RSS

.

R

R(R Core Team 2021) . R .
base R {ggplot2} (Wickham 2016) .

R {RSSthemes} . GitHub
.

CRAN {RSSthemes} :

```
install.packages("RSSthemes")
```

GitHub (CRAN):

```
remotes::install_github("nrennie/RSSthemes")
```

:

```
library(RSSthemes)
```

Base R

R . Jumping Rivers (“Styling Base r Graphics” 2018) base R .

: base R .

, , col RSS . signif_red, signif_blue, signif_green, signif_orange, signif_yellow .

```
barplot(table(mtcars$gear), col = signif_blue)
```

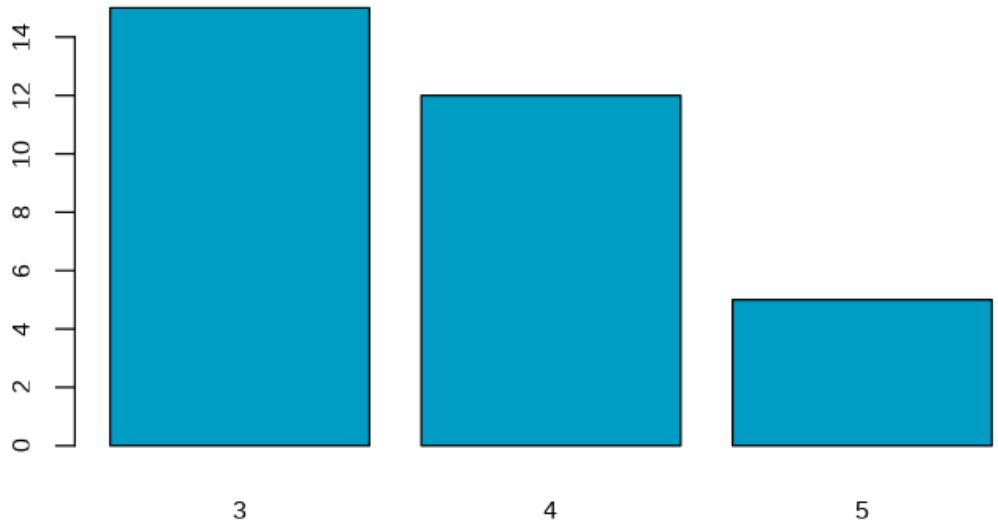

Figure 1: *Significance* .

palette() . {RSSthemes} set_rss_palette() . {RSSthemes} . signif_qual, signif_div, signif_seq .

```
set_rss_palette("signif_qual")
plot(1:4, 1:4, col=1:4, pch=19, cex=3, xlab="", ylab="")
```

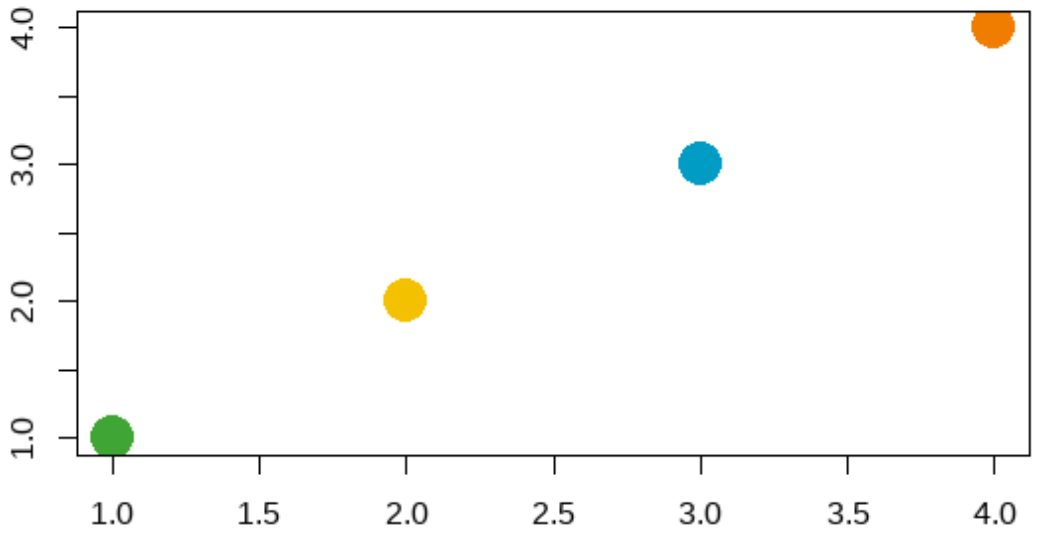

Figure 2: `signif_qual` .

`palette("default")` base R .

: base R .

`plot()` (`barplot()`, `hist()` base R) . `family` . `par()` . {RSSthemes} base R `set_signif_par()` . `abline()` .

```
set_signif_par()
plot(1:4, 1:4, col=1:4, pch=19, cex=3, xlab="", ylab="",
     main = "  Significance  ",
     sub = " :     ")
abline(h=1:4, v=1:4, col = "lightgrey")
```

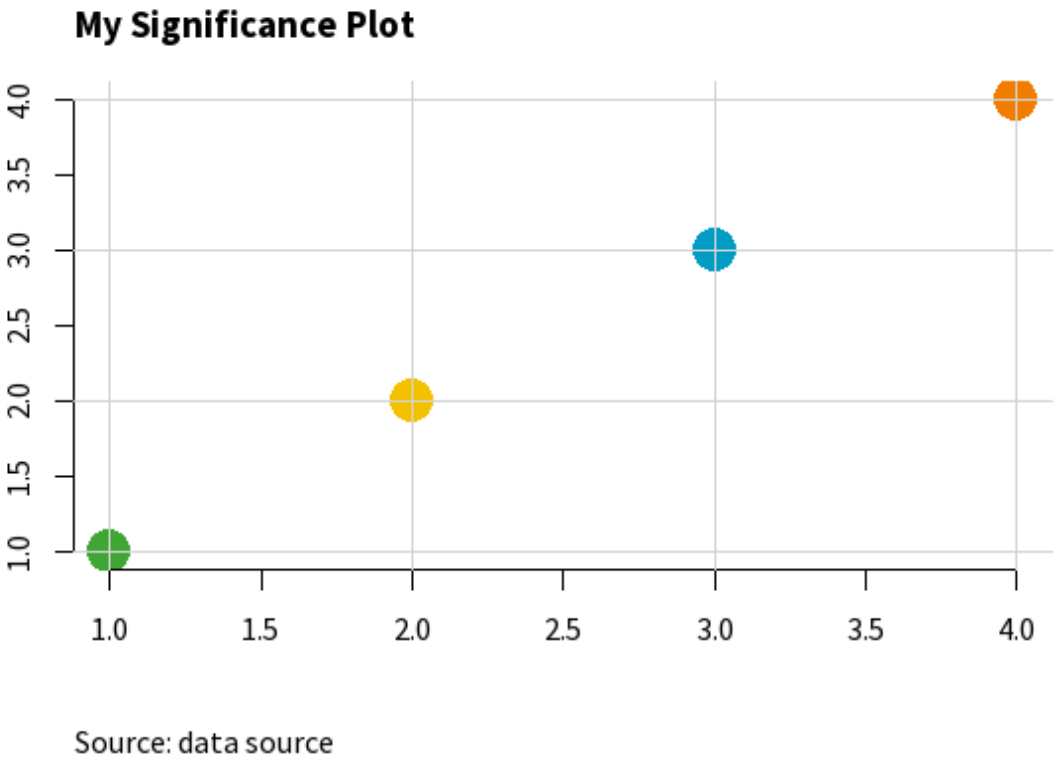

Figure 3: `set_signif_par()` base R .

{ggplot2}

{ggplot2} {tidyverse} R . . {ggplot2} Hadley Wickham ggplot2: Elegant Graphics for Data Analysis (Wickham 2016) .

{ggplot2} .

```
library(ggplot2)
plot_df <- data.frame(x = LETTERS[1:4],
                      y = 1:4)
```

: {ggplot2} .

