Examples with {flextable}

November 23, 2021

# Print a Plain Dataframe

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

| species | island | bill\_length\_mm | bill\_depth\_mm | flipper\_length\_mm | body\_mass\_g | 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 {flextable}, not {gt}. Learn why at  
## http://www.danieldsjoberg.com/gtsummary/articles/rmarkdown.html  
## To suppress this message, include `message = FALSE` in the code chunk header.

| Characteristic | N = 3441 |
| --- | --- |
| **Species** |  |
| *Adelie* | 152 (44%) |
| *Chinstrap* | 68 (20%) |
| *Gentoo* | 124 (36%) |
| **Island** |  |
| *Biscoe* | 168 (49%) |
| *Dream* | 124 (36%) |
| *Torgersen* | 52 (15%) |
| **Bill Length Mm** | 44.5 (39.2, 48.5) |
| *Unknown* | 2 |
| **Bill Depth Mm** | 17.30 (15.60, 18.70) |
| *Unknown* | 2 |
| **Flipper Length Mm** | 197 (190, 213) |
| *Unknown* | 2 |
| **Body Mass G** | 4,050 (3,550, 4,750) |
| *Unknown* | 2 |
| **Sex** |  |
| *female* | 165 (50%) |
| *male* | 168 (50%) |
| *Unknown* | 11 |
| **Year** |  |
| *2007* | 110 (32%) |
| *2008* | 114 (33%) |
| *2009* | 120 (35%) |
| 1n (%); Median (IQR) | |

# {gtsummary} Example: Specify Print Engine

penguins %>%   
 tbl\_summary() %>%  
 bold\_labels() %>%  
 italicize\_levels() %>%  
 as\_flex\_table()

| Characteristic | N = 3441 |
| --- | --- |
| **Species** |  |
| *Adelie* | 152 (44%) |
| *Chinstrap* | 68 (20%) |
| *Gentoo* | 124 (36%) |
| **Island** |  |
| *Biscoe* | 168 (49%) |
| *Dream* | 124 (36%) |
| *Torgersen* | 52 (15%) |
| **Bill Length Mm** | 44.5 (39.2, 48.5) |
| *Unknown* | 2 |
| **Bill Depth Mm** | 17.30 (15.60, 18.70) |
| *Unknown* | 2 |
| **Flipper Length Mm** | 197 (190, 213) |
| *Unknown* | 2 |
| **Body Mass G** | 4,050 (3,550, 4,750) |
| *Unknown* | 2 |
| **Sex** |  |
| *female* | 165 (50%) |
| *male* | 168 (50%) |
| *Unknown* | 11 |
| **Year** |  |
| *2007* | 110 (32%) |
| *2008* | 114 (33%) |
| *2009* | 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()

| Characteristic | N = 3441 |
| --- | --- |
| **Species** |  |
| *Adelie* | 152 (44%) |
| *Chinstrap* | 68 (20%) |
| *Gentoo* | 124 (36%) |
| **Island** |  |
| *Biscoe* | 168 (49%) |
| *Dream* | 124 (36%) |
| *Torgersen* | 52 (15%) |
| **Bill Length Mm** | 44.5 (39.2, 48.5) |
| *Unknown* | 2 |
| **Bill Depth Mm** | 17.30 (15.60, 18.70) |
| *Unknown* | 2 |
| **Flipper Length Mm** | 197 (190, 213) |
| *Unknown* | 2 |
| **Body Mass G** | 4,050 (3,550, 4,750) |
| *Unknown* | 2 |
| **Sex** |  |
| *female* | 165 (50%) |
| *male* | 168 (50%) |
| *Unknown* | 11 |
| **Year** |  |
| *2007* | 110 (32%) |
| *2008* | 114 (33%) |
| *2009* | 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)

