Package 'openxlsx2'

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Type Package

Title Read, Write and Edit 'xlsx' Files

Version 0.5.1

Language en-US

Description Simplifies the creation of 'xlsx' files by
providing a high level interface to writing, styling and editing
worksheets.

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URL https://github.com/JanMarvin/openxlsx2

BugReports https://github.com/JanMarvin/openxlsx2/issues

Depends R (>= 3.4.0)

Imports R6, Rcpp, grDevices, magrittr, stringi, utils, zip

LinkingTo Rcpp

Suggests covr, ggplot2, knitr, mschart (>= 0.4), rmarkdown, roxygen2,
rvg, testthat (>= 3.0.0), waldo

VignetteBuilder knitr

Encoding UTF-8

RoxygenNote 7.2.3

Config/testthat/edition 3

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NeedsCompilation yes

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R topics documented:

`as_xml` *loads character string to pugixml and returns an externalptr*

Description

loads character string to pugixml and returns an externalptr

Usage

```
as_xml(x, ...)
```

Arguments

`x`	input as xml
`...`	additional arguments passed to `read_xml()`

Details

might be useful for larger documents where single nodes are shortened and otherwise the full tree has to be reimported. unsure where we have such a case. is useful, for printing nodes from a larger tree, that have been exported as characters (at some point in time we have to convert the xml to R)

Examples

```
tmp_xlsx <- tempfile()
xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
unzip(xlsxFile, exdir = tmp_xlsx)

wb <- wb_load(xlsxFile)
styles_xml <- sprintf("%s/xl/styles.xml", tmp_xlsx)

# is external pointer
sxml <- read_xml(styles_xml)

# is character
font <- xml_node(sxml, "styleSheet", "fonts", "font")

# is again external pointer
as_xml(font)
```

`cell_style` *get and set cell style*

Description

get and set cell style

Usage

```
wb_get_cell_style(wb, sheet = current_sheet(), dims)

wb_set_cell_style(wb, sheet = current_sheet(), dims, style)
```

Arguments

`wb`	wb
`sheet`	sheet
`dims`	dims
`style`	style

Value

wb_get_cell_style returns the style id as character

wb_set_cell_style returns the workbook invisible

Examples

```
# set a style in b1
wb <- wb_workbook()$add_worksheet()$
  add_numfmt(dims = "B1", numfmt = "#,0")

# get style from b1 to assign it to a1
numfmt <- wb$get_cell_style(dims = "B1")

# assign style to a1
wb$set_cell_style(dims = "A1", style = numfmt)
```

---

cleanup *clean sheet (remove all values)*

Description

clean sheet (remove all values)

Usage

```
wb_clean_sheet(
  wb,
  sheet = current_sheet(),
  numbers = TRUE,
  characters = TRUE,
  styles = TRUE,
  merged_cells = TRUE
)

delete_data(wb, sheet, cols, rows)
```

Arguments

wb	workbook
sheet	sheet to clean
numbers	remove all numbers
characters	remove all characters
styles	remove all styles
merged_cells	remove all merged_cells
cols	numeric column vector
rows	numeric row vector

clean_worksheet_name *Clean worksheet name*

Description

Cleans a worksheet name by removing legal characters.

Usage

```
clean_worksheet_name(x, replacement = " ")
```

Arguments

x	A vector, coerced to character
replacement	A single value to replace illegal characters by.

Details

Illegal characters are considered \, /, ?, *, :, [, and]. These must be intentionally removed from worksheet names prior to creating a new worksheet.

Value

x with bad characters removed

cloneSheetStyle *clone sheets style*

Description

clone sheets style

Usage

```
cloneSheetStyle(wb, from_sheet, to_sheet)
```

Arguments

wb	workbook
from_sheet	sheet we select the style from
to_sheet	sheet we apply the style from

col2int *Convert Excel column to integer*

Description

Converts an Excel column label to an integer.

Usage

```
col2int(x)
```

Arguments

x	A character vector

Examples

```
col2int(LETTERS)
```

convertToExcelDate *convert back to ExcelDate*

Description

convert back to ExcelDate

Usage

```
convertToExcelDate(df, date1904 = FALSE)
```

Arguments

df	dataframe
date1904	take different origin

Examples

```
xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
wb1 <- wb_load(xlsxFile)
df <- wb_to_df(wb1)
# conversion is done on dataframes only
convertToExcelDate(df = df["Var5"], date1904 = FALSE)
```

convert_date *Convert from excel date number to R Date type*

Description

Convert from excel date number to R Date type

Usage

```
convert_date(x, origin = "1900-01-01", ...)
```

Arguments

x	A vector of integers
origin	date. Default value is for Windows Excel 2010
...	additional parameters passed to as.Date()

Details

Excel stores dates as number of days from some origin day

See Also

write_data()

Examples

```
## 2014 April 21st to 25th
convert_date(c(41750, 41751, 41752, 41753, 41754, NA))
convert_date(c(41750.2, 41751.99, NA, 41753))
```

convert_datetime *Convert from excel time number to R POSIXct type.*

Description

Convert from excel time number to R POSIXct type.

Usage

```
convert_datetime(x, origin = "1900-01-01", ...)
```

Arguments

x	A numeric vector
origin	date. Default value is for Windows Excel 2010
...	Additional parameters passed to as.POSIXct

Details

Excel stores dates as number of days from some origin date

Examples

```
## 2014-07-01, 2014-06-30, 2014-06-29
x <- c(41821.8127314815, 41820.8127314815, NA, 41819, NaN)
convert_datetime(x)
convert_datetime(x, tz = "Australia/Perth")
convert_datetime(x, tz = "UTC")
```

---

create_border *create border*

Description

Border styles can any of the following: "thin", "thick", "slantDashDot", "none", "mediumDashed", "mediumDashDot", "medium", "hair", "double", "dotted", "dashed", "dashedDotDot", "dashDot" Border colors are of the following type: c(rgb="FF000000")

Usage

```
create_border(
  diagonalDown = "",
  diagonalUp = "",
  outline = "",
  bottom = NULL,
  bottom_color = NULL,
  diagonal = NULL,
  diagonal_color = NULL,
  end = "",
  horizontal = "",
  left = NULL,
  left_color = NULL,
  right = NULL,
  right_color = NULL,
  start = "",
  top = NULL,
  top_color = NULL,
  vertical = "",
  ...
)
```

Arguments

diagonalDown	x
diagonalUp	x

outline	x
bottom	X
bottom_color	X
diagonal	X
diagonal_color	X,
end	x,
horizontal	x
left	x
left_color	x
right	x
right_color	x
start	x
top	x
top_color	x
vertical	x
...	x

`create_cell_style` *create_cell_style*

Description

create_cell_style

Usage

```
create_cell_style(
  borderId = "",
  fillId = "",
  fontId = "",
  numFmtId = "",
  pivotButton = "",
  quotePrefix = "",
  xfId = "",
  horizontal = "",
  indent = "",
  justifyLastLine = "",
  readingOrder = "",
  relativeIndent = "",
  shrinkToFit = "",
  textRotation = "",
  vertical = "",
```

```
  wrapText = "",
  extLst = "",
  hidden = "",
  locked = ""
)
```

Arguments

borderId	dummy
fillId	dummy
fontId	dummy
numFmtId	a numFmt ID for a builtin style
pivotButton	dummy
quotePrefix	dummy
xfId	dummy
horizontal	alignment can be "", "center", "right"
indent	dummy
justifyLastLine	dummy
readingOrder	dummy
relativeIndent	dummy
shrinkToFit	dummy
textRotation	dummy
vertical	alignment can be "", "center", "right"
wrapText	dummy
extLst	dummy
hidden	dummy
locked	dummy

Details

ID	numFmt
0	General
1	0
2	0.00
3	#,##0
4	#,##0.00
9	0%
10	0.00%
11	0.00E+00
12	# ?/?
13	# ??/??
14	mm-dd-yy

"15"	"d-mmm-yy"
"16"	"d-mmm"
"17"	"mmm-yy"
"18"	"h:mm AM/PM"
"19"	"h:mm:ss AM/PM"
"20"	"h:mm"
"21"	"h:mm:ss"
"22"	"m/d/yy h:mm"
"37"	"#,##0 ;(#,##0)"
"38"	"#,##0 ;[Red](#,##0)"
"39"	"#,##0.00;(#,##0.00)"
"40"	"#,##0.00;[Red](#,##0.00)"
"45"	"mm:ss"
"46"	"[h]:mm:ss"
"47"	"mmss.0"
"48"	"##0.0E+0"
"49"	"@"

`create_comment` *Create, write and remove comments*

Description

The comment functions (create, write and remove) allow the modification of comments. In newer Excels they are called notes, while they are called comments in openxml. Modification of what Excel now calls comment (openxml calls them threadedComments) is not yet possible

Usage

```
create_comment(
  text,
  author = Sys.info()[["user"]],
  style = NULL,
  visible = TRUE,
  width = 2,
  height = 4
)

write_comment(wb, sheet, col, row, comment, xy = NULL)

remove_comment(wb, sheet, col, row, gridExpand = TRUE)

wb_add_comment(
```

```
  wb,
  sheet = current_sheet(),
  col,
  row,
  dims = rowcol_to_dims(row, col),
  comment
)

wb_remove_comment(
  wb,
  sheet = current_sheet(),
  col,
  row,
  dims = rowcol_to_dims(row, col),
  gridExpand = TRUE
)
```

Arguments

text	Comment text. Character vector.
author	Author of comment. Character vector of length 1
style	A Style object or list of style objects the same length as comment vector.
visible	TRUE or FALSE. Is comment visible.
width	Textbox integer width in number of cells
height	Textbox integer height in number of cells
wb	A workbook object
sheet	A worksheet of the workbook
col	A column to apply the comment
row	A row to apply the comment
comment	A comment to apply to the worksheet
xy	An alternative to specifying col and row individually. A vector of the form c(col, row).
gridExpand	Remove all comments inside the grid. Similar to dims "A1:B2"
dims	Optional row and column as spreadsheet dimension, e.g. "A1"

Value

The wbWorkbook object

The wbWorkbook object

Examples

```
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
```

```
# write comment without author
c1 <- create_comment(text = "this is a comment", author = "")
write_comment(wb, 1, col = "B", row = 10, comment = c1)

# Write another comment with author information
c2 <- create_comment(text = "this is another comment", author = "Marco Polo")
write_comment(wb, 1, col = "C", row = 10, comment = c2)

# write a styled comment with system author
s1 <- create_font(b = "true", color = wb_color(hex = "FFFF0000"), sz = "12")
s2 <- create_font(color = wb_color(hex = "FF000000"), sz = "9")
c3 <- create_comment(text = c("This Part Bold red\n\n", "This part black"), style = c(s1, s2))

write_comment(wb, 1, col = 6, row = 3, comment = c3)

# remove the first comment
remove_comment(wb, 1, col = "B", row = 10)
```

`create_dxfs_style` *Create a custom formatting style*

Description

Create a new style to apply to worksheet cells. Created styles have to be assigned to a workbook to use them

Usage

```
create_dxfs_style(
  font_name = NULL,
  font_size = NULL,
  font_color = NULL,
  numFmt = NULL,
  border = NULL,
  border_color = wb_color(getOption("openxlsx2.borderColor", "black")),
  border_style = getOption("openxlsx2.borderStyle", "thin"),
  bgFill = NULL,
  text_bold = NULL,
  text_strike = NULL,
  text_italic = NULL,
  text_underline = NULL,
  ...
)
```

Arguments

`font_name`	A name of a font. Note the font name is not validated. If fontName is NULL, the workbook base font is used. (Defaults to Calibri)

font_size	Font size. A numeric greater than 0. If fontSize is NULL, the workbook base font size is used. (Defaults to 11)
font_color	Color of text in cell. A valid hex color beginning with "#" or one of colors(). If fontColor is NULL, the workbook base font colors is used. (Defaults to black)
numFmt	Cell formatting. Some custom openxml format
border	NULL or TRUE
border_color	"black"
border_style	"thin"
bgFill	Cell background fill color.
text_bold	bold
text_strike	strikeout
text_italic	italic
text_underline	underline 1, true, single or double
...	...