{ggplot2} `colour( color)` , `fill` . , `fill` `colour` RSS . `signif_red`, `signif_blue`, `signif_green`, `signif_orange`, `signif_yellow` .

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y)) +
  geom_col(fill = signif_yellow)
```

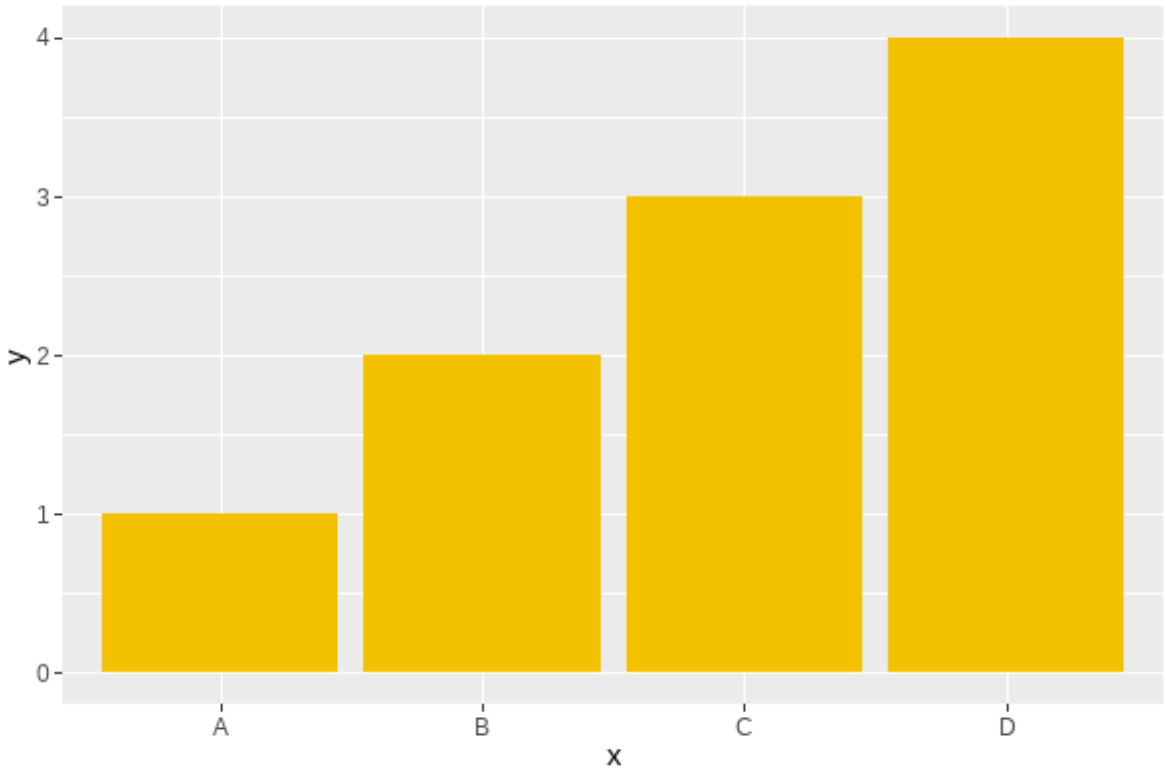

Figure 4: .

: {ggplot2} .

( ) "signif_qual" . 4 .

- ( ) : scale_fill_rss_d()

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, fill = x)) +
  geom_col() +
  scale_fill_rss_d(palette = "signif_qual")
```

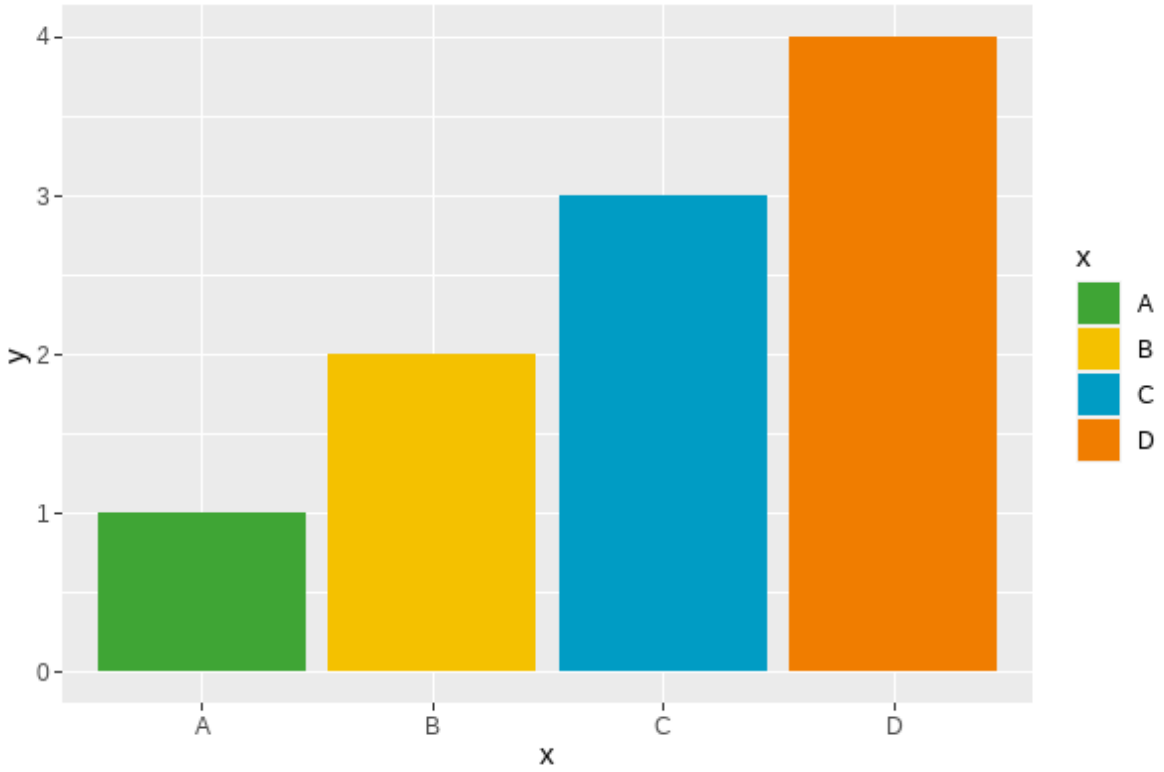

Figure 5: `signif_qual` .

- ( ) : `scale_colour_rss_d()`

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, colour = x)) +
  geom_point(size = 4) +
  scale_colour_rss_d(palette = "signif_qual")
```

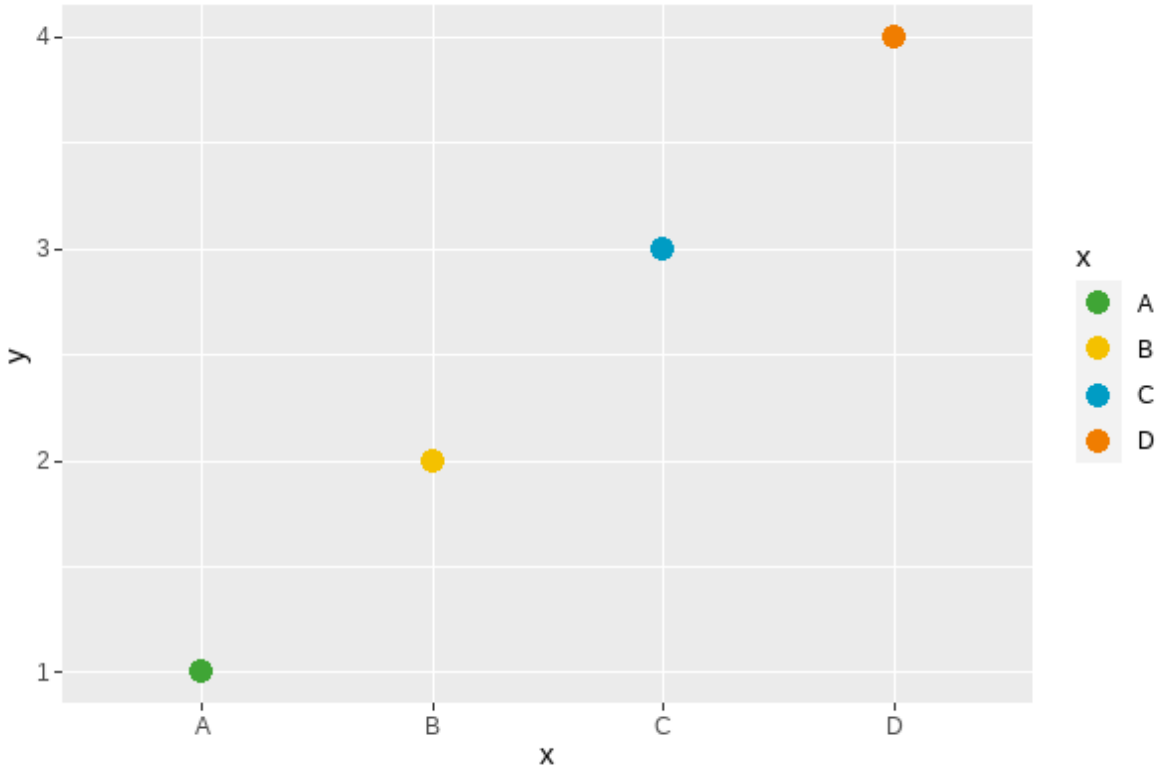

Figure 6: `signif_qual` .

: {ggplot2} .

. ( ) `"signif_seq"` .

- ( ) : `scale_fill_rss_c()`

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, fill = y)) +
  geom_col() +
  scale_fill_rss_c(palette = "signif_seq")
```

