LaTeX table for fdt objects

Authors:
José C. Faria
e Ivan B. Allaman

Customization in LaTeX:
José C. Faria

17 de abril de 2020

To elaborate a simple table.

```
> library(fdth)
> library(xtable)
> t1 <- fdt(rnorm(n=1e3,
+                 mean=10,
+                 sd=2),
+           x.round=3)
> t1x <- xtable(t1)
> t1x
```

	Class limits	f	rf	rf(\%)	cf	cf(\%)
1	$[3.9837,5.3224)$	11	0.01	1.10	11.00	1.10
2	$[5.3224,6.6611)$	32	0.03	3.20	43.00	4.30
3	$[6.6611,7.9998)$	104	0.10	10.40	147.00	14.70
4	$[7.9998,9.3386)$	191	0.19	19.10	338.00	33.80
5	$[9.3386,10.677)$	279	0.28	27.90	617.00	61.70
6	$[10.677,12.016)$	223	0.22	22.30	840.00	84.00
7	$[12.016,13.355)$	106	0.11	10.60	946.00	94.60
8	$[13.355,14.693)$	36	0.04	3.60	982.00	98.20
9	$[14.693,16.032)$	16	0.02	1.60	998.00	99.80
10	$[16.032,17.371)$	1	0.00	0.10	999.00	99.90
11	$[17.371,18.71)$	1	0.00	0.10	1000.00	100.00

The default is not good. Let's use the print function.

```
> print(t1x,
+       include.rownames=FALSE,
+       sanitize.text.function = function(x){x})
```

Class limits	f	rf	rf(%)	cf	cf(%)
$[3.9837, 5.3224)$	11	0.01	1.10	11.00	1.10
$[5.3224, 6.6611)$	32	0.03	3.20	43.00	4.30
$[6.6611, 7.9998)$	104	0.10	10.40	147.00	14.70
$[7.9998, 9.3386)$	191	0.19	19.10	338.00	33.80
$[9.3386, 10.677)$	279	0.28	27.90	617.00	61.70
$[10.677, 12.016)$	223	0.22	22.30	840.00	84.00
$[12.016, 13.355)$	106	0.11	10.60	946.00	94.60
$[13.355, 14.693)$	36	0.04	3.60	982.00	98.20
$[14.693, 16.032)$	16	0.02	1.60	998.00	99.80
$[16.032, 17.371)$	1	0.00	0.10	999.00	99.90
$[17.371, 18.71)$	1	0.00	0.10	1000.00	100.00

It's very good!

Substitute [and) by $\dashv$.

```
> newclass <- gsub("[$\\\\[\\\\)$]","",t1x[,1],perl=TRUE)
> t3x <- t1x
> t3x[,1] <- newclass
> print(t3x,
+       include.rownames=FALSE,
+       sanitize.text.function = function(x)gsub(",",
+                                                "$\\\\dashv$",
+                                                x),
+       table.placement='H')
```

Class limits	f	rf	rf(%)	cf	cf(%)
3.9837⊣5.3224	11	0.01	1.10	11.00	1.10
5.3224⊣6.6611	32	0.03	3.20	43.00	4.30
6.6611⊣7.9998	104	0.10	10.40	147.00	14.70
7.9998⊣9.3386	191	0.19	19.10	338.00	33.80
9.3386⊣10.677	279	0.28	27.90	617.00	61.70
10.677⊣12.016	223	0.22	22.30	840.00	84.00
12.016⊣13.355	106	0.11	10.60	946.00	94.60
13.355⊣14.693	36	0.04	3.60	982.00	98.20
14.693⊣16.032	16	0.02	1.60	998.00	99.80
16.032⊣17.371	1	0.00	0.10	999.00	99.90
17.371⊣18.71	1	0.00	0.10	1000.00	100.00

Standardizing the 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(%)
[03.98, 05.32)	11	0.01	1.10	11.00	1.10
[05.32, 06.66)	32	0.03	3.20	43.00	4.30
[06.66, 08.00)	104	0.10	10.40	147.00	14.70
[08.00, 09.34)	191	0.19	19.10	338.00	33.80
[09.34, 10.68)	279	0.28	27.90	617.00	61.70
[10.68, 12.02)	223	0.22	22.30	840.00	84.00
[12.02, 13.36)	106	0.11	10.60	946.00	94.60
[13.36, 14.69)	36	0.04	3.60	982.00	98.20
[14.69, 16.03)	16	0.02	1.60	998.00	99.80
[16.03, 17.37)	1	0.00	0.10	999.00	99.90
[17.37, 18.71)	1	0.00	0.10	1000.00	100.00