Value

A dxfs style node

See Also

wb_add_style()

Examples

```
# do not apply anthing
style1 <- create_dxfs_style()

# change font color and background color
style2 <- create_dxfs_style(
  font_color = wb_color(hex = "FF9C0006"),
  bgFill = wb_color(hex = "FFFFC7CE")
)

# change font (type, size and color) and background
# the old default in openxlsx and openxlsx2 <= 0.3
style3 <- create_dxfs_style(
  font_name = "Calibri",
  font_size = 11,
  font_color = wb_color(hex = "FF9C0006"),
  bgFill = wb_color(hex = "FFFFC7CE")
)

## See package vignettes for further examples
```

create_fill *create fill*

Description

create fill

Usage

```
create_fill(
  gradientFill = "",
  patternType = "",
  bgColor = NULL,
  fgColor = NULL,
  ...
)
```

Arguments

gradientFill	complex fills
patternType	various default is "none", but also "solid", or a color like "gray125"
bgColor	hex8 color with alpha, red, green, blue only for patternFill
fgColor	hex8 color with alpha, red, green, blue only for patternFill
...	...

create_font *create font format*

Description

create font format

Usage

```
create_font(
  b = "",
  charset = "",
  color = wb_color(hex = "FF000000"),
  condense = "",
  extend = "",
  family = "2",
  i = "",
  name = "Calibri",
  outline = "",
```

```
  scheme = "minor",
  shadow = "",
  strike = "",
  sz = "11",
  u = "",
  vertAlign = "",
  ...
)
```

Arguments

b	bold
charset	charset
color	rgb color: default "FF000000"
condense	condense
extend	extend
family	font family: default "2"
i	italic
name	font name: default "Calibri"
outline	outline
scheme	font scheme: default "minor"
shadow	shadow
strike	strike
sz	font size: default "11",
u	underline
vertAlign	vertical alignment
...	...

Examples

```
font <- create_font()
# openxml has the alpha value leading
hex8 <- unlist(xml_attr(read_xml(font), "font", "color"))
hex8 <- paste0("#", substr(hex8, 3, 8), substr(hex8, 1,2))

# # write test color
# col <- crayon::make_style(col2rgb(hex8, alpha = TRUE))
# cat(col("Test"))
```

create_hyperlink *create Excel hyperlink string*

Description

Wrapper to create internal hyperlink string to pass to write_formula(). Either link to external urls or local files or straight to cells of local Excel sheets.

Usage

```
create_hyperlink(sheet, row = 1, col = 1, text = NULL, file = NULL)
```

Arguments

sheet	Name of a worksheet
row	integer row number for hyperlink to link to
col	column number of letter for hyperlink to link to
text	display text
file	Excel file name to point to. If NULL hyperlink is internal.

See Also

write_formula()

Examples

```
## Writing internal hyperlinks
wb <- wb_workbook()
wb$add_worksheet("Sheet1")
wb$add_worksheet("Sheet2")
wb$add_worksheet("Sheet 3")
wb$add_data(sheet = 3, x = iris)

## External Hyperlink
x <- c("https://www.google.com", "https://www.google.com.au")
names(x) <- c("google", "google Aus")
class(x) <- "hyperlink"

wb$add_data(sheet = 1, x = x, startCol = 10)


## Internal Hyperlink - create hyperlink formula manually
write_formula(
  wb, "Sheet1",
  x = '=HYPERLINK(\"#Sheet2!B3\", "Text to Display - Link to Sheet2")',
  startCol = 3
)
```

```
## Internal - No text to display using create_hyperlink() function
write_formula(
  wb, "Sheet1",
  startRow = 1,
  x = create_hyperlink(sheet = "Sheet 3", row = 1, col = 2)
)

## Internal - Text to display
write_formula(
  wb, "Sheet1",
  startRow = 2,
  x = create_hyperlink(
    sheet = "Sheet 3", row = 1, col = 2,
    text = "Link to Sheet 3"
  )
)

## Link to file - No text to display
write_formula(
  wb, "Sheet1",
  startRow = 4,
  x = create_hyperlink(
    sheet = "testing", row = 3, col = 10,
    file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2")
  )
)

## Link to file - Text to display
write_formula(
  wb, "Sheet1",
  startRow = 3,
  x = create_hyperlink(
    sheet = "testing", row = 3, col = 10,
    file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"),
    text = "Link to File."
  )
)

## Link to external file - Text to display
write_formula(
  wb, "Sheet1",
  startRow = 10, startCol = 1,
  x = '=HYPERLINK("[C:/Users]", "Link to an external file")'
)

## Link to internal file
x = create_hyperlink(text = "test.png", file = "D:/somepath/somepicture.png")
write_formula(wb, "Sheet1", startRow = 11, startCol = 1, x = x)
```

create_numfmt *create number format*

Description

create number format

Usage

```
create_numfmt(numFmtId, formatCode)
```

Arguments

numFmtId	an id
formatCode	a format code

create_sparklines *create sparklines used in* add_sparline()

Description

create sparklines used in add_sparline()

Usage

```
create_sparklines(
  sheet = current_sheet(),
  dims,
  sqref,
  type = NULL,
  negative = NULL,
  displayEmptyCellsAs = "gap",
  markers = NULL,
  high = NULL,
  low = NULL,
  first = NULL,
  last = NULL,
  colorSeries = wb_color(hex = "FF376092"),
  colorNegative = wb_color(hex = "FFD00000"),
  colorAxis = wb_color(hex = "FFD00000"),
  colorMarkers = wb_color(hex = "FFD00000"),
  colorFirst = wb_color(hex = "FFD00000"),
  colorLast = wb_color(hex = "FFD00000"),
  colorHigh = wb_color(hex = "FFD00000"),
  colorLow = wb_color(hex = "FFD00000")
)
```

Arguments

sheet	sheet
dims	dims
sqref	sqref
type	type
negative	negative
displayEmptyCellsAs	displayEmptyCellsAs
markers	markers add marker to line
high	highlight highest value
low	highlight lowest value
first	highlight first value
last	highlight last value
colorSeries	colorSeries
colorNegative	colorNegative
colorAxis	colorAxis
colorMarkers	colorMarkers
colorFirst	colorFirst
colorLast	colorLast
colorHigh	colorHigh
colorLow	colorLow

Details

the colors are all predefined to be rgb. Maybe theme colors can be used too.

Examples

```
# create sparklineGroup
sparklines <- c(
  create_sparklines("Sheet 1", "A3:L3", "M3", type = "column", first = "1"),
  create_sparklines("Sheet 1", "A2:L2", "M2", markers = "1"),
  create_sparklines("Sheet 1", "A4:L4", "M4", type = "stacked", negative = "1")
)

t1 <- AirPassengers
t2 <- do.call(cbind, split(t1, cycle(t1)))
dimnames(t2) <- dimnames(.preformat.ts(t1))

wb <- wb_workbook()$
  add_worksheet("Sheet 1")$
  add_data(x = t2)$
  add_sparklines(sparklines = sparklines)
```

dataframe_to_dims *create dimensions from dataframe*

Description

create dimensions from dataframe

Usage

```
dataframe_to_dims(df)
```

Arguments

df	dataframe with spreadsheet columns and rows

Examples

```
{
  df <- dims_to_dataframe("A1:D5;F1:F6;D8", fill = TRUE)
  dataframe_to_dims(df)
}
```

dims_to_dataframe *create dataframe from dimensions*

Description

create dataframe from dimensions

Usage

```
dims_to_dataframe(dims, fill = FALSE)
```

Arguments

dims	Character vector of expected dimension.
fill	If TRUE, fills the dataframe with variables

Examples

```
{
  dims_to_dataframe("A1:B2")
}
```

get_cell_refs *Return excel cell coordinates from (x,y) coordinates*

Description

Return excel cell coordinates from (x,y) coordinates

Usage

```
get_cell_refs(cellCoords)
```

Arguments

cellCoords	A data.frame with two columns coordinate pairs.

Value

Excel alphanumeric cell reference

Examples

```
get_cell_refs(data.frame(1, 2))
# "B1"
get_cell_refs(data.frame(1:3, 2:4))
# "B1" "C2" "D3"
```

get_cell_style *helper get_cell_style*

Description

helper get_cell_style

Usage

```
get_cell_style(wb, sheet, cell)
```

Arguments

wb	a workbook
sheet	a worksheet
cell	a cell

get_date_origin *Get the date origin an xlsx file is using*

Description

Return the date origin used internally by an xlsx or xlsm file

Usage

```
get_date_origin(xlsxFile, origin = FALSE)
```

Arguments

xlsxFile	An xlsx or xlsm file or a wbWorkbook object.
origin	return the origin instead of the character string.

Details

Excel stores dates as the number of days from either 1904-01-01 or 1900-01-01. This function checks the date origin being used in an Excel file and returns is so it can be used in convert_date()

Value

One of "1900-01-01" or "1904-01-01".

See Also

convert_date()

Examples

```
## create a file with some dates
temp <- temp_xlsx()
write_xlsx(as.Date("2015-01-10") - (0:4), file = temp)
m <- read_xlsx(temp)

## convert to dates
do <- get_date_origin(system.file("extdata", "readTest.xlsx", package = "openxlsx2"))
convert_date(m[[1]], do)

get_date_origin(wb_workbook())
get_date_origin(wb_workbook(), origin = TRUE)
```

`guess_col_type` *function to estimate the column type. 0 = character, 1 = numeric, 2 = date.*

Description

function to estimate the column type. 0 = character, 1 = numeric, 2 = date.

Usage

```
guess_col_type(tt)
```

Arguments

`tt`	dataframe produced by wb_to_df()

`int2col` *Convert integer to Excel column*

Description

Converts an integer to an Excel column label.