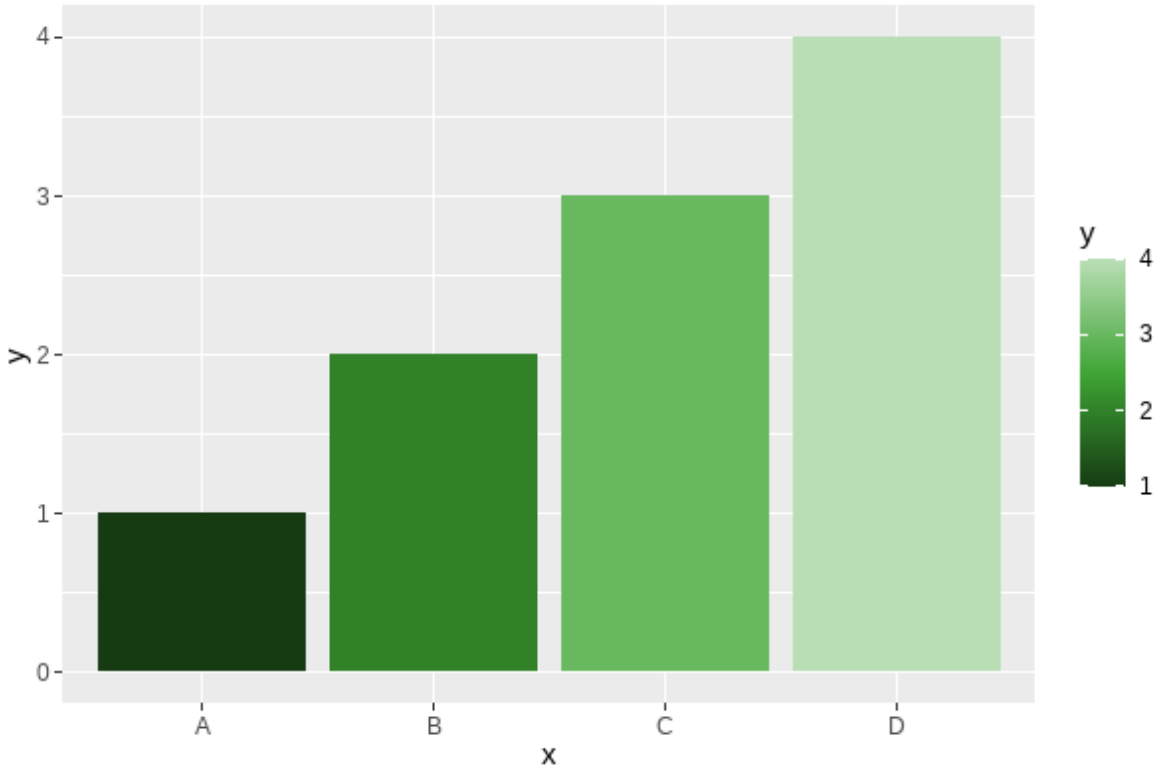

Figure 7: .

- ( ) : `scale_colour_rss_c()`

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, colour = y)) +
  geom_point(size = 4) +
  scale_colour_rss_c(palette = "signif_seq")
```

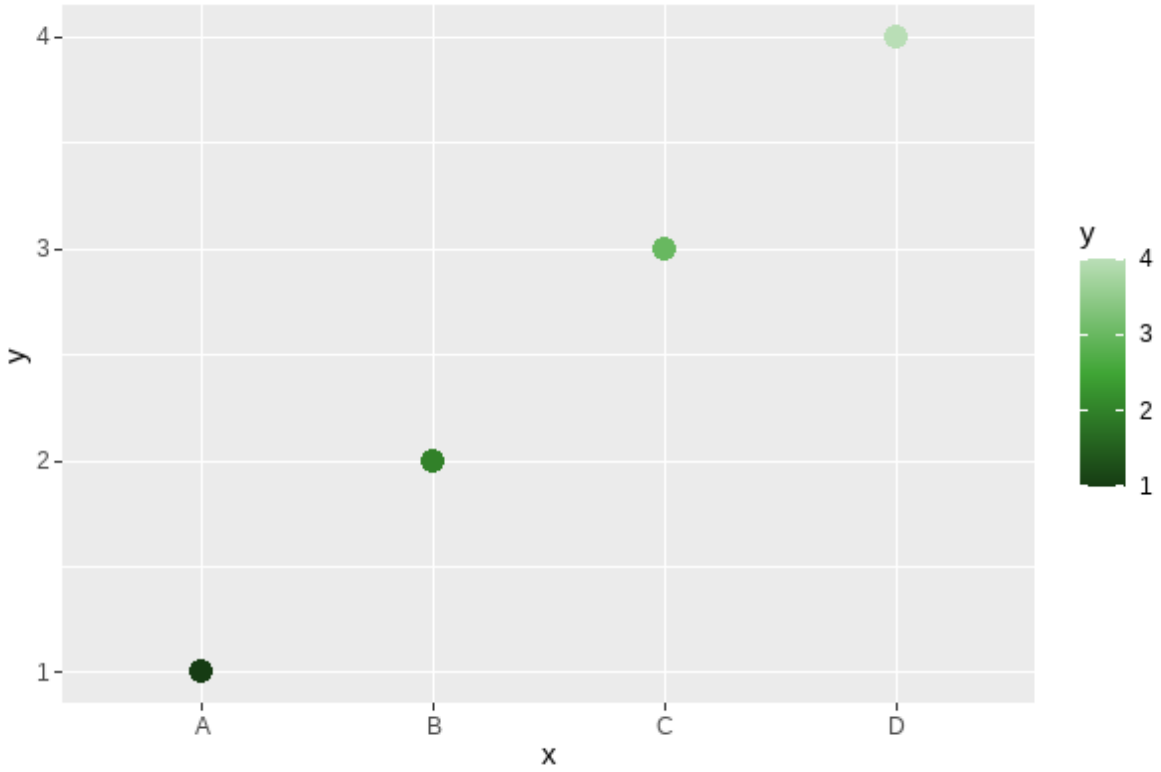

Figure 8: .

( ) "signif_div" .

- ( ) : scale_fill_rss_c()

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, fill = y)) +
  geom_col() +
  scale_fill_rss_c(palette = "signif_div")
```