To objects of the ”fdt.multiple”class.

```
> t5 <- fdt(iris,
+           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 = setosa.Petal.Length						
15	$[0.99,1.123)$	2	0.04	4.00	2.00	4.00
16	$[1.123,1.255)$	2	0.04	4.00	4.00	8.00
17	$[1.255,1.388)$	7	0.14	14.00	11.00	22.00
18	$[1.388,1.521)$	26	0.52	52.00	37.00	74.00
19	$[1.521,1.654)$	7	0.14	14.00	44.00	88.00
20	$[1.654,1.786)$	4	0.08	8.00	48.00	96.00
21	$[1.786,1.919)$	2	0.04	4.00	50.00	100.00
Variable = setosa.Petal.Width						
22	$[0.099,0.1714)$	5	0.10	10.00	5.00	10.00
23	$[0.1714,0.2439)$	29	0.58	58.00	34.00	68.00
24	$[0.2439,0.3163)$	7	0.14	14.00	41.00	82.00
25	$[0.3163,0.3887)$	0	0.00	0.00	41.00	82.00
26	$[0.3887,0.4611)$	7	0.14	14.00	48.00	96.00
27	$[0.4611,0.5336)$	1	0.02	2.00	49.00	98.00
28	$[0.5336,0.606)$	1	0.02	2.00	50.00	100.00
Variable = versicolor.Sepal.Length						
29	$[4.851,5.168)$	4	0.08	8.00	4.00	8.00
30	$[5.168,5.485)$	2	0.04	4.00	6.00	12.00
31	$[5.485,5.802)$	18	0.36	36.00	24.00	48.00
32	$[5.802,6.119)$	10	0.20	20.00	34.00	68.00
33	$[6.119,6.436)$	7	0.14	14.00	41.00	82.00
34	$[6.436,6.753)$	6	0.12	12.00	47.00	94.00
35	$[6.753,7.07)$	3	0.06	6.00	50.00	100.00
Variable = versicolor.Sepal.Width						
36	$[1.98,2.188)$	1	0.02	2.00	1.00	2.00
37	$[2.188,2.395)$	5	0.10	10.00	6.00	12.00
38	$[2.395,2.603)$	10	0.20	20.00	16.00	32.00
39	$[2.603,2.811)$	11	0.22	22.00	27.00	54.00
40	$[2.811,3.019)$	15	0.30	30.00	42.00	84.00
41	$[3.019,3.226)$	6	0.12	12.00	48.00	96.00
42	$[3.226,3.434)$	2	0.04	4.00	50.00	100.00
Variable = versicolor.Petal.Length						
43	$[2.97,3.282)$	1	0.02	2.00	1.00	2.00
44	$[3.282,3.593)$	4	0.08	8.00	5.00	10.00
45	$[3.593,3.905)$	6	0.12	12.00	11.00	22.00
46	$[3.905,4.216)$	12	0.24	24.00	23.00	46.00
47	$[4.216,4.528)$	13	0.26	26.00	36.00	72.00
48	$[4.528,4.839)$	10	0.20	20.00	46.00	92.00
49	$[4.839,5.151)$	4	0.08	8.00	50.00	100.00
Variable = versicolor.Petal.Width						
50	$[0.99,1.108)$	10	0.20	20.00	10.00	20.00
51	$[1.108,1.227)$	5	0.10	10.00	15.00	30.00
52	$[1.227,1.345)$	13	0.26	26.00	28.00	56.00
53	$[1.345,1.463)$	7	0.14	14.00	35.00	70.00
54	$[1.463,1.581)$	10	0.20	20.00	45.00	90.00
55	$[1.581,1.7)$	3	0.06	6.00	48.00	96.00

Is not good! It's necessary to use the longtable begin.