Usage

```
int2col(x)
```

Arguments

`x`	A numeric vector

Examples

```
int2col(1:10)
```

NamedRegions *Get create or remove named regions*

Description

Return a vector of named regions in a xlsx file or Workbook object

Usage

```
get_named_regions(x)
```

Arguments

x	An xlsx file or Workbook object

See Also

wb_add_named_region() wb_remove_named_region()

Examples

```
## create named regions
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")

## specify region
wb$add_data(sheet = 1, x = iris, startCol = 1, startRow = 1)
wb$add_named_region(
  sheet = 1,
  name = "iris",
  rows = seq_len(nrow(iris) + 1),
  cols = seq_along(iris)
)


## using write_data 'name' argument to create a named region
wb$add_data(sheet = 1, x = iris, name = "iris2", startCol = 10)

out_file <- temp_xlsx()
wb$save(out_file, overwrite = TRUE)

## see named regions
get_named_regions(wb) ## From Workbook object
get_named_regions(out_file) ## From xlsx file

## read named regions
df <- read_xlsx(wb, namedRegion = "iris")
head(df)

df <- read_xlsx(out_file, namedRegion = "iris2")
```

```
head(df)
```

---

named_region *Create / delete a named region*

Description

Create / delete a named region

Usage

```
wb_add_named_region(
  wb,
  sheet = current_sheet(),
  cols,
  rows,
  name,
  localSheet = FALSE,
  overwrite = FALSE,
  comment = NULL,
  customMenu = NULL,
  description = NULL,
  is_function = NULL,
  functionGroupId = NULL,
  help = NULL,
  hidden = NULL,
  localName = NULL,
  publishToServer = NULL,
  statusBar = NULL,
  vbProcedure = NULL,
  workbookParameter = NULL,
  xml = NULL
)

wb_remove_named_region(wb, sheet = current_sheet(), name = NULL)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
cols	Numeric vector specifying columns to include in region
rows	Numeric vector specifying rows to include in region
name	Name for region. A character vector of length 1. Note region names musts be case-insensitive unique.
localSheet	If TRUE the named region will be local for this sheet

overwrite	Boolean. Overwrite if exists? Default to FALSE
comment	description text for named region
customMenu	customMenu (unknown xml feature)
description	description (unknown xml feature)
is_function	function (unknown xml feature)
functionGroupId	function group id (unknown xml feature)
help	help (unknown xml feature)
hidden	hidden if the named region should be hidden
localName	localName (unknown xml feature)
publishToServer	publish to server (unknown xml feature)
statusBar	status bar (unknown xml feature)
vbProcedure	wbProcedure (unknown xml feature)
workbookParameter	workbookParameter (unknown xml feature)
xml	xml (unknown xml feature)

Details

Region is given by: min(cols):max(cols) X min(rows):max(rows)

Examples

```
## create named regions
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")

## specify region
wb$add_data(sheet = 1, x = iris, startCol = 1, startRow = 1)
wb$add_named_region(
  sheet = 1,
  name = "iris",
  rows = seq_len(nrow(iris) + 1),
  cols = seq_along(iris)
)


## using write_data 'name' argument
wb$add_data(sheet = 1, x = iris, name = "iris2", startCol = 10)

out_file <- temp_xlsx()
wb_save(wb, out_file, overwrite = TRUE)

## see named regions
get_named_regions(wb) ## From Workbook object
get_named_regions(out_file) ## From xlsx file
```

```
## delete one
wb$remove_named_region(name = "iris2")
get_named_regions(wb)

## read named regions
df <- read_xlsx(wb, namedRegion = "iris")
head(df)

df <- read_xlsx(out_file, namedRegion = "iris2")
head(df)
```

`numfmt_is_date` *check if numFmt is date. internal function*

Description

check if numFmt is date. internal function

Usage

```
numfmt_is_date(numFmt)
```

Arguments

`numFmt`	numFmt xml nodes

`numfmt_is_posix` *check if numFmt is posix. internal function*

Description

check if numFmt is posix. internal function

Usage

```
numfmt_is_posix(numFmt)
```

Arguments

`numFmt`	numFmt xml nodes

openxlsx2 *xlsx reading, writing and editing.*

Description

This R package is a modern reinterpretation of the widely used popular openxlsx package. Similar to its predecessor, it simplifies the creation of xlsx files by providing a clean interface for writing, designing and editing worksheets. Based on a powerful XML library and focusing on modern programming flows in pipes or chains, openxlsx2 allows to break many new ground.

Details

The openxlsx package uses global options to simplify formatting:

- `options("openxlsx2.borderColor" = "black")`
- `options("openxlsx2.borderStyle" = "thin")`
- `options("openxlsx2.dateFormat" = "mm/dd/yyyy")`
- `options("openxlsx2.datetimeFormat" = "yyyy-mm-dd hh:mm:ss")`
- `options("openxlsx2.numFmt" = NULL)`
- `options("openxlsx2.paperSize" = 9)` ## A4
- `options("openxlsx2.orientation" = "portrait")` ## page orientation
- `options("openxlsx2.sheet.default_name" = "Sheet")`
- `options("openxlsx2.rightToLeft" = NULL)`

By default, openxlsx2 uses the American English word for color (written with 'o' instead of the British English 'ou'). However, both spellings are supported. So where the documentation uses a 'color', the function should also accept a 'color'. However, this is not indicated by the autocompletion.

Authors and contributions:

For a full list of all authors that have made this package possible and for whom we are greatful, please see:

```
system.file("AUTHORS", package = "openxlsx2")
```

If you feel like you should be included on this list, please let us know. If you have something to contribute, you are welcome. If something is not working as expected, open issues or if you have solved an issue, open a pull request. Please be respectful and be aware that we are volunteers doing this for fun in our unpaid free time. We will work on problems when we have time or need.

License:

This package is licensed under the MIT license and is based on openxlsx (by Alexander Walker and Philipp Schauberger; COPYRIGHT 2014-2022) and pugixml (by Arseny Kapoulkine; COPYRIGHT 2006-2022). Both released under the MIT license.

See Also

- `vignette(package = "openxlsx2")`
- `write_data()`
- `write_datatable()`
- `write_xlsx()`
- `read_xlsx()`

for examples

`print.pugi_xml` *print pugi_xml*

Description

print pugi_xml

Usage

```
## S3 method for class 'pugi_xml'
print(x, indent = " ", raw = FALSE, attr_indent = FALSE, ...)
```

Arguments

`x`	something to print
`indent`	indent used default is " "
`raw`	print as raw text
`attr_indent`	print attributes indented on new line
`...`	to please check

Examples

```
# a pointer
x <- read_xml("<a><b/></a>")
print(x)
print(x, raw = TRUE)
```

pugixml *xml_node*

Description

returns xml values as character

Usage

```
xml_node(xml, level1 = NULL, level2 = NULL, level3 = NULL, ...)

xml_node_name(xml, level1 = NULL, level2 = NULL, ...)

xml_value(xml, level1 = NULL, level2 = NULL, level3 = NULL, ...)

xml_attr(xml, level1 = NULL, level2 = NULL, level3 = NULL, ...)
```

Arguments

xml	something xml
level1	to please check
level2	to please check
level3	to please check
...	additional arguments passed to read_xml()

Details

This function returns XML nodes as used in openxlsx2. In theory they could be returned as pointers as well, but this has not yet been implemented. If no level is provided, the nodes on level1 are returned

Examples

```
x <- read_xml("<a><b/></a>")
# return a
xml_node(x, "a")
# return b. requires the path to the node
xml_node(x, "a", "b")
xml_node_name("<a/>")
xml_node_name("<a><b/></a>", "a")
x <- read_xml("<a>1</a>")
xml_value(x, "a")

x <- read_xml("<a><b r=\"1\">2</b></a>")
xml_value(x, "a", "b")

x <- read_xml("<a a=\"1\" b=\"2\">1</a>")
```

```
xml_attr(x, "a")

x <- read_xml("<a><b r=\"1\">2</b></a>")
xml_attr(x, "a", "b")
x <- read_xml("<a a=\"1\" b=\"2\">1</a>")
xml_attr(x, "a")

x <- read_xml("<b><a a=\"1\" b=\"2\"/></b>")
xml_attr(x, "b", "a")
```

`read_sheet_names` *Get names of worksheets*

Description

Returns the worksheet names within an xlsx file

Usage

```
read_sheet_names(file)
```

Arguments

`file`	An xlsx or xlsm file.

Value

Character vector of worksheet names.

Examples

```
read_sheet_names(system.file("extdata", "readTest.xlsx", package = "openxlsx2"))
```

`read_xlsx` *Read from an Excel file or Workbook object*

Description

Read data from an Excel file or Workbook object into a data.frame

Usage

```
read_xlsx(
  xlsxFile,
  sheet,
  startRow = 1,
  startCol = NULL,
  rowNames = FALSE,
  colNames = TRUE,
  skipEmptyRows = FALSE,
  skipEmptyCols = FALSE,
  rows = NULL,
  cols = NULL,
  detectDates = TRUE,
  namedRegion,
  na.strings = "#N/A",
  na.numbers = NA,
  check.names = FALSE,
  sep.names = ".",
  fillMergedCells = FALSE,
  ...
)
```

Arguments

xlsxFile	An xlsx file, Workbook object or URL to xlsx file.
sheet	The name or index of the sheet to read data from.
startRow	first row to begin looking for data.
startCol	first column to begin looking for data.
rowNames	If TRUE, first column of data will be used as row names.
colNames	If TRUE, the first row of data will be used as column names.
skipEmptyRows	If TRUE, empty rows are skipped else empty rows after the first row containing data will return a row of NAs.
skipEmptyCols	If TRUE, empty columns are skipped.
rows	A numeric vector specifying which rows in the Excel file to read. If NULL, all rows are read.
cols	A numeric vector specifying which columns in the Excel file to read. If NULL, all columns are read.
detectDates	If TRUE, attempt to recognize dates and perform conversion.
namedRegion	A named region in the Workbook. If not NULL startRow, rows and cols parameters are ignored.
na.strings	A character vector of strings which are to be interpreted as NA. Blank cells will be returned as NA.
na.numbers	A numeric vector of digits which are to be interpreted as NA. Blank cells will be returned as NA.

check.names	logical. If TRUE then the names of the variables in the data frame are checked to ensure that they are syntactically valid variable names
sep.names	(unimplemented) One character which substitutes blanks in column names. By default, "."
fillMergedCells	If TRUE, the value in a merged cell is given to all cells within the merge.
...	additional arguments passed to wb_to_df()

Details

Formulae written using write_formula to a Workbook object will not get picked up by read_xlsx(). This is because only the formula is written and left to be evaluated when the file is opened in Excel. Opening, saving and closing the file with Excel will resolve this.

Value

data.frame

See Also

get_named_regions() wb_to_df()

Examples

