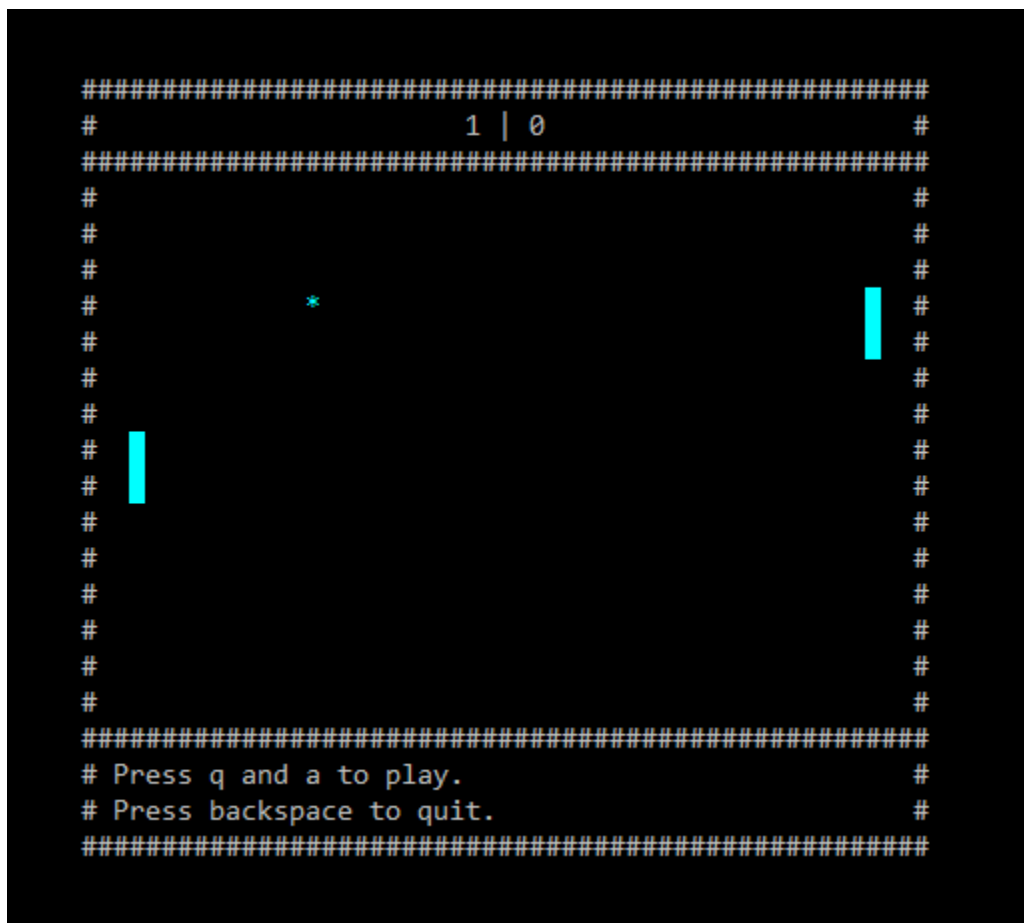
CHAPTER 3

links

- [github](#)
- [pypi](#)
- [read the docs](#)
- [youtube](#)
- [patreon](#)
- [facebook](#)

CHAPTER 4

table tennis example



```
import tamcolors
tamcolors.examples.tabletennis.run()
```


CHAPTER 5

basic example

```
>>> tamcolors.examples.basic.run()  
Hello World!  
Whats Your Name? >>> Chad
```

```
import tamcolors  
tamcolors.examples.basic_console.run()
```

```
from tamcolors.tam_basic import console  
from tamcolors.tam_io.tam_colors import *  
console.printc("Hello", "World!", ("light blue", "white"), same_color=True)  
name = console.inputc("Whats Your Name? >>> ", ("light aqua", "gray"))  
console.clear()  
console.printc("Hello, ", ("default", "default"), name, (GREEN, WHITE), "!", ("gray",  
↪ "light aqua"), sep="")
```



```
import tamcolors
tamcolors.examples.icon.run()
```

6.1 tamcolors

6.1.1 tamcolors package

Subpackages

tamcolors.examples package

Submodules

tamcolors.examples.alpha module

```
class tamcolors.examples.alpha.TAMAlpha
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.alpha.run()
```

tamcolors.examples.basic module

tamcolors.examples.clouds module

```
class tamcolors.examples.clouds.Clouds
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.clouds.run()
```

tamcolors.examples.colors module

```
class tamcolors.examples.colors.TAMCOLORS
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.colors.run()
```

tamcolors.examples.connection_loopback module

```
tamcolors.examples.connection_loopback.run()
```

tamcolors.examples.connection_multi_player module

```
tamcolors.examples.connection_multi_player.run()
```

tamcolors.examples.host_loopback module

```
tamcolors.examples.host_loopback.run()
```

tamcolors.examples.host_multi_player module

```
class tamcolors.examples.host_multi_player.HostMultiPlayer
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, other_surfaces, other_data)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:
```

```

update (tam_loop, keys, loop_data, other_handlers, other_keys, other_data)
    info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
    :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

```

```
tamcolors.examples.host_multi_player.run()
```

tamcolors.examples.icon module

```

class tamcolors.examples.icon.BootLogo
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.icon.run()

```

tamcolors.examples.rgb_color module

```

class tamcolors.examples.rgb_color.RGBCOLOR
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.rgb_color.run()

```

tamcolors.examples.sandy_check module

```
tamcolors.examples.sandy_check.run()
```

tamcolors.examples.tabletennis module

```

class tamcolors.examples.tabletennis.Ball (tam_surface, way=False)
    Bases: object

    get_y ()

    update ()

    winner ()

class tamcolors.examples.tabletennis.Racket (x, ball, tam_surface, ai=False)
    Bases: object

    update (key_manager)

```

```
class tamcolors.examples.tabletennis.TableTennis
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tabletennis.run()
```

tamcolors.examples.tam_key_manager module

```
class tamcolors.examples.tam_key_manager.TAMKeyManager
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_key_manager.run()
```

tamcolors.examples.tam_keys module

```
class tamcolors.examples.tam_keys.TAMKeys
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_keys.run()
```

tamcolors.examples.tam_list_surface module

```
class tamcolors.examples.tam_list_surface.TAMListSurface
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_list_surface.run()
```

tamcolors.examples.tam_loop module

```

class tamcolors.examples.tam_loop.TAMLoopHelloWorld
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_loop.run()

```

tamcolors.examples.tam_print module

```

class tamcolors.examples.tam_print.TAMPrint
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_print.run()

```

tamcolors.examples.tam_text_box module

```

class tamcolors.examples.tam_text_box.TAMPrint
    Bases: tamcolors.tam.tam_loop.TAMFrame

    draw (tam_surface, loop_data, *args)
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param
        other_surfaces: dict :param other_data: dict :return:

    update (tam_loop, keys, loop_data, *args)
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:

tamcolors.examples.tam_text_box.run()

```

Module contents

tamcolors.tam package

Submodules

tamcolors.tam.tam_loop module

```
class tamcolors.tam.tam_loop.TAMFrame (fps, char, foreground_color, background_color,  
                                         min_width=0, max_width=1000, min_height=0,  
                                         max_height=1000)  
  
    Bases: object  
  
    done (tam_loop, loop_data, other_handlers, other_data)  
        info: called when TAMLoop is terminating and can only be called once :param tam_loop: TAMLoop  
        :param loop_data: dict :param other_handlers: dict :param other_data: dict :return:  
  
    draw (tam_surface, loop_data, other_surfaces, other_data)  
        info: will draw frame onto terminal :param tam_surface: TAMSurface :param loop_data: object :param  
        other_surfaces: dict :param other_data: dict :return:  
  
    frame_done (tam_loop, loop_data, other_handlers, other_data)  
        info: called when clean up the frame and can only be called once :param tam_loop: TAMLoop :param  
        loop_data: dict :param other_handlers: dict :param other_data: dict :return:  
  
    get_defaults ()  
        info: gets defaults :return: (str, int, int)  
  
    get_fps ()  
        info: returns the frame fps :return: int  
  
    get_height_min_and_max ()  
        info: returns min and max height :return: (int, int)  
  
    get_width_min_and_max ()  
        info: returns min and max width :return: (int, int)  
  
    make_surface_ready (tam_surface, screen_width, screen_height)  
        info: will make surface ready for frame :param tam_surface: TAMSurface :param screen_width: int: 0 -  
        inf :param screen_height: int: 0 - inf :return:  
  
    update (tam_loop, keys, loop_data, other_handlers, other_keys, other_data)  
        info: will update terminal :param tam_loop: TAMLoop :param keys: list, tuple :param loop_data: objects  
        :param other_handlers: dict :param other_keys: dict :param other_data: dict :return:  
  
class tamcolors.tam.tam_loop.TAMLoop (tam_frame,          io=None,          only_any_os=False,  
                                         color_change_key=('ESCAPE',          'SPECIAL'),  
                                         loop_data=None,          stability_check=False,  
                                         tam_color_defaults=True, highest_mode_lock=False,  
                                         preferred_mode=None, name=None, identi-  
                                         fier_id=None, start_data=None, receivers=None,  
                                         other_handlers=None, thread_count=20, en-  
                                         able_loop_log=False, loop_log_key=('F1',          'SPE-  
                                         CIAL'), loop_log_level=10, enable_loop_fps=True,  
                                         loop_fps_key=('F2', 'SPECIAL')))  
  
    Bases: tamcolors.tam.tam_loop_io_handler.TAMLoopIOHandler  
  
    add_frame_stack (frame)  
        info: will add a TAMFrame to stack :param frame: TAMFrame :return:  
  
    add_receiver (receiver)  
  
    done ()  
        info: will stop tam loop :return: None  
  
    get_all_receiver_names ()
```

```

get_receiver_settings()
    info: gets the receiver settings :return: dict

pop_frame_stack()
    info: will remove TAMFrame from stack :return: TAMFrame or None

remove_receiver(receiver_name)

classmethod run_application(*args, **kwargs)
    info: will run tam loop as an application note: when tam loop is done running the program will quit if tam
    loop has an error and the frame does not catch it the error will be printed onto the screen and the program
    will quit after user input :param args: :param kwargs: :return:

thread_task(func, *args, **kwargs)

exception tamcolors.tam.tam_loop.TAMLoopError
    Bases: Exception

```

tamcolors.tam.tam_loop_io_handler module

```

class tamcolors.tam.tam_loop_io_handler.TAMLoopIOHandler(io, name=None,
                                                         identifier_id=None,
                                                         color_change_key=('ESCAPE',
                                                         'SPECIAL'),
                                                         start_data=None,
                                                         loop_data=None,
                                                         tam_color_defaults=True,
                                                         high-
                                                         est_mode_lock=False,
                                                         preferred_mode=None,
                                                         reset_io=True)

    Bases: object

done()
    info: will stop tam loop :return: None

enable_key_state_mode(enable=True)
    info: Will enable or disable key state mode :param enable: bool :return: None

freeze_handler()
    info: will freeze event loop :return:

get_color_16(spot)
    info: Will get color from color palette 16 :param spot: int :return: RGBA

get_color_16_pal_256(spot)
    info: Will get color from color palette 2 :param spot: int :return: RGBA

get_color_2(spot)
    info: Will get color from color palette 2 :param spot: int :return: RGBA

get_color_256(spot)
    info: Will get color from color palette 256 :param spot: int :return: RGBA

get_dimensions()
    info: Will get the dimensions of the terminal :return: tuple

get_full_name()
    info: get full name :return: tuple

