

Package ‘screenshot’

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Type Package

Title Take Screenshots (Screen Capture) from R Command

Version 0.9.1

Description Take screenshots from R command and locate an image position.

RoxygenNote 7.3.1

URL <https://github.com/matutosi/screenshot>,
<https://matutosi.github.io/screenshot/>

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bitmap2png	<i>Converts a bitmap image to PNG using</i>
------------	---

Description

Converts a bitmap image to PNG using

Usage

bitmap2png(path)

Arguments

path Path to the bitmap image.

Value

The result of the system call.

Examples

```
## Not run:
bitmap2png("path/to/image.bmp")

## End(Not run)
```

clipboard2bitmap	<i>Save clipboard image to temporary BMP file</i>
------------------	---

Description

This function works only on windows. This function saves the image currently in the clipboard to a temporary BMP file.

Usage

```
clipboard2bitmap()
```

Value

Path to the temporary BMP file.

Examples

```
## Not run:  
clipboard2bitmap()  
  
## End(Not run)
```

clipboard_sample	<i>Sample data of clipboard bitmap array</i>
------------------	--

Description

Sample data of clipboard bitmap array

Usage

```
clipboard_sample
```

Format

raw data of bitmap array with 246292 length

Examples

```
data(clipboard_sample)
```

compare_table	<i>Compare values within tow arrays or matrices. Helper function for locate_ndl_in_hay().</i>
---------------	---

Description

Compare values within tow arrays or matrices. Helper function for locate_ndl_in_hay().

Usage

```
compare_table(ndl_mt, hay_mt)
```

Arguments

ndl_mt, hay_mt A matrix.

Value

A tibble.

Examples

```
val <- seq(from = 0, to = 1, by = 0.1)
mt_1 <- matrix(sample(val, 20, replace = TRUE))
mt_2 <- matrix(sample(val, 100, replace = TRUE))
compare_table(mt_1, mt_2)
```

count_val_freq	<i>Helper function for compare_table().</i>
----------------	---

Description

Helper function for compare_table().

Usage

```
count_val_freq(mt, colname)
```

Arguments

mt A numeric matrix or array.
colname A string of name for count.

Value

A dataframe.

Examples

```
mt <- sample(1:10, 30, replace = TRUE)
count_val_freq(mt, "freq")
```

create_header	Create a BMP header
---------------	---------------------

Description

Create a BMP header

Usage

```
create_header(clipboard)
```

Arguments

clipboard A raw vector of the clipboard contents.

Value

A raw vector of the BMP header.

Examples

```
data(clipboard_sample)
create_header(clipboard_sample)
```

display_corner	Get display corner of screen
----------------	------------------------------

Description

This function returns the coordinates of the specified corner of the display. This function works only on windows.

Usage

```
display_corner(corner = "bottom_left", width = 600, height = 600)
```

Arguments

corner A string to specify a corner of the display. "top_left", "top_right", "bottom_left", or "bottom_right".

width, height A integer to specify width or height of the corner.

Value

A numeric vector of length 4 representing the coordinates of the specified corner.

Examples

```
## Not run:
display_corner("top_left", 800, 800)

## End(Not run)
```

display_size	<i>Get the size of the display.</i>
--------------	-------------------------------------

Description

This function works only on windows.

Usage

```
display_size()
```

Value

A list with two elements, width and height, which are the width and height of the display.

Examples

```
## Not run:
display_size()

## End(Not run)
```

get_clipboard_image	<i>Retrieves the image from the clipboard</i>
---------------------	---

Description

This function works only on windows.

Usage

```
get_clipboard_image()
```

Value

A raw vector containing the image data.

Examples

```
## Not run:  
get_clipboard_image()  
  
## End(Not run)  
  
data(clipboard_sample)  
head(clipboard_sample, 100)  
header <- create_header(clipboard_sample)  
image_data <- c(header, clipboard_sample)  
path <- fs::path_temp(ext = "bmp")  
save_bmp(image_data, path)  
# shell.exec(path)  
fs::file_delete(path)
```

get_os

Get OS name

Description

Get OS name

Usage

```
get_os()
```

Value

A string of OS name

Examples

```
get_os()
```

hay2needle	<i>Cut off a part of image from a whole image.</i>
------------	--

Description

Cut off a part of image from a whole image.

