

# Package ‘rtf’

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**Imports** R.oo, R.methodsS3

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**Title** Rich Text Format (RTF) Output

**Description** A set of R functions to output Rich Text Format (RTF) files with high resolution tables and graphics that may be edited with a standard word processor such as Microsoft Word.

**License** GPL (>= 2)

**LazyLoad** TRUE

**NeedsCompilation** no

**Repository** CRAN

**URL** <https://github.com/schaffman5/rtf>

**BugReports** <https://github.com/schaffman5/rtf/issues>

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rtf-package	<i>Package rtf</i>
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## Description

A set of R functions to output Rich Text Format (RTF) files with high resolution tables and graphics that may be edited with a standard word processor such as Microsoft Word. This is useful for compiling R results into a document for further editing or to be merged with another document.

While Sweave and odfWeave provide nicely formatted outputs, the syntax can be difficult for beginners to master. Moreover, Sweave compilation to a PDF is not editable. Other packages such as SWord and R2wd provide similar functionality but require the user to be running a Microsoft Windows OS.

This package is written in pure R and does not require leaving the R environment to write files. R data frames and table objects are converted to nicely formatted RTF tables. One important limitation of the RTF specification is that vector graphics output is limited to Windows Meta File (WMF) and Enhanced Meta File (EMF) formats. Because these formats are not supported across platforms, this package currently only supports RTF embedding of PNG plots and images. To ensure high quality reports, the resolution may be specified when writing the RTF output.

## Requirements

This package depends on the **R.00** package.

## Usage

For usage details [RTF](#).

## Author(s)

Michael E. Schaffer

## References

[1] [http://en.wikipedia.org/wiki/Rich\\_Text\\_Format](http://en.wikipedia.org/wiki/Rich_Text_Format)

[2] [http://latex2rtf.sourceforge.net/rftspec\\_7.html#rftspec\\_paraforprop](http://latex2rtf.sourceforge.net/rftspec_7.html#rftspec_paraforprop)

---

addHeader.RTF

*Insert a header into the RTF document*

---

## Description

Insert a header into the RTF document.

## Usage

```
## S3 method for class 'RTF'  
addHeader(this, title, subtitle=NULL, font.size=NULL, TOC.level=NULL, ...)
```

## Arguments

<code>this</code>	An RTF object.
<code>title</code>	Header title text.
<code>subtitle</code>	Header subtitle text. <b>optional</b> .
<code>font.size</code>	Font size in points. <b>optional</b> .
<code>TOC.level</code>	Indent level for table of contents. <b>optional</b> .
<code>...</code>	Not used.

## Author(s)

Michael E. Schaffer

## See Also

For more information see [RTF](#).

---

addNewLine.RTF      *Insert a new line into the RTF document*

---

### Description

Insert a new line into the RTF document.

### Usage

```
## S3 method for class 'RTF'
addNewLine(this, n=1, ...)
```

### Arguments

this	An RTF object.
n	Number of lines to add. Default is 1. <b>optional</b>
...	Not used.

### Author(s)

Michael E. Schaffer

### See Also

For more information see [RTF](#).

---

addPageBreak.RTF      *Insert a page break into the RTF document optionally specifying new page settings*

---

### Description

Insert a page break into the RTF document optionally specifying new page settings.

### Usage

```
## S3 method for class 'RTF'
addPageBreak(this, width=8.5, height=11, omi=c(1, 1, 1, 1), ...)
```

### Arguments

this	An RTF object.
width	New page width in inches. <b>optional</b> .
height	New page height in inches. <b>optional</b> .
omi	A <a href="#">vector</a> of page margins (bottom, left, top, right) <b>optional</b> .
...	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

**Examples**

```
rtf<-RTF("test_addPageBreak.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1))
addPageBreak(rtf,width=11,height=8.5,omi=c(0.5,0.5,0.5))
done(rtf)
```

---

`addParagraph.RTF`      *Insert a paragraph into the RTF document*

---

**Description**

Insert a paragraph into the RTF document.

**Usage**

```
## S3 method for class 'RTF'
addParagraph(this, ...)
```

**Arguments**

`this`            An RTF object.  
`...`            A character [vector](#) of text to add.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

`addPlot.RTF`*Insert a plot into the RTF document*

---

**Description**

Insert a plot into the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
addPlot(this, plot.fun=plot.fun, width=3, height=0.3, res=300, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>plot.fun</code>	Plot function.
<code>width</code>	Plot output width in inches.
<code>height</code>	Plot output height in inches.
<code>res</code>	Output resolution in dots per inch.
<code>...</code>	Arguments for <code>plot.fun</code> .