```

get_identifier_id()
info: get identifier id :return: bytes or None

get_io()
info: will get the IO :return: IO

get_keyboard_name (*default_to_us_english=True*)
info: Will get the keyboard language name :param default_to_us_english: bool :return: str

get_loop_data()
info: get loop data :return: object

get_name()
info: get name :return: str or None

get_start_data()
info: get start data :return: object

is_key_state_mode_enabled()
info: Will get the status of key_state :return: bool

is_running()
info: None has not ran, True is running, False has ran :return: bool or None

pump_keys()
info: will get keys from the key queue :return: list

reset_colors_to_console_defaults()
info: will reset colors to console defaults :return: None

run()
info: will call tam loop :return: None

run_with_profiler()
info: will run with a profiler and print out data when done :return: None

set_color_16 (*spot, color*)
info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_16_pal_256 (*spot, color*)
info: sets a color value :param spot: int :param color: int :return: None

set_color_2 (*spot, color*)
info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_256 (*spot, color*)
info: sets a color value :param spot: int :param color: RGBA :return: None

set_loop_data (*loop_data*)
info: set loop data :param loop_data: object :return: None

set_start_data (*start_data*)
info: set start data :param start_data: object :return: None

set_tam_color_defaults()
info: will set console colors to tam defaults :return: None

unfreeze_handler()
info: will unfreeze event loop :return:

tamcolors.tam.tam_loop_io_tcp_handler module

```
class tamcolors.tam.tam_loop_io_tcp_handler.TAMLoopIOTCPHandler (io,
                                                                name=None,
                                                                identi-
                                                                fier_id=None,
                                                                color_change_key=('ESCAPE',
                                                                'SPECIAL'),
                                                                start_data=None,
                                                                loop_data=None,
                                                                tam_color_defaults=True,
                                                                high-
                                                                est_mode_lock=False,
                                                                pre-
                                                                ferred_mode=None,
                                                                re-
                                                                set_io=True)
```

Bases: *tamcolors.tam.tam_loop_io_handler.TAMLoopIOHandler*

```
done ()
    info: will stop tam loop :return: None

is_running ()
    info: None has not ran, True is running, False has ran :return: bool or None
```

tamcolors.tam.tam_loop_receiver module

```
class tamcolors.tam.tam_loop_receiver.TAMLoopReceiver (name)
    Bases: abc.ABC

    done ()
        info: Will stop the receiver :return: None

    get_handler ()
        info: Will get an io if available :return: TAMLoopIOHandler or None

    get_name ()
        info: Will get the receiver name :return: str

    get_receiver_settings ()
        info: will get the receiver io settings :return: dict or None

    get_running ()
        info: Checks if receiver is running :return: bool

    set_receiver_settings (settings)
        info: will set the receiver io settings :param settings: dict :return: None
```

tamcolors.tam.tam_loop_tcp_receiver module

```
class tamcolors.tam.tam_loop_tcp_receiver.TAMLoopTCPReceiver (host='127.0.0.1',
                                                             port=4444,
                                                             ipv6=False,    lis-
                                                             ten_count=10,
                                                             connec-
                                                             tion_password="",
                                                             ad-
                                                             dress_white_list=None,
                                                             ad-
                                                             dress_black_list=None,
                                                             encryp-
                                                             tion=None,    ob-
                                                             ject_packer=None,
                                                             our_information=None)
```

Bases: *tamcolors.tam.tam_loop_receiver.TAMLoopReceiver*

```
done ()
    info: Will stop the receiver :return: None

get_handler ()
    info: Will get an io if available :return: TAMLoopIOHandler or None
```

Module contents

tamcolors.tam_basic package

Submodules

tamcolors.tam_basic.basic module

Module contents

tamcolors.tam_c package

Module contents

tamcolors.tam_io package

Submodules

tamcolors.tam_io.ansi_256_drivers module

```
class tamcolors.tam_io.ansi_256_drivers.ANSI256ChangerDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.ColorChangerDriver, abc.ABC

class tamcolors.tam_io.ansi_256_drivers.ANSI256ColorDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.FullColorDriver, abc.ABC

draw (tam_surface)
    info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None
```

```

get_printc_mode ()
    Gets the modes used by printc and inputc :return: str

inputc (output, color)
    info: Will get input from the console in color :param output: str :param color: COLOR :return: str

printc (output, color, flush, stderr)
    info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param
    stderr: std :return:

set_mode (mode)
    info: will set the color mode :param mode: int: key to color mode :return:

start ()
    info: operations for IO to start :return: None

```

tamcolors.tam_io.ansi_true_color_drivers module

```

class tamcolors.tam_io.ansi_true_color_drivers.ANSITrueFullColorDriver (*args,
                                                                    **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.FullColorDriver, abc.ABC

    draw (tam_surface)
        info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None

    get_printc_mode ()
        Gets the modes used by printc and inputc :return: str

    inputc (output, color)
        info: Will get input from the console in color :param output: str :param color: COLOR :return: str

    printc (output, color, flush, stderr)
        info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param
        stderr: std :return:

    set_mode (mode)
        info: will set the color mode :param mode: int: key to color mode :return:

    start ()
        info: operations for IO to start :return: None

```

tamcolors.tam_io.any_drivers module

```

class tamcolors.tam_io.any_drivers.ANYFullColorDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.FullColorDriver, abc.ABC

    draw (tam_surface)
        info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None

    get_printc_mode ()
        Gets the modes used by printc and inputc :return: str

    inputc (value, color)
        info: will get user input with color :param value: str :param color: tuple: (int, int) :return: str

    printc (output, color, flush, stderr)
        info: will print out user output with color :param output: str :param color: tuple: (int, int) :param flush:
        boolean :param stderr: boolean :return: None

```

```
class tamcolors.tam_io.any_drivers.ANYKeyDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.KeyDriver, abc.ABC

    get_key ()
        info: Gets an input from the terminal :return: tuple or false

    get_key_dict (language=None)
        info: Gets a dict of all the keys :param language: str or None :return: dict

    get_keyboard_name (default_to_us_english=True)
        info: Will get the keyboard language name :param default_to_us_english: bool :return: str

    wait_key (rest_time=0.0001, attempts=300000)
        info: Get an input from the terminal :param: rest_time: float: rest time from checking if a key is down
        :param: attempts: int: number of attempts to get a key :return: tuple or false

class tamcolors.tam_io.any_drivers.ANYSoundDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.SoundDriver, abc.ABC

    close_sound (sound_id)
        info: will close sound :param sound_id: int :return: None

    get_sound_length (sound_id)
        info: will get sound lenght :param sound_id: int :return: int

    get_sound_position (sound_id)
        info: will get the time spot of the song :param sound_id: int :return: int

    is_sound_playing (sound_id)
        info: will check if sound is playing :param sound_id: int :return: bool

    open_sound (file, sound_id)
        info: will open .wav sound :param file: str :param sound_id: int :return: None

    pause_sound (sound_id)
        info: will pause sound :param sound_id: int :return: None

    play_sound (sound_id, reset_sound=True)
        info: will play sound :param sound_id: int :param reset_sound: bool :return: None

    set_sound_position (sound_id, spot)
        info: will set the spot of the sound :param sound_id: int :param spot: int :return: None

class tamcolors.tam_io.any_drivers.ANYUtilitiesDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.UtilitiesDriver, abc.ABC

    clear ()
        info: Will clear the console :return: None

    get_dimensions ()
        info: Gets the dimensions of console :return: (int, int): (row, column)

    show_console_cursor (show)
        info: Will show or hide console cursor :param show: int :return: None
```

tamcolors.tam_io.io_tam module

```
class tamcolors.tam_io.io_tam.IO(identifier, mode_2=True, mode_16_pal_256=True,
                                mode_16=True, mode_256=True,
                                mode_rgb=True, key_driver_operational=True,
                                color_driver_operational=True,
                                color_changer_driver_operational=True,
                                utilities_driver_operational=True,
                                sound_driver_operational=True)
```

Bases: *tamcolors.tam_io.io_tam.RawIO*, *abc.ABC*

```
classmethod able_to_execute()
```

info: checks that io is stable in current environment :return: bool

```
apply_snapshot (snapshot)
```

info: apply snapshot state to IO :param snapshot: dict :return: None

```
clear()
```

info: Will clear the console :return: None

```
close_sound (sound_id)
```

info: will close sound :param sound_id: int :return: None

```
color_changer_driver_operational()
```

info: checks if the color changer driver is operational :return: bool

```
color_driver_operational()
```

info: checks if the color driver is operational :return: bool

```
done()
```

info: operations for IO to stop :return: None

```
draw (tam_surface)
```

info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None

```
enable_console_keys (enable)
```

info: will enable console keys :param enable: boool :return: None

```
enable_event_bus (bus=True)
```

info: will enable the event bus :param bus: bool :return: None

```
enable_key_state_mode (enable=True)
```

info: Will enable or disable key state mode :param enable: bool :return: None

```
get_color_16 (spot)
```

info: Will get color from color palette 16 :param spot: int :return: RGBA

```
get_color_16_pal_256 (spot)
```

info: Will get color from color palette 2 :param spot: int :return: int

```
get_color_2 (spot)
```

info: Will get color from color palette 2 :param spot: int :return: RGBA

```
get_color_256 (spot)
```

info: Will get color from color palette 256 :param spot: int :return: RGBA

```
get_dimensions()
```

info: Gets the dimensions of console :return: (int, int): (row, column)

```
get_event()
```

info: will get event :yield: tuple

get_info_dict ()
info: will get the identifier dict :return: dict

get_key ()
info: Gets an input from the terminal :return: tuple or false

get_key_dict (*language=None*)
info: Gets a dict of all the keys :param language: str or None :return: dict

get_keyboard_name (*default_to_us_english=True*)
info: Will get the keyboard language name :param default_to_us_english: bool :return: str

get_mode ()
info: will return the current color mode :return: int

get_modes ()
info: will return a tuple of all color modes :return: (int, int, ...)