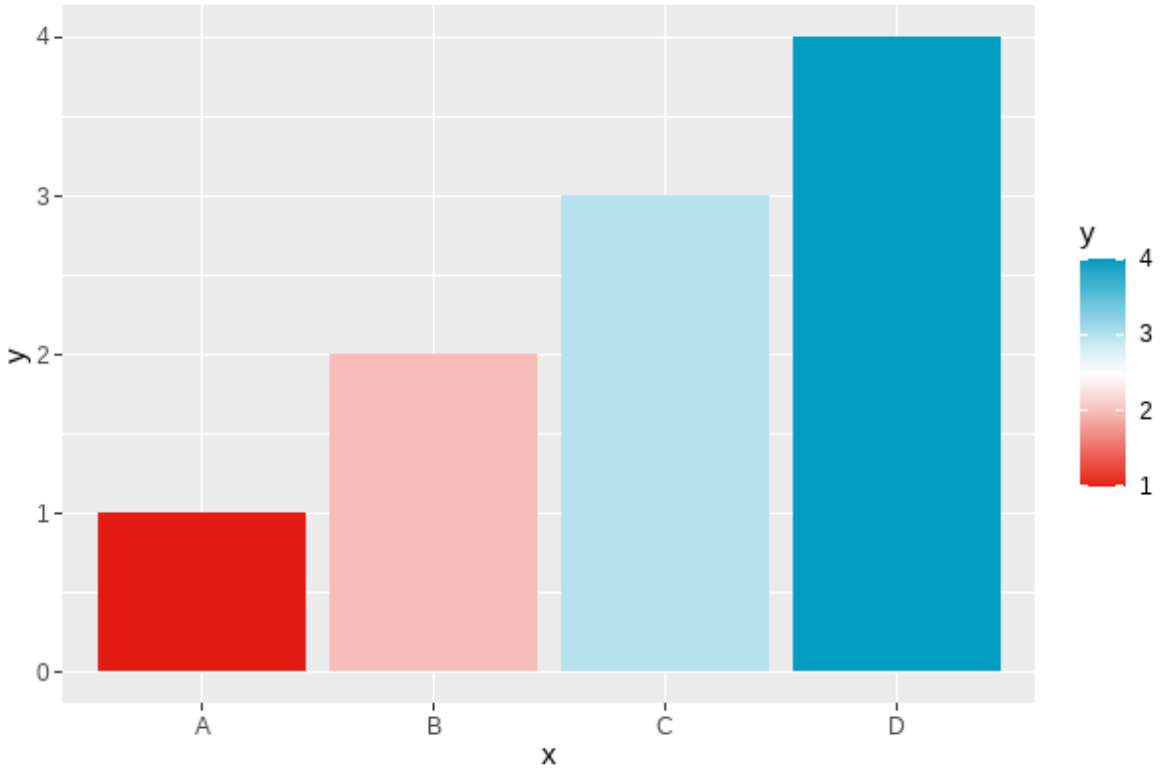

Figure 9: .

{RSSthemes} {ggplot2} `scale_fill_gradient2()` :

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, fill = y)) +
  geom_col() +
  scale_fill_gradient2(low = signif_red, high = signif_blue, midpoint = 2)
```

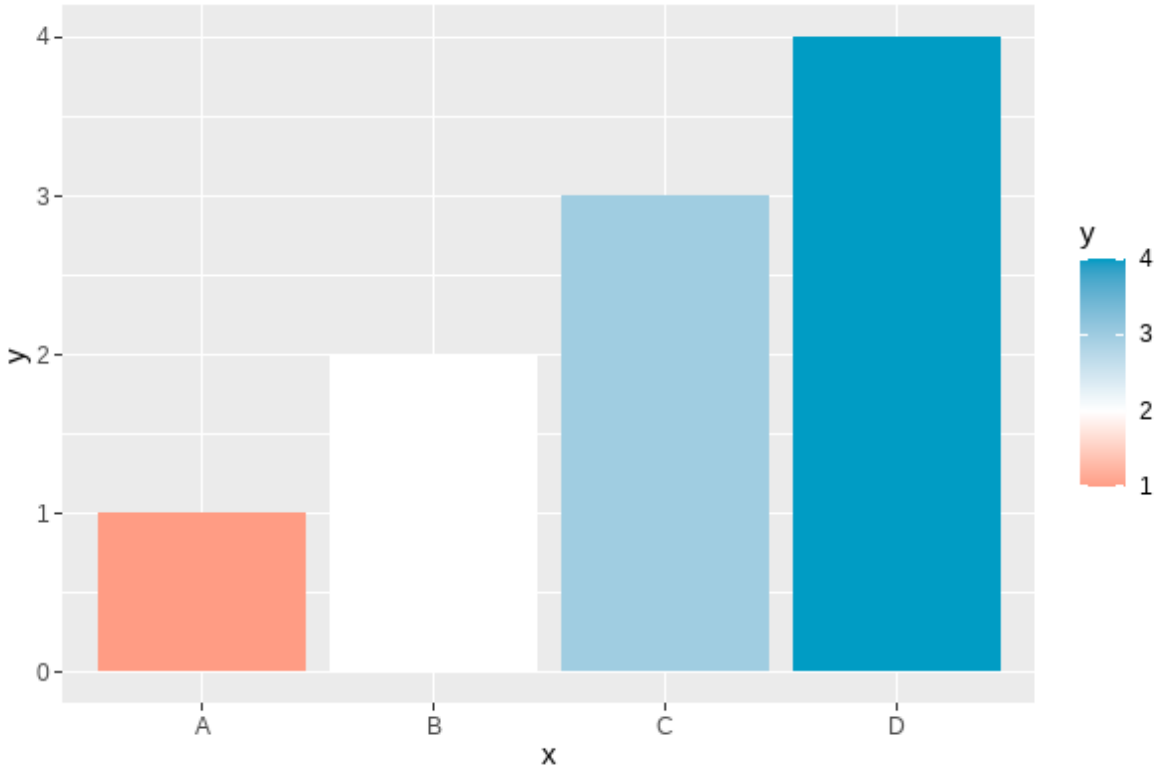

Figure 10: 2 .

: {ggplot2} .

{ggplot2} . `theme_grey()` . `theme_minimal()` `theme_bw()` .

{RSSthemes} `theme_significance()` *Significance* . `library(RSSthemes)` .

```
ggplot(data = plot_df,
       mapping = aes(x = x, y = y, fill = x)) +
  geom_col() +
  labs(title = "  Significance  ",
       subtitle = "               .",
       caption = " :       ") +
  scale_fill_rss_d(palette = "signif_qual") +
  theme_significance()
```

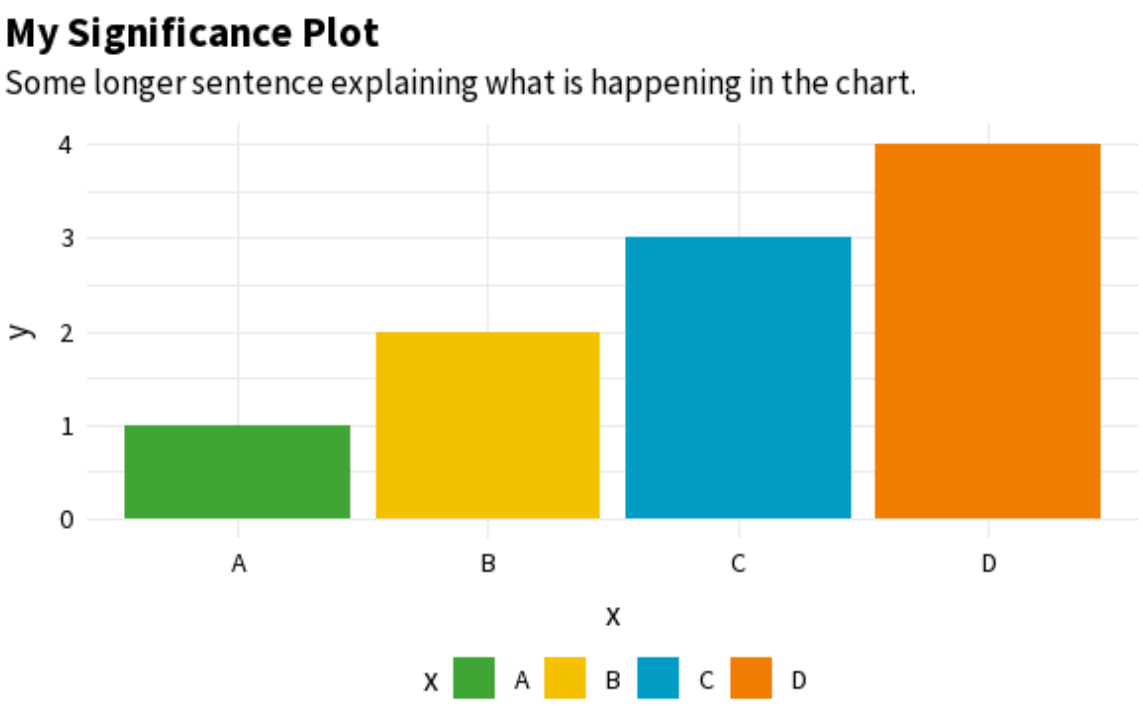

Figure 11: `theme_significance()` .

{RSSthemes} GitHub .

R

R . RStudio *Plots* *Export* .
300 dpi . {ggplot2} `ggsave()` 300 dpi . PDF EPS
.

RSS .

Significance Features 3 2 . 124mm .
`pdf()` (124mm ~ 4.88). 2:1 :