**Details**

Plots are added to the document as PNG objects. This function will work with all base graphics methods for plotting. For more sophisticated plots, you may need to wrap your plot code into a function, and then pass a reference to that function to this method. The parameters for the plot method would then get passed in as `'...'` above.

To output a `ggplot2` plot, simply assign the plot to a variable. Then use `'print'` as the plot function and pass in the plot variable assigned above.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

**Examples**

```
rtf<-RTF("test_addPlot.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1,1))  
addPlot(rtf,plot.fun=plot,width=6,height=6,res=300, iris[,1],iris[,2])  
done(rtf)
```

---

addPng.RTF                    *Insert an existing PNG image into the RTF document*

---

**Description**

Insert an existing PNG image into the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
addPng(this, file, width=3, height=0.3, ...)
```

**Arguments**

this	An RTF object.
file	Image file path.
width	Plot output width in inches.
height	Plot output height in inches.
...	Not used.

**Details**

Add existing PNG file to RTF document.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

addSessionInfo.RTF            *Insert session information into the RTF document*

---

**Description**

Insert session information into the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
addSessionInfo(this, locale=TRUE, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>locale</code>	Output the locale.
<code>...</code>	Not used.

**Details**

Exports session information to the RTF document in a similar

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF.](#), [sessionInfo](#).

**Examples**

```
rtf<-RTF("test_addSessionInfo.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1,1))
addSessionInfo(rtf)
done(rtf)
```

---

`addTable.RTF`

*Insert a table into the RTF document*

---

**Description**

Insert a table into the RTF document.

**Usage**

```
## S3 method for class 'RTF'
addTable(this, dat, col.widths=NULL, col.justify=NULL, header.col.justify=NULL,
  font.size=NULL, row.names=FALSE, NA.string="-", space.before=NULL, space.after=NULL,
  ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>dat</code>	A matrix, data frame, or table.
<code>col.widths</code>	A <a href="#">vector</a> of column widths in inches. <b>optional</b> .
<code>col.justify</code>	A single value or <a href="#">vector</a> of column justifications ('L', 'R', 'C', or 'J' for Left, Right, Center, and Justify, respectively). <b>optional</b> .



header.col.justify	A single value or <a href="#">vector</a> of table header column justifications ('L', 'R', 'C', or 'J' for Left, Right, Center, and Justify, respectively). <b>optional.</b>
font.size	Font size in points. <b>optional.</b>
row.names	Boolean argument to include row names in tables. <b>optional.</b>
NA.string	A character string to replace NA values in the table.
space.before	Space before each row (in inches). <b>optional.</b>
space.after	Space after each row (in inches). <b>optional.</b>
...	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

**Examples**

```

rtf<-RTF("test_addTable.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1,1))
addTable(rtf,as.data.frame(head(iris)),font.size=10,row.names=FALSE,NA.string="-",
        col.widths=rep(1,5))

tab<-table(iris$Species,floor(iris$Sepal.Length))
names(dimnames(tab))<-c("Species","Sepal Length")
addTable(rtf,tab,font.size=10,row.names=TRUE,NA.string="-",col.widths=c(1,rep(0.5,4)) )

done(rtf)

```

---

addText.RTF                      *Insert text into the RTF document*

---

**Description**

Insert text into the RTF document.

**Usage**

```

## S3 method for class 'RTF'
addText(this, ..., bold=FALSE, italic=FALSE)

```

**Arguments**

this	An RTF object.
bold	Bold text. <b>optional.</b>
italic	Italic text. <b>optional.</b>
...	Any number of character strings to concatenate.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

addTOC.RTF

*Insert table of contents field*

---

**Description**

Insert table of contents field.