get_printc_mode ()
Gets the modes used by printc and inputc :return: str

get_snapshot ()
info: get snapshot of IO :return: dict

get_sound_length (*sound_id*)
info: will get sound length :param sound_id: int :return: int

get_sound_position (*sound_id*)
info: will get the time spot of the song :param sound_id: int :return: int

inputc (*output, color*)
info: Will get input from the console in color :param output: str :param color: COLOR :return: str

is_console_cursor_enabled ()
info: will check if console cursor is enabled :return: bool

is_console_keys_enabled ()
info: will check if console keys enabled :return: bool

is_event_bus_enabled ()
info: will check if event bus is enabled :return: bool

is_key_state_mode_enabled ()
info: Will get the status of key_state :return: bool

is_running ()
info: checks if IO has been started :return: bool

is_sound_playing (*sound_id*)
info: will check if sound is playing :param sound_id: int :return: bool

key_driver_operational ()
info: checks if the key driver is operational :return: bool

open_sound (*file, sound_id*)
info: will open .wav sound :param file: str :param sound_id: int :return: None

pause_sound (*sound_id*)
info: will pause sound :param sound_id: int :return: None

play_sound (*sound_id, reset_sound=True*)
info: will play sound :param sound_id: int :param reset_sound: bool :return: None

```

prime_event_bus ()
    info: will repeat the last event for every type other than keys :return: None

printc (output, color, flush, stderr)
    info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param
    stderr: std :return:

reset_colors_to_console_defaults ()
    info: will reset colors to console defaults :return: None

rest_sound (sound_id)
    info: will reset sound :param sound_id: int :return: None

set_color_16 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_16_pal_256 (spot, color)
    info: sets a color value :param spot: int :param color: int :return: None

set_color_2 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_256 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_mode (mode)
    info: will set the color mode :param mode: int: key to color mode :return: None

set_sound_position (sound_id, spot)
    info: will set the spot of the sound :param sound_id: int :param spot: int :return: None

set_tam_color_defaults ()
    info: will set console colors to tam defaults :return: None

show_console_cursor (show)
    info: Will show or hide console cursor :param show: bool :return: None

sound_driver_operational ()
    info: checks if the sound driver is operational :return: bool

start ()
    info: operations for IO to start :return: None

utilities_driver_operational ()
    info: checks if the utilities driver is operational :return: bool

wait_key (rest_time=0.0001, attempts=None)
    info: Get an input from the terminal :param: rest_time: float: rest time from checking if a key is down
    :param: attempts: int or None: number of attempts to get a key :return: tuple or false

class tamcolors.tam_io.io_tam.RawIO
    Bases: abc.ABC

    classmethod able_to_execute ()
        info: checks that io is stable in current environment :return: bool

    apply_snapshot (snapshot)
        info: apply snapshot state to IO :param snapshot: dict :return: None

    clear ()
        info: Will clear the console :return: None

    close_sound (sound_id)
        info: will close sound :param sound_id: int :return: None

```

color_change_driver_operational ()
info: checks if the color changer driver is operational :return: bool

color_changer_driver_operational ()
info: checks if the color changer driver is operational :return: bool

color_driver_operational ()
info: checks if the color driver is operational :return: bool

done ()
info: operations for IO to stop :return: None

draw (*tam_surface*)
info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None

enable_console_keys (*enable*)
info: will enable console keys :param enable: boool :return: None

enable_event_bus (*bus=True*)
info: will enable the event bus :param bus: bool :return: None

enable_key_state_mode (*enable=True*)
info: Will enable or disable key state mode :param enable: bool :return: None

get_color_16 (*spot*)
info: Will get color from color palette 16 :param spot: int :return: RGBA

get_color_16_pal_256 (*spot*)
info: Will get color from color palette 2 :param spot: int :return: int

get_color_2 (*spot*)
info: Will get color from color palette 2 :param spot: int :return: RGBA

get_color_256 (*spot*)
info: Will get color from color palette 256 :param spot: int :return: RGBA

get_dimensions ()
info: Gets the dimensions of console :return: (int, int): (row, column)

get_event ()
info: will get event :yield: tuple

get_info_dict ()
info: will get the identifier dict :return: dict

get_key ()
info: Gets an input from the terminal :return: tuple or false

get_key_dict (*language=None*)
info: Gets a dict of all the keys :param language: str or None :return: dict

get_keyboard_name (*default_to_us_english=True*)
info: Will get the keyboard language name :param default_to_us_english: bool :return: str

get_mode ()
info: will return the current color mode :return: int

get_modes ()
info: will return a tuple of all color modes :return: (str, str, ...)

get_printc_mode ()
Gets the modes used by printc and inputc :return: str

get_snapshot()
info: get snapshot of IO :return: dict

get_sound_length(sound_id)
info: will get sound length :param sound_id: int :return: int

get_sound_position(sound_id)
info: will get the time spot of the song :param sound_id: int :return: int

inputc(output, color)
info: Will get input from the console in color :param output: str :param color: COLOR :return: str

is_console_cursor_enabled()
info: will check if console cursor is enabled :return: bool

is_console_keys_enabled()
info: will check if console keys enabled :return: bool

is_event_bus_enabled()
info: will check if event bus is enabled :return: bool

is_key_state_mode_enabled()
info: Will get the status of key_state :return: bool

is_running()
info: checks if IO has been started :return: bool

is_sound_playing(sound_id)
info: will check if sound is playing :param sound_id: int :return: bool

key_driver_operational()
info: checks if the key driver is operational :return: bool

open_sound(file, sound_id)
info: will open .wav sound :param file: str :param sound_id: int :return: None

pause_sound(sound_id)
info: will pause sound :param sound_id: int :return: None

play_sound(sound_id, reset_sound=True)
info: will play sound :param sound_id: int :param reset_sound: bool :return: None

prime_event_bus()
info: will repeat the last event for every type other than keys :return: None

printc(output, color, flush, stderr)
info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param stderr: std :return:

reset_colors_to_console_defaults()
info: will reset colors to console defaults :return: None

rest_sound(sound_id)
info: will reset sound :param sound_id: int :return: None

set_color_16(spot, color)
info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_16_pal_256(spot, color)
info: sets a color value :param spot: int :param color: int :return: None

set_color_2(spot, color)
info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_256 (*spot, color*)

info: sets a color value :param spot: int :param color: RGBA :return: None

set_mode (*mode*)

info: will set the color mode :param mode: int: key to color mode :return:

set_sound_position (*sound_id, spot*)

info: will set the spot of the sound :param sound_id: int :param spot: int :return: None

set_tam_color_defaults ()

info: will set console colors to tam defaults :return: None

show_console_cursor (*show*)

info: Will show or hide console cursor :param show: int :return: None

sound_driver_operational ()

info: checks if the sound driver is operational :return: bool

start ()

info: operations for IO to start :return: None

utilities_driver_operational ()

info: checks if the utilities driver is operational :return: bool

wait_key (*rest_time=0.0001, attempts=300000*)

info: Get an input from the terminal :param: rest_time: float: rest time from checking if a key is down
:param: attempts: int: number of attempts to get a key :return: tuple or false

exception tamcolors.tam_io.io_tam.TAMSoundError

Bases: Exception

tamcolors.tam_io.null_drivers module

class tamcolors.tam_io.null_drivers.NULLFullColorDriver (*args, **kwargs)

Bases: tamcolors.tam_io.tam_drivers.FullColorDriver, abc.ABC

get_printc_mode ()

Gets the modes used by printc and inputc :return: str

inputc (*output, color*)

info: Will get input from the console in color :param output: str :param color: COLOR :return: str

printc (*output, color, flush, stderr*)

info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param
stderr: std :return:

class tamcolors.tam_io.null_drivers.NULLKeyDriver (*args, **kwargs)

Bases: tamcolors.tam_io.tam_drivers.KeyDriver, abc.ABC

get_key ()

info: Gets an input from the terminal :return: tuple or false

classmethod get_key_dict (*language=None*)

info: Gets a dict of all the keys :param language: str or None :return: dict

get_keyboard_name (*default_to_us_english=True*)

info: Will get the keyboard language name :param default_to_us_english: bool :return: str

wait_key (*rest_time=0.0001, attempts=300000*)

info: Get an input from the terminal :param: rest_time: float: rest time from checking if a key is down
:param: attempts: int: number of attempts to get a key :return: tuple or false

```

class tamcolors.tam_io.null_drivers.NULLSoundDriver(*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.SoundDriver, abc.ABC

    close_sound(sound_id)
        info: will close sound :param sound_id: int :return: None

    get_sound_length(sound_id)
        info: will get sound lenght :param sound_id: int :return: int

    get_sound_position(sound_id)
        info: will get the time spot of the song :param sound_id: int :return: int

    is_sound_playing(sound_id)
        info: will check if sound is playing :param sound_id: int :return: bool

    open_sound(file, sound_id)
        info: will open .wav sound :param file: str :param sound_id: int :return: None

    pause_sound(sound_id)
        info: will pause sound :param sound_id: int :return: None

    play_sound(sound_id, reset_sound=True)
        info: will play sound :param sound_id: int :param reset_sound: bool :return: None

    set_sound_position(sound_id, spot)
        info: will set the spot of the sound :param sound_id: int :param spot: int :return: None

class tamcolors.tam_io.null_drivers.NULLUtilitiesDriver(*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.UtilitiesDriver, abc.ABC

    get_dimensions()
        info: Gets the dimensions of console :return: (int, int): (row, column)

```

tamcolors.tam_io.tam_colors module

```

class tamcolors.tam_io.tam_colors.Color(mode_16, mode_256, mode_rgb,
                                         mode_16_pal_256=None, mode_2=None,
                                         _color_id=None)
    Bases: tamcolors.utils.immutable_cache.ImmutableCache, tamcolors.utils.
            object_packer.FastHandObjectPacker

    classmethod from_bytes(object_byte_array)
        info: from bytes to object :param object_byte_array: bytearray :return: object

    has_alpha
        info: Checks if color has any alpha :return: bool

    mode_16
        info: Gets mode 16 :return: int

    mode_16_pal_256
        info: Gets mode 16 pal 256 :return: int

    mode_2
        info: Gets mode 2 :return: int

    mode_256
        info: Gets mode 256 :return: int

    mode_rgb
        info: Gets mode rgb :return: RGBA

```

place_color_over (*old_color, override_alpha*)

info: Will calculate what the new color will be :param old_color: Color :param override_alpha: bool
:return: color

to_bytes ()

info: object to bytes :return: bytes

transparent_value

class tamcolors.tam_io.tam_colors.RGBA (*r, g, b, a=255, is_default=False*)

Bases: *tamcolors.utils.immutable_cache.ImmutableCache, tamcolors.utils.object_packer.FastHandObjectPacker*

a

info: Will get the a value :return: int

b

info: Will get the b value :return: int

classmethod from_bytes (*object_byte_array*)

info: from bytes to object :param object_byte_array: bytearray :return: object

g

info: Will get the g value :return: int

is_default

info: See if color is default :return: bool

r

info: Will get the r value :return: int

to_bytes ()

info: object to bytes :return: bytes

tamcolors.tam_io.tam_drivers module

class tamcolors.tam_io.tam_drivers.ColorChangerDriver (*identifier, mode_2=True, mode_16_pal_256=True, mode_16=True, mode_256=True, mode_rgb=True, key_driver_operational=True, color_driver_operational=True, color_changer_driver_operational=True, utilities_driver_operational=True, sound_driver_operational=True*)

