The xtable gallery

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with small contributions from others

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1 Summary

This document gives a gallery of tables which can be made by using the `xtable` package to create LaTeX output. It doubles as a regression check for the package.

```
> library(xtable)
```

2 Gallery

2.1 Data frame

Load example dataset

```
> data(tli)
> ## Demonstrate data.frame
> tli.table <- xtable(tli[1:10,])
> digits(tli.table)[c(2,6)] <- 0

> print(tli.table,floating=FALSE)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

2.2 Matrix

```
> design.matrix <- model.matrix(~ sex*grade, data=tli[1:10,])
> design.table <- xtable(design.matrix)

> print(design.table,floating=FALSE)
```

	(Intercept)	sexM	grade	sexM:grade
1	1.00	1.00	6.00	6.00
2	1.00	1.00	7.00	7.00
3	1.00	0.00	5.00	0.00
4	1.00	1.00	3.00	3.00
5	1.00	1.00	8.00	8.00
6	1.00	1.00	5.00	5.00
7	1.00	0.00	8.00	0.00
8	1.00	1.00	4.00	4.00
9	1.00	1.00	6.00	6.00
10	1.00	1.00	7.00	7.00

2.3 aov

```
> fm1 <- aov(tlimth ~ sex + ethnicty + grade + disadvg, data=tli)
> fm1.table <- xtable(fm1)

> print(fm1.table,floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
sex	1	75.37	75.37	0.38	0.5417
ethnicty	3	2572.15	857.38	4.27	0.0072
grade	1	36.31	36.31	0.18	0.6717
disadvg	1	59.30	59.30	0.30	0.5882
Residuals	93	18682.87	200.89		

2.4 lm

```
> fm2 <- lm(tlimth ~ sex*ethnicty, data=tli)
> fm2.table <- xtable(fm2)

> print(fm2.table,floating=FALSE)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	73.6364	4.2502	17.33	0.0000
sexM	-1.6364	5.8842	-0.28	0.7816
ethnictyHISPANIC	-9.7614	6.5501	-1.49	0.1395
ethnictyOTHER	15.8636	10.8360	1.46	0.1466
ethnictyWHITE	4.7970	4.9687	0.97	0.3368
sexM:ethnictyHISPANIC	10.6780	8.7190	1.22	0.2238
sexM:ethnictyWHITE	5.1230	7.0140	0.73	0.4670

2.4.1 anova object

```
> print(xtable(anova(fm2)),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
sex	1	75.37	75.37	0.38	0.5395
ethnicty	3	2572.15	857.38	4.31	0.0068
sex:ethnicty	2	298.43	149.22	0.75	0.4748
Residuals	93	18480.04	198.71		

2.4.2 Another anova object

```
> fm2b <- lm(tlimth ~ ethnicty, data=tli)

> print(xtable(anova(fm2b,fm2)),floating=FALSE)
```

	Res.Df	RSS	Df	Sum of Sq	F	Pr(>F)
1	96	19053.59				
2	93	18480.04	3	573.55	0.96	0.4141

2.5 glm

```
> ## Demonstrate glm
> fm3 <- glm(disadvg ~ ethnicty*grade, data=tli, family=binomial())
> fm3.table <- xtable(fm3)

> print(fm3.table,floating=FALSE)
```

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	3.1888	1.5966	2.00	0.0458
ethnictyHISPANIC	-0.2848	2.4808	-0.11	0.9086
ethnictyOTHER	212.1701	22122.7093	0.01	0.9923
ethnictyWHITE	-8.8150	3.3355	-2.64	0.0082
grade	-0.5308	0.2892	-1.84	0.0665
ethnictyHISPANIC:grade	0.2448	0.4357	0.56	0.5742
ethnictyOTHER:grade	-32.6014	3393.4687	-0.01	0.9923
ethnictyWHITE:grade	1.0171	0.5185	1.96	0.0498

2.5.1 anova object

```
> print(xtable(anova(fm3)),floating=FALSE)
```

	Df	Deviance	Resid. Df	Resid. Dev
NULL			99	129.49
ethnicty	3	47.24	96	82.25
grade	1	1.73	95	80.52
ethnicty:grade	3	7.20	92	73.32

2.6 More aov

```
> ## Demonstrate aov
> ## Taken from help(aov) in R 1.1.1
> ## From Venables and Ripley (1997) p.210.
> N <- c(0,1,0,1,1,1,0,0,0,1,1,0,1,1,0,0,1,0,1,0,1,1,0,0)
> P <- c(1,1,0,0,0,1,0,1,1,1,0,0,0,1,0,1,1,0,0,1,0,1,1,0)
> K <- c(1,0,0,1,0,1,1,0,0,1,0,1,0,1,1,0,0,0,1,1,1,0,1,0)
> yield <- c(49.5,62.8,46.8,57.0,59.8,58.5,55.5,56.0,62.8,55.8,69.5,55.0,
+            62.0,48.8,45.5,44.2,52.0,51.5,49.8,48.8,57.2,59.0,53.2,56.0)
> npk <- data.frame(block=gl(6,4), N=factor(N), P=factor(P), K=factor(K), yield=yield)
> npk.aov <- aov(yield ~ block + N*P*K, npk)
> op <- options(contrasts=c("contr.helmert", "contr.treatment"))
> npk.aovE <- aov(yield ~  N*P*K + Error(block), npk)
> options(op)
> #summary(npk.aov)

> print(xtable(npk.aov),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
block	5	343.30	68.66	4.45	0.0159
N	1	189.28	189.28	12.26	0.0044
P	1	8.40	8.40	0.54	0.4749
K	1	95.20	95.20	6.17	0.0288
N:P	1	21.28	21.28	1.38	0.2632
N:K	1	33.13	33.13	2.15	0.1686
P:K	1	0.48	0.48	0.03	0.8628
Residuals	12	185.29	15.44		

2.6.1 anova object

