

# Package ‘colouR’

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**Type** Package

**Title** Create Colour Palettes from Images

**Version** 0.1.1

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**Description**

Can take in images in either .jpg, .jpeg, or .png format and creates a colour palette of the most frequent colours used in the image. Also provides some custom colour palettes.

**License** GPL (>= 2)

**Encoding** UTF-8

**Imports** ggplot2, dplyr, jpeg, png, grDevices, httr, stats, pixmap

**RoxygenNote** 7.2.3

**Suggests** knitr, rmarkdown, scales

**VignetteBuilder** knitr

**NeedsCompilation** no

**Repository** CRAN

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avgHex	<i>avgHex</i>
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**Description**

Average Hex Colors per Group. This function takes a data frame with two columns: one for the hex color values and another for the group labels. It calculates the average color for each group and returns a data frame with the group labels and their corresponding average hex colors.

**Usage**

```
avgHex(df, hex_col, group_col)
```

**Arguments**

df	A data frame with columns for hex color values and group labels.
hex_col	The name of the column containing hex color values. Default is "hex".
group_col	The name of the column containing group labels. Default is "group".

**Value**

A data frame with the group labels and their corresponding average hex colors.

**Examples**

```
df <- data.frame(
  hex = c("#FF0000", "#00FF00", "#0000FF", "#FFFF00", "#FF00FF"),
  group = c(1, 1, 2, 2, 3)
)

avgHex(df, hex_col = "hex", group_col = "group")
```

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colPalette	<i>colPalette</i>
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**Description**

Create a Color Palette. This function generates a custom color palette based on the specified 'palette' name. The color palettes are sourced from two predefined lists: 'taylor\_palettes' and 'radiohead\_palettes'.

**Usage**

```
colPalette(palette)
```

**Arguments**

`palette` A character string specifying the name of the colour palette. The palette must be present in either 'taylor\_palettes' or 'radiohead\_palettes'.

**Value**

A colorRampPalette function with the specified colour palette.

**Examples**

```
my_palette <- colPalette(palette = "evermore")
colours <- my_palette(5)
print(colors)
```

---

`excludeCols`*excludeCols*

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**Description**

A non-exhaustive list of white and black colour shades. For use when setting `exclude = TRUE` in the `getTopCol` function. Setting `exclude = TRUE` when calling the `getTopCol` function will exclude the colours from the results.

**Usage**

```
excludeCols(data, customExclude = NULL)
```

**Arguments**

`data` Data frame of colours

`customExclude` Character vector. Optional vector of custom color codes in HEX format to be excluded.

**Value**

No return value, called for side effects.

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getExtension	<i>getExtension</i>
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**Description**

Get the file extension of a given file. This function takes a file path as input and returns the file extension without the dot.

**Usage**

```
getExtension(file)
```

**Arguments**

file            A character string containing the file path.

**Value**

A character vector containing the file extension without the dot.

**Examples**

```
getExtension("example.txt")
```

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getTopCol	<i>getTopCol</i>
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**Description**

Get top colors from an image. This function reads an image file, extracts the colors, and returns the top n colors based on their frequency in the image. Optionally, black and white shades can be excluded, and the colors can be grouped and averaged.

**Usage**

```
getTopCol(  
  path,  
  n = NULL,  
  exclude = TRUE,  
  sig = 4,  
  avgCols = TRUE,  
  n_clusters = 5,  
  customExclude = NULL  
)
```

**Arguments**

path	Character, the path to the image file (either jpg or png).
n	Integer, the number of top colors to return. If NULL (default), return all colors.
exclude	Logical, whether to exclude black and white shades. Default is TRUE.
sig	Integer, the number of decimal places for the color percentage. Default is 4.
avgCols	Logical, whether to average the colors by groups. Default is TRUE.
n_clusters	Integer, the number of clusters to use for grouping colors. Default is 5.
customExclude	Character vector. Optional vector of custom color codes in HEX format to be excluded.

**Value**

A data frame with the top colors, their frequency, and percentage in the image.

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groupCols	<i>groupCols</i>
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**Description**

Group Hex Colors. This function takes a vector of hex color values and groups them using k-means clustering in the RGB color space. It returns a data frame with the original hex colors and their assigned group labels.

**Usage**

```
groupCols(hex_colors, n_clusters = 5)
```

**Arguments**

hex_colors	A character vector of hex color values.
n_clusters	The number of clusters (groups) to use in the k-means clustering. Default is 5.

**Value**

A data frame with the original hex colors and their assigned group labels.