```
> 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 = setosa.Petal.Length					
[0.99, 1.123)	2	0.04	4.00	2.00	4.00
[1.123, 1.255)	2	0.04	4.00	4.00	8.00
[1.255, 1.388)	7	0.14	14.00	11.00	22.00
[1.388, 1.521)	26	0.52	52.00	37.00	74.00
[1.521, 1.654)	7	0.14	14.00	44.00	88.00
[1.654, 1.786)	4	0.08	8.00	48.00	96.00
[1.786, 1.919)	2	0.04	4.00	50.00	100.00
Variable = setosa.Petal.Width					
[0.099, 0.1714)	5	0.10	10.00	5.00	10.00
[0.1714, 0.2439)	29	0.58	58.00	34.00	68.00
[0.2439, 0.3163)	7	0.14	14.00	41.00	82.00
[0.3163, 0.3887)	0	0.00	0.00	41.00	82.00
[0.3887, 0.4611)	7	0.14	14.00	48.00	96.00
[0.4611, 0.5336)	1	0.02	2.00	49.00	98.00
[0.5336, 0.606)	1	0.02	2.00	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 = versicolor.Petal.Length					
[2.97, 3.282)	1	0.02	2.00	1.00	2.00
[3.282, 3.593)	4	0.08	8.00	5.00	10.00
[3.593, 3.905)	6	0.12	12.00	11.00	22.00
[3.905, 4.216)	12	0.24	24.00	23.00	46.00
[4.216, 4.528)	13	0.26	26.00	36.00	72.00
[4.528, 4.839)	10	0.20	20.00	46.00	92.00
[4.839, 5.151)	4	0.08	8.00	50.00	100.00
Variable = versicolor.Petal.Width					
[0.99, 1.108)	10	0.20	20.00	10.00	20.00
[1.108, 1.227)	5	0.10	10.00	15.00	30.00
[1.227, 1.345)	13	0.26	26.00	28.00	56.00
[1.345, 1.463)	7	0.14	14.00	35.00	70.00
[1.463, 1.581)	10	0.20	20.00	45.00	90.00
[1.581, 1.7)	3	0.06	6.00	48.00	96.00
[1.7, 1.818)	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
Variable = virginica.Petal.Length					
[4.455, 4.814)	3	0.06	6.00	3.00	6.00
[4.814, 5.173)	13	0.26	26.00	16.00	32.00
[5.173, 5.532)	9	0.18	18.00	25.00	50.00
[5.532, 5.892)	12	0.24	24.00	37.00	74.00
[5.892, 6.251)	7	0.14	14.00	44.00	88.00
[6.251, 6.61)	3	0.06	6.00	47.00	94.00
[6.61, 6.969)	3	0.06	6.00	50.00	100.00
Variable = virginica.Petal.Width					
[1.386, 1.549)	3	0.06	6.00	3.00	6.00
[1.549, 1.711)	2	0.04	4.00	5.00	10.00
[1.711, 1.874)	11	0.22	22.00	16.00	32.00
[1.874, 2.037)	11	0.22	22.00	27.00	54.00
[2.037, 2.2)	6	0.12	12.00	33.00	66.00
[2.2, 2.362)	11	0.22	22.00	44.00	88.00
[2.362, 2.525)	6	0.12	12.00	50.00	100.00

To objects of the "fdt_cat"class.

```
> 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	14	0.47	46.67	14	46.67
A	8	0.27	26.67	22	73.33
C	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(%)
C	4	0.40	40.00	4	40.00
A	3	0.30	30.00	7	70.00
B	3	0.30	30.00	10	100.00
d	6	0.60	60.00	6	60.00
e	4	0.40	40.00	10	100.00

```
>
```

Title of the table 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(%)
[3.9837, 5.3224)	11	0.01	1.10	11.00	1.10
[5.3224, 6.6611)	32	0.03	3.20	43.00	4.30
[6.6611, 7.9998)	104	0.10	10.40	147.00	14.70
[7.9998, 9.3386)	191	0.19	19.10	338.00	33.80
[9.3386, 10.677)	279	0.28	27.90	617.00	61.70
[10.677, 12.016)	223	0.22	22.30	840.00	84.00
[12.016, 13.355)	106	0.11	10.60	946.00	94.60
[13.355, 14.693)	36	0.04	3.60	982.00	98.20
[14.693, 16.032)	16	0.02	1.60	998.00	99.80
[16.032, 17.371)	1	0.00	0.10	999.00	99.90
[17.371, 18.71)	1	0.00	0.10	1000.00	100.00