

Examples with {flextable}

November 23, 2021

Print a Plain Dataframe

```
df <- penguins %>%  
  head(n = 10)  
  
df %>% flextable()
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'  
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning  
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a  
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the  
## R Markdown document.
```

| species | island | bill_length | bill_depth | flipper_length | body_mass | sex | year |
|---------|-----------|-------------|------------|----------------|-----------|--------|-------|
| Adelie | Torgersen | 39.1 | 18.7 | 181 | 3,750 | male | 2,007 |
| Adelie | Torgersen | 39.5 | 17.4 | 186 | 3,800 | female | 2,007 |
| Adelie | Torgersen | 40.3 | 18.0 | 195 | 3,250 | female | 2,007 |
| Adelie | Torgersen | | | | | | 2,007 |
| Adelie | Torgersen | 36.7 | 19.3 | 193 | 3,450 | female | 2,007 |
| Adelie | Torgersen | 39.3 | 20.6 | 190 | 3,650 | male | 2,007 |
| Adelie | Torgersen | 38.9 | 17.8 | 181 | 3,625 | female | 2,007 |
| Adelie | Torgersen | 39.2 | 19.6 | 195 | 4,675 | male | 2,007 |
| Adelie | Torgersen | 34.1 | 18.1 | 193 | 3,475 | | 2,007 |
| Adelie | Torgersen | 42.0 | 20.2 | 190 | 4,250 | | 2,007 |

{gtsummary} Example: Default Print Engine

Example where we don't specify print engine:

```
penguins %>%  
  tbl_summary() %>%  
  bold_labels() %>%  
  italicize_levels()
```

```
## Table printed with 'knitr::kable()', not {gt}. Learn why at
## http://www.danielsjoberg.com/gtsummary/articles/rmarkdown.html
## To suppress this message, include 'message = FALSE' in code chunk header.
```

| Characteristic | N = 344 |
|--------------------------|----------------------|
| Species | |
| <i>Adelie</i> | 152 (44%) |
| <i>Chinstrap</i> | 68 (20%) |
| <i>Gentoo</i> | 124 (36%) |
| Island | |
| <i>Biscoe</i> | 168 (49%) |
| <i>Dream</i> | 124 (36%) |
| <i>Torgersen</i> | 52 (15%) |
| Bill Length Mm | 44.5 (39.2, 48.5) |
| <i>Unknown</i> | 2 |
| Bill Depth Mm | 17.30 (15.60, 18.70) |
| <i>Unknown</i> | 2 |
| Flipper Length Mm | 197 (190, 213) |
| <i>Unknown</i> | 2 |
| Body Mass G | 4,050 (3,550, 4,750) |
| <i>Unknown</i> | 2 |
| Sex | |
| <i>female</i> | 165 (50%) |
| <i>male</i> | 168 (50%) |
| <i>Unknown</i> | 11 |
| Year | |
| <i>2007</i> | 110 (32%) |
| <i>2008</i> | 114 (33%) |
| <i>2009</i> | 120 (35%) |

{gtsummary} Example: Specify Print Engine

```
penguins %>%
  tbl_summary() %>%
  bold_labels() %>%
  italicize_levels() %>%
  as_flex_table()
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the
## R Markdown document.
```

| Characteristic | N = 344 ¹ |
|--------------------------|----------------------|
| Species | |
| <i>Adelie</i> | 152 (44%) |
| <i>Chinstrap</i> | 68 (20%) |
| <i>Gentoo</i> | 124 (36%) |
| Island | |
| <i>Biscoe</i> | 168 (49%) |
| <i>Dream</i> | 124 (36%) |
| <i>Torgersen</i> | 52 (15%) |
| Bill Length Mm | 44.5 (39.2, 48.5) |
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| Bill Depth Mm | 17.30 (15.60, 18.70) |
| <i>Unknown</i> | 2 |
| Flipper Length Mm | 197 (190, 213) |
| <i>Unknown</i> | 2 |
| Body Mass G | 4,050 (3,550, 4,750) |
| <i>Unknown</i> | 2 |
| Sex | |
| <i>female</i> | 165 (50%) |
| <i>male</i> | 168 (50%) |
| <i>Unknown</i> | 11 |
| Year | |
| <i>2007</i> | 110 (32%) |
| <i>2008</i> | 114 (33%) |
| <i>2009</i> | 120 (35%) |

¹n (%); Median (IQR)

{gtsummary} Example: With Compact Theme

```
theme_gtsummary_compact()
```

```
## Setting theme 'Compact'
```

```
penguins %>%
  tbl_summary() %>%
  bold_labels() %>%
  italicize_levels() %>%
  as_flex_table()
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the
## R Markdown document.
```

| Characteristic | N = 344 ¹ |
|--------------------------|----------------------|
| Species | |
| <i>Adelie</i> | 152 (44%) |
| <i>Chinstrap</i> | 68 (20%) |
| <i>Gentoo</i> | 124 (36%) |
| Island | |
| <i>Biscoe</i> | 168 (49%) |
| <i>Dream</i> | 124 (36%) |
| <i>Torgersen</i> | 52 (15%) |
| Bill Length Mm | 44.5 (39.2, 48.5) |
| <i>Unknown</i> | 2 |
| Bill Depth Mm | 17.30 (15.60, 18.70) |
| <i>Unknown</i> | 2 |
| Flipper Length Mm | 197 (190, 213) |
| <i>Unknown</i> | 2 |
| Body Mass G | 4,050 (3,550, 4,750) |
| <i>Unknown</i> | 2 |
| Sex | |
| <i>female</i> | 165 (50%) |
| <i>male</i> | 168 (50%) |
| <i>Unknown</i> | 11 |
| Year | |