```
> print(xtable(anova(npk.aov)),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
block	5	343.30	68.66	4.45	0.0159
N	1	189.28	189.28	12.26	0.0044
P	1	8.40	8.40	0.54	0.4749
K	1	95.20	95.20	6.17	0.0288
N:P	1	21.28	21.28	1.38	0.2632
N:K	1	33.13	33.13	2.15	0.1686
P:K	1	0.48	0.48	0.03	0.8628
Residuals	12	185.29	15.44		

2.6.2 Another anova object

```
> print(xtable(summary(npk.aov)),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
block	5	343.30	68.66	4.45	0.0159
N	1	189.28	189.28	12.26	0.0044
P	1	8.40	8.40	0.54	0.4749
K	1	95.20	95.20	6.17	0.0288
N:P	1	21.28	21.28	1.38	0.2632
N:K	1	33.13	33.13	2.15	0.1686
P:K	1	0.48	0.48	0.03	0.8628
Residuals	12	185.29	15.44		

```
> #summary(npk.aovE)

> print(xtable(npk.aovE),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
N:P:K	1	37.00	37.00	0.48	0.5252
Residuals	4	306.29	76.57		
N	1	189.28	189.28	12.26	0.0044
P	1	8.40	8.40	0.54	0.4749
K	1	95.20	95.20	6.17	0.0288
N:P	1	21.28	21.28	1.38	0.2632
N:K	1	33.14	33.14	2.15	0.1686
P:K	1	0.48	0.48	0.03	0.8628
Residuals1	12	185.29	15.44		

```
> print(xtable(summary(npk.aovE)),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
N:P:K	1	37.00	37.00	0.48	0.5252
Residuals	4	306.29	76.57		
N	1	189.28	189.28	12.26	0.0044
P	1	8.40	8.40	0.54	0.4749
K	1	95.20	95.20	6.17	0.0288
N:P	1	21.28	21.28	1.38	0.2632
N:K	1	33.14	33.14	2.15	0.1686
P:K	1	0.48	0.48	0.03	0.8628
Residuals1	12	185.29	15.44		

2.7 More lm

```
> ## Demonstrate lm
> ## Taken from help(lm) in R 1.1.1
> ## Annette Dobson (1990) "An Introduction to Generalized Linear Models".
> ## Page 9: Plant Weight Data.
> ctl <- c(4.17,5.58,5.18,6.11,4.50,4.61,5.17,4.53,5.33,5.14)
> trt <- c(4.81,4.17,4.41,3.59,5.87,3.83,6.03,4.89,4.32,4.69)
> group <- gl(2,10,20, labels=c("Ctl","Trt"))
```

```
> weight <- c(ctl, trt)
> lm.D9 <- lm(weight ~ group)

> print(xtable(lm.D9),floating=FALSE)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	5.0320	0.2202	22.85	0.0000
groupTrt	-0.3710	0.3114	-1.19	0.2490

```
> print(xtable(anova(lm.D9)),floating=FALSE)
```

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
group	1	0.69	0.69	1.42	0.2490
Residuals	18	8.73	0.48		

2.8 More glm

```
> ## Demonstrate glm
> ## Taken from help(glm) in R 1.1.1
> ## Annette Dobson (1990) "An Introduction to Generalized Linear Models".
> ## Page 93: Randomized Controlled Trial :
> counts <- c(18,17,15,20,10,20,25,13,12)
> outcome <- gl(3,1,9)
> treatment <- gl(3,3)
> d.AD <- data.frame(treatment, outcome, counts)
> glm.D93 <- glm(counts ~ outcome + treatment, family=poisson())

> print(xtable(glm.D93,align="r|llrc"),floating=FALSE)
```

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	3.0445	0.1709	17.81	0.0000
outcome2	-0.4543	0.2022	-2.25	0.0246
outcome3	-0.2930	0.1927	-1.52	0.1285
treatment2	0.0000	0.2000	0.00	1.0000
treatment3	0.0000	0.2000	0.00	1.0000

2.9 prcomp

```
> if(require(stats,quietly=TRUE)) {
+   ## Demonstrate prcomp
+   ## Taken from help(prcomp) in mva package of R 1.1.1
+   data(USArrests)
+   pr1 <- prcomp(USArrests)
+ }

> if(require(stats,quietly=TRUE)) {
+   print(xtable(pr1),floating=FALSE)
+ }
```

