

# S3 class `cr_group` and its `latex` method

Henrik Renlund

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## 0 Excuses, excuses

This vignette is a mess...

## 1 Generation of data

```
nr <- 7; nc <- 5; m <- matrix(1:(nr*nc), nrow=nr, byrow=TRUE)
rownames(m) <- letters[1:nr]
colnames(m) <- LETTERS[1:nc]
rg <- rep(c("foo", "bar", "baz"), length.out=nr)
cg <- rep(c("Fuzzy", "Busy"), length.out=nc)
M <- cr_group(m, rg, cg)
rm(nr, nc)
```

## 2 Examples

Generate Table 1:

Table 1: Example 1: default settings

	<b>Fuzzy</b>			<b>Busy</b>	
	A	B	C	D	E
<b>foo</b>					
a	1	3	5	2	4
d	16	18	20	17	19
g	31	33	35	32	34
<b>bar</b>					
b	6	8	10	7	9
e	21	23	25	22	24
<b>baz</b>					
c	11	13	15	12	14
f	26	28	30	27	29

Table 2: Example 2: no 'rgroup' attribute

	<b>Fuzzy</b>			<b>Busy</b>	
	A	B	C	D	E
a	1	3	5	2	4
b	6	8	10	7	9
c	11	13	15	12	14
d	16	18	20	17	19
e	21	23	25	22	24
f	26	28	30	27	29
g	31	33	35	32	34

```
dummy <- latex(object=M, caption="Example 1: default settings", label="tab:1")
```

Generate Table 2:

```
M2 <- M; attr(M2, "rgroup") <- NULL
dummy <- latex(M2, caption="Example 2: no 'rgroup' attribute", label="tab:2")
```

Generate Table 3:

```
M2 <- M; attr(M2, "cgroup") <- NULL
dummy <- latex(M2, caption="Example 3: no 'cgroup' attribute", label="tab:3")
```

Generate Table 4:

Table 3: Example 3: no 'cgroup' attribute

	A	B	C	D	E
<b>foo</b>					
a	1	2	3	4	5
d	16	17	18	19	20
g	31	32	33	34	35
<b>bar</b>					
b	6	7	8	9	10
e	21	22	23	24	25
<b>baz</b>					
c	11	12	13	14	15
f	26	27	28	29	30

Table 4: Example 4: rgroup alphabetically

	<b>Fuzzy</b>			<b>Busy</b>	
	A	B	C	D	E
<b>bar</b>					
b	6	8	10	7	9
e	21	23	25	22	24
<b>baz</b>					
c	11	13	15	12	14
f	26	28	30	27	29
<b>foo</b>					
a	1	3	5	2	4
d	16	18	20	17	19
g	31	33	35	32	34

```
dummy <- latex(M, r.perm='alphabetical', caption="Example 4: rgroup alphabetically", label=)
```

Generate Table 4:

```
dummy <- latex(M, r.perm=c(3,2,1), c.perm='alphabetical', caption="Example 5: cgroup alphab
```