Bases: *tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC*

get_color_16 (*spot*)

info: Will get color from color palette 16 :param spot: int :return: RGBA

get_color_16_pal_256 (*spot*)

info: Will get color from color palette 16 :param spot: int :return: int

get_color_2 (*spot*)

info: Will get color from color palette 2 :param spot: int :return: RGBA

get_color_256 (*spot*)

info: Will get color from color palette 256 :param spot: int :return: RGBA

```

set_color_16 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_16_pal_256 (spot, color)
    info: sets a color value :param spot: int :param color: int :return: None

set_color_2 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_color_256 (spot, color)
    info: sets a color value :param spot: int :param color: RGBA :return: None

set_mode (mode)
    info: will set the color mode :param mode: int: key to color mode :return:

class tamcolors.tam_io.tam_drivers.ColorDriver (identifier, mode_2=True,
                                                mode_16_pal_256=True,
                                                mode_16=True, mode_256=True,
                                                mode_rgb=True,
                                                key_driver_operational=True,
                                                color_driver_operational=True,
                                                color_changer_driver_operational=True,
                                                utilities_driver_operational=True,
                                                sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

draw (tam_surface)
    info: Will draw TAMSurface to console :param tam_surface: TAMSurface :return: None

get_printc_mode ()
    Gets the modes used by printc and inputc :return: str

inputc (output, color)
    info: Will get input from the console in color :param output: str :param color: COLOR :return: str

printc (output, color, flush, stderr)
    info: Will print to the console in color :param output: str :param color: COLOR :param flush: bool :param
    stderr: std :return:

set_mode (mode)
    info: will set the color mode :param mode: int: key to color mode :return:

class tamcolors.tam_io.tam_drivers.FullColorDriver (identifier, mode_2=True,
                                                mode_16_pal_256=True,
                                                mode_16=True, mode_256=True,
                                                mode_rgb=True,
                                                key_driver_operational=True,
                                                color_driver_operational=True,
                                                color_changer_driver_operational=True,
                                                utilities_driver_operational=True,
                                                sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.ColorDriver, tamcolors.tam_io.
tam_drivers.ColorChangerDriver, abc.ABC

```

```
class tamcolors.tam_io.tam_drivers.KeyDriver (identifier, mode_2=True,
                                             mode_16_pal_256=True, mode_16=True,
                                             mode_256=True, mode_rgb=True,
                                             key_driver_operational=True,
                                             color_driver_operational=True,
                                             color_changer_driver_operational=True,
                                             utilities_driver_operational=True,
                                             sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

enable_console_keys (enable)
    info: will enable console keys :param enable: boool :return: None

get_key ()
    info: Gets an input from the terminal :return: tuple or false

get_key_dict (language=None)
    info: Gets a dict of all the keys :param language: str or None :return: dict

get_keyboard_name (default_to_us_english=True)
    info: Will get the keyboard language name :param default_to_us_english: bool :return: str

wait_key (rest_time=0.0001, attempts=300000)
    info: Get an input from the terminal :param: rest_time: float: rest time from checking if a key is down
    :param: attempts: int: number of attempts to get a key :return: tuple or false

class tamcolors.tam_io.tam_drivers.SoundDriver (identifier, mode_2=True,
                                             mode_16_pal_256=True,
                                             mode_16=True, mode_256=True,
                                             mode_rgb=True,
                                             key_driver_operational=True,
                                             color_driver_operational=True,
                                             color_changer_driver_operational=True,
                                             utilities_driver_operational=True,
                                             sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

close_sound (sound_id)
    info: will close sound :param sound_id: int :return: None

get_sound_length (sound_id)
    info: will get sound lenght :param sound_id: int :return: int

get_sound_position (sound_id)
    info: will get the time spot of the song :param sound_id: int :return: int

is_sound_playing (sound_id)
    info: will check if sound is playing :param sound_id: int :return: bool

open_sound (file, sound_id)
    info: will open .wav sound :param file: str :param sound_id: int :return: None

pause_sound (sound_id)
    info: will pause sound :param sound_id: int :return: None

play_sound (sound_id, reset_sound=True)
    info: will play sound :param sound_id: int :param reset_sound: bool :return: None

set_sound_position (sound_id, spot)
    info: will set the spot of the sound :param sound_id: int :param spot: int :return: None
```

```

class tamcolors.tam_io.tam_drivers.TAMDriver(identifier,
                                              mode_2=True,
                                              mode_16_pal_256=True, mode_16=True,
                                              mode_256=True, mode_rgb=True,
                                              key_driver_operational=True,
                                              color_driver_operational=True,
                                              color_changer_driver_operational=True,
                                              utilities_driver_operational=True,
                                              sound_driver_operational=True)

Bases: tamcolors.tam_io.io_tam.IO, abc.ABC

classmethod able_to_execute()
    info: checks that io is stable in current environment :return: bool

done()
    info: operations for IO to stop :return: None

start()
    info: operations for IO to start :return: None

class tamcolors.tam_io.tam_drivers.UtilitiesDriver(identifier,
                                                    mode_2=True,
                                                    mode_16_pal_256=True,
                                                    mode_16=True, mode_256=True,
                                                    mode_rgb=True,
                                                    key_driver_operational=True,
                                                    color_driver_operational=True,
                                                    color_changer_driver_operational=True,
                                                    utilities_driver_operational=True,
                                                    sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

clear()
    info: Will clear the console :return: None

get_dimensions()
    info: Gets the dimensions of console :return: (int, int): (row, column)

show_console_cursor(show)
    info: Will show or hide console cursor :param show: int :return: None

```

tamcolors.tam_io.tam_identifier module

```

class tamcolors.tam_io.tam_identifier.TAMIdentifier(name, *drivers)
    Bases: object

    get_all_drivers()
        info: Get a list of all the tam drivers being used :return: list

    get_info_dict()
        info: Get raw info about this identifier :return: dict

    get_io()
        info: Gets the IO that the selected drivers made :return: IO

    get_name()
        info: Get the general name of the drivers :return: str

    get_system()
        info: Get the system :return: str

```

```
classmethod identify()  
    info: Will find the best drivers for current environment :return: TAMIdentifier  
  
stable()  
    info: Sees if this IO is able to execute :return: bool
```

tamcolors.tam_io.tam_keys module

terminal keys supported on all platforms

```
class tamcolors.tam_io.tam_keys.Keyboard(name,          key_spot_dict,          key_dict=None,  
                                         key_state_dict=None)  
    Bases: object  
  
    code_to_key(code)  
        info: will get key from code :param code: object :return: tuple or False  
  
    code_to_key_state(code)  
        info: will get key from code :param code: object :return: tuple or False  
  
    get_key_dict()  
        info: will get key dict :return: dict or None  
  
    get_key_list()  
  
    get_key_spot_dict()  
        info: will get key spot dict :return: dict  
  
    get_key_state_dict()  
        info: will get key state dict :return: dict or None  
  
    get_name()  
        info: will get keyboard name :return: str  
  
    key_to_spot(key)  
        info: will get spot from key :param key: tuple :return: int or None  
  
    static split_code_dict(code_dict)  
        info: will split a code dict :param code_dict: dict: {tuple: (object, object)} :return: dict, dict  
  
    spot_to_key(spot)  
        info: will get key from spot :param spot: int :return: tuple or None
```

tamcolors.tam_io.tam_surface module

```
class tamcolors.tam_io.tam_surface.TAMSurface(width, height, char, foreground_color,  
                                              background_color)  
    Bases: tamcolors.utils.object_packer.FastHandObjectPacker  
  
    clear()  
        info: clears TAMSurface :return:  
  
    copy()  
        info: copy's TAMSurface :return: TAMSurface  
  
    draw_onto(tam_surface, start_x=0, start_y=0, surface_start_x=0, surface_start_y=0,  
             surface_size_x=-1, surface_size_y=-1, override_alpha=False)  
        info: will draw tam_surface or part of a TAMSurface onto another TAMSurface :param tam_surface:  
        TAMSurface :param start_x: int :param start_y: int :param surface_start_x: int :param surface_start_y: int  
        :param surface_size_x: int: 0 - inf :param surface_size_y: int: 0 - inf :param override_alpha: bool :return:
```


classmethod from_bytes (*object_byte_array*)
 info: from bytes to object :param object_byte_array: bytearray :return: object

get_cross_rect (*tam_surface*, *start_x=0*, *start_y=0*, *surface_start_x=0*, *surface_start_y=0*,
surface_size_x=-1, *surface_size_y=-1*)
 info: will draw tam_surface or part of a TAMSurface onto another TAMSurface :param tam_surface:
 TAMSurface :param start_x: int :param start_y: int :param surface_start_x: int :param surface_start_y: int
 :param surface_size_x: int: 0 - inf :param surface_size_y: int: 0 - inf :return:

get_defaults ()
 info: gets defaults :return: (str, int, int)

get_dimensions ()
 info: gets surface dimensions :return: (int, int)

get_from_raw_spot (*spot*)
 info: gets spot info :param spot: x: int: 0 - (len(tam_surface) - 1) :return: (int, int, int) or None

get_raw_spot (*x*, *y*)
 info: return -1 if not a spot :param x: int :param y: int :return: int

get_raw_surface ()
 info: gets raw surface :return: (list, list, list)

get_spot (*x*, *y*)
 info: gets spot info :param x: int :param y: int :return: (int, int, int) or None

replace_alpha_chars (*alpha_replacement=None*)
Parameters *alpha_replacement* – None or str
Returns

set_defaults_and_clear (*char*, *foreground_color*, *background_color*)
 info: clears surface and resets defaults :param char: str: len of 1 :param foreground_color: int: 0 - inf
 :param background_color: int: 0 - inf :return:

set_dimensions_and_clear (*width*, *height*)
 info: clears and resizes TAMSurface :param width: int: 0 - inf :param height: int: 0 - inf :return:

set_spot (*x*, *y*, *char*, *foreground_color*, *background_color*, *override_alpha=False*)
 info: sets a single spot on the surface :param x: int :param y: int :param char: str: len of 1 :param
 foreground_color: int :param background_color: int :param override_alpha: bool :return:

to_bytes ()
 info: object to bytes :return: bytes

tamcolors.tam_io.tcp_io module

tamcolors.tam_io.tcp_io.get_tcp_io (*receiver*, *wait=True*)
 info: will return TCPObjectConnector connected to an io object :param receiver: TCPReceiver :param wait:
 bool :return: TCPObjectConnector

tamcolors.tam_io.tcp_io.run_tcp_connection (*connection*, *io=None*)
 info: will run a tcp connection :param connection: TCPConnection :param io: IO or None: None will uses
 default IO :return: None

tamcolors.tam_io.uni_drivers module

```
class tamcolors.tam_io.uni_drivers.UNISharedData (identifier, mode_2=True,
                                                mode_16_pal_256=True,
                                                mode_16=True, mode_256=True,
                                                mode_rgb=True,
                                                key_driver_operational=True,
                                                color_driver_operational=True,
                                                color_changer_driver_operational=True,
                                                utilities_driver_operational=True,
                                                sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

classmethod able_to_execute()
    info: checks that io is stable in current environment :return: bool

class tamcolors.tam_io.uni_drivers.UNIUtilitiesDriver (identifier, mode_2=True,
                                                mode_16_pal_256=True,
                                                mode_16=True,
                                                mode_256=True,
                                                mode_rgb=True,
                                                key_driver_operational=True,
                                                color_driver_operational=True,
                                                color_changer_driver_operational=True,
                                                utili-
                                                ties_driver_operational=True,
                                                sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.UtilitiesDriver, tamcolors.tam_io.
uni_drivers.UNISharedData, abc.ABC

clear()
    info: Will clear the console :return: None

done()
    info: operations for IO to stop :return: None

get_dimensions()
    info: Gets the dimensions of console :return: (int, int): (row, column)

show_console_cursor(show)
    info: Will show or hide console cursor :param show: int :return: None
```

