Package ‘duke’

April 12, 2023

Title Creating a Color-Blind Friendly Duke Color Package
Version 0.0.1
Description Generates visualizations with Duke’s official suite of colors in a color blind friendly way.
License MIT + file LICENSE
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
Author Aidan Gildea [aut, cre],
    Mine Çetinkaya-Rundel [aut] (<https://orcid.org/0000-0001-6452-2420>)
Maintainer Aidan Gildea <aidan.gildea@duke.edu>
Repository CRAN
Date/Publication 2023-04-12 11:30:02 UTC

R topics documented:

  duke_pal ................................................................. 2
  scale_duke_color_discrete ....................................... 2
  scale_duke_continuous .......................................... 3
  scale_duke_fill_discrete ....................................... 5
  theme_duke .......................................................... 6

Index 8
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
... Arguments passed on to discrete_scale.
na.value 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")
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(
  ...,  # Arguments passed on to continuous_scale().
  low = "#00539B",
  high = "#E2E6ED",
  space = "Lab",
  na.value = "#666666",
  guide = "colourbar",
  aesthetics = c("colour", "color", "fill")
)

Arguments

...  # Arguments passed on to continuous_scale().
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

... Arguments passed on to discrete_scale.
na.value 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)) +
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."
```r

theme_duke()

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()
  )
```
Index

duke_pal, 2
scale_duke_color_discrete, 2
scale_duke_colour_discrete
  (scale_duke_color_discrete), 2
scale_duke_continuous, 3
scale_duke_fill_discrete, 5
theme_duke, 6