```
pdf(file = "significance-feature-plot.pdf", #
    width = 4.88,                           #
    height = 4.88 / 2                       #
    )
```

```
plot(1:4, 1:4)
dev.off()
```

Python

Python , .

RSS Python github.com/nrennie/RSSpythemes . Python GitHub .

Matplotlib

Matplotlib , Python .

: matplotlib .

`color` matplotlib :

```
import matplotlib.pyplot as plt
# generate data
x_vals = ['A', 'B', 'C', 'D']
y_vals = [1, 2, 3, 4]
# create barchart
plt.bar(x_vals, y_vals, color = "#009cc4")
plt.show()
```

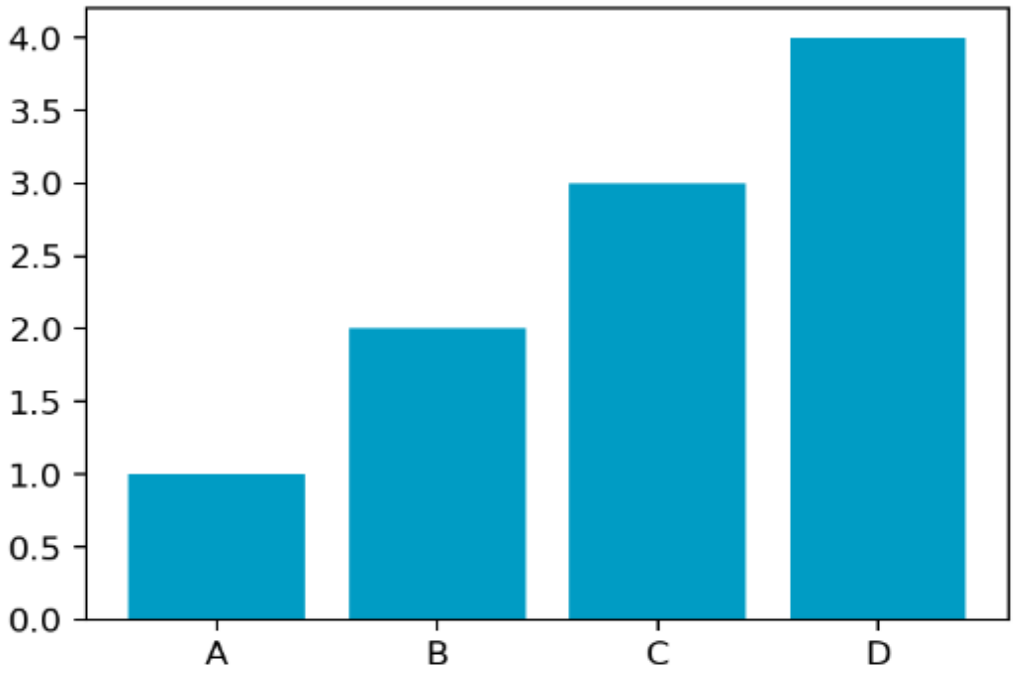

Figure 12: *Significance* .

:

```
# define colour palette
signif_qual = ['#3fa535', '#f4c100', '#009cc4', '#f07d00']
# create barchart
plt.bar(x_vals, y_vals, label = x_vals, color = signif_qual)
plt.show()
```

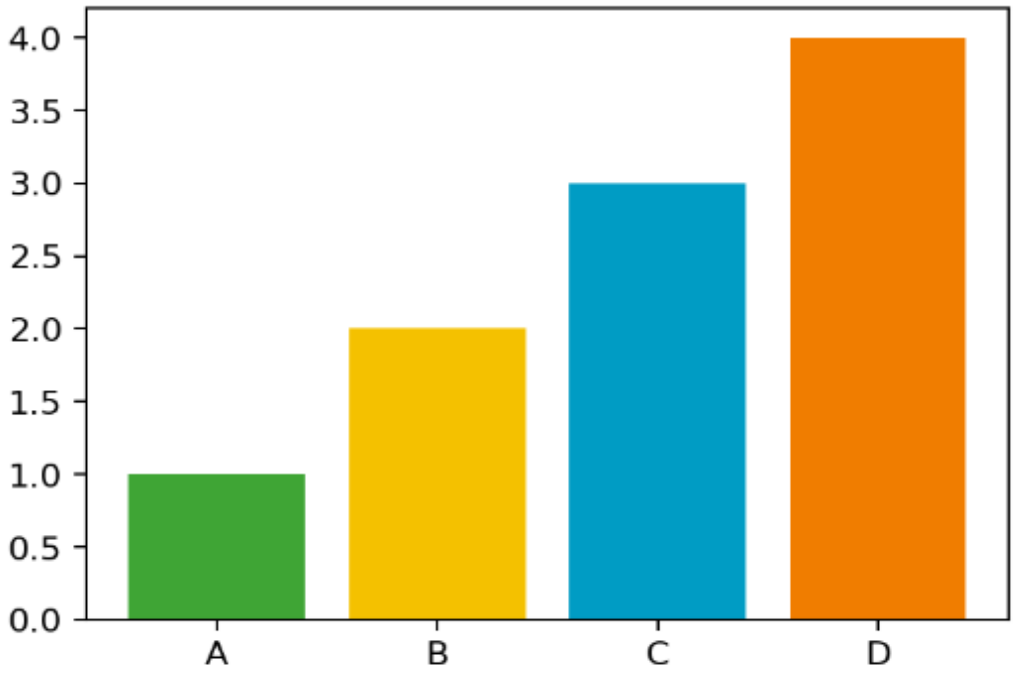

Figure 13: `signif_qual` .

: matplotlib .

`rcParams` . (: sans serif) .
`font_manager` :

```
from matplotlib import font_manager
font_manager.fontManager.addfont("SourceSans3-Regular.ttf")
```

`fontdic` , .