Usage

```
hay2needle(haystack_image, pos_x, pos_y, w = 50, h = 20)
```

Arguments

haystack_image	An image of cimg.
pos_x, pos_y	A numeric to indicate the top left corner of cutting image. When NULL, position will be randomly sampled.
w, h	A numeric for width or height of the cutting image.

Value

An image of cimg object.

Examples

```
haystack_image <- imager::load.example("parrots")
needle_image <- hay2needle(haystack_image, 200, 250, 100, 50)
layout(c(1:2))
plot(haystack_image)
plot(needle_image)
```

hex2little_endian	<i>Convert hexadecimal string to little-endian</i>
-------------------	--

Description

Convert hexadecimal string to little-endian

Usage

```
hex2little_endian(x)
```

Arguments

x	Hexadecimal string
---	--------------------

Value

Little-endian hexadecimal string

Examples

```
hex2little_endian("01234567")  
hex2little_endian("012345")
```

image2gray_matrix	<i>Convert cimg class into grayscale xy matrix. Helper function for locate_image(). Use grayscale to Speed up and to simplify code.</i>
-------------------	---

Description

Convert cimg class into grayscale xy matrix. Helper function for locate_image(). Use grayscale to Speed up and to simplify code.

Usage

```
image2gray_matrix(img)
```

Arguments

img	A cimg object.
-----	----------------

Value

An xy dimensional matrix.

index2xy	<i>Convert array index into xy location in matrix. Helper function for locate_ndl_in_hay().</i>
----------	---

Description

Convert array index into xy location in matrix. Helper function for locate_ndl_in_hay().

Usage

```
index2xy(index, nrow)
```

Arguments

index, nrow	A numeric.
-------------	------------

Value

A numeric pair of xy location.

Examples

```
nrow <- 4
matrix(1:12, nrow = nrow)
purrr::map(1:12, index2xy, nrow = nrow)
```

install_screenshot	<i>Install command line screenshot for Windows.</i>
--------------------	---

Description

Codes are from URL shown below. <https://superuser.com/questions/75614/take-a-screen-shot-from-command-line-in-windows#answer-1751844> On Mac screencapture is usually available. On Linux GNOME desktop use gnome-screenshot. If not installed, run `sudo apt install gnome-screenshot`.

Usage

```
install_screenshot(bin_dir = "")
```

Arguments

`bin_dir` A string of directory to be installed.

Value

A string of installed directory.

Examples

```
if(interactive()){
  # need only on Win
  if(get_os() == "win"){
    bin_dir <- fs::path_package("screenshot")
    # if you want to install another directory
    #   bin_dir <- "SET_YOUR_DIRECTORY"
    install_screenshot(bin_dir)
  }
}
```

is_all_same	<i>Helper function for locate_ndl_in_hay().</i>
-------------	---

Description

Helper function for locate_ndl_in_hay().

Usage

```
is_all_same(ndl_mt, hay_mt, base_xy)
```

Arguments

ndl_mt, hay_mt	A matrix
base_xy	A numeric pair of xy location.

Value

A logical.

locate_image	<i>Locate needle image position on a screenshot image.</i>
--------------	--

Description

Locate needle image position on a screenshot image.

Usage

```
locate_image(  
  needle_image,  
  center = TRUE,  
  exact = TRUE,  
  timeout = 5,  
  corner = NULL,  
  width = 600,  
  height = 300,  
  bin_dir = ""  
)
```

Arguments

needle_image	A string of image file path or a cimg class object of imager library.
center	A logical. TRUE returns center position of needle_image.
exact	A logical. Check matching exactly or not.
timeout	A numeric for timeout seconds.
corner	A string to specify a corner of the display. "top_left", "top_right", "bottom_left", or "bottom_right".
width, height	A integer to specify width or height of the corner.
bin_dir	A string for directory name of screenshot.exe on Win.

Value

A numeric pair of xy location.

