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# L<sup>A</sup>T<sub>E</sub>X table for fdt objects

Examples with xtable and formatting

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## L<sup>A</sup>T<sub>E</sub>X customization

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## 1 Quick start

This vignette shows a practical workflow to create publication-ready  $\text{\LaTeX}$  tables from `fdt` and `fdt_cat` objects.

1. Create a frequency distribution object with `fdt()` or `fdt_cat()`.
2. Convert it to an `xtable` object.
3. Use `print()` options to control row names, sanitization and table layout.

### 1.1 Most used `xtable::print` arguments

Argument	Purpose
<code>include.rownames</code>	Include or hide row names (usually <code>FALSE</code> for cleaner tables).
<code>sanitize.text.function</code>	Control escaping/sanitization (useful for math delimiters and custom symbols).
<code>table.placement</code>	Preferred placement for floating tables (for example, "H").
<code>tabular.environment</code>	Choose environment ("tabular", "longtable", etc.).
<code>floating</code>	Enable/disable floating behavior (commonly <code>FALSE</code> with <code>longtable</code> ).

## 2 First table

Creating a simple table.

```
library(fdth)
library(xtable)
set.seed(123)

t1 <- fdt(rnorm(n = 1e3,
               mean = 10,
               sd = 2),
         x.round = 3)

t1x <- xtable(t1)
t1x
```

	Class limits	f	rf	rf(\%)	cf	cf(\%)
1	\$(4.3366,5.4558)\$	7	0.01	0.70	7.00	0.70
2	\$(5.4558,6.5749)\$	33	0.03	3.30	40.00	4.00
3	\$(6.5749,7.694)\$	86	0.09	8.60	126.00	12.60
4	\$(7.694,8.8131)\$	137	0.14	13.70	263.00	26.30
5	\$(8.8131,9.9322)\$	220	0.22	22.00	483.00	48.30
6	\$(9.9322,11.051)\$	221	0.22	22.10	704.00	70.40
7	\$(11.051,12.17)\$	163	0.16	16.30	867.00	86.70
8	\$(12.17,13.29)\$	77	0.08	7.70	944.00	94.40
9	\$(13.29,14.409)\$	39	0.04	3.90	983.00	98.30
10	\$(14.409,15.528)\$	16	0.02	1.60	999.00	99.90
11	\$(15.528,16.647)\$	1	0.00	0.10	1000.00	100.00

### 2.1 Using `print`

The default output is not ideal. We use the `print` function.



### 3.2 Two decimal places for limits

Standardizing class limits to two decimal places.

```
clim <- t1$table[1]
clim1 <- sapply(clim, as.character)
right <- t1$breaks[4]
pattern <- "%05.2f"

clim2 <- make.fdt.format.classes(clim1,
                                right,
                                pattern)

clim3 <- sapply(clim2,
               function(x) paste0("$", x, "$"))

t4x <- t1x
t4x[, 1] <- clim3

print(t4x,
      include.rownames = FALSE,
      sanitize.text.function = function(x) x)
```

Class limits	f	rf	rf(%)	cf	cf(%)
[04.34,05.46)	7	0.01	0.70	7.00	0.70
[05.46,06.57)	33	0.03	3.30	40.00	4.00
[06.57,07.69)	86	0.09	8.60	126.00	12.60
[07.69,08.81)	137	0.14	13.70	263.00	26.30
[08.81,09.93)	220	0.22	22.00	483.00	48.30
[09.93,11.05)	221	0.22	22.10	704.00	70.40
[11.05,12.17)	163	0.16	16.30	867.00	86.70
[12.17,13.29)	77	0.08	7.70	944.00	94.40
[13.29,14.41)	39	0.04	3.90	983.00	98.30
[14.41,15.53)	16	0.02	1.60	999.00	99.90
[15.53,16.65)	1	0.00	0.10	1000.00	100.00

## 4 Objects of class fdt.multiple

```
t5 <- fdt(iris[, c(1:2, 5)],
        by = "Species")
attr(t5, "subheadings") <- paste0("Variable = ",
                                   names(t5))

print(xtable(t5),
      table.placement = "H")
```