```
# define fonts
from matplotlib import rcParams
rcParams['font.family'] = ['Source Sans 3', 'sans-serif']

# create barchart
fig, ax = plt.subplots(1, 1)
plt.bar(x_vals, y_vals, color = signif_qual, label = x_vals)
```

```
plt.title('  Significance  ', fontdict = {'fontsize':14}, loc = 'left')
# add grid lines lines
ax.set_axisbelow(True)
ax.xaxis.grid(color = 'lightgrey')
ax.yaxis.grid(color = 'lightgrey')
# add legend below plot
ax.legend(ncol = 4, loc = 'lower center',
          bbox_to_anchor = (0.5, -0.15), frameon = False)
plt.show()
```

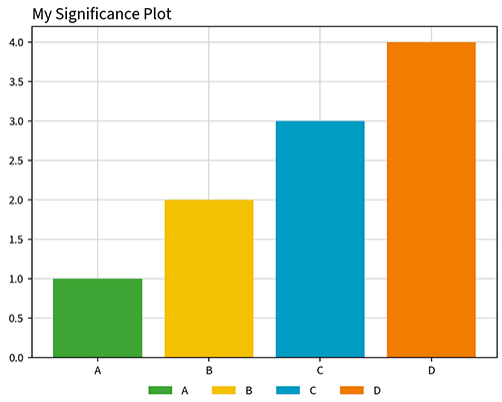

Figure 14: Source Sans .

Julia

Julia . Julia .

Makie

Makie Julia .

: Makie .

Makie `color` `axis` `xticks` :

```
using CairoMakie
# generate data
x_vals = [1, 2, 3, 4]
y_vals = [1, 2, 3, 4]
```

```
# create barchart
barplot(x_vals, y_vals, color="#009cc4", axis=(; xticks=(1:4, ["A", "B", "C", "D"])))
```

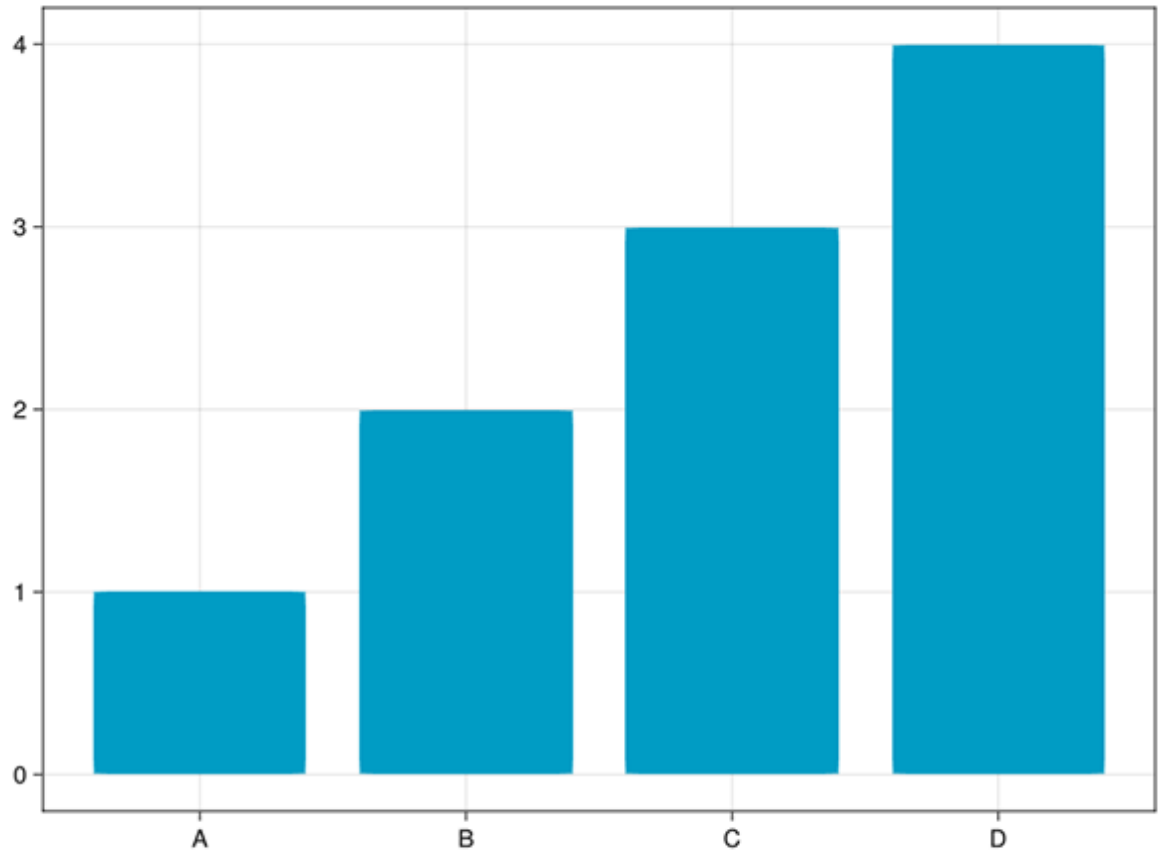

Figure 15: *Significance* .

:

```
# define colour palette
signif_qual = ["#3fa535", "#f4c100", "#009cc4", "#f07d00"]
# create barchart
barplot(x_vals, y_vals, color=signif_qual, axis=(; xticks=(1:4, ["A", "B", "C", "D"])))
```

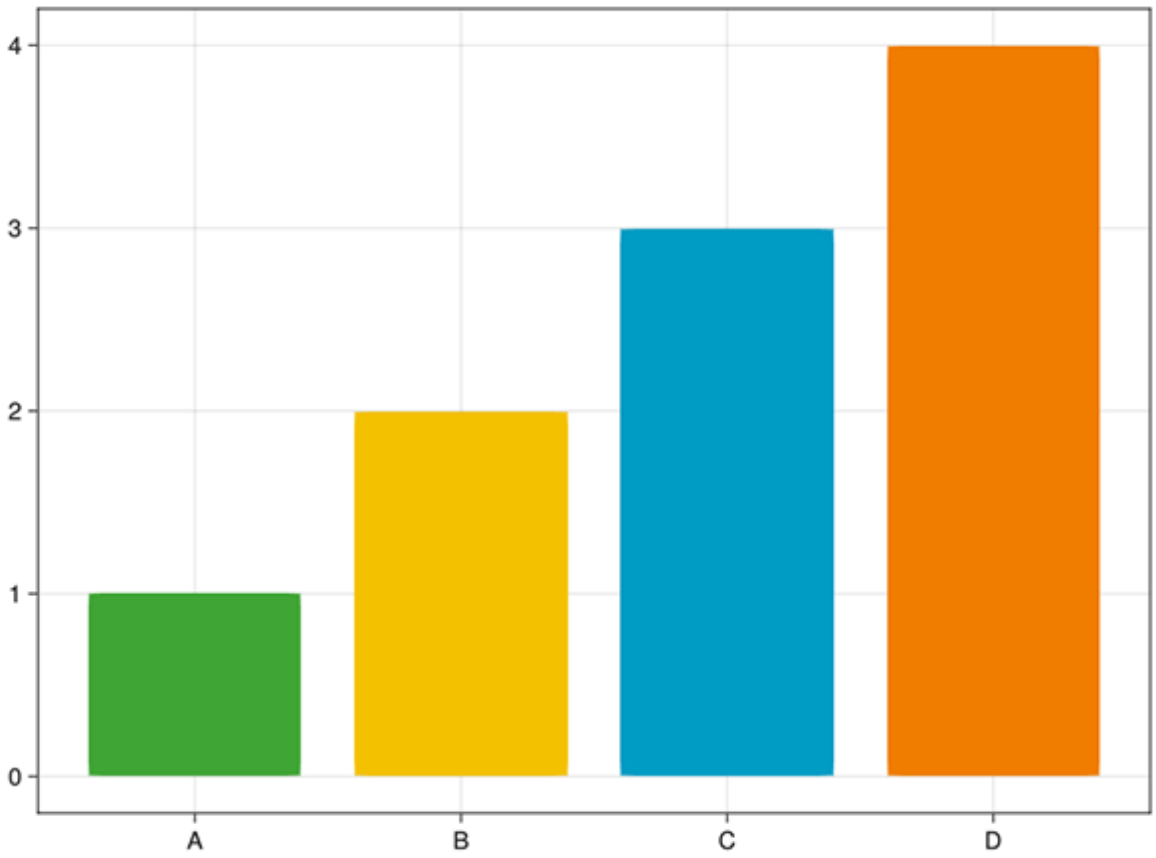

Figure 16: `signif_qual` .

`axis` :

```
# define labels and title
title = "  Significance  "
subtitle = "              ."
xlabel = "X   "
ylabel = "Y   "

# create barchart
barplot(x_vals,
        y_vals;
        color=signif_qual,
        axis=(;
            xticks=(1:4, ["A", "B", "C", "D"]),
            title=title,
```