tamcolors.tam_io.win_drivers module

```
class tamcolors.tam_io.win_drivers.WINFullColorDriver (*args, **kwargs)

Bases: tamcolors.tam_io.tam_drivers.FullColorDriver, tamcolors.tam_io.
win_drivers.WinSharedData, abc.ABC

done()
    info: operations for IO to stop :return: None

draw(tam_surface)
    info: will draw tam surface to terminal :param tam_surface: TAMSurface :return:

get_printc_mode()
    Gets the modes used by printc and inputc :return: str
```

```

inputc (output, color)
    info: will get user input with color :param output: str :param color: tuple: (int, int) :return: str

printc (output, color, flush, stderr)
    info: will print out user output with color :param output: str :param color: tuple: (int, int) :param flush:
    boolean :param stderr: boolean :return: None

set_mode (mode)
    info: will set the color mode :param mode: int: key to color mode :return:

class tamcolors.tam_io.win_drivers.WINKeyDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.KeyDriver, tamcolors.tam_io.win_drivers.
    WinSharedData, abc.ABC

    get_key ()
        info: will get single key input or return False :return: str or False

    get_key_dict (language=None)
        info: Gets a dict of all the keys :param language: str or None :return: dict

    get_keyboard_name (default_to_us_english=True)
        info: Will get the keyboard language name :param default_to_us_english: bool :return: str

class tamcolors.tam_io.win_drivers.WINSoundDriver (identifier, mode_2=True,
                                                    mode_16_pal_256=True,
                                                    mode_16=True, mode_256=True,
                                                    mode_rgb=True,
                                                    key_driver_operational=True,
                                                    color_driver_operational=True,
                                                    color_changer_driver_operational=True,
                                                    utilities_driver_operational=True,
                                                    sound_driver_operational=True)

    Bases: tamcolors.tam_io.tam_drivers.SoundDriver, tamcolors.tam_io.
    win_drivers.WinSharedData, abc.ABC

    close_sound (sound_id)
        info: will close sound :param sound_id: int :return: None

    get_sound_length (sound_id)
        info: will get sound length :param sound_id: int :return: int

    get_sound_position (sound_id)
        info: will get the time spot of the song :param sound_id: int :return: int

    is_sound_playing (sound_id)
        info: will check if sound is playing :param sound_id: int :return: bool

    open_sound (file, sound_id)
        info: will open .wav sound :param file: str :param sound_id: int :return: None

    pause_sound (sound_id)
        info: will pause sound :param sound_id: int :return: None

    play_sound (sound_id, reset_sound=True)
        info: will play sound :param sound_id: int :param reset_sound: bool :return: None

    set_sound_position (sound_id, spot)
        info: will set the spot of the sound :param sound_id: int :param spot: int :return: None

class tamcolors.tam_io.win_drivers.WINUtilitiesDriver (*args, **kwargs)
    Bases: tamcolors.tam_io.tam_drivers.UtilitiesDriver, tamcolors.tam_io.
    win_drivers.WinSharedData, abc.ABC

```

```
clear ()
    info: will clear the screen :return:

done ()
    info: operations for IO to stop :return: None

get_dimensions ()
    info: will get teh terminal dimensions :return: (int, int)

show_console_cursor (show)
    info: Will show or hide console cursor :param show: bool :return: None

start ()
    info: operations for IO to start :return: None

class tamcolors.tam_io.win_drivers.WinSharedData (identifier, mode_2=True,
                                                mode_16_pal_256=True,
                                                mode_16=True, mode_256=True,
                                                mode_rgb=True,
                                                key_driver_operational=True,
                                                color_driver_operational=True,
                                                color_changer_driver_operational=True,
                                                utilities_driver_operational=True,
                                                sound_driver_operational=True)

Bases: tamcolors.tam_io.tam_drivers.TAMDriver, abc.ABC

classmethod able_to_execute ()
    info: checks that io is stable in current environment :return: bool
```

Module contents

tamcolors.tam_tools package

Submodules

tamcolors.tam_tools.tam_color_palette module

```
class tamcolors.tam_tools.tam_color_palette.TAMColorPalette (color_range=range(0,
                                                                16),
                                                                color_rules=None)

Bases: object

get_color (key)
    info: gets a color from the color palette :param key: object :return:

get_rule (key)
    info: gets a instance of TAMColorPaletteRule or None :param key: object :return: instance of TAMColor-
    PaletteRule or None

key_present (key)
    info: checks if key is in color palette :param key: object :return: bool

set_color (key, color)
    info sets a color to the color palette :param key: object :param color: Color :return:

set_rule (key, rule)
    info: sets a color rule :param key: object :param rule: instance of TAMColorPaletteRule :return:
```

```

    update ()
        info: updates color_palette rules :return:

exception tamcolors.tam_tools.tam_color_palette.TAMColorPaletteError
    Bases: Exception

class tamcolors.tam_tools.tam_color_palette.TAMColorPaletteRule
    Bases: object

    update (color_palette, key)

class tamcolors.tam_tools.tam_color_palette.TAMCycleColor (colors, clock=1)
    Bases: tamcolors.tam_tools.tam_color_palette.TAMColorPaletteRule

    get_clock ()
        info: gets the clock rate :return: int

    set_clock (clock)
        info: sets the clock :param clock: int :return: int: 1 - inf

    set_colors (colors)
        info: sets all the colors :param colors: tuple or int: [Color, Color, Color, ...] :return:

    update (color_palette, key)
        info: will update the color_palette color :param color_palette: TAMColorPalette :param key: object :re-
        turn:

class tamcolors.tam_tools.tam_color_palette.TAMDefaultColor (color)
    Bases: tamcolors.tam_tools.tam_color_palette.TAMColorPaletteRule

    get_color ()
        info: gets the default color :return: Color

    set_color (color)
        info: sets the default color :param color: Color :return:

    update (color_palette, key)
        info: will update the color_palette color :param color_palette: TAMColorPalette :param key: object :re-
        turn:

```

tamcolors.tam_tools.tam_fade module

```

tamcolors.tam_tools.tam_fade.tam_fade_in (surface, char, foreground_color, back-
                                         ground_color, rand=(True, False, False, False,
                                         False), reverse=False)

    info: makes a fade in or fade out via TAMFilm :param surface: TAMSurface :param char: single block char
    :param foreground_color: Color :param background_color: Color :param rand: list: [True, bool, bool, bool, ...]
    :param reverse: bool :return: TAMFilm

```

tamcolors.tam_tools.tam_film module

```

class tamcolors.tam_tools.tam_film.TAMFilm (tam_surfaces=None, circular=False)
    Bases: object

    append (tam_surface)
        info :param tam_surface: :return:

    done ()
        info: returns true if film is done :return: bool

```

get (*spot*)

info will get a TAMSurface :param spot: int: 0 - len(self._surface_list) :return: TAMSurface

get_circular ()

info: gets the circular value :return: bool

peak ()

info: gets the current frame :return: TAMSurface or None

pop ()

info: will pop the last TAMSurface :return: TAMSurface or None

set (*spot*, *tam_surface*)

info: sets a frame :param spot: int: 0 - len(self._surface_list) :param tam_surface: TAMSurface :return:

set_circular (*circular*)

info: can set circular value :param circular: True :return:

slide ()

info will get the next TAMSurface :return: TAMSurface or None

exception tamcolors.tam_tools.tam_film.**TAMFilmError**

Bases: Exception

tamcolors.tam_tools.tam_icon module

tamcolors.tam_tools.tam_icon.**get_icon** ()

tamcolors.tam_tools.tam_key_manager module

```

class tamcolors.tam_tools.tam_key_manager.TAMKeyManager (all_keys=({'t', 'WHITES-
    PACE'), ('n', 'WHITES-
    PACE'), (' ', 'WHITES-
    PACE'), ('!', 'NORMAL'),
    ('"', 'NORMAL'), ('#',
    'NORMAL'), ('$ ', 'NOR-
    MAL'), ('%', 'NOR-
    MAL'), ('&', 'NORMAL'),
    ('"', 'NORMAL'), ('(',
    'NORMAL'), (')', 'NOR-
    MAL'), ('*', 'NORMAL'),
    ('+', 'NORMAL'), (' ',
    'NORMAL'), ('-',
    'NORMAL'), (',', 'NOR-
    MAL'), ('/', 'NORMAL'),
    ('0', 'NORMAL'), ('1',
    'NORMAL'), ('2', 'NOR-
    MAL'), ('3', 'NORMAL'),
    ('4', 'NORMAL'), ('5',
    'NORMAL'), ('6', 'NOR-
    MAL'), ('7', 'NORMAL'),
    ('8', 'NORMAL'), ('9',
    'NORMAL'), (':', 'NOR-
    MAL'), (';', 'NORMAL'),
    ('<', 'NORMAL'), ('=',
    'NORMAL'), ('>', 'NOR-
    MAL'), ('?', 'NORMAL'),
    ('@', 'NORMAL'), ('A',
    'NORMAL'), ('B', 'NOR-
    MAL'), ('BACKSPACE',
    'SPECIAL'), ('C', 'NOR-
    MAL'), ('D', 'NORMAL'),
    ('DELETE', 'SPECIAL'),
    ('DOWN', 'SPECIAL'),
    ('E', 'NORMAL'), ('ES-
    CAPE', 'SPECIAL'),
    ('F', 'NORMAL'), ('F1',
    'SPECIAL'), ('F12', 'SPE-
    CIAL'), ('F12_SHIFT',
    'SPECIAL'), ('F1_SHIFT',
    'SPECIAL'), ('F2', 'SPE-
    CIAL'), ('F2_SHIFT',
    'SPECIAL'), ('F3', 'SPE-
    CIAL'), ('F3_SHIFT',
    'SPECIAL'), ('F4', 'SPE-
    CIAL'), ('F4_SHIFT',
    'SPECIAL'), ('F5', 'SPE-
    CIAL'), ('F5_SHIFT',
    'SPECIAL'), ('F6', 'SPE-
    CIAL'), ('F6_SHIFT',
    'SPECIAL'), ('F7', 'SPE-
    CIAL'), ('F7_SHIFT',
    'SPECIAL'), ('F8', 'SPE-
    CIAL'), ('F8_SHIFT',
    'SPECIAL'), ('F9', 'SPE-
    CIAL'), ('F9_SHIFT',
    'SPECIAL'), ('G', 'NOR-
    MAL'), ('H', 'NORMAL'),

```

get_key_state (*key*)
info: will get a state of a key :param key: str :return: int

get_raw_user_input ()
info: will get the raw user input :return: list or tuple: [(str, str), ...]