¹n (%); Median (IQR)

| Characteristic | N = 344 ¹ |
|----------------|----------------------|
| <i>2007</i> | 110 (32%) |
| <i>2008</i> | 114 (33%) |
| <i>2009</i> | 120 (35%) |

¹n (%); Median (IQR)

```
reset_gtsummary_theme()
```

{gtsummary} Example: Add Title

```
penguins %>%
  tbl_summary() %>%
  bold_labels() %>%
  italicize_levels() %>%
  as_flex_table() %>%
  add_header_row(values = "Title", colwidths = 2)
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the
## R Markdown document.
```

| Title | |
|-----------------------|----------------------|
| Characteristic | N = 344 ¹ |
| Species | |
| <i>Adelie</i> | 152 (44%) |
| <i>Chinstrap</i> | 68 (20%) |
| <i>Gentoo</i> | 124 (36%) |
| Island | |
| <i>Biscoe</i> | 168 (49%) |
| <i>Dream</i> | 124 (36%) |
| <i>Torgersen</i> | 52 (15%) |
| Bill Length Mm | 44.5 (39.2, 48.5) |
| <i>Unknown</i> | 2 |
| Bill Depth Mm | 17.30 (15.60, 18.70) |
| <i>Unknown</i> | 2 |

¹n (%); Median (IQR)

| Title | |
|--------------------------|----------------------|
| Characteristic | N = 344 ¹ |
| Flipper Length Mm | 197 (190, 213) |
| <i>Unknown</i> | 2 |
| Body Mass G | 4,050 (3,550, 4,750) |
| <i>Unknown</i> | 2 |
| Sex | |
| <i>female</i> | 165 (50%) |
| <i>male</i> | 168 (50%) |
| <i>Unknown</i> | 11 |
| Year | |
| <i>2007</i> | 110 (32%) |
| <i>2008</i> | 114 (33%) |
| <i>2009</i> | 120 (35%) |

¹n (%); Median (IQR)

{gtsummary} Example: Highlight Specific Values

```
x <- penguins %>%
  tbl_summary(by = species) %>%
  add_p() %>%
  bold_labels() %>%
  italicize_levels() %>%
  as_flex_table() %>%
  add_header_row(values = "Title", colwidths = 5)

# To inspect internals of gt object you can do:
# x$body$dataset

x$body$dataset <- x$body$dataset %>%
  mutate(new_cond = parse_number(stat_1))

x %>%
  flextable::bg(
    i = .body$dataset$new_cond >= 50,
    j = "label",
    bg = "purple"
  ) %>%
  flextable::bg(
    i = .body$dataset$p.value <= 0.05,
    # j = "label",
    bg = "red"
  )
```

)

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the
## R Markdown document.
```

| Title | | | | |
|--------------------------|------------------------------|--------------------------------|------------------------------|----------------------|
| Characteristic | Adelie, N = 152 ¹ | Chinstrap, N = 68 ¹ | Gentoo, N = 124 ¹ | p-value ² |
| Island | | | | <0.001 |
| <i>Biscoe</i> | 44 (29%) | 0 (0%) | 124 (100%) | |
| <i>Dream</i> | 56 (37%) | 68 (100%) | 0 (0%) | |
| <i>Torgersen</i> | 52 (34%) | 0 (0%) | 0 (0%) | |
| Bill Length Mm | 38.8 (36.8, 40.8) | 49.5 (46.3, 51.1) | 47.3 (45.3, 49.5) | <0.001 |
| <i>Unknown</i> | 1 | 0 | 1 | |
| Bill Depth Mm | 18.40 (17.50, 19.00) | 18.45 (17.50, 19.40) | 15.00 (14.20, 15.70) | <0.001 |
| <i>Unknown</i> | 1 | 0 | 1 | |
| Flipper Length Mm | 190 (186, 195) | 196 (191, 201) | 216 (212, 221) | <0.001 |
| <i>Unknown</i> | 1 | 0 | 1 | |
| Body Mass G | 3,700 (3,350, 4,000) | 3,700 (3,488, 3,950) | 5,000 (4,700, 5,500) | <0.001 |
| <i>Unknown</i> | 1 | 0 | 1 | |
| Sex | | | | >0.9 |
| <i>female</i> | 73 (50%) | 34 (50%) | 58 (49%) | |
| <i>male</i> | 73 (50%) | 34 (50%) | 61 (51%) | |
| <i>Unknown</i> | 6 | 0 | 5 | |
| Year | | | | 0.5 |
| <i>2007</i> | 50 (33%) | 26 (38%) | 34 (27%) | |
| <i>2008</i> | 50 (33%) | 18 (26%) | 46 (37%) | |
| <i>2009</i> | 52 (34%) | 24 (35%) | 44 (35%) | |

¹n (%); Median (IQR)

²Pearson's Chi-squared test; Kruskal-Wallis rank sum test

{gtsummary} Example: Merged Tables with Spanning Headers