```
xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
df1 <- read_xlsx(xlsxFile = xlsxFile, sheet = 1, skipEmptyRows = FALSE)
sapply(df1, class)

df2 <- read_xlsx(xlsxFile = xlsxFile, sheet = 3, skipEmptyRows = TRUE)
df2$Date <- convert_date(df2$Date)
sapply(df2, class)
head(df2)

df2 <- read_xlsx(
  xlsxFile = xlsxFile, sheet = 3, skipEmptyRows = TRUE,
  detectDates = TRUE
)
sapply(df2, class)
head(df2)

wb <- wb_load(system.file("extdata", "readTest.xlsx", package = "openxlsx2"))
df3 <- read_xlsx(wb, sheet = 2, skipEmptyRows = FALSE, colNames = TRUE)
df4 <- read_xlsx(xlsxFile, sheet = 2, skipEmptyRows = FALSE, colNames = TRUE)
all.equal(df3, df4)

wb <- wb_load(system.file("extdata", "readTest.xlsx", package = "openxlsx2"))
df3 <- read_xlsx(wb,
  sheet = 2, skipEmptyRows = FALSE,
  cols = c(1, 4), rows = c(1, 3, 4)
)
```

```
## URL
##
xlsxFile <- "https://github.com/JanMarvin/openxlsx2/raw/main/inst/extdata/readTest.xlsx"
head(read_xlsx(xlsxFile))
```

`read_xml` *read xml file*

Description

read xml file

Usage

```
read_xml(
  xml,
  pointer = TRUE,
  escapes = FALSE,
  declaration = FALSE,
  whitespace = TRUE,
  empty_tags = FALSE,
  skip_control = TRUE
)
```

Arguments

`xml`	something to read character string or file
`pointer`	should a pointer be returned?
`escapes`	bool if characters like "&" should be escaped. The default is no escapes. Assuming that the input already provides valid information.
`declaration`	should the declaration be imported
`whitespace`	should whitespace pcdata be imported
`empty_tags`	should or be returned
`skip_control`	should whitespace character be exported

Details

Read xml files or strings to pointer and checks if the input is valid XML. If the input is read into a character object, it will be reevaluated every time it is called. A pointer is evaluated once, but lives only for the lifetime of the R session or once it is gc().

Examples

```
# a pointer
x <- read_xml("<a><b/></a>")
print(x)
print(x, raw = TRUE)
str(x)

# a character
y <- read_xml("<a><b/></a>", pointer = FALSE)
print(y)
print(y, raw = TRUE)
str(y)

# Errors if the import was unsuccessful
try(z <- read_xml("<a><b/>"))

xml <- '<?xml test="yay" ?><a>A & B</a>'
# difference in escapes
read_xml(xml, escapes = TRUE, pointer = FALSE)
read_xml(xml, escapes = FALSE, pointer = FALSE)
read_xml(xml, escapes = TRUE)
read_xml(xml, escapes = FALSE)

# read declaration
read_xml(xml, declaration = TRUE)
```

---

select_active_sheet *get and set table of sheets and their state as selected and active*

Description

Multiple sheets can be selected, but only a single one can be active (visible). The visible sheet, must not necessarily be a selected sheet.

Usage

```
wb_get_active_sheet(wb)

wb_set_active_sheet(wb, sheet)

wb_get_selected(wb)

wb_set_selected(wb, sheet)
```

Arguments

wb	a workbook
sheet	a sheet name of the workbook

Value

a data frame with tabSelected and names

Examples

```
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))
# testing is the selected sheet
wb_get_selected(wb)
# change the selected sheet to IrisSample
wb <- wb_set_selected(wb, "IrisSample")
# get the active sheet
wb_get_active_sheet(wb)
# change the selected sheet to IrisSample
wb <- wb_set_active_sheet(wb, sheet = "IrisSample")
```

---

set_cell_style *helper set_cell_style*

Description

helper set_cell_style

Usage

```
set_cell_style(wb, sheet, cell, value)
```

Arguments

wb	a workbook
sheet	a worksheet
cell	a cell
value	a value to assign

Examples

```
# create a numeric data matrix
mat <- matrix(rnorm(28*28, mean = 44444, sd = 555), ncol = 28)
wb <- wb_workbook()$
  add_worksheet("test")$
  add_data("test", mat, colNames = FALSE)

# create known builtins 0 is the default
builtins <- c( # "0",
  "1", "2", "3", "4", "9", "10", "11", "12", "13", "14", "15", "16",
  "17", "18", "19", "20", "21", "22", "37", "38", "39", "40", "45", "46",
  "47", "48", "49"
)
```

```
# assign the style to the first row
for (builtin in builtins) {
  dim <- paste0(int2col(which(builtins %in% builtin)), "1")
  wb$add_cell_style(dims = dim,
                    numFmtId = builtin)
}

# new styles are 1:28, because s in a 0-index, they are in the
# order we just assigned them above
for (i in seq_along(wb$styles_mgr$styles$cellXfs)) {
  cell <- sprintf("%s2:%s28", int2col(i), int2col(i))
  wb$set_cell_style("test", cell, as.character(i))
}
```

`sheet_visibility` *Get/set worksheet visible state*

Description

Get and set worksheet visible state

Usage

```
wb_get_sheet_visibility(wb)

wb_set_sheet_visibility(wb, sheet = current_sheet(), value)
```

Arguments

`wb`	A `wbWorkbook` object
`sheet`	Worksheet identifier
`value`	a logical/character vector the same length as sheet

Value

Character vector of worksheet names.

Vector of "hidden", "visible", "veryHidden"

Examples

```
wb <- wb_workbook()
wb$add_worksheet(sheet = "S1", visible = FALSE)
wb$add_worksheet(sheet = "S2", visible = TRUE)
wb$add_worksheet(sheet = "S3", visible = FALSE)

wb$get_sheet_visibility()
wb$set_sheet_visibility(1, TRUE)         ## show sheet 1
```

```
wb$set_sheet_visibility(2, FALSE)        ## hide sheet 2
wb$set_sheet_visibility(3, "hidden")     ## hide sheet 3
wb$set_sheet_visibility(3, "veryHidden") ## hide sheet 3 from UI
```

`styles_on_sheet` *get all styles on a sheet*

Description

get all styles on a sheet

Usage

```
styles_on_sheet(wb, sheet)
```

Arguments

`wb`	workbook
`sheet`	worksheet

`style_is_date` *check if style is date. internal function*

Description

check if style is date. internal function

Usage

```
style_is_date(cellXfs, numfmt_date)
```

Arguments

`cellXfs`	cellXfs xml nodes
`numfmt_date`	custom numFmtId dates

style_is_posix *check if style is posix. internal function*

Description

check if style is posix. internal function

Usage

```
style_is_posix(cellXfs, numfmt_date)
```

Arguments

`cellXfs`	cellXfs xml nodes
`numfmt_date`	custom numFmtId dates

style_mgr *style manager*

Description

style manager

style manager

Public fields

`numfmt` numfmt-ids

`font` font-ids

`fill` fill-ids

`border` border-ids

`xf` xf-ids

`dxf` dxf-ids

`styles` styles as xml

Methods

Public methods:

- `style_mgr$new()`
- `style_mgr$get_numfmt()`
- `style_mgr$get_font()`
- `style_mgr$get_fill()`
- `style_mgr$get_border()`

- style_mgr$get_xf()
- style_mgr$get_dxf()
- style_mgr$get_numfmt_id()
- style_mgr$get_font_id()
- style_mgr$get_fill_id()
- style_mgr$get_border_id()
- style_mgr$get_xf_id()
- style_mgr$get_dxf_id()
- style_mgr$next_numfmt_id()
- style_mgr$next_font_id()
- style_mgr$next_fill_id()
- style_mgr$next_border_id()
- style_mgr$next_xf_id()
- style_mgr$next_dxf_id()
- style_mgr$add()
- style_mgr$clone()

Method `new()`**:** Creates a new `wbStylesMgr` object

Usage:

```
style_mgr$new(
  numfmt = NA,
  font = NA,
  fill = NA,
  border = NA,
  xf = NA,
  dxf = NA,
  styles = NA
)
```

Arguments:

`numfmt` numfmt

`font` font

`fill` fill

`border` border

`xf` xf

`dxf` dxf

`styles` styles

Returns: a `wbStylesMgr` object

Method `get_numfmt()`**:** get numfmt ids

Usage:

```
style_mgr$get_numfmt()
```

Method `get_font()`**:** get font ids

Usage:

```
style_mgr$get_font()
```

Method `get_fill()`: get fill ids

Usage:

```
style_mgr$get_fill()
```

Method `get_border()`: get border ids

Usage:

```
style_mgr$get_border()
```

Method `get_xf()`: get xf ids

Usage:

```
style_mgr$get_xf()
```

Method `get_dxf()`: get dxf ids

Usage:

```
style_mgr$get_dxf()
```

Method `get_numfmt_id()`: get numfmt id by name

Usage:

```
style_mgr$get_numfmt_id(name)
```

Arguments:

`name` name

Method `get_font_id()`: get font id by name

Usage:

```
style_mgr$get_font_id(name)
```

Arguments:

`name` name

Method `get_fill_id()`: get fill id by name

Usage:

```
style_mgr$get_fill_id(name)
```

Arguments:

`name` name

Method `get_border_id()`: get border id by name

Usage:

```
style_mgr$get_border_id(name)
```

Arguments:

`name` name

Method `get_xf_id()`: get xf id by name

Usage:

```
style_mgr$get_xf_id(name)
```

Arguments:

`name` name

Method `get_dxf_id()`: get dxf id by name

Usage:

```
style_mgr$get_dxf_id(name)
```

Arguments:

`name` name

Method `next_numfmt_id()`: get next numfmt id

Usage:

```
style_mgr$next_numfmt_id()
```

Method `next_font_id()`: get next font id

Usage:

```
style_mgr$next_font_id()
```

Method `next_fill_id()`: get next fill id

Usage:

```
style_mgr$next_fill_id()
```

Method `next_border_id()`: get next border id

Usage:

```
style_mgr$next_border_id()
```

Method `next_xf_id()`: get next xf id

Usage:

```
style_mgr$next_xf_id()
```

Method `next_dxf_id()`: get next xf id

Usage:

```
style_mgr$next_dxf_id()
```

Method `add()`: add entry

Usage:

```
style_mgr$add(style, style_name, skip_duplicates = TRUE)
```

Arguments:

`style` new_style

`style_name` a unique name identifying the style

`skip_duplicates` should duplicates be added?

Method `clone()`: The objects of this class are cloneable with this method.

Usage:

```
style_mgr$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

Examples

```
xlsxFile <- system.file("extdata", "oxlsx2_sheet.xlsx", package = "openxlsx2")
wb <- wb_load(xlsxFile)

# ## start style mgr
# style <- style_mgr$new(wb)
# style$initialize(wb)

# wb$styles_mgr$get_numfmt() |> print()
# wb$styles_mgr$next_numfmt_id() |> print()
# wb$styles_mgr$get_numfmt_id("numFmt-166")

# create new number format
new_numfmt <- create_numfmt(numFmtId = wb$styles_mgr$next_numfmt_id(), formatCode = "#,#")

# add it via stylemgr
wb$styles_mgr$add(new_numfmt, "test")

## get numfmts (invisible)
# z <- wb$styles_mgr$get_numfmt()
# z
wb$styles_mgr$styles$numFmts

## create and add huge font
new_huge_font <- create_font(sz = "20", name = "Arial", b = "1",
                             color = wb_color(hex = "FFFFFFFF"))
wb$styles_mgr$add(new_huge_font, "arial_huge")

## create another font
new_font <- create_font(name = "Arial")
wb$styles_mgr$add(new_font, "arial")

## create and add new fill
new_fill <- create_fill(patternType = "solid", fgColor = wb_color(hex = "FF00224B"))
wb$styles_mgr$add(new_fill, "blue")

# create new style with numfmt enabled
head_xf <- create_cell_style(
  horizontal = "center",
  textRotation = "45",
  numFmtId = "0",
  fontId = wb$styles_mgr$get_font_id("arial_huge"),
  fillId = wb$styles_mgr$get_fill_id("blue")
)

new_xf <- create_cell_style(
  numFmtId = wb$styles_mgr$get_numfmt_id("test"),
  fontId = wb$styles_mgr$get_font_id("arial")
)

## add new styles
wb$styles_mgr$add(head_xf, "head_xf")
```

```
wb$styles_mgr$add(new_xf, "new_xf")

## get cell style ids (invisible)
# z <- wb$styles_mgr$get_xf()

## get cell style id
# wb$styles_mgr$get_xf_id("new_xf")

 ## assign styles to cells
wb$set_cell_style("SUM", "B3:I3", wb$styles_mgr$get_xf_id("head_xf"))
wb$set_cell_style("SUM", "C7:C16", wb$styles_mgr$get_xf_id("new_xf"))
# wb_open(wb)
```

`temp_xlsx` *helper function to create temporary directory for testing purpose*

Description

helper function to create temporary directory for testing purpose

Usage

```
temp_xlsx(name = "temp_xlsx", macros = FALSE)
```

Arguments

`name`	for the temp file
`macros`	logical if the file extension is xlsm or xlsx

`waivers` `openxlsx2` *waivers*

Description

Waiver functions for `openxlsx2` functions

Usage

```
current_sheet()

next_sheet()

na_strings()
```

Value

An object of class `openxlsx2_waiver`

wbChartSheet *R6 class for a Workbook Chart Sheet*

Description

R6 class for a Workbook Chart Sheet

R6 class for a Workbook Chart Sheet

Details

A chart sheet

Value

A character vector of xml

Public fields

`sheetPr` Sheet something?

`sheetViews` Something

`pageMargins` page margins

`drawing` drawing

`hyperlinks` hyperlinks

`relships` relships

Methods

Public methods:

- `wbChartSheet$new()`
- `wbChartSheet$get_prior_sheet_data()`
- `wbChartSheet$set_sheetview()`
- `wbChartSheet$clone()`

Method `new()`**:** Create a new workbook chart sheet object

Usage:

```
wbChartSheet$new(tabColor = tabColor)
```

Arguments:

`tabColor` `character` a tab color to set

Returns: The `wbChartSheet` object

Method `get_prior_sheet_data()`**:** get (prior) sheet data

Usage:

```
wbChartSheet$get_prior_sheet_data()
```

Method `set_sheetview()`**:** add sheetview

Usage:

```
wbChartSheet$set_sheetview(
  colorId = NULL,
  defaultGridColor = NULL,
  rightToLeft = NULL,
  showFormulas = NULL,
  showGridLines = NULL,
  showOutlineSymbols = NULL,
  showRowColHeaders = NULL,
  showRuler = NULL,
  showWhiteSpace = NULL,
  showZeros = NULL,
  tabSelected = NULL,
  topLeftCell = NULL,
  view = NULL,
  windowProtection = NULL,
  workbookViewId = NULL,
  zoomScale = NULL,
  zoomScaleNormal = NULL,
  zoomScalePageLayoutView = NULL,
  zoomScaleSheetLayoutView = NULL
)
```

Arguments:

`colorId` colorId

`defaultGridColor` defaultGridColor

`rightToLeft` rightToLeft

`showFormulas` showFormulas

`showGridLines` showGridLines

`showOutlineSymbols` showOutlineSymbols

`showRowColHeaders` showRowColHeaders

`showRuler` showRuler

`showWhiteSpace` showWhiteSpace

`showZeros` showZeros

`tabSelected` tabSelected

`topLeftCell` topLeftCell

`view` view

`windowProtection` windowProtection

`workbookViewId` workbookViewId

`zoomScale` zoomScale

`zoomScaleNormal` zoomScaleNormal

`zoomScalePageLayoutView` zoomScalePageLayoutView

`zoomScaleSheetLayoutView` zoomScaleSheetLayoutView

Returns: The `wbWorksheetObject`, invisibly

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbChartSheet$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`wbComment` *R6 class for a Workbook Comments*

Description

R6 class for a Workbook Comments

R6 class for a Workbook Comments

Details

A comment

Value

The `wbComment` object, invisibly; called for its side effects

Public fields

`text` Comment text

`author` The comment author

`style` A style for the comment

`visible` `logical`, if `FALSE` is not visible

`width` Width of the comment in ... units

`height` Height of comment in ... units

Methods

Public methods:

- `wbComment$new()`
- `wbComment$print()`
- `wbComment$clone()`

Method `new()`**:** Creates a new `wbComment` object

Usage:

```
wbComment$new(text, author, style, visible = TRUE, width = 2, height = 4)
```

Arguments:

`text` Comment text

`author` The comment author

`style` A style for the comment

`visible` `logical`, if `FALSE` is not visible

`width` Width of the comment in ... units

`height` Height of comment in ... units

Returns: a `wbComment` object

Method `print()`**:** Prints the object

Usage:

```
wbComment$print()
```

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbComment$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`wbHyperlink` *R6 class for a Workbook Hyperlink*

Description

R6 class for a Workbook Hyperlink

R6 class for a Workbook Hyperlink

Details

A hyperlink

Value

A character vector of html if `is_external` is `TRUE`, otherwise `NULL`

Public fields

`ref` ref

`target` target

`location` location

`display` display

`is_external` is_external

Methods

Public methods:

- wbHyperlink$new()
- wbHyperlink$to_xml()
- wbHyperlink$to_target_xml()
- wbHyperlink$clone()

Method `new()`**:** Creates a new `wbHyperlink` object

Usage:

```
wbHyperlink$new(ref, target, location, display = NULL, is_external = TRUE)
```

Arguments:

`ref` ref

`target` target

`location` location

`display` display

`is_external` is_external

Returns: a `wbHyperlink` object

Method `to_xml()`**:** Convert to xml

Usage:

```
wbHyperlink$to_xml(id)
```

Arguments:

`id` ???

Returns: A character vector of xml

Method `to_target_xml()`**:** Convert to target xml

Usage:

```
wbHyperlink$to_target_xml(id)
```

Arguments:

`id` ???

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbHyperlink$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

wbSheetData *R6 class for a Workbook Hyperlink*

Description

R6 class for a Workbook Hyperlink

R6 class for a Workbook Hyperlink

Usage

```
wb_sheet_data()
```

Details

A hyperlink

Public fields

`row_attr` row_attr

`cc` cc

`cc_out` cc_out

Methods

Public methods:

- `wbSheetData$new()`
- `wbSheetData$clone()`

Method `new()`**:** Creates a new `wbSheetData` object

Usage:

```
wbSheetData$new()
```

Returns: a `wbSheetData` object

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbSheetData$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

wbWorkbook *R6 class for a Workbook*

Description

R6 class for a Workbook

R6 class for a Workbook

Details

A Workbook

fun can be either of AVERAGE, COUNT, COUNTA, MAX, MIN, PRODUCT, STDEV, STDEVP, SUM, VAR, VARP

minor helper wrapping xl_open which does the entire same thing

Value

The integer position of the sheet

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

A named character vector of sheet names in their order. The names represent the original value of the worksheet prior to any character substitutions.

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The sheet tables. character() if empty

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

The wbWorkbook object

Returns sheet visibility

The wbWorkbook object

The wbWorkbook object

a character vector of cell styles

Public fields

sheet_names sheet_names

calcChain calcChain

apps apps

charts charts

is_chartsheet is_chartsheet

customXml customXml

connections connections

ctrlProps ctrlProps

Content_Types Content_Types

app app

core core

custom custom

drawings drawings

drawings_rels drawings_rels

embeddings embeddings

externalLinks externalLinks

externalLinksRels externalLinksRels

headFoot headFoot

media media

metadata metadata

persons persons

pivotTables pivotTables

pivotTables.xml.rels pivotTables.xml.rels

pivotDefinitions pivotDefinitions

pivotRecords pivotRecords

pivotDefinitionsRels pivotDefinitionsRels

queryTables queryTables

slicers slicers

slicerCaches slicerCaches

`sharedStrings` sharedStrings

`styles_mgr` styles_mgr

`styles_xml` styles_xml

`tables` tables

`tables.xml.rels` tables.xml.rels

`theme` theme

`vbaProject` vbaProject

`vml` vml

`vml_rels` vml_rels

`comments` comments

`threadComments` threadComments

`workbook` workbook

`workbook.xml.rels` workbook.xml.rels

`worksheets` worksheets

`worksheets_rels` worksheets_rels

`sheetOrder` The sheet order. Controls ordering for worksheets and worksheet names.

`path` path

`creator` A character vector of creators

`title` title

`subject` subject

`category` category

`datetimeCreated` The datetime (as `POSIXt`) the workbook is created. Defaults to the current `Sys.time()` when the workbook object is created, not when the Excel files are saved.