**Usage**

```
## S3 method for class 'RTF'  
addTOC(this, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>...</code>	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

addTrellisObject.RTF

*Insert a trellis plot object into the RTF document*

---

**Description**

Insert a trellis plot object into the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
addTrellisObject(this, trellis.object, width=3, height=0.3, res=300, rotate=NULL, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>trellis.object</code>	The trellis plot object.
<code>width</code>	Plot output width in inches.
<code>height</code>	Plot output height in inches.
<code>res</code>	Output resolution in dots per inch.
<code>rotate</code>	Object rotation in degrees. <b>optional</b> .
<code>...</code>	Not used.

**Details**

Plots are added to the document as PNG objects. Multi-page trellis objects are automatically split across multiple pages in the RTF output file. To rotate the object to landscape orientation within the RTF output, use `rotate=90`. When using rotation, width and height still refer to the unrotated plot dimensions and not the rotated output dimensions on the RTF page. An alternative to rotating the plot is to rotate the entire page using a call to `addPageBreak` with suitable page width and height dimensions.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

**Examples**

```
## Not run:
rtf<-RTF("test_addTrellisObject.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1,1))
if(require(lattice) & require(grid)) {
  # multipage trellis object
  p2<-xyplot(uptake ~ conc | Plant, CO2, layout = c(2,2))
  addTrellisObject(rtf,trellis.object=p2,width=8,height=4,res=300, rotate=90)
}
done(rtf)

## End(Not run)
```

---

decreaseIndent.RTF      *Decrease RTF document indent*

---

**Description**

Decrease RTF document indent.

**Usage**

```
## S3 method for class 'RTF'  
decreaseIndent(this, ...)
```

**Arguments**

this	An RTF object.
...	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

done.RTF      *Write and close the RTF output*

---

**Description**

Write and close the RTF output.

**Usage**

```
## S3 method for class 'RTF'  
done(this, ...)
```

**Arguments**

this	An RTF object.
...	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

*endParagraph.RTF*      *End a paragraph in the RTF document*

---

**Description**

End a paragraph in the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
endParagraph(this, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>...</code>	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

*increaseIndent.RTF*      *Increase RTF document indent*

---

**Description**

Increase RTF document indent.

**Usage**

```
## S3 method for class 'RTF'  
increaseIndent(this, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>...</code>	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

RTF

*The RTF class*

---

**Description**

This is the class representing an RTF file output.

Package: rtf

**Class RTF**

[Object](#)

~~|

~~+--RTF

**Directly known subclasses:**

```
public static class RTF
extends Object
```

**Usage**

```
RTF(file="", width=8.5, height=11, omi=c(1, 1, 1, 1), font.size=10)
```

**Arguments**

file	The path of the output file.
width	The width of the output page.
height	The width of the output page.
omi	A <a href="#">vector</a> representing the outer margins in inches (bottom, left, top, right).
font.size	Default font size for the document in points.

## Fields and Methods

### Methods:

<code>addHeader</code>	Insert a header into the RTF document.
<code>addNewLine</code>	Insert a new line into the RTF document.
<code>addPageBreak</code>	Insert a page break into the RTF document optionally specifying new page settings.
<code>addParagraph</code>	Insert a paragraph into the RTF document.
<code>addPlot</code>	Insert a plot into the RTF document.
<code>addPng</code>	Insert an existing PNG image into the RTF document.
<code>addSessionInfo</code>	Insert session information into the RTF document.
<code>addTOC</code>	Insert table of contents field.
<code>addTable</code>	Insert a table into the RTF document.
<code>addText</code>	Insert text into the RTF document.
<code>addTrellisObject</code>	Insert a trellis plot object into the RTF document.
<code>decreaseIndent</code>	Decrease RTF document indent.
<code>done</code>	Write and close the RTF output.
<code>endParagraph</code>	End a paragraph in the RTF document.
<code>increaseIndent</code>	Increase RTF document indent.
<code>setFontSize</code>	Set RTF document font size.
<code>startParagraph</code>	Start a new paragraph in the RTF document.
<code>view</code>	View encoded RTF.

### Methods inherited from Object:

`$`, `$<-`, `[[`, `[[<-`, `as.character`, `attach`, `attachLocally`, `clearCache`, `clearLookupCache`, `clone`, `detach`, `equals`, `extend`, `finalize`, `getEnvironment`, `getFieldModifier`, `getFieldModifiers`, `getFields`, `getInstantiationTime`, `getStaticInstance`, `hasField`, `hashCode`, `ll`, `load`, `names`, `objectSize`, `print`, `save`

### Author(s)

Michael E. Schaffer

### See Also

For more information see [RTF](#).