```
            subtitle=subtitle,
            titlealign=:left,
            xlabel=xlabel,
            ylabel=ylabel,
        ),
)
```

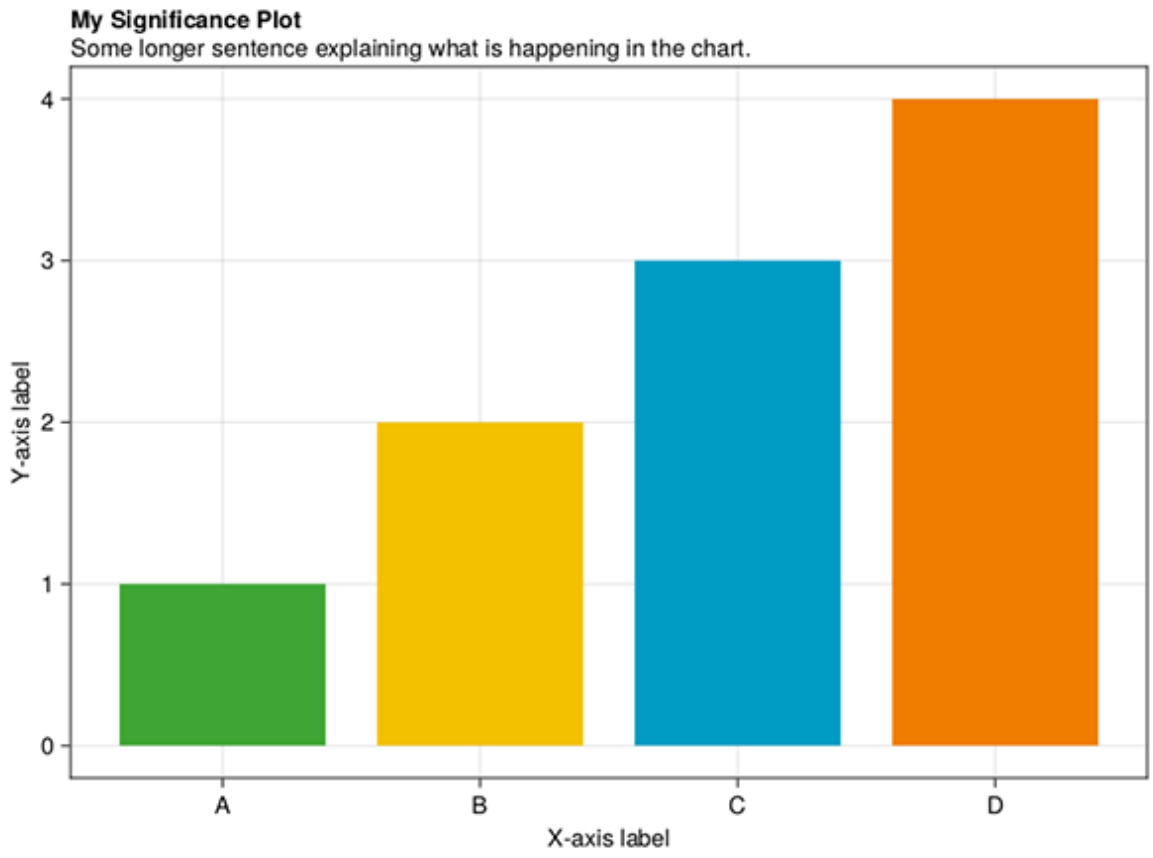

Figure 17: .

AlgebraOfGraphics

AlgebraOfGraphics Makie Julia . R `ggplot2` .

: AlgebraOfGraphics .

Makie `color` `axis` `xticks` :

```
using AlgebraOfGraphics
using CairoMakie
# generate data
x_vals = [1, 2, 3, 4]
y_vals = [1, 2, 3, 4]
# create barchart
plt = data((; x_vals, y_vals)) * mapping(:x_vals, :y_vals) * visual(BarPlot; color="#009cc4")
draw(plt; axis=(; xticks=(1:4, ["A", "B", "C", "D"])))
```

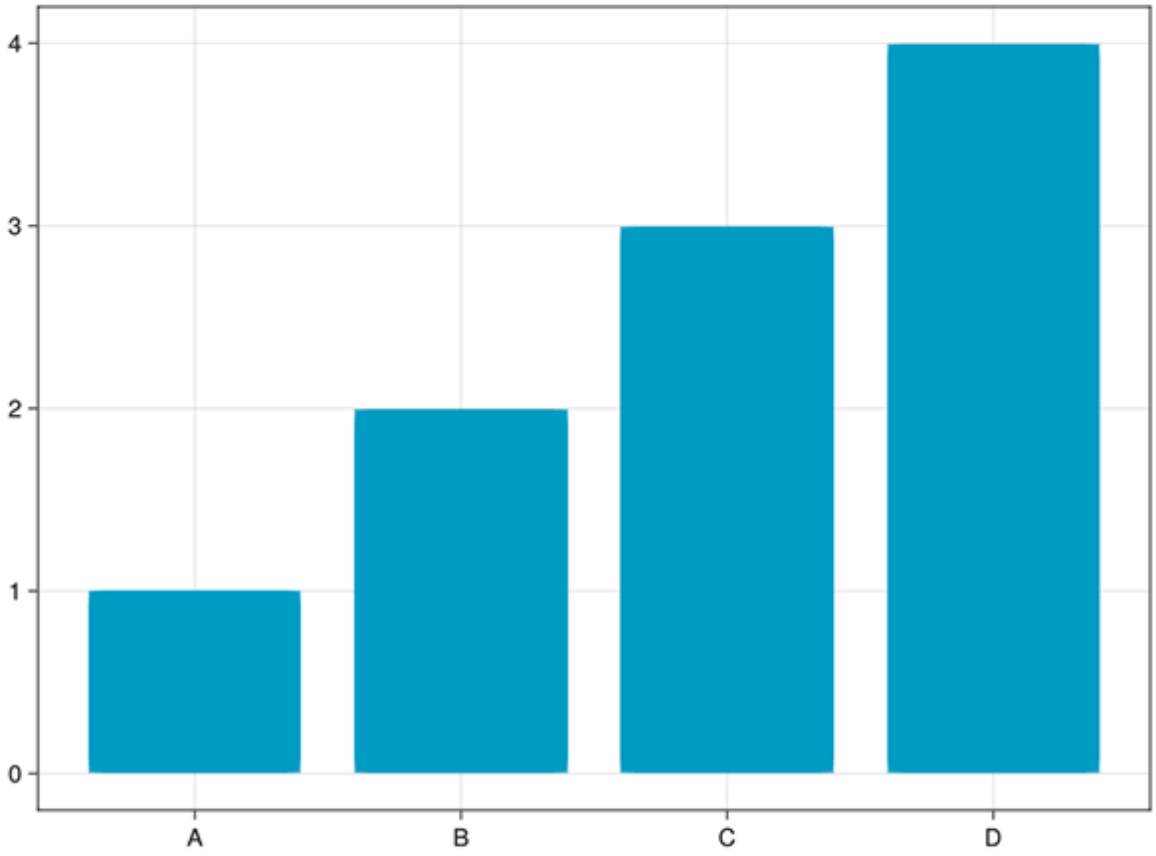

Figure 18: *Significance* .

:

```
# define colour palette
signif_qual = ["#3fa535", "#f4c100", "#009cc4", "#f07d00"]
# create barchart
```