	PC1	PC2	PC3	PC4
Murder	0.0417	-0.0448	0.0799	-0.9949
Assault	0.9952	-0.0588	-0.0676	0.0389
UrbanPop	0.0463	0.9769	-0.2005	-0.0582
Rape	0.0752	0.2007	0.9741	0.0723

```
>   print(xtable(summary(pr1)),floating=FALSE)
```

	PC1	PC2	PC3	PC4
Standard deviation	83.7324	14.2124	6.4894	2.4828
Proportion of Variance	0.9655	0.0278	0.0058	0.0008
Cumulative Proportion	0.9655	0.9933	0.9991	1.0000

```
> #  ## Demonstrate princomp
> #  ## Taken from help(princomp) in mva package of R 1.1.1
> #  pr2 <- princomp(USArrests)
> #  print(xtable(pr2))
```

2.10 Time series

```
> temp.ts <- ts(cumsum(1+round(rnorm(100), 0)), start = c(1954, 7), frequency=12)
>    temp.table <- xtable(temp.ts,digits=0)
>     caption(temp.table) <- "Time series example"
>     print(temp.table,floating=FALSE)
```

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1954							0	0	2	2	4	5
1955	7	6	6	8	9	11	12	15	16	19	20	21
1956	22	25	26	28	29	30	30	30	31	30	31	32
1957	33	33	34	35	36	37	38	37	37	37	37	38
1958	39	42	43	44	43	46	48	48	49	52	54	56
1959	56	59	61	60	61	62	63	63	64	64	66	67
1960	66	65	66	68	67	68	70	72	74	75	75	75
1961	78	80	83	84	85	84	86	89	88	88	89	88
1962	89	90	90	90	91	92	94	98	99	99		

3 Sanitization

```
> insane <- data.frame(Name=c("Ampersand","Greater than","Less than","Underscore","Per cent'
+                                  Character = I(c("&",">",                "<",
> colnames(insane)[2] <- paste(insane[,2],collapse="")
> print( xtable(insane))
```

Sometimes you might want to have your own sanitization function

```
> wanttex <- xtable(data.frame( label=paste("Value_is $10^{-",1:3,"}$",sep="")))
> print(wanttex,sanitize.text.function=function(str)gsub("_","\\_",str,fixed=TRUE))
```

	Name	&><_%$\#^~{}
1	Ampersand	&
2	Greater than	>
3	Less than	<
4	Underscore	_
5	Per cent	%
6	Dollar	$
7	Backslash	\
8	Hash	#
9	Caret	^
10	Tilde	~
11	Left brace	{
12	Right brace	}

	label
1	Value_is 10^{-1}
2	Value_is 10^{-2}
3	Value_is 10^{-3}

3.1 Markup in tables

Markup can be kept in tables, including column and row names, by using a custom sanitize.text.function:

```
> mat <- round(matrix(c(0.9, 0.89, 200, 0.045, 2.0), c(1, 5)), 4)
> rownames(mat) <- "$y_{t-1}$"
> colnames(mat) <- c("$R^2$", "$\\bar{R}^2$", "F-stat", "S.E.E", "DW")
> mat <- xtable(mat)

> print(mat, sanitize.text.function = function(x){x})
```

	R^2	$\bar{R}^2$	F-stat	S.E.E	DW
y_{t-1}	0.90	0.89	200.00	0.04	2.00

You can also have sanitize functions that are specific to column or row names. In the table below, the row name is not sanitized but column names and table elements are:

```
> money <- matrix(c("$1,000","$900","$100"),ncol=3,dimnames=list("$\\alpha$",c("Income (US$)
> print(xtable(money),sanitize.rownames.function=function(x) {x})
```

4 Format examples

4.1 Adding a centering environment

```
>    print(xtable(lm.D9,caption="\\tt latex.environments=NULL"),latex.environments=NULL)
```

	Income (US$)	Expenses (US$)	Profit (US$)
α	$1,000	$900	$100

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	5.0320	0.2202	22.85	0.0000
groupTrt	-0.3710	0.3114	-1.19	0.2490

Table 1: `latex.environments=NULL`

```
>     print(xtable(lm.D9,caption="\\tt latex.environments=\"\""),latex.environments="")
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	5.0320	0.2202	22.85	0.0000
groupTrt	-0.3710	0.3114	-1.19	0.2490

Table 2: `latex.environments=""`

```
>     print(xtable(lm.D9,caption="\\tt latex.environments=\"center\""),latex.environments="c
```

4.2 Column alignment

```
> tli.table <- xtable(tli[1:10,])

> align(tli.table) <- rep("r",6)

> print(tli.table,floating=FALSE)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.2.1 Single string and column lines

```
> align(tli.table) <- "|rrl|l|lr|"

> print(tli.table,floating=FALSE)
```

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	5.0320	0.2202	22.85	0.0000
groupTrt	-0.3710	0.3114	-1.19	0.2490

Table 3: `latex.environments="center"`

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.2.2 Fixed width columns

```
> align(tli.table) <- "|rr|lp{3cm}l|r|"

> print(tli.table,floating=FALSE)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.3 Significant digits

Specify with a single argument

```
> digits(tli.table) <- 3

> print(tli.table,floating=FALSE,)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

or one for each column, counting the row names

```
> digits(tli.table) <- 1:(ncol(tli)+1)

> print(tli.table,floating=FALSE,)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

or as a full matrix