get_user_input ()
info: will the next key the user enters :return: tuple, list or None: (str, str)

get_user_input_generator ()
info: yields a key at a time :return: list or tuple: (str, str)

silent_key_state (*key*)
info: will get a key state and make it 0 :param key: str :return: int

update (*keys*)
info: will update key manager with next set of keys :param keys: tuple or list: [(str, str), ...] :return:

tamcolors.tam_tools.tam_list_surface module

`tamcolors.tam_tools.tam_list_surface.tam_list_surface` (*chars*, *foreground_colors*,
background_colors)
info: makes a list into a TAMSurface :param chars: list, tuple :param foreground_colors: list, tuple, Color
:param background_colors: list, tuple, Color :return: TAMSurface

tamcolors.tam_tools.tam_menu module

class `tamcolors.tam_tools.tam_menu.TAMButtonRule`
Bases: object

draw (*tam_surface*)

get_action ()

get_position ()

off ()

on ()

run_action ()

set_action (*func*)

set_position (*x*, *y*)

update ()

class `tamcolors.tam_tools.tam_menu.TAMMenu` (*buttons*, *call_key*, *goto_map*, *on=0*)
Bases: object

draw (*tam_surface*)
info: draw all the buttons of the menu :param tam_surface: TAMSurface :return:

get_buttons ()
info: gets the buttons :return: list

get_call_key ()
info: gets the call key :return: str

get_goto_map ()
info: gets the goto map :return: dict


```

get_on()
    info: gets the on value :return: int

static simple_menu_builder(buttons, call_on, up_keys=('UP', ), down_keys=('DOWN', ),
                             on=0)
    info: a simple way of making a TAMMenu :param buttons: TAMButtonRule :param call_on: str :param
    up_keys: list or tuple: (str, ...) :param down_keys: list or tuple: (str, ...) :param on: int :return:
    TAMMenu

update(keys)
    info: update the menu :param keys: list or tuple: [(str, str), (str, str, ...), ...] :return:

class tamcolors.tam_tools.tam_menu.TAMTextBoxButton(text, x, y, width, height,
                                                    char, foreground_color,
                                                    background_color, action_func, on_foreground_color,
                                                    on_background_color,
                                                    on_char='/', clock=-1,
                                                    center_vertical=True, center
                                                    horizontal=False, vertical
                                                    space=1, vertical_start=1,
                                                    char_background='')

Bases: tamcolors.tam_tools.tam_menu.TAMButtonRule

draw(tam_surface)
    info: draws button onto surface :param tam_surface: :return:

get_action()
    info: gets action function :return: fuction

get_position()
    info: gets the position :return:

off()
    info: puts the button onto the off state :return:

on()
    info: puts the button onto the on state :return:

run_action()
    " info: calls the action function :return:

set_action(func)
    info: sets the actions :param func: function :return:

set_position(x, y)
    info: sets the position :param x: int :param y: int :return:

update()
    info: updates the button :return:

class tamcolors.tam_tools.tam_menu.TAMTextButton(text, x, y, foreground_color,
                                                  background_color, action_func,
                                                  on_foreground_color,
                                                  on_background_color, on_chars='*
                                                  )

Bases: tamcolors.tam_tools.tam_menu.TAMButtonRule

draw(tam_surface)
    info: draws button onto surface :param tam_surface: :return:

```

get_action()
info: gets action function :return: fuction

get_position()
info: gets the position :return:

off()
info: puts the button onto the off state :return:

on()
info: puts the button onto the on state :return:

run_action()
” info: calls the action function :return:

set_action(func)
info: sets the actions :param func: function :return:

set_position(x, y)
info: sets the position :param x: int :param y: int :return:

update()
info: updates the button :return:

tamcolors.tam_tools.tam_placing module

tamcolors.tam_tools.tam_placing.**bottom_left**(x, y, width, height)
info: gets the bottom left x, y :param x: int :param y: int :param width: int: 0 - inf :param height: int: 0 - inf :return: (int, int)

tamcolors.tam_tools.tam_placing.**bottom_right**(x, y, width, height)
info: gets the bottom right x, y :param x: int :param y: int :param width: int: 0 - inf :param height: int: 0 - inf :return: (int, int)

tamcolors.tam_tools.tam_placing.**center**(x, y, width, height)
info: gets the center x, y :param x: int :param y: int :param width: int: 0 - inf :param height: int: 0 - inf :return: (int, int)

tamcolors.tam_tools.tam_placing.**top_left**(x, y, width, height)
info: gets the top left x, y :param x: int :param y: int :param width: int: 0 - inf :param height: int: 0 - inf :return: (int, int)

tamcolors.tam_tools.tam_placing.**top_right**(x, y, width, height)
info: gets the top right x, y :param x: int :param y: int :param width: int: 0 - inf :param height: int: 0 - inf :return: (int, int)

tamcolors.tam_tools.tam_print module

tamcolors.tam_tools.tam_print.**tam_print**(tam_surface, x, y, text, foreground_color, background_color, error_bad_char=False, bad_char=”)
info: tam_print will draw string on a tam_surface :param tam_surface: TAMSurface :param x: int :param y: int :param text: object with __str__ :param foreground_color: int: -1 - inf: use current foreground_color :param background_color: int: -1 - inf: use current background_color :param error_bad_char: bool :param bad_char: str :return:

tamcolors.tam_tools.tam_str module

exception tamcolors.tam_tools.tam_str.**TAMStrError**

Bases: Exception

tamcolors.tam_tools.tam_str.**make_tam_str**(*text*, *end_line*='\n', *bad_char*=None)

info: formats str into a tam str :param text: str :param end_line: str :param bad_char: str :return: str

tamcolors.tam_tools.tam_text_box module

class tamcolors.tam_tools.tam_text_box.**TAMTextBox**(*text*, *width*, *height*, *char*, *foreground_color*, *background_color*, *clock*=-1, *center_vertical*=True, *center_horizontal*=False, *vertical_space*=1, *vertical_start*=1, *char_background*='')
Bases: object

done()

info: True if text box has placed all chars onto to its self :return: bool

draw(*tam_surface*, *start_x*=0, *start_y*=0)

info: draws the text box on to another surface :param tam_surface: TAMSurface :param start_x: int :param start_y: int :return:

get_char()

info: gets char :return: str

get_colors()

info: gets textbox color :return: (int, int)

get_dimensions()

info: gets surface dimensions :return: (int, int)

get_text()

info: gets text :return: str

set_char(*char*)

info: sets char :return:

set_colors(*foreground_color*, *background_color*)

info: sets textbox colors :param foreground_color: 0 - inf :param background_color: 0 - inf :return:

update()

info updates the text box :return:

Module contents

tamcolors.tests package

Subpackages

tamcolors.tests.tam_basic_tests package

Submodules

tamcolors.tests.tam_basic_tests.basic_tests module

Module contents

tamcolors.tests.tam_io_tests package

Submodules

tamcolors.tests.tam_io_tests.any_drivers_tests module

```
class tamcolors.tests.tam_io_tests.any_drivers_tests.AnyIOTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_events()
    test_get_dimensions()
    test_get_io()
    test_get_key()
    test_get_keyboard_name()
    test_get_modes()
    static test_reset_colors_to_console_defaults()
    test_set_slash_get_mode()
    static test_set_tam_color_defaults()
    static test_snapshot()
    test_sound()

tamcolors.tests.tam_io_tests.any_drivers_tests.get_any_io()
```

tamcolors.tests.tam_io_tests.io_tam_tests module

```
class tamcolors.tests.tam_io_tests.io_tam_tests.IOTAMTest (methodName='runTest')
    Bases: unittest.case.TestCase

    test__draw_onto()
    test__draw_onto_2()
    test__draw_onto_3()
    static test__write_to_output_stream()
    static test__write_to_output_stream_2()

class tamcolors.tests.tam_io_tests.io_tam_tests.RAWIOTest (methodName='runTest')
    Bases: unittest.case.TestCase

    test_same_doc_string()
    test_same_methods()
```

tamcolors.tests.tam_io_tests.tam_colors_tests module

```
class tamcolors.tests.tam_io_tests.tam_colors_tests.ColorTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_color_eq()
    test_color_eq_2()
    test_color_eq_3()
    test_color_init()
    test_color_init_2()
    test_color_ne()
    test_color_ne_2()
    test_get_property()
    test_get_property_2()

class tamcolors.tests.tam_io_tests.tam_colors_tests.RGBATests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_get_property()
    test_get_property_2()
    test_rgba_eq()
    test_rgba_eq_2()
    test_rgba_eq_3()
    test_rgba_init()
    test_rgba_init_2()
    test_rgba_ne()
    test_rgba_ne_2()

class tamcolors.tests.tam_io_tests.tam_colors_tests.TAMColorTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_colors()
```

tamcolors.tests.tam_io_tests.tam_keys_tests module

```
class tamcolors.tests.tam_io_tests.tam_keys_tests.TAMKeyTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_keys()
```

tamcolors.tests.tam_io_tests.tam_surface_tests module

```
class tamcolors.tests.tam_io_tests.tam_surface_tests.TAMSurfaceTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_clear()
    test_copy()
```

```
test_copy_2()
test_draw_onto()
test_draw_onto_2()
test_draw_onto_3()
test_draw_onto_4()
test_draw_onto_5()
test_draw_onto_6()
test_draw_onto_7()
test_draw_onto_8()
test_get_cross_rect()
test_get_cross_rect_2()
test_get_defaults()
test_get_dimensions()
test_get_dimensions_2()
test_get_dimensions_3()
test_get_from_raw_spot()
test_get_raw_spot()
test_get_raw_surface()
test_get_raw_surface_2()
test_get_spot()
test_replace_alpha_chars_1()
test_replace_alpha_chars_2()
test_replace_alpha_chars_3()
test_set_defaults_and_clear()
test_set_defaults_and_clear_2()
test_set_dimensions_and_clear()
test_set_dimensions_and_clear_2()
test_set_spot()
test_set_spot_2()
test_set_spot_3()
test_set_spot_4()
test_set_spot_5()
test_set_spot_6()
test_set_spot_7()
test_set_spot_8()
test_set_spot_9()
```

```

test_surface_eq()
test_surface_eq_2()
test_surface_eq_3()
test_surface_eq_4()
test_surface_eq_5()
test_surface_init()
test_surface_len()
test_surface_len_2()
test_surface_len_3()
test_surface_len_4()
test_surface_ne()
test_surface_ne_2()
test_surface_ne_3()
test_surface_ne_4()
test_surface_str()
test_surface_str_2()
test_surface_str_3()
test_to_bytes_from_bytes()

```

tamcolors.tests.tam_io_tests.uni_drivers_tests module

tamcolors.tests.tam_io_tests.win_drivers_tests module

```

class tamcolors.tests.tam_io_tests.win_drivers_tests.WinDriversTests(methodName='runTest')
    Bases: unittest.case.TestCase
    test__console_color_count()
    test__draw_16()
    static test__draw_2()
    test__get_buffer_dimension()
    static test__print()
    static test__print_2()
    static test__print_3()
    test__processes_special_color_1()
    test__processes_special_color_2()
    test__processes_special_color_3()
    test__processes_special_color_4()
    test__processes_special_color_5()
    test__processes_special_color_6()

```

```
test__spot_swap()
test_able_to_execute()
static test_close()
test_done()
test_full_play()
test_get_dimensions()
test_get_key()
test_get_key_2()
test_get_key_3()
test_get_key_4()
test_get_key_5()
test_get_key_dict()
test_get_keyboard_name()
test_get_keyboard_name_2()
test_get_keyboard_name_3()
test_get_keyboard_name_4()
test_get_modes()
static test_play()
test_position()
test_reset_colors_to_console_defaults()
test_rest()
test_set_slash_get_mode()
test_set_tam_color_defaults()
test_start()
class tamcolors.tests.tam_io_tests.win_drivers_tests.WinGlobalsTests (methodName='runTest')
    Bases: unittest.case.TestCase
        test_win_stable()
tamcolors.tests.tam_io_tests.win_drivers_tests.get_win_io()
```