```
plt = data((; x_vals, y_vals)) * mapping(:x_vals, :y_vals) * visual(BarPlot; color=signif_qua
draw(plt; axis=(; xticks=(1:4, ["A", "B", "C", "D"])))
```

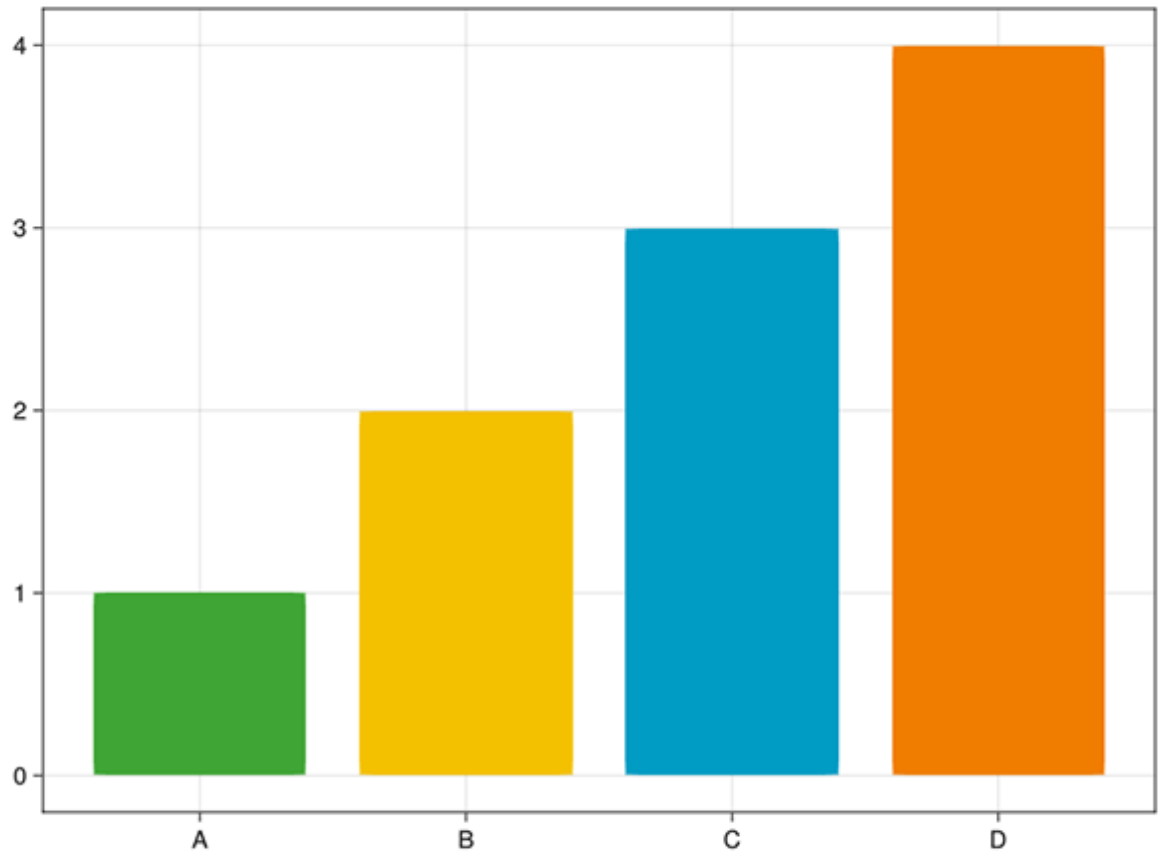

Figure 19: `signif_qual` .

`axis` :

```
# define labels and title
title = "  Significance  "
subtitle = "              ."
xlabel = "X   "
ylabel = "Y   "

# create barchart
draw(plt;
     axis=(;
```

```
        xticks=(1:4, ["A", "B", "C", "D"]),
        title=title,
        subtitle=subtitle,
        titlealign=:left,
        xlabel=xlabel,
        ylabel=ylabel,
    ),
)
```

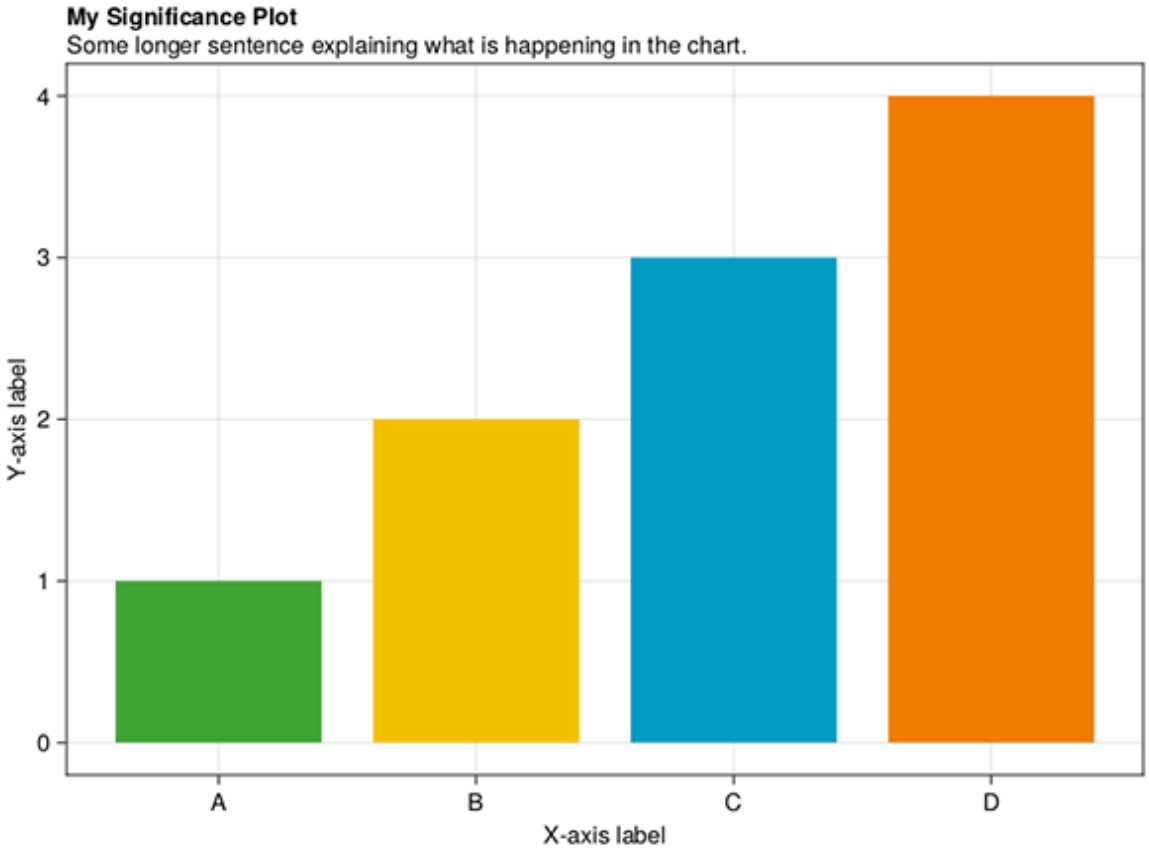

Figure 20: .

RSS . , , .

Significance Magazine

	(W) 212.55 mm x (H) 263.65 mm
	(W) 188 mm x (H) 212 mm
	300 dpi ( )
	jpeg, png

Notebook

4 .

1x	45 mm
2x	93 mm
3x	140 mm
4x	188 mm
	Meta Serif OT, Book
	8.5 pt
	:
	(`RSSthemes` `signif_red`)

- CMYK = 0, 96, 98, 1
- RGB = 228, 27, 18
- Hex code = #e41b12

Features

3 .

1x	60 mm
2x	124 mm
3x	188 mm
	Source Sans Pro, Regular
	9 pt

:
(`RSSthemes signif_green`)

- CMYK = 75, 5, 100, 0
- RGB = 63, 165, 53
- Hex code = #3fa535

Profiles / Perspectives / Statscom

3 .

1x	60 mm
2x	124 mm
3x	188 mm
	Meta Serif OT, Book
	8.5 pt

:

Profiles :
(`RSSthemes signif_blue`)

- CMYK = 78, 19, 15, 1
- RGB = 0, 156, 196
- Hex code = #009cc4

Perspectives :
(`RSSthemes signif_yellow`)

- CMYK = 5, 24, 95, 1
- RGB = 244, 193, 0
- Hex code = #f4c100

Statscomm	: (`RSSthemes` `signif_orange`) • CMYK = 0, 60, 99, 0 • RGB = 240, 125, 0 • Hex code = #f07d00

Journal of the Royal Statistical Society Series A

.

(W) 189 mm x (H) 246 mm
(W) 136 mm x (H) 217 mm
Sabon LT Std Roman
9.25 pt
300 dpi ( )
jpeg, png

R Core Team. 2021. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

"Styling Base r Graphics." 2018. Jumping Rivers. 2018. https://www.jumpingrivers.com/blog/styling-base-r-graphics/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org.