```
> digits(tli.table) <- matrix( 0:4, nrow = 10, ncol = ncol(tli)+1 )

> print(tli.table,floating=FALSE,)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.4 Suppress row names

```
> print((tli.table),include.rownames=FALSE,floating=FALSE)
```

grade	sex	disadvg	ethnicty	tlimth
6	M	YES	HISPANIC	43
7	M	NO	BLACK	88
5	F	YES	HISPANIC	34
3	M	YES	HISPANIC	65
8	M	YES	WHITE	75
5	M	NO	BLACK	74
8	F	YES	HISPANIC	72
4	M	YES	BLACK	79
6	M	NO	WHITE	88
7	M	YES	HISPANIC	87

If you want a vertical line on the left, you need to change the align attribute.

```
> align(tli.table) <- "|r|r|lp{3cm}l|r|"

> print((tli.table),include.rownames=FALSE,floating=FALSE)
```

grade	sex	disadvg	ethnicty	tlimth
6	M	YES	HISPANIC	43
7	M	NO	BLACK	88
5	F	YES	HISPANIC	34
3	M	YES	HISPANIC	65
8	M	YES	WHITE	75
5	M	NO	BLACK	74
8	F	YES	HISPANIC	72
4	M	YES	BLACK	79
6	M	NO	WHITE	88
7	M	YES	HISPANIC	87

Revert the alignment to what is was before.

```
> align(tli.table) <- "|rr|lp{3cm}l|r|"
```

4.5 Suppress column names

```
> print((tli.table),include.colnames=FALSE,floating=FALSE)
```

1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

Note the doubled header lines which can be suppressed with, eg,

```
> print(tli.table,include.colnames=FALSE,floating=FALSE,hline.after=c(0,nrow(tli.table)))
```

1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.6 Suppress row and column names

```
> print((tli.table),include.colnames=FALSE,include.rownames=FALSE,floating=FALSE)
```

6	M	YES	HISPANIC	43
7	M	NO	BLACK	88
5	F	YES	HISPANIC	34
3	M	YES	HISPANIC	65
8	M	YES	WHITE	75
5	M	NO	BLACK	74
8	F	YES	HISPANIC	72
4	M	YES	BLACK	79
6	M	NO	WHITE	88
7	M	YES	HISPANIC	87

4.7 Rotate row and column names

The `rotate.rownames` and `rotate.colnames` arguments can be used to rotate the row and/or column names.

```
> print((tli.table),rotate.rownames=TRUE,rotate.colnames=TRUE)
```

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.8 Horizontal lines

4.8.1 Line locations

Use the `hline.after` argument to specify the position of the horizontal lines.

```
> print(xtable(anova(glm.D93)),hline.after=c(1),floating=FALSE)
```

	Df	Deviance	Resid. Df	Resid. Dev
NULL			8	10.58
outcome	2	5.45	6	5.13
treatment	2	0.00	4	5.13

4.8.2 Line styles

The LaTeXpackage `booktabs` can be used to specify different line style tags for top, middle, and bottom lines. Specifying `booktabs = TRUE` will lead to separate tags being generated for the three line types.

Insert `\usepackage{booktabs}` in your LaTeXpreamble and define the `toprule`, `midrule`, and `bottomrule` tags to specify the line styles.

```
> print(tli.table , booktabs=TRUE)
```

4.9 Table-level LaTeX

```
> print(xtable(anova(glm.D93)),size="small",floating=FALSE)
```

	Df	Deviance	Resid. Df	Resid. Dev
NULL			8	10.58
outcome	2	5.45	6	5.13
treatment	2	0.00	4	5.13

	grade	sex	disadvg	ethnicty	tlimth
1	6	M	YES	HISPANIC	43
2	7	M	NO	BLACK	88
3	5	F	YES	HISPANIC	34
4	3	M	YES	HISPANIC	65
5	8	M	YES	WHITE	75
6	5	M	NO	BLACK	74
7	8	F	YES	HISPANIC	72
8	4	M	YES	BLACK	79
9	6	M	NO	WHITE	88
10	7	M	YES	HISPANIC	87

4.10 Long tables

Remember to insert `\usepackage{longtable}` in your LaTeXpreamble.

```
> ## Demonstration of longtable support.
> x <- matrix(rnorm(1000), ncol = 10)
> x.big <- xtable(x,label='tabbig',
+         caption='Example of longtable spanning several pages')

> print(x.big,tabular.environment='longtable',floating=FALSE)
```