	Class limits	f	rf	rf(\%)	cf	cf(\%)
Variable = setosa.Sepal.Length						
1	\$(4.257,4.486)\$	4	0.08	8.00	4.00	8.00
2	\$(4.486,4.714)\$	7	0.14	14.00	11.00	22.00
3	\$(4.714,4.943)\$	9	0.18	18.00	20.00	40.00
4	\$(4.943,5.172)\$	16	0.32	32.00	36.00	72.00
5	\$(5.172,5.401)\$	9	0.18	18.00	45.00	90.00
6	\$(5.401,5.629)\$	2	0.04	4.00	47.00	94.00
7	\$(5.629,5.858)\$	3	0.06	6.00	50.00	100.00
Variable = setosa.Sepal.Width						
8	\$(2.277,2.587)\$	1	0.02	2.00	1.00	2.00
9	\$(2.587,2.896)\$	0	0.00	0.00	1.00	2.00
10	\$(2.896,3.206)\$	16	0.32	32.00	17.00	34.00
11	\$(3.206,3.515)\$	17	0.34	34.00	34.00	68.00
12	\$(3.515,3.825)\$	10	0.20	20.00	44.00	88.00
13	\$(3.825,4.134)\$	4	0.08	8.00	48.00	96.00
14	\$(4.134,4.444)\$	2	0.04	4.00	50.00	100.00
Variable = versicolor.Sepal.Length						
15	\$(4.851,5.168)\$	4	0.08	8.00	4.00	8.00
16	\$(5.168,5.485)\$	2	0.04	4.00	6.00	12.00
17	\$(5.485,5.802)\$	18	0.36	36.00	24.00	48.00
18	\$(5.802,6.119)\$	10	0.20	20.00	34.00	68.00
19	\$(6.119,6.436)\$	7	0.14	14.00	41.00	82.00
20	\$(6.436,6.753)\$	6	0.12	12.00	47.00	94.00
21	\$(6.753,7.07)\$	3	0.06	6.00	50.00	100.00
Variable = versicolor.Sepal.Width						
22	\$(1.98,2.188)\$	1	0.02	2.00	1.00	2.00
23	\$(2.188,2.395)\$	5	0.10	10.00	6.00	12.00
24	\$(2.395,2.603)\$	10	0.20	20.00	16.00	32.00
25	\$(2.603,2.811)\$	11	0.22	22.00	27.00	54.00
26	\$(2.811,3.019)\$	15	0.30	30.00	42.00	84.00
27	\$(3.019,3.226)\$	6	0.12	12.00	48.00	96.00
28	\$(3.226,3.434)\$	2	0.04	4.00	50.00	100.00
Variable = virginica.Sepal.Length						
29	\$(4.851,5.298)\$	1	0.02	2.00	1.00	2.00
30	\$(5.298,5.745)\$	2	0.04	4.00	3.00	6.00
31	\$(5.745,6.192)\$	8	0.16	16.00	11.00	22.00
32	\$(6.192,6.638)\$	17	0.34	34.00	28.00	56.00
33	\$(6.638,7.085)\$	10	0.20	20.00	38.00	76.00
34	\$(7.085,7.532)\$	6	0.12	12.00	44.00	88.00
35	\$(7.532,7.979)\$	6	0.12	12.00	50.00	100.00
Variable = virginica.Sepal.Width						
36	\$(2.178,2.415)\$	1	0.02	2.00	1.00	2.00
37	\$(2.415,2.652)\$	6	0.12	12.00	7.00	14.00
38	\$(2.652,2.889)\$	12	0.24	24.00	19.00	38.00
39	\$(2.889,3.127)\$	18	0.36	36.00	37.00	74.00
40	\$(3.127,3.364)\$	8	0.16	16.00	45.00	90.00
41	\$(3.364,3.601)\$	3	0.06	6.00	48.00	96.00
42	\$(3.601,3.838)\$	2	0.04	4.00	50.00	100.00

This output is not ideal for wide layouts; the longtable environment works better.

```
t51 <- xtable(t5)
print(t51,
      table.placement = "H",
      include.rownames = FALSE,
      sanitize.text.function = function(x) x,
      tabular.environment = "longtable",
      floating = FALSE)
```