Module contents

`tamcolors.tests.tam_tests` package

Submodules

tamcolors.tests.tam_tests.tam_loop_tcp_receiver_tests module

```

class tamcolors.tests.tam_tests.tam_loop_tcp_receiver_tests.TAMLoopTCPReceiver (methodName='runTest')
    Bases: tamcolors.tests.test_multi_task_helper.MultiTaskHelper, unittest.case.TestCase
    test_loop_tcp_receiver()

```

tamcolors.tests.tam_tests.tam_loop_tests module

```

class tamcolors.tests.tam_tests.tam_loop_tests.TAMFrameTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test__done()
    test__done_2()
    test__frame_done()
    test__frame_done_2()
    test_draw()
    test_frame_init()
    test_get_defaults()
    test_get_defaults_2()
    test_get_fps()
    test_get_fps_2()
    test_get_height_min_and_max()
    test_get_height_min_and_max_2()
    test_get_width_min_and_max()
    test_get_width_min_and_max_2()
    test_make_surface_ready()
    test_make_surface_ready_2()
    test_make_surface_ready_3()
    test_update()

class tamcolors.tests.tam_tests.tam_loop_tests.TAMLoopTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_loop_init()
    test_preferred_mode()
    test_preferred_mode_2()
    test_preferred_mode_3()
    test_reset_colors_to_console_defaults()
    test_run()
    test_set_tam_color_defaults()
    test_stack()

```

Module contents

tamcolors.tests.tam_tools_tests package

Submodules

tamcolors.tests.tam_tools_tests.tam_color_palette_tests module

```
class tamcolors.tests.tam_tools_tests.tam_color_palette_tests.TAMColorPaletteTests (methodName=
    Bases: unittest.case.TestCase

    test_get_color()
    test_get_color_2()
    test_get_color_3()
    test_get_rule()
    test_get_rule_2()
    test_getitem()
    test_getitem_2()
    test_getitem_3()
    test_init_color_palette()
    test_init_color_palette_2()
    test_key_present()
    test_key_present_2()
    test_set_color()
    test_set_color_2()
    test_set_color_3()
    test_set_rule()
    test_set_rule_2()
    test_setitem()
    test_setitem_2()
    test_setitem_3()
    test_str()
    test_str_2()
    test_update()

class tamcolors.tests.tam_tools_tests.tam_color_palette_tests.TAMCycleColorTests (methodName=
    Bases: unittest.case.TestCase

    test_get_clock()
    test_init_cycle_color()
    test_set_clock()
    test_set_colors()
```

```
    test_update()
    test_update_2()
class tamcolors.tests.tam_tools_tests.tam_color_palette_tests.TAMDefaultColorTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_get_color()
    test_init_default_color()
    test_set_color()
    test_update()
```

tamcolors.tests.tam_tools_tests.tam_fade_tests module

```
class tamcolors.tests.tam_tools_tests.tam_fade_tests.TAMFilmFadeInTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_tam_fade_in()
    test_tam_fade_in_2()
    test_tam_fade_in_3()
    test_tam_fade_in_4()
```

tamcolors.tests.tam_tools_tests.tam_film_tests module

```
class tamcolors.tests.tam_tools_tests.tam_film_tests.TAMFilmTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_append()
    test_done()
    test_done_2()
    test_done_3()
    test_get()
    test_get_2()
    test_get_3()
    test_get_circular()
    test_get_circular_2()
    test_getitem()
    test_getitem_2()
    test_getitem_3()
    test_init_film()
    test_len()
    test_len_2()
    test_next()
```

```
test_next_2()
test_peak()
test_peak_2()
test_peak_3()
test_pop()
test_set()
test_set_2()
test_set_3()
test_set_circular()
test_setitem()
test_setitem_2()
test_setitem_3()
test_slide()
test_slide_2()
```

tamcolors.tests.tam_tools_tests.tam_key_manager_tests module

```
class tamcolors.tests.tam_tools_tests.tam_key_manager_tests.TAMKeyManagerTests (methodName='runTest')
    Bases: unittest.case.TestCase
    get_raw_user_input_2()
    get_raw_user_input_3()
    test_get_key_state()
    test_get_key_state_2()
    test_get_raw_user_input()
    test_get_user_input()
    test_get_user_input_2()
    test_get_user_input_3()
    test_get_user_input_generator()
    test_get_user_input_generator_2()
    test_get_user_input_generator_3()
    test_init_key_manger()
    test_iter()
    test_silent_key_state()
    test_silent_key_state_2()
    test_silent_key_state_3()
    test_update()
    test_update_2()
```

tamcolors.tests.tam_tools_tests.tam_list_surface_tests module

```
class tamcolors.tests.tam_tools_tests.tam_list_surface_tests.TAMListSurfaceTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_tam_list_surface()
    test_tam_list_surface_2()
    test_tam_list_surface_3()
    test_tam_list_surface_4()
    test_tam_list_surface_5()
```

tamcolors.tests.tam_tools_tests.tam_menu_tests module

```
class tamcolors.tests.tam_tools_tests.tam_menu_tests.TAMMenuTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_draw()
    test_get_buttons()
    test_get_buttons_2()
    test_get_buttons_3()
    test_get_call_key()
    test_get_call_key_2()
    test_get_goto_map()
    test_get_on()
    test_get_on_2()
    test_simple_menu_builder()
    test_simple_menu_builder_2()
    test_simple_menu_builder_3()
    test_simple_menu_builder_4()
    test_simple_menu_builder_5()
    test_tam_menu()
    test_tam_menu_2()
    test_update()
    test_update_2()
    test_update_3()

class tamcolors.tests.tam_tools_tests.tam_menu_tests.TAMTextBoxButtonTests (methodName='runTest')
    Bases: unittest.case.TestCase

    static test_call_TextBoxButton()
    test_draw()
    test_draw_2()
```

```
test_get_action()
test_get_position()
test_get_position_2()
test_init_TextBoxButton()
test_init_TextBoxButton_2()
test_off()
test_off_2()
test_on()
test_on_2()
static test_run_action()
test_set_action()
test_set_position()
test_set_position_2()
test_str_TextBoxButton()
test_str_TextBoxButton_2()
static test_update()
class tamcolors.tests.tam_tools_tests.tam_menu_tests.TAMTextButtonTests (methodName='runTest')
    Bases: unittest.case.TestCase
    static test_call_TextButton()
    test_draw()
    test_draw_2()
    test_get_action()
    test_get_position()
    test_get_position_2()
    test_init_TextButton()
    test_init_TextButton_2()
    test_off()
    test_off_2()
    test_on()
    test_on_2()
    static test_run_action()
    test_set_action()
    test_set_position()
    test_set_position_2()
    test_str_TextButton()
    test_str_TextButton_2()
```

```
static test_update()
```

tamcolors.tests.tam_tools_tests.tam_placing_tests module

```
class tamcolors.tests.tam_tools_tests.tam_placing_tests.TAMPlacingTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test__get_center()
    test__get_center_2()
    test__get_dimensions_wrapper()
    test__get_dimensions_wrapper_2()
    test__get_dimensions_wrapper_3()
    test__get_other_side()
    test__get_other_side_2()
    test_bottom_left()
    test_bottom_left_2()
    test_bottom_right()
    test_bottom_right_2()
    test_center()
    test_center_2()
    test_top_left()
    test_top_left_2()
    test_top_right()
    test_top_right_2()
```

tamcolors.tests.tam_tools_tests.tam_print_tests module

```
class tamcolors.tests.tam_tools_tests.tam_print_tests.TAMPrintTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_tam_print()
    test_tam_print_2()
    test_tam_print_3()
    test_tam_print_4()
    test_tam_print_5()
```

tamcolors.tests.tam_tools_tests.tam_str_tests module

```
class tamcolors.tests.tam_tools_tests.tam_str_tests.MakeTAMStrTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_make_tam_str()
```

```
test_make_tam_str_2()
test_make_tam_str_3()
test_make_tam_str_4()
test_make_tam_str_5()
```

tamcolors.tests.tam_tools_tests.tam_text_box_tests module

```
class tamcolors.tests.tam_tools_tests.tam_text_box_tests.TAMTextBoxTests (methodName='runTest')
    Bases: unittest.case.TestCase

    test_done()
    test_done_2()
    test_draw()
    test_draw_2()
    test_draw_3()
    test_get_char()
    test_get_char_2()
    test_get_colors()
    test_get_colors_2()
    test_get_dimensions()
    test_get_dimensions_2()
    test_get_text()
    test_get_text_2()
    test_set_char()
    test_set_char_2()
    test_set_colors()
    test_set_colors_2()
    test_set_colors_3()
    test_tam_text_box_init()
    test_tam_text_box_str()
    test_tam_text_box_str_2()
    test_update()
```

Module contents

tamcolors.tests.tests_tests package

Submodules

tamcolors.tests.tests_tests.test_multi_task_helper_tests module

```
class tamcolors.tests.tests_tests.test_multi_task_helper_tests.MultiTaskHelperTests (methodName='runTest')  
    Bases: tamcolors.tests.test_multi_task_helper.MultiTaskHelper, unittest.case.  
        TestCase  
  
    test_assert_no_main_process()  
    test_assert_no_main_thread()  
    test_assert_process()  
    test_assert_thread()  
    test_hand_down()
```

Module contents

tamcolors.tests.utils_tests package

Submodules

tamcolors.tests.utils_tests.compress_tests module

```
class tamcolors.tests.utils_tests.compress_tests.CompressTests (methodName='runTest')  
    Bases: unittest.case.TestCase  
  
    test_1()  
    test_2()  
    test_3()  
    test_4()
```

tamcolors.tests.utils_tests.encryption_tests module

```
class tamcolors.tests.utils_tests.encryption_tests.EncryptionTests (methodName='runTest')  
    Bases: unittest.case.TestCase  
  
    test_build_setting()  
    test_encrypt_decrypt()  
    test_init()  
    test_simple_encrypt_decrypt()  
  
class tamcolors.tests.utils_tests.encryption_tests.NoEncryptionTests (methodName='runTest')  
    Bases: unittest.case.TestCase  
  
    test_init()
```

tamcolors.tests.utils_tests.identifier_tests module

```
class tamcolors.tests.utils_tests.identifier_tests.IdentifierTests (methodName='runTest')  
    Bases: unittest.case.TestCase
```

```
test_generate_identifier()  
test_get_identifier_bytes()  
test_globals()
```

tamcolors.tests.utils_tests.immutable_cache_tests module

```
class tamcolors.tests.utils_tests.immutable_cache_tests.DummyCache(*args,  
                                                                    **kwargs)  
    Bases: tamcolors.utils.immutable_cache.ImmutableCache  
class tamcolors.tests.utils_tests.immutable_cache_tests.ImmutableCacheTests(methodName='runTest')  
    Bases: unittest.case.TestCase  
    test_cache()  
    test_init()  
    test_new()
```

tamcolors.tests.utils_tests.log_tests module

```
class tamcolors.tests.utils_tests.log_tests.LogTests(methodName='runTest')  
    Bases: unittest.case.TestCase  
    test_critical()  
    test_debug()  
    static test_enable_and_disable_logging()  
    test_log_stream()
```

tamcolors.tests.utils_tests.object_packer_tests module

```
class tamcolors.tests.utils_tests.object_packer_tests.FastHandObjectPackerTests(methodName='runTest')  
    Bases: unittest.case.TestCase  
    test_dunder_bytes()  
    test_tam_color_1()  
    test_tam_color_2()  
    test_tam_surface_1()  
    test_tam_surface_2()  
class tamcolors.tests.utils_tests.object_packer_tests.ObjectPackerFunctionsTests(methodName='runTest')  
    Bases: unittest.case.TestCase  
    test_save_and_load_data_1()  
    test_save_and_load_data_2()  
    test_save_and_load_data_3()  
    test_save_and_load_data_4()  
    test_save_and_load_int_1()
```

```

    test_save_and_load_int_2()
    test_save_and_load_int_3()
    test_save_and_load_int_4()
class tamcolors.tests.utils_tests.object_packer_tests.ObjectPackerJsonTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_bool()
    test_bytearray()
    test_bytes()
    test_dict()
    test_fast_hand_object()
    test_float()
    test_int()
    test_large_data()
    test_list()
    test_none()
    test_set()
    test_str()
    test_tuple()