Methods

Public methods:

- `wbWorkbook$new()`
- `wbWorkbook$append()`
- `wbWorkbook$append_sheets()`
- `wbWorkbook$validate_sheet()`
- `wbWorkbook$add_chartsheet()`
- `wbWorkbook$add_worksheet()`
- `wbWorkbook$clone_worksheet()`
- `wbWorkbook$add_data()`
- `wbWorkbook$add_data_table()`
- `wbWorkbook$add_pivot_table()`
- `wbWorkbook$add_formula()`
- `wbWorkbook$add_style()`
- `wbWorkbook$save()`

- wbWorkbook$open()
- wbWorkbook$buildTable()
- wbWorkbook$copy_cells()
- wbWorkbook$get_base_font()
- wbWorkbook$set_base_font()
- wbWorkbook$set_bookview()
- wbWorkbook$get_sheet_names()
- wbWorkbook$set_sheet_names()
- wbWorkbook$setSheetName()
- wbWorkbook$set_row_heights()
- wbWorkbook$remove_row_heights()
- wbWorkbook$createCols()
- wbWorkbook$group_cols()
- wbWorkbook$ungroup_cols()
- wbWorkbook$remove_col_widths()
- wbWorkbook$set_col_widths()
- wbWorkbook$group_rows()
- wbWorkbook$ungroup_rows()
- wbWorkbook$remove_worksheet()
- wbWorkbook$add_data_validation()
- wbWorkbook$merge_cells()
- wbWorkbook$unmerge_cells()
- wbWorkbook$freeze_pane()
- wbWorkbook$add_comment()
- wbWorkbook$remove_comment()
- wbWorkbook$add_conditional_formatting()
- wbWorkbook$add_image()
- wbWorkbook$add_plot()
- wbWorkbook$add_drawing()
- wbWorkbook$add_chart_xml()
- wbWorkbook$add_mschart()
- wbWorkbook$add_form_control()
- wbWorkbook$print()
- wbWorkbook$protect()
- wbWorkbook$protect_worksheet()
- wbWorkbook$set_creators()
- wbWorkbook$add_creators()
- wbWorkbook$remove_creators()
- wbWorkbook$set_last_modified_by()
- wbWorkbook$page_setup()
- wbWorkbook$set_header_footer()
- wbWorkbook$get_tables()

- wbWorkbook$remove_tables()
- wbWorkbook$add_filter()
- wbWorkbook$remove_filter()
- wbWorkbook$grid_lines()
- wbWorkbook$add_named_region()
- wbWorkbook$remove_named_region()
- wbWorkbook$set_order()
- wbWorkbook$get_sheet_visibility()
- wbWorkbook$set_sheet_visibility()
- wbWorkbook$add_page_break()
- wbWorkbook$clean_sheet()
- wbWorkbook$add_border()
- wbWorkbook$add_fill()
- wbWorkbook$add_font()
- wbWorkbook$add_numfmt()
- wbWorkbook$add_cell_style()
- wbWorkbook$get_cell_style()
- wbWorkbook$set_cell_style()
- wbWorkbook$clone_sheet_style()
- wbWorkbook$add_sparklines()
- wbWorkbook$clone()

Method `new()`**:** Creates a new `wbWorkbook` object

Usage:

```
wbWorkbook$new(
  creator = NULL,
  title = NULL,
  subject = NULL,
  category = NULL,
  datetimeCreated = Sys.time()
)
```

Arguments:

`creator` character vector of creators. Duplicated are ignored.

`title` title

`subject` subject

`category` category

`datetimeCreated` The datetime (as `POSIXt`) the workbook is created. Defaults to the current `Sys.time()` when the workbook object is created, not when the Excel files are saved.

Returns: a `wbWorkbook` object

Method `append()`**:** Append a field. This method is intended for internal use

Usage:

```
wbWorkbook$append(field, value)
```

Arguments:

`field` A valid field name

`value` A value for the field

Method `append_sheets()`**:** Append to `self$workbook$sheets` This method is intended for internal use

Usage:

```
wbWorkbook$append_sheets(value)
```

Arguments:

`value` A value for `self$workbook$sheets`

Method `validate_sheet()`**:** validate sheet

Usage:

```
wbWorkbook$validate_sheet(sheet)
```

Arguments:

`sheet` A character sheet name or integer location

Method `add_chartsheet()`**:** Add a chart sheet to the workbook

Usage:

```
wbWorkbook$add_chartsheet(
  sheet = next_sheet(),
  tabColor = NULL,
  zoom = 100,
  visible = c("true", "false", "hidden", "visible", "veryhidden"),
  ...
)
```

Arguments:

`sheet` sheet

`tabColor` tabColor

`zoom` zoom

`visible` visible

`...` ...

Returns: The `wbWorkbook` object, invisibly

Method `add_worksheet()`**:** Add worksheet to the `wbWorkbook` object

Usage:

```
wbWorkbook$add_worksheet(
  sheet = next_sheet(),
  gridLines = TRUE,
  rowColHeaders = TRUE,
  tabColor = NULL,
  zoom = 100,
  header = NULL,
  footer = NULL,
```

```
  oddHeader = header,
  oddFooter = footer,
  evenHeader = header,
  evenFooter = footer,
  firstHeader = header,
  firstFooter = footer,
  visible = c("true", "false", "hidden", "visible", "veryhidden"),
  hasDrawing = FALSE,
  paperSize = getOption("openxlsx2.paperSize", default = 9),
  orientation = getOption("openxlsx2.orientation", default = "portrait"),
 hdpi = getOption("openxlsx2.hdpi", default = getOption("openxlsx2.dpi", default = 300)),
 vdpi = getOption("openxlsx2.vdpi", default = getOption("openxlsx2.dpi", default = 300)),
  ...
)
```

Arguments:

`sheet` sheet

`gridLines` gridLines

`rowColHeaders` rowColHeaders

`tabColor` tabColor

`zoom` zoom

`header` header

`footer` footer

`oddHeader` oddHeader

`oddFooter` oddFooter

`evenHeader` evenHeader

`evenFooter` evenFooter

`firstHeader` firstHeader

`firstFooter` firstFooter

`visible` visible

`hasDrawing` hasDrawing

`paperSize` paperSize

`orientation` orientation

`hdpi` hdpi

`vdpi` vdpi

`...` ...

Returns: The `wbWorkbook` object, invisibly

Method `clone_worksheet()`**:** Clone a workbooksheet

Usage:

```
wbWorkbook$clone_worksheet(old = current_sheet(), new = next_sheet())
```

Arguments:

`old` name of worksheet to clone

`new` name of new worksheet to add

Method `add_data()`**:** add data

Usage:

```
wbWorkbook$add_data(
  sheet = current_sheet(),
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  withFilter = FALSE,
  name = NULL,
  sep = ", ",
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)
```

Arguments:

`sheet` sheet

`x` x

`startCol` startCol

`startRow` startRow

`dims` dims

`array` array

`xy` xy

`colNames` colNames

`rowNames` rowNames

`withFilter` withFilter

`name` name

`sep` sep

`applyCellStyle` applyCellStyle

`removeCellStyle` if writing into existing cells, should the cell style be removed?

`na.strings` Value used for replacing `NA` values from `x`. Default `na_strings()` uses the special `#N/A` value within the workbook.

`inline_strings` write characters as inline strings

`return` The `wbWorkbook` object

Method `add_data_table()`**:** add a data table

Usage:

```
wbWorkbook$add_data_table(
  sheet = current_sheet(),
  x,
```

```
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  tableStyle = "TableStyleLight9",
  tableName = NULL,
  withFilter = TRUE,
  sep = ", ",
  firstColumn = FALSE,
  lastColumn = FALSE,
  bandedRows = TRUE,
  bandedCols = FALSE,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)
```

Arguments:

`sheet` sheet

`x` x

`startCol` startCol

`startRow` startRow

`dims` dims

`xy` xy

`colNames` colNames

`rowNames` rowNames

`tableStyle` tableStyle

`tableName` tableName

`withFilter` withFilter

`sep` sep

`firstColumn` firstColumn

`lastColumn` lastColumn

`bandedRows` bandedRows

`bandedCols` bandedCols

`applyCellStyle` applyCellStyle

`removeCellStyle` if writing into existing cells, should the cell style be removed?

`na.strings` Value used for replacing `NA` values from `x`. Default `na_strings()` uses the special `#N/A` value within the workbook.

`inline_strings` write characters as inline strings

Method `add_pivot_table()`**:** add pivot table

Usage:

```
wbWorkbook$add_pivot_table(
  x,
  sheet = next_sheet(),
  dims = "A3",
  filter,
  rows,
  cols,
  data,
  fun,
  params
)
```

Arguments:

`x` a wb_data object

`sheet` a worksheet

`dims` the worksheet cell where the pivot table is placed

`filter` a character object with names used to filter

`rows` a character object with names used as rows

`cols` a character object with names used as cols

`data` a character object with names used as data

`fun` a character object of functions to be used with the data

`params` a list of parameters to modify pivot table creation

Method `add_formula()`**:** add formula

Usage:

```
wbWorkbook$add_formula(
  sheet = current_sheet(),
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE
)
```

Arguments:

`sheet` sheet

`x` x

`startCol` startCol

`startRow` startRow

`dims` dims

`array` array

`xy` xy

`applyCellStyle` applyCellStyle

`removeCellStyle` if writing into existing cells, should the cell style be removed?

Method `add_style()`: add style

Usage:

```
wbWorkbook$add_style(style = NULL, style_name = NULL)
```

Arguments:

`style` style

`style_name` style_name

Method `save()`: Save the workbook

Usage:

```
wbWorkbook$save(path = self$path, overwrite = TRUE)
```

Arguments:

`path` The path to save the workbook to

`overwrite` If `FALSE`, will not overwrite when `path` exists

Returns: The `wbWorkbook` object invisibly

Method `open()`: open wbWorkbook in Excel.

Usage:

```
wbWorkbook$open(interactive = NA)
```

Arguments:

`interactive` If `FALSE` will throw a warning and not open the path. This can be manually set to `TRUE`, otherwise when `NA` (default) uses the value returned from `base::interactive()`

Returns: The `wbWorkbook`, invisibly

Method `buildTable()`: Build table

Usage:

```
wbWorkbook$buildTable(
  sheet = current_sheet(),
  colNames,
  ref,
  showColNames,
  tableStyle,
  tableName,
  withFilter,
  totalsRowCount = 0,
  showFirstColumn = 0,
  showLastColumn = 0,
  showRowStripes = 1,
  showColumnStripes = 0
)
```

Arguments:

`sheet` sheet

`colNames` colNames

`ref` ref

showColNames showColNames
tableStyle tableStyle
tableName tableName
withFilter withFilter
totalsRowCount totalsRowCount
showFirstColumn showFirstColumn
showLastColumn showLastColumn
showRowStripes showRowStripes
showColumnStripes showColumnStripes

Returns: The wbWorksheet object, invisibly

Method copy_cells(): copy cells around in a workbook

Usage:

```
wbWorkbook$copy_cells(
  sheet = current_sheet(),
  dims = "A1",
  data,
  as_value = FALSE,
  as_ref = FALSE,
  transpose = FALSE
)
```

Arguments:

sheet a worksheet
dims cell used as start
data a wb_data object
as_value should a copy of the value be written
as_ref should references to the cell be written
transpose should the data be written transposed

Returns: The wbWorksheet object, invisibly

Method get_base_font(): Get the base font

Usage:

```
wbWorkbook$get_base_font()
```

Returns: A list of of the font

Method set_base_font(): Get the base font

Usage:

```
wbWorkbook$set_base_font(
  fontSize = 11,
  fontColor = wb_color(theme = "1"),
  fontName = "Calibri",
  ...
)
```

Arguments:

fontSize fontSize

fontColor fontColor

fontName fontName

... ...