Class limits	f	rf	rf(%)	cf	cf(%)
Variable = setosa.Sepal.Length					
[4.257,4.486)	4	0.08	8.00	4.00	8.00
[4.486,4.714)	7	0.14	14.00	11.00	22.00
[4.714,4.943)	9	0.18	18.00	20.00	40.00
[4.943,5.172)	16	0.32	32.00	36.00	72.00
[5.172,5.401)	9	0.18	18.00	45.00	90.00
[5.401,5.629)	2	0.04	4.00	47.00	94.00
[5.629,5.858)	3	0.06	6.00	50.00	100.00
Variable = setosa.Sepal.Width					
[2.277,2.587)	1	0.02	2.00	1.00	2.00
[2.587,2.896)	0	0.00	0.00	1.00	2.00
[2.896,3.206)	16	0.32	32.00	17.00	34.00
[3.206,3.515)	17	0.34	34.00	34.00	68.00
[3.515,3.825)	10	0.20	20.00	44.00	88.00
[3.825,4.134)	4	0.08	8.00	48.00	96.00
[4.134,4.444)	2	0.04	4.00	50.00	100.00
Variable = versicolor.Sepal.Length					
[4.851,5.168)	4	0.08	8.00	4.00	8.00
[5.168,5.485)	2	0.04	4.00	6.00	12.00
[5.485,5.802)	18	0.36	36.00	24.00	48.00
[5.802,6.119)	10	0.20	20.00	34.00	68.00
[6.119,6.436)	7	0.14	14.00	41.00	82.00
[6.436,6.753)	6	0.12	12.00	47.00	94.00
[6.753,7.07)	3	0.06	6.00	50.00	100.00
Variable = versicolor.Sepal.Width					
[1.98,2.188)	1	0.02	2.00	1.00	2.00
[2.188,2.395)	5	0.10	10.00	6.00	12.00
[2.395,2.603)	10	0.20	20.00	16.00	32.00
[2.603,2.811)	11	0.22	22.00	27.00	54.00
[2.811,3.019)	15	0.30	30.00	42.00	84.00
[3.019,3.226)	6	0.12	12.00	48.00	96.00
[3.226,3.434)	2	0.04	4.00	50.00	100.00
Variable = virginica.Sepal.Length					
[4.851,5.298)	1	0.02	2.00	1.00	2.00
[5.298,5.745)	2	0.04	4.00	3.00	6.00
[5.745,6.192)	8	0.16	16.00	11.00	22.00
[6.192,6.638)	17	0.34	34.00	28.00	56.00
[6.638,7.085)	10	0.20	20.00	38.00	76.00
[7.085,7.532)	6	0.12	12.00	44.00	88.00
[7.532,7.979)	6	0.12	12.00	50.00	100.00
Variable = virginica.Sepal.Width					

[2.178,2.415)	1	0.02	2.00	1.00	2.00
[2.415,2.652)	6	0.12	12.00	7.00	14.00
[2.652,2.889)	12	0.24	24.00	19.00	38.00
[2.889,3.127)	18	0.36	36.00	37.00	74.00
[3.127,3.364)	8	0.16	16.00	45.00	90.00
[3.364,3.601)	3	0.06	6.00	48.00	96.00
[3.601,3.838)	2	0.04	4.00	50.00	100.00

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## 5 Objects of class `fdt_cat`

```
set.seed(321)
t6 <- fdt_cat(sample(LETTERS[1:3],
                    replace = TRUE,
                    size = 30))

t6x <- xtable(t6)
print(t6x,
      table.placement = "H",
      include.rownames = FALSE)
```

Category	f	rf	rf(%)	cf	cf(%)
B	12	0.40	40.00	12	40.00
C	10	0.33	33.33	22	73.33
A	8	0.27	26.67	30	100.00

```
t61 <- fdt_cat(data.frame(c1 = sample(LETTERS[1:3],
                                    replace = TRUE,
                                    size = 10),
                        c2 = sample(letters[4:5],
                                    replace = TRUE,
                                    size = 10),
                        stringsAsFactors = TRUE))

t61x <- xtable(t61)
print(t61x,
      table.placement = "H",
      include.rownames = FALSE)
```