| Title | |
| --- | --- |
| Characteristic | N = 3441 |
| **Species** |  |
| *Adelie* | 152 (44%) |
| *Chinstrap* | 68 (20%) |
| *Gentoo* | 124 (36%) |
| **Island** |  |
| *Biscoe* | 168 (49%) |
| *Dream* | 124 (36%) |
| *Torgersen* | 52 (15%) |
| **Bill Length Mm** | 44.5 (39.2, 48.5) |
| *Unknown* | 2 |
| **Bill Depth Mm** | 17.30 (15.60, 18.70) |
| *Unknown* | 2 |
| **Flipper Length Mm** | 197 (190, 213) |
| *Unknown* | 2 |
| **Body Mass G** | 4,050 (3,550, 4,750) |
| *Unknown* | 2 |
| **Sex** |  |
| *female* | 165 (50%) |
| *male* | 168 (50%) |
| *Unknown* | 11 |
| **Year** |  |
| *2007* | 110 (32%) |
| *2008* | 114 (33%) |
| *2009* | 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"  
 )

| Title | | | | |
| --- | --- | --- | --- | --- |
| Characteristic | Adelie, N = 1521 | Chinstrap, N = 681 | Gentoo, N = 1241 | p-value2 |
| **Island** |  |  |  | <0.001 |
| *Biscoe* | 44 (29%) | 0 (0%) | 124 (100%) |  |
| *Dream* | 56 (37%) | 68 (100%) | 0 (0%) |  |
| *Torgersen* | 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 |
| *Unknown* | 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 |
| *Unknown* | 1 | 0 | 1 |  |
| **Flipper Length Mm** | 190 (186, 195) | 196 (191, 201) | 216 (212, 221) | <0.001 |
| *Unknown* | 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 |
| *Unknown* | 1 | 0 | 1 |  |
| **Sex** |  |  |  | >0.9 |
| *female* | 73 (50%) | 34 (50%) | 58 (49%) |  |
| *male* | 73 (50%) | 34 (50%) | 61 (51%) |  |
| *Unknown* | 6 | 0 | 5 |  |
| **Year** |  |  |  | 0.5 |
| *2007* | 50 (33%) | 26 (38%) | 34 (27%) |  |
| *2008* | 50 (33%) | 18 (26%) | 46 (37%) |  |
| *2009* | 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)

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

|  | Summary Statistics | | | | Univariate\* | | | Multivariate\* | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Characteristic | Adelie, N = 1521 | Chinstrap, N = 681 | Gentoo, N = 1241 | p-value2 | OR3 | 95% CI3 | p-value | N | OR3 | 95% CI3 | p-value |
| Island |  |  |  | <0.001 |  |  |  |  |  |  |  |
| Biscoe | 44 (29%) | 0 (0%) | 124 (100%) |  | — | — |  |  | — | — |  |
| Dream | 56 (37%) | 68 (100%) | 0 (0%) |  | 0.46 | 0.28, 0.75 | 0.002 |  |  |  |  |
| Torgersen | 52 (34%) | 0 (0%) | 0 (0%) |  | 0.00 | 0.00, 758,956,969 | >0.9 |  |  |  |  |
| Sex |  |  |  | >0.9 |  |  |  | 333 |  |  |  |
| female | 73 (50%) | 34 (50%) | 58 (49%) |  | — | — |  |  | — | — |  |
| male | 73 (50%) | 34 (50%) | 61 (51%) |  | 1.01 | 0.61, 1.66 | >0.9 |  | 1.03 | 0.67, 1.59 | 0.9 |
| Unknown | 6 | 0 | 5 |  |  |  |  |  |  |  |  |
| Bill Length Mm |  |  |  |  |  |  |  | 342 | 3.29 | 2.49, 4.77 | <0.001 |
| Bill Depth Mm |  |  |  |  |  |  |  | 342 | 0.48 | 0.40, 0.56 | <0.001 |
| Flipper Length Mm |  |  |  |  |  |  |  | 342 | 1.21 | 1.16, 1.26 | <0.001 |
| Body Mass G |  |  |  |  |  |  |  | 342 | 1.00 | 1.00, 1.00 | <0.001 |
| Year |  |  |  |  |  |  |  | 344 | 1.04 | 0.80, 1.35 | 0.7 |
| 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"))

| species | island1 | bill\_length\_mm | bill\_depth\_mm | flipper\_length\_mm | body\_mass\_g | 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 |
| 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()