

Package ‘duke’

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Title Creating a Color-Blind Friendly Duke Color Package

Version 0.0.3

Description Generates visualizations with Duke’s official suite of colors in a color blind friendly way.

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Encoding UTF-8

RoxygenNote 7.2.3

Imports ggplot2, scales

URL <https://github.com/aidangildea/duke>,
<https://aidangildea.github.io/duke/>

BugReports <https://github.com/aidangildea/duke/issues>

Depends R (>= 2.10)

Suggests knitr, rmarkdown, testthat (>= 3.0.0), palmerpenguins,
ggmosaic, dplyr

Config/testthat/edition 3

VignetteBuilder knitr

NeedsCompilation no

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`duke_pal`*Duke Color Palette (Discrete) and Scales*

Description

An eight-color colorblind friendly qualitative discrete palette that is based on colors on the Duke branding guidelines.

Usage

```
duke_pal()
```

Value

Character vector of Duke palette HEX codes.

References

<https://brand.duke.edu/colors/>

Examples

```
duke_pal()
```

`scale_duke_color_discrete`*Discrete scale constructor for color argument.*

Description

Applies a Duke branded and accessible discrete color palette to ggplot geometric objects using `color` argument. It prioritizes high contrast colors aligned with Web Content Accessibility Guidelines (WCAG).

Usage

```
scale_duke_color_discrete(..., na.value = "#B5B5B5")
```

```
scale_duke_colour_discrete(..., na.value = "#B5B5B5")
```

Arguments

<code>...</code>	Arguments passed on to <code>discrete_scale</code> .
<code>na.value</code>	Color used for NA values

Details

Partial code for this function can be attributed to [ggthemes](#).

Value

a visualization with discrete duke color scale

Examples

```
library(ggplot2)
library(dplyr)
library(palmerpenguins)

# default
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, color = species)) +
  geom_point()

# vs. with Duke scale
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, color = species)) +
  geom_point() +
  scale_duke_color_discrete()

# vs. with shape and Duke scale
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, shape = species, color = species)) +
  geom_point() +
  scale_duke_color_discrete()

# vs. with Duke scale, UK spelling
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, colour = species)) +
  geom_point() +
  scale_duke_colour_discrete()

# Make some species NAs to demonstrate na.value usage
penguins_with_NAs <- penguins |>
  mutate(species = if_else(species == "Gentoo", NA, species))

# with default na.value
ggplot(penguins_with_NAs, aes(x = body_mass_g, color = species)) +
  geom_density() +
  scale_duke_color_discrete()

# with custom na.value
ggplot(penguins_with_NAs, aes(x = body_mass_g, color = species)) +
  geom_density() +
  scale_duke_color_discrete(na.value = "pink")
```

scale_duke_continuous *Continuous scale constructor.*

Description

Applies a Duke branded and accessible continuous color scale to ggplot geometric objects. It is applicable for both fill and color arguments. Defines gradient scale from dark to light to improve visibility and contrast for readers.

Usage

```
scale_duke_continuous(  
  ...,  
  low = "#00539B",  
  high = "#E2E6ED",  
  space = "Lab",  
  na.value = "#666666",  
  guide = "colourbar",  
  aesthetics = c("colour", "color", "fill")  
)
```

Arguments

...	Arguments passed on to <code>continuous_scale()</code> .
low	Low end of color gradient.
high	High end of color gradient.
space	Color space in which to calculate gradient.
na.value	Color used for NA values.
guide	Type of legend. "colorbar" for continuous scale, "legend" for discrete scale.
aesthetics	String or vector of strings detailing what aesthetic features this continuous scale can apply to.

Value

a visualization with continuous duke color scale

Examples

```
library(ggplot2)  
library(palmerpenguins)  
  
# default  
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, color = body_mass_g)) +  
  geom_point()  
  
# vs. with Duke scale  
ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, color = body_mass_g)) +  
  geom_point() +  
  scale_duke_continuous()
```

`scale_duke_fill_discrete`*Discrete scale constructor for fill argument.*

Description

Applies a Duke branded and accessible discrete color palette to ggplot geometric objects using fill argument. It prioritizes high contrast colors aligned with Web Content Accessibility Guidelines (WCAG).

Usage

```
scale_duke_fill_discrete(..., na.value = "#B5B5B5")
```

Arguments

<code>...</code>	Arguments passed on to <code>discrete_scale</code> .
<code>na.value</code>	Color used for NA values

Value

a visualization with discrete duke color scale in fill

Examples

```
library(ggplot2)
library(dplyr)
library(palmerpenguins)

# default
ggplot(penguins, aes(x = species, fill = species)) +
  geom_bar()

# vs. with Duke scale
ggplot(penguins, aes(x = species, fill = species)) +
  geom_bar() +
  scale_duke_fill_discrete()

# Make some species NAs to demonstrate na.value usage
penguins_with_NAs <- penguins |>
  mutate(species = if_else(species == "Gentoo", NA, species))

# with default na.value
ggplot(penguins_with_NAs, aes(x = species, fill = species)) +
  geom_bar() +
  scale_duke_fill_discrete()

# with custom na.value
ggplot(penguins_with_NAs, aes(x = species, fill = species)) +
```

```
geom_bar() +
scale_duke_fill_discrete(na.value = "pink")
```

theme_duke

Implements theme components.

Description

Defines the overall aesthetic and thematic features of the plot. This function specifies simple background, grid line, text, and legend arguments to create minimalist design. Its use is intended for ggplot objects.

Usage

```
theme_duke(
  base_size = 11,
  base_family = "",
  base_line_size = base_size/22,
  base_rect_size = base_size/22
)
```

Arguments

```
base_size      the base size
base_family    the base family
base_line_size the baseline size
base_rect_size the base rect
```

Value

a plot with Duke colors

Examples

```
library(ggplot2)
library(palmerpenguins)

# default
p <- ggplot(penguins, aes(x = bill_depth_mm, y = bill_length_mm, color = species)) +
  geom_point() +
  labs(
    title = "Bill length and depth of penguins",
    subtitle = "Dimensions for Adelie, Chinstrap, and Gentoo Penguins",
    x = "Bill depth (mm)",
    y = "Bill length (mm)",
    color = "Species",
    caption = "Source: palmerpenguins package."
  )
```

```
p

# vs. with Duke theme
p +
  theme_duke()

# vs. with Duke theme and scale
p +
  scale_duke_color_discrete() +
  theme_duke()

# with Duke theme, scale, and further customization to theme
p +
  scale_duke_color_discrete() +
  theme_duke() +
  theme(
    plot.title = element_text(color = "red", size = 20),
    plot.background = element_rect(fill = "pink", color = "yellow"),
    panel.grid = element_blank()
  )
```

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