**Examples**

```
hex_colors <- c("#FF0000", "#00FF00", "#0000FF", "#FFFF00", "#FF00FF")
groupCols(hex_colors, n_clusters = 2)
```

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`img2pal`*Create a Colour Palette from an Image*

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### Description

This function generates a colour palette based on the most prominent colors in an image..

### Usage

```
img2pal(  
  path,  
  n = NULL,  
  avgCols = FALSE,  
  exclude = FALSE,  
  n_clusters = NULL,  
  customExclude = NULL  
)
```

### Arguments

<code>path</code>	Character string. The path to the image file.
<code>n</code>	Integer. The number of most frequent colours in input image to consider.
<code>avgCols</code>	Logical. Whether to average colours within clusters.
<code>exclude</code>	Character vector. List of colours in HEX format to exclude from the palette.
<code>n_clusters</code>	Integer. The number of clusters for colour grouping.
<code>customExclude</code>	Character vector. Optional vector of custom color codes in HEX format to be excluded.

### Value

A colour palette generated from input image.

### Examples

```
pal<-img2pal(path = "https://raw.githubusercontent.com/AlanInglis/colouR/master/images/bender.png",  
            n = 10,  
            avgCols = TRUE,  
            exclude = TRUE,  
            n_clusters = 15,  
            customExclude = NULL)  
pal
```

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plotPalette	<i>plotPalette</i>
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**Description**

Plot a color palette from a data frame. This function takes a vector of colours or a data frame with a column of colors and plots the colors as a color palette.

**Usage**

```
plotPalette(df, color_col)
```

**Arguments**

df	A vector of colours or a data frame containing a column with colors in hexadecimal format.
color_col	A character string representing the name of the column containing the colors.

**Value**

A ggplot2 plot object displaying the color palette.

**Examples**

```
# Create a sample data frame with colors
colors_df <- data.frame(
  color = c("#FF0000", "#00FF00", "#0000FF", "#FFFF00", "#FF00FF")
)

# Plot the color palette with default bar height
plotPalette(colors_df, "color")
```

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radiohead_palettes	<i>list of radiohead colour palettes</i>
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**Description**

list of radiohead colour palettes

**Usage**

```
radiohead_palettes
```

**Format**

An object of class list of length 9.

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```
read_image_from_url  read_image_from_url
```

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**Description**

Read either a PNG or JPG file from a URL. This function reads an image file (PNG or JPG) from a URL and returns the image data.

**Usage**

```
read_image_from_url(path)
```

**Arguments**

`path`                    A character string representing the URL of the image file.

**Value**

An object containing the image data. If the image is a JPG, the object will be of class "array". If the image is a PNG, the object will be of class "matrix".

---

```
scaleColor  scaleColor
```

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**Description**

Create a Custom Color Scale for ggplot2. This function creates a custom color scale for ggplot2 plots based on the specified 'palette' name. The color palettes are sourced from two predefined lists: 'taylor\_palettes' and 'radiohead\_palettes'. The function can create either a discrete or continuous color scale, depending on the 'discrete' parameter. Additional arguments passed to the function are forwarded to the corresponding ggplot2 scale function.

**Usage**

```
scaleColor(palette = "pabloHoney", discrete = TRUE, ...)
```

**Arguments**

`palette`                    A character string specifying the name of the color palette. The palette must be present in either 'taylor\_palettes' or 'radiohead\_palettes'.

`discrete`                    A logical value indicating whether to create a discrete (TRUE) or continuous (FALSE) color scale. Default is TRUE.

`...`                        Additional arguments to be passed to the ggplot2 scale function.

**Value**

A ggplot2 colour scale based on the specified color palette.

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scaleFill	<i>scaleFill</i>
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**Description**

Create a Custom Fill Scale for ggplot2. This function creates a custom fill scale for ggplot2 plots based on the specified 'palette' name. The color palettes are sourced from two predefined lists: 'taylor\_palettes' and 'radiohead\_palettes'. The function can create either a discrete or continuous fill scale, depending on the 'discrete' parameter. Additional arguments passed to the function are forwarded to the corresponding ggplot2 scale function.

**Usage**

```
scaleFill(palette, discrete = TRUE, ...)
```

**Arguments**

palette	A character string specifying the name of the color palette. The palette must be present in either 'taylor_palettes' or 'radiohead_palettes'.
discrete	A logical value indicating whether to create a discrete (TRUE) or continuous (FALSE) fill scale. Default is TRUE.
...	Additional arguments to be passed to the ggplot2 scale function.

**Value**

A ggplot2 fill scale based on the specified color palette.

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taylor_palettes	<i>list of Taylor swift colour palettes</i>
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**Description**

list of Taylor swift colour palettes

**Usage**

```
taylor_palettes
```

**Format**

An object of class list of length 10.

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