	1	2	3	4	5	6	7	8	9	10
1	-1.42	1.39	0.35	-0.17	0.81	-0.81	0.19	-0.61	0.78	-0.70
2	1.65	2.38	-0.09	-1.36	-0.20	0.02	-1.55	0.08	-0.32	-1.64
3	-1.01	-0.29	-1.56	1.05	2.20	-0.86	0.31	0.74	0.31	0.04
4	-2.20	-0.24	-0.00	-1.44	-2.63	0.14	1.11	1.47	-0.43	0.12
5	-2.00	-1.29	0.27	-0.85	-0.50	-0.82	-1.55	-0.19	-2.00	-0.47
6	-1.64	0.68	-0.51	0.84	0.42	-0.91	-0.76	1.99	-0.39	0.32
7	0.85	-0.31	1.50	0.71	0.42	1.78	0.67	0.83	0.17	0.77
8	-0.75	1.28	2.50	1.49	-0.23	-0.06	0.02	-1.02	-1.41	0.45
9	0.94	-0.43	-0.58	-0.40	1.59	0.60	-0.22	-0.49	0.55	0.25
10	-0.39	-0.49	-1.47	-0.31	-0.13	-0.91	0.02	0.31	-0.49	-0.90
11	0.73	1.77	0.62	0.16	-0.57	0.68	0.98	0.75	0.46	0.26
12	0.84	1.27	0.99	0.42	-0.25	-0.22	0.27	0.51	-0.69	-0.59
13	-0.02	-0.50	-1.12	1.48	3.12	1.10	-1.31	-0.08	-2.27	0.35
14	-1.19	0.09	0.36	-0.92	0.77	1.06	-0.81	-0.62	-0.43	1.16
15	0.74	-0.42	-0.45	0.40	1.25	-0.46	0.67	-1.32	1.46	1.40
16	-0.83	0.66	-0.10	-0.62	0.04	1.88	0.11	1.07	1.53	-1.40
17	0.11	-1.37	0.83	-1.56	1.51	1.58	-0.48	1.02	-0.01	0.37
18	0.67	0.56	1.40	2.11	0.58	0.48	-0.22	-1.38	-0.91	-0.34
19	0.49	-1.82	0.81	1.40	1.41	0.32	1.41	2.46	-1.35	0.57
20	-0.64	-0.74	-0.95	0.63	-1.26	-0.94	-0.22	1.66	0.56	-0.16

21	-1.52	0.49	-0.93	-0.07	0.45	0.36	0.38	-1.80	-0.43	-0.90
22	-1.01	-0.32	0.20	0.11	-1.61	0.12	0.55	1.21	0.77	-1.58
23	0.42	0.34	1.20	0.62	0.14	0.23	-0.20	2.10	0.06	-0.09
24	-0.58	1.63	0.37	0.34	-1.72	0.52	-0.41	1.98	1.73	0.66
25	-0.22	0.01	-1.29	-1.57	0.56	2.13	-0.08	0.82	-0.14	-1.73
26	-0.60	-0.35	0.63	-0.06	-0.19	1.50	0.03	-0.66	1.09	-0.34
27	-1.04	-1.04	1.35	-1.17	-0.79	-0.33	0.49	1.01	0.91	-2.19
28	1.83	1.58	0.34	0.37	-0.90	0.20	-0.54	0.28	-0.35	1.27
29	1.61	-1.05	1.12	-0.53	0.62	0.02	1.69	-0.54	-0.99	0.80
30	-1.70	-0.41	2.35	-0.22	0.25	0.69	-0.91	0.15	0.14	2.38
31	-0.73	-0.53	-1.10	1.99	-0.62	0.69	0.18	-1.80	-0.99	0.35
32	0.82	0.25	-0.28	1.76	1.00	0.92	-0.38	-0.64	-0.07	1.88
33	0.59	-1.53	2.27	0.23	1.06	-0.96	0.99	-1.55	-0.42	2.07
34	0.03	0.43	2.07	-0.88	0.01	-0.51	0.46	-2.05	0.22	0.45
35	0.51	1.36	-0.09	1.29	0.04	-0.93	-1.31	0.55	1.15	0.85
36	0.06	-1.26	-0.19	1.07	-1.38	-1.11	0.83	-0.28	-0.61	-0.39
37	2.13	0.24	-1.33	0.05	1.23	-0.79	-1.78	1.13	0.22	-0.01
38	0.93	2.75	1.40	-0.96	-2.89	0.08	0.59	-1.75	0.18	1.45
39	0.10	-1.81	1.53	1.99	1.23	0.50	-0.77	0.31	1.26	1.94
40	-1.10	-1.94	-0.38	-0.02	-0.60	-0.12	-0.94	-0.88	-1.11	0.07
41	1.50	1.05	-0.15	0.49	1.54	0.19	-0.95	0.60	-0.34	-1.89
42	-0.55	1.04	0.68	-2.42	-1.24	-1.53	-0.49	-0.39	-1.79	0.37
43	0.34	2.11	0.37	1.39	-0.01	-0.45	2.09	-0.57	-0.49	-0.18
44	0.27	0.19	-1.15	0.28	2.11	2.72	0.66	2.40	-0.95	-0.15
45	-1.97	1.02	-0.03	-0.60	-1.82	-0.05	1.82	-0.20	-1.07	-0.33
46	-0.11	0.45	0.52	0.57	0.11	0.37	0.58	1.59	-0.28	-0.07
47	0.92	0.31	-0.03	2.61	1.12	1.00	-1.19	1.56	1.26	0.64
48	0.34	-1.04	-0.51	0.97	0.53	-2.26	0.15	-0.72	-1.31	0.57
49	0.34	-0.13	0.80	-1.06	1.00	1.16	0.73	-0.52	0.74	0.30
50	3.06	-0.24	0.81	-0.98	-0.46	-0.17	0.34	1.43	1.48	-1.37
51	1.50	-0.85	-0.85	-0.21	0.37	1.15	-1.60	0.39	-0.74	-0.20
52	-0.60	-0.64	0.58	0.91	2.33	-2.21	-1.35	0.88	-1.67	0.24
53	-0.60	-0.50	-0.61	-1.99	0.24	1.18	2.23	-1.15	1.71	0.89
54	1.43	1.05	0.54	-0.49	0.45	-0.19	-1.65	-0.11	0.92	-0.86
55	0.65	0.36	-1.96	0.36	-0.47	0.82	-0.97	0.28	-0.65	0.43
56	1.00	-0.71	0.77	1.20	0.21	-0.59	0.40	-0.46	-0.67	-1.40
57	-1.19	-2.23	1.85	-0.22	0.77	-0.81	1.13	-0.08	-0.15	1.01
58	-0.50	-0.34	1.58	0.45	2.42	-1.00	-1.99	0.61	-2.47	-0.98
59	0.22	-2.35	0.26	-1.62	-0.33	-0.00	-0.87	1.90	-1.00	1.51
60	-0.20	-1.30	-0.59	1.74	-0.05	-1.27	-1.29	0.86	2.10	1.82
61	0.08	0.48	-0.74	1.40	-0.39	-1.16	1.88	0.09	0.97	2.99
62	-0.68	0.53	0.56	-0.70	-0.66	1.27	-1.26	-0.71	0.33	0.05
63	0.15	0.42	-0.34	-1.31	-1.44	1.45	0.25	0.47	0.29	2.24
64	0.97	-0.53	1.04	1.09	1.13	-0.21	0.65	-0.32	0.97	0.14
65	0.84	0.18	-0.73	-1.22	0.97	0.00	-0.12	-0.80	-0.70	0.07
66	0.38	0.21	0.94	1.68	0.04	0.49	-0.03	-0.92	-0.98	1.20

