

ALIGNING THE DOTS SIMPLIFYING TABLE PRESENTATIONS IN R

Phuse US 2022
Atlanta, Georgia

Mike Stackhouse
Maya Gans

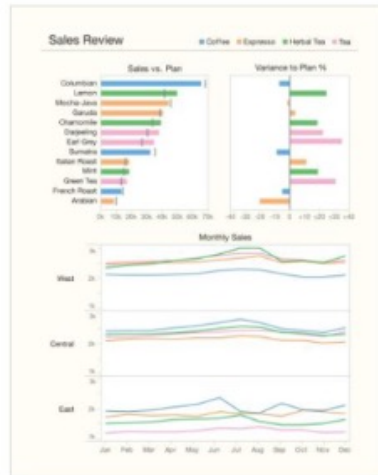
OVERVIEW



- Defining the problem
- How Tplyr solves it
- Using `f_str()` outside of Tplyr
- Portability
- Examples

Show Me the Numbers

Designing Tables and Graphs to Enlighten



Stephen Few

TABLE DESIGN

"Align both the decimal point and the final digit to the right."

DEFINING THE PROBLEM

ALIGNMENT IS HARDER THAN THE MATH ITSELF!

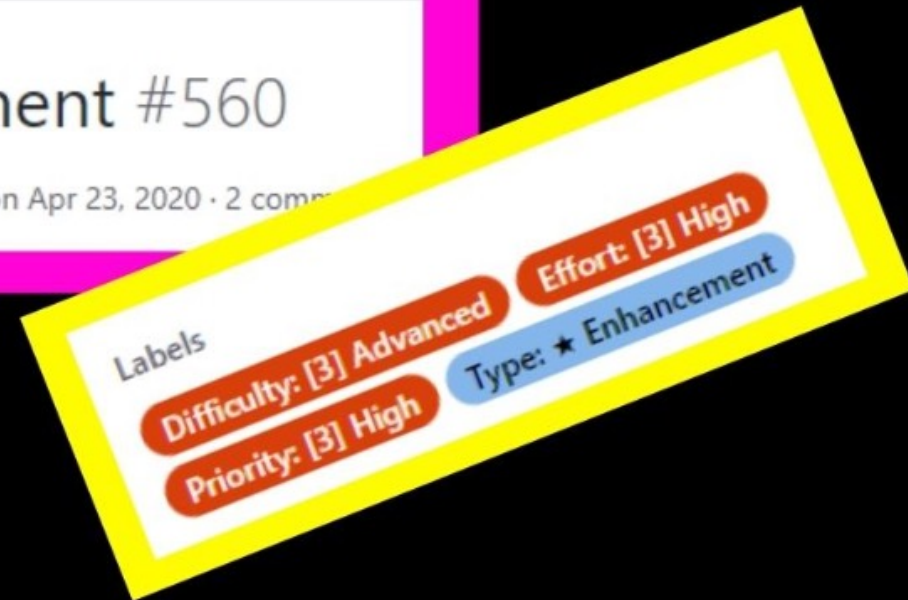
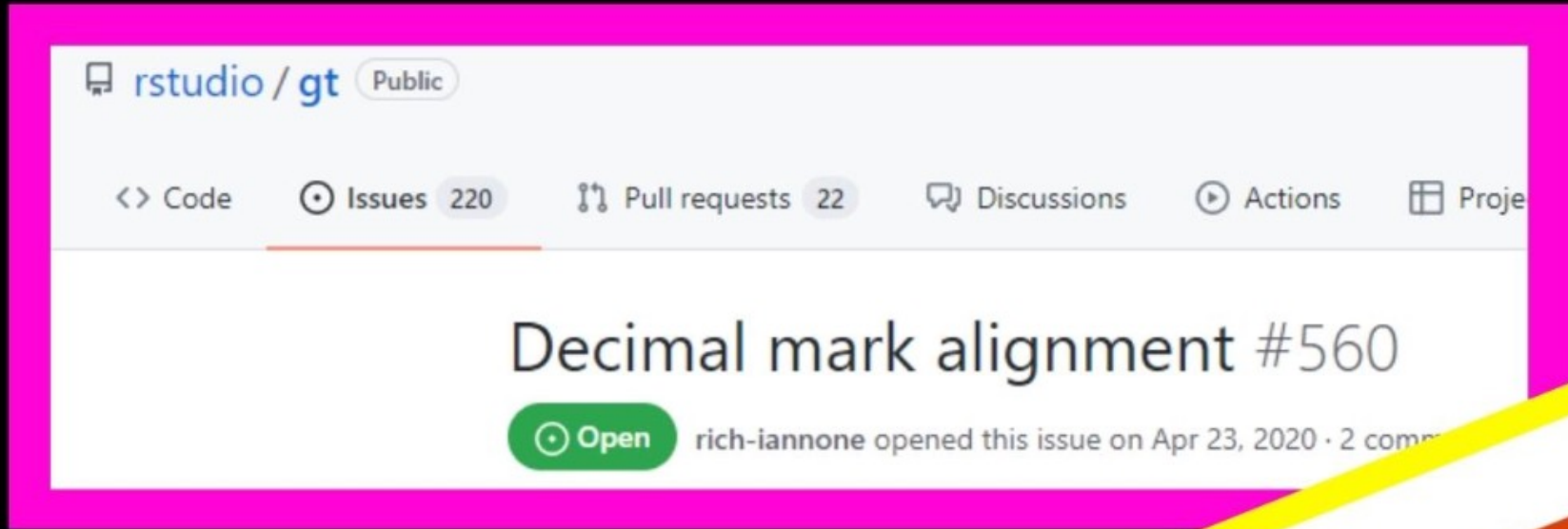
preserve decimal places and vertically align decimals in output table
Asked 2 years, 6 months ago Modified 2 years, 6 months ago Viewed 55 times

R Aligning table content to decimal points
Asked 11 months ago Modified 11 months ago Viewed 291 times

Easy way to align decimal place

Asked 3 years, 9 months ago Modified 3 years, 8 months ago Viewed 123 times

ALIGNMENT IS HARDER THAN THE MATH ITSELF!