Category	f	rf	rf(%)	cf	cf(%)
A	5	0.50	50.00	5	50.00
B	3	0.30	30.00	8	80.00
C	2	0.20	20.00	10	100.00
e	6	0.60	60.00	6	60.00
d	4	0.40	40.00	10	100.00



## 6 Objects of class `fdt_cat.multiple` with subheadings

```
set.seed(654)
t62 <- fdt_cat(data.frame(c1 = sample(LETTERS[1:3],
                                   replace = TRUE,
                                   size = 20),
                        c2 = sample(letters[4:6],
                                   replace = TRUE,
                                   size = 20),
                        stringsAsFactors = TRUE))
attr(t62, "subheadings") <- paste0("Variable = ",
                                   names(t62))
print(xtable(t62),
      table.placement = "H")
```

	Category	f	rf	rf(%)	cf	cf(%)
Variable = c1						
1	A	8	0.40	40.00	8	40.00
2	B	6	0.30	30.00	14	70.00
3	C	6	0.30	30.00	20	100.00
Variable = c2						
4	d	7	0.35	35.00	7	35.00
5	e	7	0.35	35.00	14	70.00
6	f	6	0.30	30.00	20	100.00

## 7 Custom numeric formatting

```
print(xtable(t1,
            auto = FALSE,
            digits = c(0,
                      0,
                      0,
                      3,
                      2,
                      0,
                      2)),
      include.rownames = FALSE,
      sanitize.text.function = function(x) x,
      table.placement = "H")
```

Class limits	f	rf	rf(%)	cf	cf(%)
[4.3366,5.4558)	7	0.007	0.70	7	0.70
[5.4558,6.5749)	33	0.033	3.30	40	4.00
[6.5749,7.694)	86	0.086	8.60	126	12.60
[7.694,8.8131)	137	0.137	13.70	263	26.30
[8.8131,9.9322)	220	0.220	22.00	483	48.30
[9.9322,11.051)	221	0.221	22.10	704	70.40
[11.051,12.17)	163	0.163	16.30	867	86.70
[12.17,13.29)	77	0.077	7.70	944	94.40
[13.29,14.409)	39	0.039	3.90	983	98.30
[14.409,15.528)	16	0.016	1.60	999	99.90
[15.528,16.647)	1	0.001	0.10	1000	100.00

## 8 Table header in Portuguese

```
portugueseT <- c("Intervalo de classes",
  "f",
  "fr",
  "fr(%)",
  "fa",
  "fa(%)")

t7 <- t1$table
names(t7) <- portugueseT
t71 <- list(table = t7,
  breaks = t1$breaks)
class(t71) <- "fdt"
t7x <- xtable(t71)

print(t7x,
  table.placement = "H",
  include.rownames = FALSE,
  sanitize.text.function = function(x) x)
```

Intervalo de classes	f	fr	fr(%)	fa	fa(%)
[4.3366,5.4558)	7	0.01	0.70	7.00	0.70
[5.4558,6.5749)	33	0.03	3.30	40.00	4.00
[6.5749,7.694)	86	0.09	8.60	126.00	12.60
[7.694,8.8131)	137	0.14	13.70	263.00	26.30
[8.8131,9.9322)	220	0.22	22.00	483.00	48.30
[9.9322,11.051)	221	0.22	22.10	704.00	70.40
[11.051,12.17)	163	0.16	16.30	867.00	86.70
[12.17,13.29)	77	0.08	7.70	944.00	94.40
[13.29,14.409)	39	0.04	3.90	983.00	98.30
[14.409,15.528)	16	0.02	1.60	999.00	99.90
[15.528,16.647)	1	0.00	0.10	1000.00	100.00

## 9 Takeaways

- For a clean default layout, use `xtable()` followed by `print(..., include.rownames = FALSE)`.

- For custom class labels (delimiters or decimal pattern), combine class-string editing with `sanitize.text.function`.
- For wide or multi-table outputs, prefer `tabular.environment = "longtable"` and `floating = FALSE`.