67	0.38	-0.37	0.39	0.40	-0.43	0.95	0.36	-0.81	-0.88	0.08
68	0.72	-1.62	-1.40	0.35	-0.60	0.71	2.28	1.07	0.34	0.57
69	1.37	-1.16	-1.74	0.18	0.18	0.29	-0.05	1.44	0.13	0.41
70	-0.09	0.09	-1.09	-0.89	-0.23	1.02	-0.04	-0.41	-0.84	-1.38
71	-0.79	-0.85	0.13	1.52	-0.30	-0.74	0.17	0.99	1.34	1.80
72	0.26	-1.13	2.46	0.60	1.36	1.44	0.65	0.07	0.45	0.38
73	0.09	1.13	-0.20	0.04	1.25	0.48	-2.34	-1.22	-0.87	0.46
74	-1.09	-0.30	0.13	2.17	1.05	-0.28	1.01	0.30	-1.12	-0.93
75	0.42	-1.87	-0.26	1.92	-0.68	0.58	-0.59	-1.00	1.43	-0.33
76	-0.77	0.18	0.64	-1.36	1.43	-1.46	1.08	-0.14	0.94	-0.51
77	-1.90	-0.84	0.09	2.31	-0.45	1.11	0.50	0.02	1.05	0.08
78	0.37	0.94	1.52	-1.44	0.43	1.17	-1.03	-0.65	0.48	0.75
79	-0.23	-0.70	0.31	-0.51	2.22	-1.16	-1.66	1.42	-0.55	0.88
80	1.07	-0.47	1.03	-2.33	-0.81	-0.83	-1.26	1.00	-1.35	0.84
81	0.05	-0.40	0.18	-2.06	0.15	1.47	0.15	-1.18	0.90	0.43
82	-0.54	-0.88	-0.74	0.13	0.69	1.19	0.21	-1.26	0.95	-0.22
83	-1.11	0.09	-0.30	-1.01	0.92	0.10	-0.01	-0.75	-0.64	1.08
84	-0.08	-1.21	0.22	0.67	0.93	-1.67	0.05	1.16	-1.05	-2.00
85	0.75	-0.11	-0.61	-2.45	-0.94	0.26	-1.01	0.41	0.02	-0.48
86	0.58	-0.66	-0.25	0.42	-1.14	0.27	0.53	-1.18	-0.93	-0.64
87	-1.16	1.94	0.74	1.26	1.59	0.24	0.32	0.99	-1.48	-0.33
88	-0.58	0.66	0.97	-0.04	-0.88	-0.79	1.08	-0.89	0.64	-0.82
89	0.86	0.31	0.68	-0.74	-0.29	-1.53	1.06	-0.99	-0.69	-0.92
90	1.84	0.20	1.69	-0.87	0.22	-0.29	0.60	-0.90	-0.36	-0.02
91	0.66	-1.07	0.85	1.34	1.68	-0.28	-0.71	-0.83	-0.27	0.64
92	1.97	1.91	-0.34	0.02	-0.16	0.02	-0.07	2.57	1.49	0.64
93	1.08	-0.59	0.18	-0.59	-2.22	-0.92	-1.49	-0.15	-0.29	0.51
94	1.42	-0.43	0.79	1.63	0.26	-1.12	-0.51	1.78	-1.09	-1.05
95	-0.57	-0.40	1.15	-0.76	-0.88	-1.51	0.38	0.24	0.41	0.72
96	1.45	-0.20	-0.04	-1.38	0.08	-0.75	-0.53	-0.92	-2.63	-1.11
97	-2.15	-0.06	1.17	0.52	-1.01	-1.06	-0.21	-0.49	-0.43	0.04
98	-0.54	-0.04	0.19	-0.66	-0.04	0.82	-0.96	0.55	0.96	-0.45
99	-2.19	1.31	1.69	0.45	0.63	-0.66	-1.81	-0.02	-0.31	0.98
100	-1.12	-0.42	0.67	-0.58	0.28	-2.08	0.33	-2.10	-1.66	-0.01