DEFINING THE PROBLEM

AUTOMATE PRECISION

MULTIPLE TABLES

VARYING OPTIONS

FRINGE CASES

ALIGN ON OTHER

CHARACTERS

HOW TPLYR SOLVES IT

WHAT IS THE F_STR()

Pronounced "f string", it is an object to hold metadata around a string format. You can get a lot of metadata out of a small bit of information!

WHAT DOES AN F_STR() LOOK LIKE

wt is formatted with a width of 1
integer and 2 decimals

f_str('xxx (x.xx)', hp, wt)

hp is formatted with a width of 1
integer and 0 decimals

the variables
to be are hp
and wt

HOW TPLYR SOLVES IT

TPLYR USES THIS INFORMATION TO DO A LOT

which summaries to perform

DESCRIPTIVE LAYER

```
tplyr_table(adsl, TRT01P) %>%  
  add_layer(  
    group_desc(AGE) %>%  
      set_format_strings("Mean (SD)"= f_str("xx.x (xx.xx)", mean, sd)  
    )  
  )
```

which summaries go on the same row

HOW TPLYR SOLVES IT

TPLYR USES THIS INFORMATION TO DO A LOT

COUNT LAYER

```
tplyr_table(adsl, TRT01P) %>%  
  add_layer(group_count(AGEGR1, by = "Age categories") %>%  
    set_format_strings(f_str('xx (xx.x)', n, pct)))
```

increment decimals

(can also be provided by external source!)

autoprecision

which numbers to present

F_STR() OUTSIDE OF TPLYR

```
apply_formats <- function(format_string, ..., empty = c(.overall = "")) {  
  format <- f_str(format_string, ..., empty=empty)  
  pmap_chr(list(...), function(...) apply_fmts(...), fmt=format)  
}  
  
apply_fmts <- function(..., fmt) {  
  nums <- list(...)  
  repl <- vector('list', length(fmt$settings))  
  for (i in seq_along(fmt$settings)) {  
    repl[[i]] <- Tplyr:::num_fmt(nums[[i]], i, fmt=fmt)  
  }  
  args <- append(list(fmt$repl_str), repl)  
  do.call('sprintf', args)  
}  
  
mtcars %>%  
  mutate(  
    formatted_string = apply_formats("xxx (x.xx)", hp, wt)  
  )
```

##	hp	wt	formatted_string
## Mazda RX4	110	2.620	110 (2.62)
## Mazda RX4 Wag	110	2.875	110 (2.88)
## Datsun 710	93	2.320	93 (2.32)
## Hornet 4 Drive	110	3.215	110 (3.21)
## Hornet Sportabout	175	3.440	175 (3.44)
## Valiant	105	3.460	105 (3.46)
## Duster 360	245	3.570	245 (3.57)
## Merc 240D	62	3.190	62 (3.19)
## Merc 230	95	3.150	95 (3.15)
## Merc 280	123	3.440	123 (3.44)
## Merc 280C	123	3.440	123 (3.44)
## Merc 450SE	180	4.070	180 (4.07)
## Merc 450SL	180	3.730	180 (3.73)
## Merc 450SLC	180	3.780	180 (3.78)
## Cadillac Fleetwood	205	5.250	205 (5.25)
## Lincoln Continental	215	5.424	215 (5.42)
## Chrysler Imperial	230	5.345	230 (5.34)
## Fiat 128	66	2.200	66 (2.20)
## Honda Civic	52	1.615	52 (1.61)
## Toyota Corolla	65	1.835	65 (1.83)

**LET THE
PRESENTATION
LIBRARY DO THE WORK**

**MONOSPACE FONTS
MAKE THIS POSSIBLE
AND ACCESSIBLE**

OUTPUT AGNOSTIC

EXAMPLES

RTF

row_label1	row_label2	Placebo	Xanomeline.High.Dose	Xanomeline.Low.Dose
Age categories	65-80	42 (48.8)	55 (65.5)	47 (56.0)
Age categories	<65	14 (16.3)	11 (13.1)	8 (9.5)
Age categories	>80	30 (34.9)	18 (21.4)	29 (34.5)

EXAMPLES

HTML

row_label1	row_label2	Placebo	Xanomeline.High.Dose	Xanomeline.Low.Dose
Age categories	65-80	42 (48.8)	55 (65.5)	47 (56.0)
Age categories	<65	14 (16.3)	11 (13.1)	8 (9.5)
Age categories	>80	30 (34.9)	18 (21.4)	29 (34.5)

THANK YOU

QUESTIONS?

`mike.stackhouse@atorusresearch.com`

`maya.gans@atorusresearch.com`

Most popular training – look at averages of time spent on each