Returns: The wbWorkbook object

Method set_bookview(): Set the book views

Usage:

```
wbWorkbook$set_bookview(
  activeTab = NULL,
  autoFilterDateGrouping = NULL,
  firstSheet = NULL,
  minimized = NULL,
  showHorizontalScroll = NULL,
  showSheetTabs = NULL,
  showVerticalScroll = NULL,
  tabRatio = NULL,
  visibility = NULL,
  windowHeight = NULL,
  windowWidth = NULL,
  xWindow = NULL,
  yWindow = NULL
)
```

Arguments:

activeTab activeTab

autoFilterDateGrouping autoFilterDateGrouping

firstSheet firstSheet

minimized minimized

showHorizontalScroll showHorizontalScroll

showSheetTabs showSheetTabs

showVerticalScroll showVerticalScroll

tabRatio tabRatio

visibility visibility

windowHeight windowHeight

windowWidth windowWidth

xWindow xWindow

yWindow yWindow

Returns: The wbWorkbook object

Method get_sheet_names(): Get sheet names

Usage:

```
wbWorkbook$get_sheet_names()
```

Method set_sheet_names(): Sets a sheet name

Usage:

```
wbWorkbook$set_sheet_names(old = NULL, new)
```

Arguments:

`old` Old sheet name

`new` New sheet name

Returns: The `wbWorkbook` object, invisibly

Method `setSheetName()`**:** Deprecated. Use `set_sheet_names()` instead

Usage:

```
wbWorkbook$setSheetName(sheet = current_sheet(), name)
```

Arguments:

`sheet` Old sheet name

`name` New sheet name

Returns: The `wbWorkbook` object, invisibly

Method `set_row_heights()`**:** Sets a row height for a sheet

Usage:

```
wbWorkbook$set_row_heights(
  sheet = current_sheet(),
  rows,
  heights = NULL,
  hidden = FALSE
)
```

Arguments:

`sheet` sheet

`rows` rows

`heights` heights

`hidden` hidden

Returns: The `wbWorkbook` object, invisibly

Method `remove_row_heights()`**:** Sets a row height for a sheet

Usage:

```
wbWorkbook$remove_row_heights(sheet = current_sheet(), rows)
```

Arguments:

`sheet` sheet

`rows` rows

Returns: The `wbWorkbook` object, invisibly description creates column object for worksheet

Method `createCols()`**:**

Usage:

```
wbWorkbook$createCols(sheet = current_sheet(), n, beg, end)
```

Arguments:

`sheet` sheet

`n` n

`beg` beg

`end` end

Method `group_cols()`**:** Group cols

Usage:

```
wbWorkbook$group_cols(
  sheet = current_sheet(),
  cols,
  collapsed = FALSE,
  levels = NULL
)
```

Arguments:

`sheet` sheet

`cols` cols

`collapsed` collapsed

`levels` levels

Returns: The `wbWorkbook` object, invisibly

Method `ungroup_cols()`**:** ungroup cols

Usage:

```
wbWorkbook$ungroup_cols(sheet = current_sheet(), cols)
```

Arguments:

`sheet` sheet

`cols` = cols

Method `remove_col_widths()`**:** Remove row heights from a worksheet

Usage:

```
wbWorkbook$remove_col_widths(sheet = current_sheet(), cols)
```

Arguments:

`sheet` A name or index of a worksheet

`cols` Indices of columns to remove custom width (if any) from.

Returns: The `wbWorkbook` object, invisibly

Method `set_col_widths()`**:** Group cols

Usage:

```
wbWorkbook$set_col_widths(
  sheet = current_sheet(),
  cols,
  widths = 8.43,
  hidden = FALSE
)
```

Arguments:

`sheet` sheet

`cols` cols

`widths` Width of columns

`hidden` A logical vector to determine which cols are hidden; values are repeated across length of `cols`

Returns: The `wbWorkbook` object, invisibly

Method `group_rows()`**:** Group rows

Usage:

```
wbWorkbook$group_rows(
  sheet = current_sheet(),
  rows,
  collapsed = FALSE,
  levels = NULL
)
```

Arguments:

`sheet` sheet

`rows` rows

`collapsed` collapsed

`levels` levels

Returns: The `wbWorkbook` object, invisibly

Method `ungroup_rows()`**:** ungroup rows

Usage:

```
wbWorkbook$ungroup_rows(sheet = current_sheet(), rows)
```

Arguments:

`sheet` sheet

`rows` rows

Returns: The `wbWorkbook` object

Method `remove_worksheet()`**:** Remove a worksheet

Usage:

```
wbWorkbook$remove_worksheet(sheet = current_sheet())
```

Arguments:

`sheet` The worksheet to delete

Returns: The `wbWorkbook` object, invisibly

Method `add_data_validation()`**:** Adds data validation

Usage:

```
wbWorkbook$add_data_validation(
  sheet = current_sheet(),
  cols,
  rows,
  type,
  operator,
  value,
  allowBlank = TRUE,
  showInputMsg = TRUE,
  showErrorMsg = TRUE,
  errorStyle = NULL,
  errorTitle = NULL,
  error = NULL,
  promptTitle = NULL,
  prompt = NULL
)
```

Arguments:

`sheet` sheet

`cols` cols

`rows` rows

`type` type

`operator` operator

`value` value

`allowBlank` allowBlank

`showInputMsg` showInputMsg

`showErrorMsg` showErrorMsg

`errorStyle` The icon shown and the options how to deal with such inputs. Default "stop" (cancel), else "information" (prompt popup) or "warning" (prompt accept or change input)

`errorTitle` The error title

`error` The error text

`promptTitle` The prompt title

`prompt` The prompt text

Method `merge_cells()`**:** Set cell merging for a sheet

Usage:

```
wbWorkbook$merge_cells(sheet = current_sheet(), rows = NULL, cols = NULL)
```

Arguments:

`sheet` sheet

`rows, cols` Row and column specifications.

Returns: The `wbWorkbook` object, invisibly

Method `unmerge_cells()`**:** Removes cell merging for a sheet

Usage:

```
wbWorkbook$unmerge_cells(sheet = current_sheet(), rows = NULL, cols = NULL)
```

Arguments:

`sheet` sheet

`rows, cols` Row and column specifications.

Returns: The `wbWorkbook` object, invisibly

Method `freeze_pane()`**:** Set freeze panes for a sheet

Usage:

```
wbWorkbook$freeze_pane(
  sheet = current_sheet(),
  firstActiveRow = NULL,
  firstActiveCol = NULL,
  firstRow = FALSE,
  firstCol = FALSE
)
```

Arguments:

`sheet` sheet

`firstActiveRow` firstActiveRow

`firstActiveCol` firstActiveCol

`firstRow` firstRow

`firstCol` firstCol

Returns: The `wbWorkbook` object, invisibly

Method `add_comment()`**:** Add comment

Usage:

```
wbWorkbook$add_comment(
  sheet = current_sheet(),
  col,
  row,
  dims = rowcol_to_dims(row, col),
  comment
)
```

Arguments:

`sheet` sheet

`col` column to apply the comment

`row` row to apply the comment

`dims` row and column as spreadsheet dimension, e.g. "A1"

`comment` a comment to apply to the worksheet

Method `remove_comment()`**:** Remove comment

Usage:

```
wbWorkbook$remove_comment(
  sheet = current_sheet(),
  col,
  row,
```

```
  dims = rowcol_to_dims(row, col),
  gridExpand = TRUE
)
```

Arguments:

`sheet` sheet

`col` column to apply the comment

`row` row to apply the comment

`dims` row and column as spreadsheet dimension, e.g. "A1"

`gridExpand` Remove all comments inside the grid. Similar to dims "A1:B2"

Method `add_conditional_formatting()`**:** Add conditional formatting

Usage:

```
wbWorkbook$add_conditional_formatting(
  sheet = current_sheet(),
  cols,
  rows,
  rule = NULL,
  style = NULL,
 type = c("expression", "colorScale", "dataBar", "iconSet", "duplicatedValues",
    "uniqueValues", "containsErrors", "notContainsErrors", "containsBlanks",
   "notContainsBlanks", "containsText", "notContainsText", "beginsWith", "endsWith",
    "between", "topN", "bottomN"),
 params = list(showValue = TRUE, gradient = TRUE, border = TRUE, percent = FALSE, rank =
    5L)
)
```

Arguments:

`sheet` sheet

`cols` cols

`rows` rows

`rule` rule

`style` style

`type` type

`params` Additional parameters

Method `add_image()`**:** Insert an image into a sheet

Usage:

```
wbWorkbook$add_image(
  sheet = current_sheet(),
  file,
  width = 6,
  height = 3,
  startRow = 1,
  startCol = 1,
  rowOffset = 0,
  colOffset = 0,
```

```
  units = "in",
  dpi = 300
)
```

Arguments:

`sheet` sheet

`file` file

`width` width

`height` height

`startRow` startRow

`startCol` startCol

`rowOffset` rowOffset

`colOffset` colOffset

`units` units

`dpi` dpi

Returns: The `wbWorkbook` object, invisibly

Method `add_plot()`**:** Add plot. A wrapper for add_image()

Usage:

```
wbWorkbook$add_plot(
  sheet = current_sheet(),
  width = 6,
  height = 4,
  xy = NULL,
  startRow = 1,
  startCol = 1,
  rowOffset = 0,
  colOffset = 0,
  fileType = "png",
  units = "in",
  dpi = 300
)
```

Arguments:

`sheet` sheet

`width` width

`height` height

`xy` xy

`startRow` startRow

`startCol` startCol

`rowOffset` rowOffset

`colOffset` colOffset

`fileType` fileType

`units` units

`dpi` dpi

Method `add_drawing()`: Add xml drawing

Usage:

```
wbWorkbook$add_drawing(sheet = current_sheet(), xml, dims = NULL)
```

Arguments:

`sheet` sheet

`xml` xml

`dims` dims

Method `add_chart_xml()`: Add xml drawing

Add xml chart

Usage:

```
wbWorkbook$add_chart_xml(sheet = current_sheet(), xml, dims = NULL)
```

Arguments:

`sheet` sheet

`xml` xml

`dims` dims

Method `add_mschart()`: Add mschart chart to the workbook

Usage:

```
wbWorkbook$add_mschart(sheet = current_sheet(), dims = NULL, graph)
```

Arguments:

`sheet` the sheet on which the graph will appear

`dims` the dimensions where the sheet will appear

`graph` mschart graph

Method `add_form_control()`: add form control to workbook

Usage:

```
wbWorkbook$add_form_control(
  sheet = current_sheet(),
  dims = "A1",
  type = NULL,
  text = NULL,
  link = NULL,
  range = NULL,
  checked = FALSE
)
```

Arguments:

`sheet` sheet

`dims` dims

`type` type

`text` text

`link` link

`range` range

checked checked

Returns: The wbWorkbook object, invisibly

Method `print()`**:** Prints the wbWorkbook object

Usage:

```
wbWorkbook$print()
```

Returns: The wbWorkbook object, invisibly; called for its side-effects

Method `protect()`**:** Protect a workbook

Usage:

```
wbWorkbook$protect(
  protect = TRUE,
  password = NULL,
  lockStructure = FALSE,
  lockWindows = FALSE,
  type = c("1", "2", "4", "8"),
  fileSharing = FALSE,
  username = unname(Sys.info()["user"]),
  readOnlyRecommended = FALSE
)
```

Arguments:

protect protect

password password

lockStructure lockStructure

lockWindows lockWindows

type type

fileSharing fileSharing

username username

readOnlyRecommended readOnlyRecommended

Returns: The wbWorkbook object, invisibly

Method `protect_worksheet()`**:** protect worksheet

Usage:

```
wbWorkbook$protect_worksheet(
  sheet = current_sheet(),
  protect = TRUE,
  password = NULL,
  properties = NULL
)
```

Arguments:

sheet sheet

protect protect

password password

properties A character vector of properties to lock. Can be one or more of the following: "selectLockedCells", "selectUnlockedCells", "formatCells", "formatColumns", "formatRows", "insertColumns", "insertRows", "insertHyperlinks", "deleteColumns", "deleteRows", "sort", "autoFilter", "pivotTables", "objects", "scenarios"

Method `set_creators()`: Set creator(s)

Usage:

```
wbWorkbook$set_creators(creators)
```

Arguments:

creators A character vector of creators to set. Duplicates are ignored.