Table 4: Example of longtable spanning several pages

4.11 Sideways tables

Remember to insert `\usepackage{rotating}` in your LaTeX preamble. Sideways tables can't be forced in place with the 'H' specifier, but you can use the `\clearpage` command to get them fairly nearby.

```
> x <- x[1:30,]
> x.small <- xtable(x,label='tabsmall',caption='A sideways table')

> print(x.small,floating.environment='sidewaystable')
```

	1	2	3	4	5	6	7	8	9	10
1	-1.42	1.39	0.35	-0.17	0.81	-0.81	0.19	-0.61	0.78	-0.70
2	1.65	2.38	-0.09	-1.36	-0.20	0.02	-1.55	0.08	-0.32	-1.64
3	-1.01	-0.29	-1.56	1.05	2.20	-0.86	0.31	0.74	0.31	0.04
4	-2.20	-0.24	-0.00	-1.44	-2.63	0.14	1.11	1.47	-0.43	0.12
5	-2.00	-1.29	0.27	-0.85	-0.50	-0.82	-1.55	-0.19	-2.00	-0.47
6	-1.64	0.68	-0.51	0.84	0.42	-0.91	-0.76	1.99	-0.39	0.32
7	0.85	-0.31	1.50	0.71	0.42	1.78	0.67	0.83	0.17	0.77
8	-0.75	1.28	2.50	1.49	-0.23	-0.06	0.02	-1.02	-1.41	0.45
9	0.94	-0.43	-0.58	-0.40	1.59	0.60	-0.22	-0.49	0.55	0.25
10	-0.39	-0.49	-1.47	-0.31	-0.13	-0.91	0.02	0.31	-0.49	-0.90
11	0.73	1.77	0.62	0.16	-0.57	0.68	0.98	0.75	0.46	0.26
12	0.84	1.27	0.99	0.42	-0.25	-0.22	0.27	0.51	-0.69	-0.59
13	-0.02	-0.50	-1.12	1.48	3.12	1.10	-1.31	-0.08	-2.27	0.35
14	-1.19	0.09	0.36	-0.92	0.77	1.06	-0.81	-0.62	-0.43	1.16
15	0.74	-0.42	-0.45	0.40	1.25	-0.46	0.67	-1.32	1.46	1.40
16	-0.83	0.66	-0.10	-0.62	0.04	1.88	0.11	1.07	1.53	-1.40
17	0.11	-1.37	0.83	-1.56	1.51	1.58	-0.48	1.02	-0.01	0.37
18	0.67	0.56	1.40	2.11	0.58	0.48	-0.22	-1.38	-0.91	-0.34
19	0.49	-1.82	0.81	1.40	1.41	0.32	1.41	2.46	-1.35	0.57
20	-0.64	-0.74	-0.95	0.63	-1.26	-0.94	-0.22	1.66	0.56	-0.16
21	-1.52	0.49	-0.93	-0.07	0.45	0.36	0.38	-1.80	-0.43	-0.90
22	-1.01	-0.32	0.20	0.11	-1.61	0.12	0.55	1.21	0.77	-1.58
23	0.42	0.34	1.20	0.62	0.14	0.23	-0.20	2.10	0.06	-0.09
24	-0.58	1.63	0.37	0.34	-1.72	0.52	-0.41	1.98	1.73	0.66
25	-0.22	0.01	-1.29	-1.57	0.56	2.13	-0.08	0.82	-0.14	-1.73
26	-0.60	-0.35	0.63	-0.06	-0.19	1.50	0.03	-0.66	1.09	-0.34
27	-1.04	-1.04	1.35	-1.17	-0.79	-0.33	0.49	1.01	0.91	-2.19
28	1.83	1.58	0.34	0.37	-0.90	0.20	-0.54	0.28	-0.35	1.27
29	1.61	-1.05	1.12	-0.53	0.62	0.02	1.69	-0.54	-0.99	0.80
30	-1.70	-0.41	2.35	-0.22	0.25	0.69	-0.91	0.15	0.14	2.38

Table 5: A sideways table

4.12 Rescaled tables

Specify a `scalebox` value to rescale the table.

```
> x <- x[1:20,]
> x.rescale <- xtable(x,label='tabrescaled',caption='A rescaled table')

> print(x.rescale, scalebox=0.7)
```