Examples

```
## Not run:
sc <- screenshot()
if(sc != ""){
  sc_image <- imager::load.image(sc)
  w <- 100
  h <- 80
  pos_x <- 1
  pos_y <- imager::height(sc_image) - h
  needle <- hay2needle(sc_image, pos_x, pos_y, w, h)
  (locate_image(needle)) # center location
  pos <- locate_image(needle, center = FALSE)
  found <- hay2needle(sc_image, pos[1], pos[2], w, h)
  layout(c(1:3))
  plot(sc_image)
  plot(needle)
  plot(found)
  # usse `coner` to limit searching field
  # `coner` can be used in Windows
  pos <- locate_image(needle, corner = "bottom_left", center = FALSE)
}

## End(Not run)
```

locate_ndl_in_hay	<i>Locate needle image matrix position in a haystack_image matrix. Helper function for locate_image().</i>
-------------------	--

Description

Locate needle image matrix position in a haystack_image matrix. Helper function for locate_image().

Usage

```
locate_ndl_in_hay(ndl_mt, hay_mt, exact = TRUE, timeout = 5)
```

Arguments

ndl_mt, hay_mt A matrix

exact A logical. Check matching exactly or not.

timeout A numeric for timeout seconds.

Value

A numeric pair of xy location for needle image.

Examples

```
haystack_image <- imager::load.example("parrots")
w <- 100
h <- 50
needle_image <- hay2needle(haystack_image, 129, 257, w, h)
hay_mt <- image2gray_matrix(haystack_image)
ndl_mt <- image2gray_matrix(needle_image)
(pos <- locate_ndl_in_hay(ndl_mt, hay_mt))

found <- hay2needle(haystack_image, pos[1], pos[2], w, h)
layout(c(1:3))
plot(haystack_image)
plot(needle_image)
plot(found)
```

save_bmp

Save an image as a BMP file

Description

Save an image as a BMP file

Usage

```
save_bmp(image_data, path)
```

Arguments

image_data A raster image data object, such as an array of pixel values or an R object representing an image.

path The path to the file to be saved.

Value

Saves the image as a BMP file at the specified path.

Examples

```
## Not run:  
# Create an image data object  
image_data <- matrix(rnorm(100), ncol = 10)  
# Save the image as a BMP file  
save_bmp(image_data, "image.bmp")  
  
## End(Not run)
```

save_clipboard_image	<i>Saves an image from the clipboard to a file</i>
----------------------	--

Description

This function works only on windows.

Usage

```
save_clipboard_image(path = "")
```

Arguments

path	Optional path to save the image to. If not specified, a temporary file will be created.
------	---

Value

The path to the saved image file.

Examples

```
## Not run:  
# Save the image from the clipboard to a file  
save_clipboard_image("clipboard_image.png")  
  
## End(Not run)
```

screenshot	<i>Take a screenshot.</i>
------------	---------------------------

Description

Need to install screenshot.exe on Win by install_screenshot().

Usage

```
screenshot(bin_dir = "", file = "")
```

Arguments

bin_dir	A string for directory name of screenshot.exe on Win.
file	A string for file name of screenshot.

Value

A file name of screenshot. When "", screenshot will be saved in a tempal directory.

See Also

```
install_screenshot()
```

Examples

```
if(interactive()){  
  
  sc <- screenshot()  
  if(sc != ""){  
    sc_image <- imager::load.image(sc)  
    plot(sc_image)  
  }  
  
}
```

screenshot_exists	<i>Find screenshot exec file.</i>
-------------------	-----------------------------------

Description

Find screenshot exec file.

Usage

```
screenshot_exists(bin_dir = "")
```

Arguments

bin_dir A string for directory name screenshot.exe exec file. No need on Mac and Linux.

Value

A logical.

Examples

```
screenshot_exists()
```

xy_pos	<i>Get xy position of a value in a matrix Helper function for locate_ndl_in_hay().</i>
--------	--

Description

Get xy position of a value in a matrix Helper function for locate_ndl_in_hay().

Usage

```
xy_pos(mt, val)
```

Arguments

mt	A matrix
val	A matrix

Value

A numeric pairs of xy location.

Examples

```
nrow <- 4
mt <- matrix(1:12, nrow = nrow)
xy_pos(mt, 5)
```

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