```
sum <- penguins %>%
  select(species, island, sex) %>%
  tbl_summary(by = species) %>%
  add_p()

reg <- glm(species ~ island + sex,
            family = binomial(), data = penguins) %>%
  tbl_regression(exponentiate = TRUE)
```

[illegible]


```
## Warning: glm.fit: fitted probabilities numerically 0 or 1 occurred
```

```
## Warning: glm.fit: fitted probabilities numerically 0 or 1 occurred
```

```
reg2 <- penguins %>%  
  # species limited to certain islands  
  select(-island) %>%  
  tbl_uvregression(  
    method = glm,  
    y = species,  
    exponentiate = TRUE,  
    method.args = list(family = binomial())  
  )  
  
x <- tbl_merge(list(sum, reg, reg2),  
  tab_spanner =  
    c("**Summary Statistics**", "**Univariate**",  
      "**Multivariate**")) %>%  
  
  as_flex_table()  
  
# another spanner  
  
x
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'  
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning  
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a  
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the  
## R Markdown document.
```

| Characteristic | Summary Statistics | | | p-value ² |
|----------------|------------------------------|--------------------------------|------------------------------|----------------------|
| | Adelie, N = 152 ¹ | Chinstrap, N = 68 ¹ | Gentoo, N = 124 ¹ | |
| Island | | | | <0.001 |
| Biscoe | 44 (29%) | 0 (0%) | 124 (100%) | |
| Dream | 56 (37%) | 68 (100%) | 0 (0%) | |
| Torgersen | 52 (34%) | 0 (0%) | 0 (0%) | |
| Sex | | | | >0.9 |
| female | 73 (50%) | 34 (50%) | 58 (49%) | |
| male | 73 (50%) | 34 (50%) | 61 (51%) | |
| Unknown | 6 | 0 | 5 | |

Bill Length Mm

¹n (%)

²Pearson's Chi-squared test

³OR = Odds Ratio, CI = Confidence Interval

| Summary Statistics | | | | |
|--------------------|------------------------------|--------------------------------|------------------------------|----------------------|
| Characteristic | Adelie, N = 152 ¹ | Chinstrap, N = 68 ¹ | Gentoo, N = 124 ¹ | p-value ² |
| Bill Depth Mm | | | | |
| Flipper Length Mm | | | | |
| Body Mass G | | | | |
| Year | | | | |

¹n (%)

²Pearson's Chi-squared test

³OR = Odds Ratio, CI = Confidence Interval

Add Footnotes

Note: need to specify `part = header` to get in header

```
x <- penguins %>%
  head(n = 10) %>%
  flextable()

x %>%
  footnote(.,
    i = 1,
    j = "island",
    part = "header",
    value = as_paragraph("Custom Footnote"))
```

```
## Warning: Warning: fonts used in 'flextable' are ignored because the 'pdflatex'
## engine is used and not 'xelatex' or 'lualatex'. You can avoid this warning
## by using the 'set_flextable_defaults(fonts_ignore=TRUE)' command or use a
## compatible engine by defining 'latex_engine: xelatex' in the YAML header of the
## R Markdown document.
```

| species | island ¹ | bill_length | bill_depth | flipper_length | body_mass | sex | year |
|---------|---------------------|-------------|------------|----------------|-----------|--------|-------|
| Adelie | Torgersen | 39.1 | 18.7 | 181 | 3,750 | male | 2,007 |
| Adelie | Torgersen | 39.5 | 17.4 | 186 | 3,800 | female | 2,007 |
| Adelie | Torgersen | 40.3 | 18.0 | 195 | 3,250 | female | 2,007 |
| Adelie | Torgersen | | | | | | 2,007 |
| Adelie | Torgersen | 36.7 | 19.3 | 193 | 3,450 | female | 2,007 |

¹Custom Footnote

| species | island ¹ | bill_length_mm | bill_depth_mm | flipper_length_mm | body_mass_g | sex | year |
|---------|---------------------|----------------|---------------|-------------------|-------------|--------|-------|
| Adelie | Torgersen | 39.3 | 20.6 | 190 | 3,650 | male | 2,007 |
| Adelie | Torgersen | 38.9 | 17.8 | 181 | 3,625 | female | 2,007 |
| Adelie | Torgersen | 39.2 | 19.6 | 195 | 4,675 | male | 2,007 |
| Adelie | Torgersen | 34.1 | 18.1 | 193 | 3,475 | | 2,007 |
| Adelie | Torgersen | 42.0 | 20.2 | 190 | 4,250 | | 2,007 |

¹Custom Footnote

Saving Quickly

```
save_as_docx(x, path = here::here("outputs",
                                   "flextable-quick-table.docx"), pr_section = NULL)

#save_as_html()
#save_as_image()
```