### 3 Using cr\_groups to make cr\_groups objects

Table 5: Example 5: cgroup alphabetically, rgroup permuted

	Busy		Fuzzy		
	A	B	C	D	E
<b>foo</b>					
a	2	4	1	3	5
d	17	19	16	18	20
g	32	34	31	33	35
<b>baz</b>					
c	12	14	11	13	15
f	27	29	26	28	30
<b>bar</b>					
b	7	9	6	8	10
e	22	24	21	23	25

```
n <- 7
DF <- data.frame(
  x.man=1:n,
  x.fem=n:1,
  y.man=-(1:n),
  y.fem=-(n:1)
)
rownames(DF) <- sprintf("Ind: %d", 1:n)
crDF <- cr_group(
  x=DF,
  rgroup=rep(LETTERS[1:3],len=7),
  cgroup=rep(c("gr-A", "gr-B"), each=2),
  colnames = gsub("[x|y]\\.", "", names(DF))
)

str(crDF)

## An object of class 'cr_group' which contains:
## 'data.frame': 7 obs. of 4 variables:
## $ x.man: int 1 2 3 4 5 6 7
## $ x.fem: int 7 6 5 4 3 2 1
## $ y.man: int -1 -2 -3 -4 -5 -6 -7
## $ y.fem: int -7 -6 -5 -4 -3 -2 -1
## - attr(*, "rgroup")= chr "A" "B" "C" "A" ...
## - attr(*, "cgroup")= chr "gr-A" "gr-A" "gr-B" "gr-B"
## - attr(*, "colnames")= chr "man" "fem" "man" "fem"

str(crDF[7:1,c(1,3,2,4)])
```

```
## An object of class 'cr_group' which contains:
## 'data.frame': 7 obs. of 4 variables:
## $ x.man: int 7 6 5 4 3 2 1
## $ y.man: int -7 -6 -5 -4 -3 -2 -1
## $ x.fem: int 1 2 3 4 5 6 7
## $ y.fem: int -1 -2 -3 -4 -5 -6 -7
## - attr(*, "rgroup")= chr "A" "C" "B" "A" ...
## - attr(*, "cgroup")= chr "gr-A" "gr-B" "gr-A" "gr-B"
## - attr(*, "colnames")= chr "man" "man" "fem" "fem"

M <- matrix(1:12, nrow=4)
rownames(M) <- sprintf("Row %d", 1:4)
colnames(M) <- sprintf("Col %d", 1:3)
(crM <- cr_group(x=M, rgroup=LETTERS[1:4], cgroup=letters[1:3]))

##          Col 1 Col 2 Col 3
## Row 1         1     5     9
## Row 2         2     6    10
## Row 3         3     7    11
## Row 4         4     8    12
## attr("rgroup")
## [1] "A" "B" "C" "D"
## attr("cgroup")
## [1] "a" "b" "c"
## attr("class")
## [1] "cr_group" "matrix"

crM[4:1,c(3,1,2)]

##          Col 3 Col 1 Col 2
## Row 4        12     4     8
## Row 3        11     3     7
## Row 2        10     2     6
## Row 1         9     1     5
## attr("rgroup")
## [1] "D" "C" "B" "A"
## attr("cgroup")
## [1] "c" "a" "b"
## attr("class")
## [1] "cr_group" "matrix"
```

```
dummy <- latex(crDF, caption="'latex' on 'crDF'", label="tab:a1", colheads=TRUE)
```

Table 6: 'latex' on 'crDF'

	gr-A		gr-B	
	man	fem	man	fem
<b>A</b>				
Ind: 1	1	7	-1	-7
Ind: 4	4	4	-4	-4
Ind: 7	7	1	-7	-1
<b>B</b>				
Ind: 2	2	6	-2	-6
Ind: 5	5	3	-5	-3
<b>C</b>				
Ind: 3	3	5	-3	-5
Ind: 6	6	2	-6	-2

Table 7: 'latex' on 'crM'

	a	b	c
	Col 1	Col 2	Col 3
<b>A</b>			
Row 1	1	5	9
<b>B</b>			
Row 2	2	6	10
<b>C</b>			
Row 3	3	7	11
<b>D</b>			
Row 4	4	8	12

```
dummy <- latex(crM, caption="'latex' on 'crM'", label="tab:a2", colheads=TRUE)
```

## 4 Errors, warnings, and such

**N.B.** It is difficult to generate this vignette with devtools; it seems that the code should not generate errors - therefore the code is commented out.

Generate an error:

```
# M2 <- M; attr(M2, "cgroup") <- NULL; attr(M2, "rgroup") <- NULL
# dummy <- latex(M2)
```

Generate an error:

```
# M2 <- M; class(M2) <- NULL  
# dummy <- latex.cr_group(M2)
```

Generate a message (output hidden):

```
# dummy <- latex(M, r.perm='as')
```

Generate a message (output hidden):

```
# dummy <- latex(M, r.perm='As.I')
```

Generate a message (output hidden):

```
# dummy <- latex(M, r.perm='pHa')
```

Generate an error:

```
# dummy <- latex(M, r.perm='alfa')
```