```

tamcolors.tests.utils_tests.tcp_tests module

```

class tamcolors.tests.utils_tests.tcp_tests.TCPObjectWrapper (methodName='runTest')
    Bases: tamcolors.tests.test_multi_task_helper.MultiTaskHelper, unittest.case.TestCase
    test_object_wrapper()
class tamcolors.tests.utils_tests.tcp_tests.TCPTests (methodName='runTest')
    Bases: tamcolors.tests.test_multi_task_helper.MultiTaskHelper, unittest.case.TestCase
    test_ping()
    test_ping_ipv6()

```

tamcolors.tests.utils_tests.timer_tests module

```

class tamcolors.tests.utils_tests.timer_tests.TimerTests (methodName='runTest')
    Bases: unittest.case.TestCase
    test_lap()
    test_offset_sleep()
    test_timer()

```

tamcolors.tests.utils_tests.transport_optimizer_tests module

```
class tamcolors.tests.utils_tests.transport_optimizer_tests.TransportOptimizerTests (methodNo  
    Bases: unittest.case.TestCase  
  
    test_large_data()  
  
    test_large_tam_surface_data()  
  
    test_same_data()  
  
    test_simple_data()
```

Module contents

Submodules

tamcolors.tests.all_tests module

```
tamcolors.tests.all_tests.load_tests (loader, other_tests=None, pattern=None)  
  
tamcolors.tests.all_tests.stability_check (ret_bool=True, run_slow=False)  
    info: run all TAM tests :param ret_bool: bool :param run_slow: bool :return: (int, int) or bool: (test_pasted,  
    test_ran) or True if all test pasted  
  
tamcolors.tests.all_tests.tests_main (run_slow=False)  
    info: the main way tamcolors run tests :param run_slow: bool: will run slow tests :return: bool
```

tamcolors.tests.test_multi_task_helper module

```
class tamcolors.tests.test_multi_task_helper.MultiTaskHelper  
    Bases: object  
  
    multiple_processes_helper (tasks, timeout=120)  
        info: will run tasks in a thread :param tasks: list or tuple: [(func, tuple, dict), ...] :param timeout: int  
        :return:  
  
    multiple_threads_helper (tasks, timeout=120)  
        info: will run tasks in a thread :param tasks: list or tuple: [(func, tuple, dict), ...] :param timeout: int  
        :return:  
  
    classmethod task (func, *args, **kwargs)  
        info: will make a Task :param func: Function :param args: tuple :param kwargs: dict :return: Task  
  
tamcolors.tests.test_multi_task_helper.process_runner (error_ret, func, *args, **kwargs)  
    info: will run the task :param error_ret: list: away to return an error :param func: function :param args: tuple  
    :param kwargs: dict :return:
```

tamcolors.tests.test_utils module

```
tamcolors.tests.test_utils.enable_slow_tests (enable=True)  
    info: will enable slow tests :param enable: bool :return:  
  
tamcolors.tests.test_utils.is_slow_tests_enabled()  
    info: will check iif slow tests are enabled :return: bool
```

`tamcolors.tests.test_utils.slow_test` (*function*)
 info: slow_test decorators :param function: function :return: function

Module contents

tamcolors.utils package

Submodules

tamcolors.utils.compress module

`tamcolors.utils.compress.compress` (*data*)
 info: will compress data :param data: bytes :return: bytes
`tamcolors.utils.compress.decompress` (*data*)
 info: will defcompress data :param data: bytes :return: bytes

tamcolors.utils.encryption module

class `tamcolors.utils.encryption.Encryption` (*rsa_key_size=4096, aes_key_size=256, nonce_key_size=64, authenticator=b'', max_random=20*)

Bases: `object`

static `check_sandy_check_key` (*sandy_key, data*)
 info: Checks if the sandy key is equal to the data key. :param sandy_key: bytes: sha hash key :param data: bytes: :return: bool

decrypt (*data*)
 info: Decrypt message. The data will also be checked for corruption. :param data: bytes :return: bytes: Unencrypted data.

encrypt (*data*)
 info: Encrypts data. :param data: bytes :return: bytes: Encrypted data.

encrypt_with_public_key (*key, data*)
 info: Encrypts data with public key. :param key: bytes or ras key object :param data: bytes :return: bytes: encrypted data

get_raw_private_key ()
 info: Gets the raw private key. :return: bytes: PEM encoding

get_raw_public_key ()
 info: gets the raw public key. :return: bytes: PEM encoding

static `make_sandy_check_key` (*data*)
 info: Hashes data. :param data: bytes :return: bytes: Hash key.

exception `tamcolors.utils.encryption.EncryptionError`
 Bases: `Exception`

tamcolors.utils.identifier module

`tamcolors.utils.identifier.generate_identifier_bytes` (*identifier_file='/home/docs/checkouts/readthedocs.org/u identifier_size=500*)

`tamcolors.utils.identifier.get_identifier_bytes` (*identifier_file*='/home/docs/checkouts/readthedocs.org/user_bu

tamcolors.utils.immutable_cache module

class `tamcolors.utils.immutable_cache.ImmutableCache`
Bases: `object`

tamcolors.utils.log module

class `tamcolors.utils.log.Log` (*size=5000*)
Bases: `object`

`first_msg_id()`
`last_msg_id()`
`log` (*msg*)
`read` (*log_id*)

`tamcolors.utils.log.critical` (*msg*)
info: log at critical level :param msg: str :return:

`tamcolors.utils.log.debug` (*msg*)
info: log at debug level :param msg: str :return:

`tamcolors.utils.log.disable_logging` ()
info: will disable logging :return:

`tamcolors.utils.log.enable_logging` (*level=10*)
info: will enable logging at a level :param level: log level :return:

`tamcolors.utils.log.error` (*msg*)
info: log at debug level :param msg: str :return:

`tamcolors.utils.log.format_message` (*func*)

`tamcolors.utils.log.info` (*msg*)
info: log at info level :param msg: str :return:

`tamcolors.utils.log.warning` (*msg*)
info: log at warning level :param msg: str :return:

tamcolors.utils.object_packer module

class `tamcolors.utils.object_packer.FastHandObjectPacker`
Bases: `object`

`classmethod from_bytes` (*object_byte_array*)
info: from bytes to object :param object_byte_array: bytearray :return: object

`classmethod start_from_bytes` (*object_bytes*)
info: from bytes to object :param object_bytes: bytearray, bytes, list, tuple :return: object

`to_bytes` ()
info: object to bytes :return: bytes

class `tamcolors.utils.object_packer.ObjectPackerJson` (*fast_hand_object_packer_objects=None*)
Bases: `object`

dumps (*data*)
info: object to bytes :param data: object :return: bytes

loads (*data*)
info: bytes to object :param data: bytearray, bytes, list, tuple :return: object

exception tamcolors.utils.object_packer.**ObjectPackerJsonError**
Bases: Exception

tamcolors.utils.object_packer.**load_data** (*object_byte_array*)
info: Loads bytes :param object_byte_array: bytearray :return: bytes

tamcolors.utils.object_packer.**load_int** (*object_byte_array*)
info: Loads an unsigned int :param object_byte_array: bytearray :return: int

tamcolors.utils.object_packer.**save_data**
info: Saves bytes :param data: bytes :return: bytes

tamcolors.utils.object_packer.**save_int**
info: Saves an unsigned int :param number: int :return: bytes

tamcolors.utils.tcp module

class tamcolors.utils.tcp.**TCPBase** (*connection, address, port, connection_password, encryption=None, object_packer=None, our_information=None*)

Bases: object

close ()
info: will close the connection :return: None

get_address ()
info: will get the address :return: str

get_data ()
info: will compress and encrypt data if encryption is enabled :return: bytes

is_open ()
info: will check if connection is open :return: bool

send_data (*data*)
info: will compress and decrypt if encryption is enabled :param data: bytes :return: None

class tamcolors.utils.tcp.**TCPConnection** (*host='127.0.0.1', port=4444, ipv6=False, connection_password='', user_name=None, user_id=None, encryption=None, object_packer=None, our_information=None*)

Bases: *tamcolors.utils.tcp.TCPBase*

get_other_data ()
info: will get other data :return: object

exception tamcolors.utils.tcp.**TCPError**
Bases: Exception

class tamcolors.utils.tcp.**TCPhost** (**args, **kwargs*)
Bases: *tamcolors.utils.tcp.TCPBase*

get_other_data ()
info: will get other data :return: object

get_user_id ()
info: get connection id :return: bytes

```
    get_user_name ()
        info: get connection name :return: str

class tamcolors.utils.tcp.TCPObjectConnector (tcp_connection,      object_packer=None,
                                              no_return=None,      optimizer=None,
                                              none_generator=None)

    Bases: object

    close ()
        info: will close the object :return:

    get_connection ()
        info: will get connection :return: TCPBase

    is_open ()
        info: will check if object is still open :return: bool

class tamcolors.utils.tcp.TCPObjectWrapper (tcp_connection, obj, object_packer=None)
    Bases: object

    close ()
        info: will close the object :return:

    get_connection ()
        info: will get connection :return: TCPBase

    is_open ()
        info: will check if object is still open :return: bool

class tamcolors.utils.tcp.TCPReceiver (host='127.0.0.1', port=4444, ipv6=False, lis-
                                     ten_count=10, connection_password="", ad-
                                     dress_white_list=None, address_black_list=None,
                                     encryption=None, object_packer=None,
                                     our_information=None)

    Bases: object

    close ()
        info: will close tcp receiver connection :return: None

    get_host_connection (wait=True)
        info: will get a new host connection :param wait: bool: if true will wait for a connection :return: None or
        TCPHost
```

tamcolors.utils.timer module

```
class tamcolors.utils.timer.TickRateTracker (frame=1)
    Bases: object

    tick ()
        info: will add a tick :return:

    tick_rate ()
        info: will get tick rate :return: int

class tamcolors.utils.timer.Timer (time_corruption=0)
    Bases: object

    lap ()
        Gets time difference from last lap. :return: float
```


offset_sleep (*sleep_time*)

Will sleep the thread for a length of time based of the lap time. :param sleep_time: float :return: float

tamcolors.utils.transport_optimizer module

class tamcolors.utils.transport_optimizer.**LastReceivedCache**

Bases: object

class tamcolors.utils.transport_optimizer.**LastSentCache**

Bases: object

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