	1	2	3	4	5	6	7	8	9	10
1	-1.42	1.39	0.35	-0.17	0.81	-0.81	0.19	-0.61	0.78	-0.70
2	1.65	2.38	-0.09	-1.36	-0.20	0.02	-1.55	0.08	-0.32	-1.64
3	-1.01	-0.29	-1.56	1.05	2.20	-0.86	0.31	0.74	0.31	0.04
4	-2.20	-0.24	-0.00	-1.44	-2.63	0.14	1.11	1.47	-0.43	0.12
5	-2.00	-1.29	0.27	-0.85	-0.50	-0.82	-1.55	-0.19	-2.00	-0.47
6	-1.64	0.68	-0.51	0.84	0.42	-0.91	-0.76	1.99	-0.39	0.32
7	0.85	-0.31	1.50	0.71	0.42	1.78	0.67	0.83	0.17	0.77
8	-0.75	1.28	2.50	1.49	-0.23	-0.06	0.02	-1.02	-1.41	0.45
9	0.94	-0.43	-0.58	-0.40	1.59	0.60	-0.22	-0.49	0.55	0.25
10	-0.39	-0.49	-1.47	-0.31	-0.13	-0.91	0.02	0.31	-0.49	-0.90
11	0.73	1.77	0.62	0.16	-0.57	0.68	0.98	0.75	0.46	0.26
12	0.84	1.27	0.99	0.42	-0.25	-0.22	0.27	0.51	-0.69	-0.59
13	-0.02	-0.50	-1.12	1.48	3.12	1.10	-1.31	-0.08	-2.27	0.35
14	-1.19	0.09	0.36	-0.92	0.77	1.06	-0.81	-0.62	-0.43	1.16
15	0.74	-0.42	-0.45	0.40	1.25	-0.46	0.67	-1.32	1.46	1.40
16	-0.83	0.66	-0.10	-0.62	0.04	1.88	0.11	1.07	1.53	-1.40
17	0.11	-1.37	0.83	-1.56	1.51	1.58	-0.48	1.02	-0.01	0.37
18	0.67	0.56	1.40	2.11	0.58	0.48	-0.22	-1.38	-0.91	-0.34
19	0.49	-1.82	0.81	1.40	1.41	0.32	1.41	2.46	-1.35	0.57
20	-0.64	-0.74	-0.95	0.63	-1.26	-0.94	-0.22	1.66	0.56	-0.16

Table 6: A rescaled table

4.13 Table Width

The `tabularx` tabular environment provides more alignment options, and has a `width` argument to specify the table width.

Remember to insert `\usepackage{tabularx}` in your LaTeXpreamble.

```
> df.width <- data.frame(
+   "label 1 with much more text than is needed" = c("item 1", "A"),
+   "label 2 is also very long" = c("item 2","B"),
+   "label 3" = c("item 3","C"),
+   "label 4" = c("item 4 but again with too much text","D"),
+   check.names = FALSE)
> x.width <- xtable(df.width,
+   caption="Using the 'tabularx' environment")
> align(x.width) <- "|l|X|X|l|X|"

> print(x.width, tabular.environment="tabularx",
+   width="\\textwidth")
```

	label 1 with much more text than is needed	label 2 is also very long	label 3	label 4
1	item 1	item 2	item 3	item 4 but again with too much text
2	A	B	C	D

Table 7: Using the 'tabularx' environment

5 Suppressing Printing

By default the `print` method will print the LaTeX or HTML to standard output and also return the character strings invisibly. The printing to standard output can be suppressed by specifying `print.results = FALSE`.

```
> x.out <- print(tli.table, print.results = FALSE)
```

Formatted output can also be captured without printing with the `toLatex` method. This function returns an object of class `"Latex"`.

```
> x.ltx <- toLatex(tli.table)
> class(x.ltx)

[1] "Latex"

> x.ltx

% latex table generated in R 2.15.1 by xtable 1.7-1 package
% Sun Feb 24 18:28:46 2013
\begin{table}[ht]
\centering
\begin{tabular}{|rr|lp{3cm}l|r|}
  \hline
 & grade & sex & disadvg & ethnicty & tlimth \\
  \hline
1 & 6 & M & YES & HISPANIC & 43 \\
  2 &  7 & M & NO & BLACK & 88 \\
  3 &   5 & F & YES & HISPANIC &  34 \\
  4 &    3 & M & YES & HISPANIC &   65 \\
  5 &     8 & M & YES & WHITE &    75 \\
  6 & 5 & M & NO & BLACK & 74 \\
  7 &  8 & F & YES & HISPANIC & 72 \\
  8 &   4 & M & YES & BLACK &  79 \\
  9 &    6 & M & NO & WHITE &   88 \\
  10 &     7 & M & YES & HISPANIC &    87 \\
   \hline
\end{tabular}
\end{table}
```

6 Acknowledgements

Most of the examples in this gallery are taken from the `xtable` documentation.

7 R Session information

```
> toLatex(sessionInfo())
```

- R version 2.15.1 (2012-06-22), `i386-pc-mingw32`
- Locale: `LC_COLLATE=C`, `LC_CTYPE=English_United Kingdom.1252`, `LC_MONETARY=English_United Kingdom.1252`, `LC_NUMERIC=C`, `LC_TIME=English_United Kingdom.1252`
- Base packages: base, datasets, grDevices, graphics, methods, stats, utils
- Other packages: xtable 1.7-1
- Loaded via a namespace (and not attached): tools 2.15.1