### Examples

```
## Not run:
output<-"test_RTF-class.doc"
png.res<-300

rtf<-RTF(output,width=8.5,height=11,font.size=10,omi=c(1,1,1,1))
addHeader(rtf,title="Test",subtitle="2011-08-15\n")
addPlot(rtf,plot.fun=plot,width=6,height=6,res=300, iris[,1],iris[,2])

# Try trellis plots
if(require(lattice) & require(grid)) {
```

```

# single page trellis objects
addPageBreak(rtf, width=11,height=8.5,omi=c(0.5,0.5,0.5,0.5))

p <- histogram( ~ height | voice.part, data = singer, xlab="Height")
addTrellisObject(rtf,trellis.object=p,width=10,height=7.5,res=png.res)

p <- densityplot( ~ height | voice.part, data = singer, xlab = "Height")
addTrellisObject(rtf,trellis.object=p,width=10,height=7.5,res=png.res)

# multipage trellis object
p2<-xyplot(uptake ~ conc | Plant, CO2, layout = c(2,2))
addTrellisObject(rtf,trellis.object=p2,width=6,height=6,res=png.res)
}

addPageBreak(rtf, width=6,height=10,omi=c(0.5,0.5,0.5,0.5))
addTable(rtf,as.data.frame(head(iris)),font.size=10,row.names=FALSE,NA.string="-")

addSessionInfo(rtf)

done(rtf)

## End(Not run)

```

---

rtf.forest.plot

*Get an RTF encoded forest plot*


---

## Description

Get an RTF encoded forest plot.

## Usage

```
rtf.forest.plot(x=1.25, min=0.5, max=2, xlim=c(0.1, 12), width=3, height=0.3, cex=1,
  lwd=0.75, res=300)
```

## Arguments

x	x (e.g. hazard ratio).
min	Minimum whisker (e.g. lower bound of 95% hazard ratio CI).
max	Maximum whisker (e.g. upper bound of 95% hazard ratio CI).
xlim	A <a href="#">vector</a> specifying the x limits.
width	Plot width in inches.
height	Plot height in inches.
cex	A numerical value giving the amount by which plotting text and symbols should be magnified relative to the default.
lwd	Line width.
res	Output resolution in dots per inch.



**Details**

Create a forest plot and convert PNG to RTF code. This is useful for embedding into a data frame of hazard ratios and then writing an RTF output file. See the example below for usage.

**Examples**

```
## Not run:
tab<-data.frame(
Label=c("Test1","Test2","Test3"),
HR=c(1,2,0.45),
Lower.CI=c(0.5,1.1,0.25),
Upper.CI=c(2,3.5,0.9),
stringsAsFactors=FALSE,
check.names=FALSE)

# create forest plots by row
forest.plot.args<-list(xlim=c(0.1,5),width=3.0,height=0.3,cex=1,lwd=0.75,res=300)
tab$"HR Plot (log scale)"<-mapply(rtf.forest.plot,tab$HR,tab$Lower.CI,tab$Upper.CI,
MoreArgs=forest.plot.args)

# rbind the x-scale to the table in the plot column
xscale<-rtf.forest.plot.xscale(xlim=c(0.1,5),width=3.0,height=0.3,cex=1,
lwd=0.75,res=300)

tab<-data.frame(lapply(tab, as.character),
stringsAsFactors=FALSE,
check.names=FALSE)

tab<-rbind(tab,list("", "", "", "", xscale))

# write the RTF output
rtf<-RTF("test_rtf.forest.plot.doc",width=8.5,height=11,font.size=10,omi=c(1,1,1,1))
addTable(rtf,tab,col.widths=c(0.75,0.75,0.75,0.75,3))
done(rtf)

## End(Not run)
```

---

setFontSize.RTF

*Set RTF document font size*


---

**Description**

Set RTF document font size.

**Usage**

```
## S3 method for class 'RTF'
setFontSize(this, font.size, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>font.size</code>	New default font size in points.
<code>...</code>	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

`startParagraph.RTF`     *Start a new paragraph in the RTF document*

---

**Description**

Start a new paragraph in the RTF document.

**Usage**

```
## S3 method for class 'RTF'  
startParagraph(this, ...)
```

**Arguments**

<code>this</code>	An RTF object.
<code>...</code>	Not used.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

---

view.RTF	<i>View encoded RTF</i>
----------	-------------------------

---

**Description**

View encoded RTF.

**Usage**

```
## S3 method for class 'RTF'  
view(this, ...)
```

**Arguments**

this	An RTF object.
...	Not used.

**Value**

Output the content of the object as RTF code.

**Author(s)**

Michael E. Schaffer

**See Also**

For more information see [RTF](#).

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