Method `add_creators()`: Add creator(s)

Usage:

```
wbWorkbook$add_creators(creators)
```

Arguments:

creators A character vector of creators to add. Duplicates are ignored.

Method `remove_creators()`: Remove creator(s)

Usage:

```
wbWorkbook$remove_creators(creators)
```

Arguments:

creators A character vector of creators to remove. All duplicated are removed.

Method `set_last_modified_by()`: Change the last modified by

Usage:

```
wbWorkbook$set_last_modified_by(LastModifiedBy = NULL)
```

Arguments:

LastModifiedBy A new value

Returns: The wbWorkbook object, invisibly

Method `page_setup()`: page_setup()

Usage:

```
wbWorkbook$page_setup(
  sheet = current_sheet(),
  orientation = NULL,
  scale = 100,
  left = 0.7,
  right = 0.7,
  top = 0.75,
  bottom = 0.75,
  header = 0.3,
  footer = 0.3,
  fitToWidth = FALSE,
  fitToHeight = FALSE,
```

```
  paperSize = NULL,
  printTitleRows = NULL,
  printTitleCols = NULL,
  summaryRow = NULL,
  summaryCol = NULL
)
```

Arguments:

`sheet` sheet

`orientation` orientation

`scale` scale

`left` left

`right` right

`top` top

`bottom` bottom

`header` header

`footer` footer

`fitToWidth` fitToWidth

`fitToHeight` fitToHeight

`paperSize` paperSize

`printTitleRows` printTitleRows

`printTitleCols` printTitleCols

`summaryRow` summaryRow

`summaryCol` summaryCol

Returns: The `wbWorkbook` object, invisibly

Method `set_header_footer()`**:** Sets headers and footers

Usage:

```
wbWorkbook$set_header_footer(
  sheet = current_sheet(),
  header = NULL,
  footer = NULL,
  evenHeader = NULL,
  evenFooter = NULL,
  firstHeader = NULL,
  firstFooter = NULL
)
```

Arguments:

`sheet` sheet

`header` header

`footer` footer

`evenHeader` evenHeader

`evenFooter` evenFooter

`firstHeader` firstHeader

firstFooter firstFooter

Returns: The wbWorkbook object, invisibly

Method `get_tables()`: get tables

Usage:

```
wbWorkbook$get_tables(sheet = current_sheet())
```

Arguments:

sheet sheet

Method `remove_tables()`: remove tables

Usage:

```
wbWorkbook$remove_tables(sheet = current_sheet(), table)
```

Arguments:

sheet sheet

table table

Method `add_filter()`: add filters

Usage:

```
wbWorkbook$add_filter(sheet = current_sheet(), rows, cols)
```

Arguments:

sheet sheet

rows rows

cols cols

Method `remove_filter()`: remove filters

Usage:

```
wbWorkbook$remove_filter(sheet = current_sheet())
```

Arguments:

sheet sheet

Method `grid_lines()`: grid lines

Usage:

```
wbWorkbook$grid_lines(sheet = current_sheet(), show = FALSE, print = show)
```

Arguments:

sheet sheet

show show

print print

Method `add_named_region()`: add a named region

Usage:

```
wbWorkbook$add_named_region(
  sheet = current_sheet(),
  cols,
  rows,
  name,
  localSheet = FALSE,
  overwrite = FALSE,
  comment = NULL,
  customMenu = NULL,
  description = NULL,
  is_function = NULL,
  functionGroupId = NULL,
  help = NULL,
  hidden = NULL,
  localName = NULL,
  publishToServer = NULL,
  statusBar = NULL,
  vbProcedure = NULL,
  workbookParameter = NULL,
  xml = NULL
)
```

Arguments:

`sheet` sheet

`cols` cols

`rows` rows

`name` name

`localSheet` localSheet

`overwrite` overwrite

`comment` comment

`customMenu` customMenu

`description` description

`is_function` function

`functionGroupId` function group id

`help` help

`hidden` hidden

`localName` localName

`publishToServer` publish to server

`statusBar` status bar

`vbProcedure` wbProcedure

`workbookParameter` workbookParameter

`xml` xml

Method `remove_named_region()`**:** remove a named region

Usage:

```
wbWorkbook$remove_named_region(sheet = current_sheet(), name = NULL)
```

Arguments:

`sheet` sheet

`name` name

Method `set_order()`: set worksheet order

Usage:

```
wbWorkbook$set_order(sheets)
```

Arguments:

`sheets` sheets

Returns: The `wbWorkbook` object

Method `get_sheet_visibility()`: Get sheet visibility

Usage:

```
wbWorkbook$get_sheet_visibility()
```

Method `set_sheet_visibility()`: Set sheet visibility

Usage:

```
wbWorkbook$set_sheet_visibility(sheet = current_sheet(), value)
```

Arguments:

`sheet` sheet

`value` value

Method `add_page_break()`: Add a page break

Usage:

```
wbWorkbook$add_page_break(sheet = current_sheet(), row = NULL, col = NULL)
```

Arguments:

`sheet` sheet

`row` row

`col` col

Method `clean_sheet()`: clean sheet (remove all values)

Usage:

```
wbWorkbook$clean_sheet(
  sheet = current_sheet(),
  numbers = TRUE,
  characters = TRUE,
  styles = TRUE,
  merged_cells = TRUE
)
```

Arguments:

`sheet` sheet

`numbers` remove all numbers

`characters` remove all characters

styles remove all styles

merged_cells remove all merged_cells

Returns: The wbWorksheetObject, invisibly

Method add_border(): create borders for cell region

Usage:

```
wbWorkbook$add_border(
  sheet = current_sheet(),
  dims = "A1",
  bottom_color = wb_color(hex = "FF000000"),
  left_color = wb_color(hex = "FF000000"),
  right_color = wb_color(hex = "FF000000"),
  top_color = wb_color(hex = "FF000000"),
  bottom_border = "thin",
  left_border = "thin",
  right_border = "thin",
  top_border = "thin",
  inner_hgrid = NULL,
  inner_hcolor = NULL,
  inner_vgrid = NULL,
  inner_vcolor = NULL,
  ...
)
```

Arguments:

sheet a worksheet

dims dimensions on the worksheet e.g. "A1", "A1:A5", "A1:H5"

bottom_color, left_color, right_color, top_color, inner_hcolor, inner_vcolor a color, either something openxml knows or some RGB color

left_border, right_border, top_border, bottom_border, inner_hgrid, inner_vgrid the border style, if NULL no border is drawn. See create_border for possible border styles

... ...

Returns: The wbWorksheetObject, invisibly

Examples:

```
wb <- wb_workbook()
wb$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_border(1, dims = "A1:K1",
 left_border = NULL, right_border = NULL,
 top_border = NULL, bottom_border = "double")
wb$add_border(1, dims = "A5",
 left_border = "dotted", right_border = "dotted",
 top_border = "hair", bottom_border = "thick")
wb$add_border(1, dims = "C2:C5")
wb$add_border(1, dims = "G2:H3")
wb$add_border(1, dims = "G12:H13",
 left_color = wb_color(hex = "FF9400D3"), right_color = wb_color(hex = "FF4B0082"),
 top_color = wb_color(hex = "FF0000FF"), bottom_color = wb_color(hex = "FF00FF00"))
```

```
wb$add_border(1, dims = "A20:C23")
wb$add_border(1, dims = "B12:D14",
 left_color = wb_color(hex = "FFFFFF00"), right_color = wb_color(hex = "FFFF7F00"),
 bottom_color = wb_color(hex = "FFFF0000"))
wb$add_border(1, dims = "D28:E28")
# if (interactive()) wb$open()

wb <- wb_workbook()
wb$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_border(1, dims = "A2:K33", inner_vgrid = "thin", inner_vcolor = c(rgb="FF808080"))
```

Method `add_fill()`**:** provide simple fill function

Usage:

```
wbWorkbook$add_fill(
  sheet = current_sheet(),
  dims = "A1",
  color = wb_color(hex = "FFFFFF00"),
  pattern = "solid",
  gradient_fill = "",
  every_nth_col = 1,
  every_nth_row = 1,
  ...
)
```

Arguments:

`sheet` the worksheet

`dims` the cell range

`color` the colors to apply, e.g. yellow: wb_color(hex = "FFFFFF00")

`pattern` various default "none" but others are possible: "solid", "mediumGray", "darkGray", "lightGray", "darkHorizontal", "darkVertical", "darkDown", "darkUp", "darkGrid", "darkTrellis", "lightHorizontal", "lightVertical", "lightDown", "lightUp", "lightGrid", "lightTrellis", "gray125", "gray0625"

`gradient_fill` a gradient fill xml pattern.

`every_nth_col` which col should be filled

`every_nth_row` which row should be filled

`...` ...

Returns: The `wbWorksheetObject`, invisibly

Examples:

```
 # example from the gradient fill manual page
 gradient_fill <- "<gradientFill degree=\"90\">
   <stop position=\"0\"><color rgb=\"FF92D050\"/></stop>
   <stop position=\"1\"><color rgb=\"FF0070C0\"/></stop>
  </gradientFill>"
```

Method `add_font()`**:** provide simple font function

Usage:

```
wbWorkbook$add_font(
  sheet = current_sheet(),
  dims = "A1",
  name = "Calibri",
  color = wb_color(hex = "FF000000"),
  size = "11",
  bold = "",
  italic = "",
  outline = "",
  strike = "",
  underline = "",
  charset = "",
  condense = "",
  extend = "",
  family = "",
  scheme = "",
  shadow = "",
  vertAlign = "",
  ...
)
```

Arguments:

`sheet` the worksheet

`dims` the cell range

`name` font name: default "Calibri"

`color` rgb color: default "FF000000"

`size` font size: default "11",

`bold` bold

`italic` italic

`outline` outline

`strike` strike

`underline` underline

`charset` charset

`condense` condense

`extend` extend

`family` font family

`scheme` font scheme

`shadow` shadow

`vertAlign` vertical alignment

`...` ...

Returns: The `wbWorksheetObject`, invisibly

Examples:

```
wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_font("S1", "A1:K1", name = "Arial", color = wb_color(theme = "4"))
```

Method `add_numfmt()`**:** provide simple number format function

Usage:

```
wbWorkbook$add_numfmt(sheet = current_sheet(), dims = "A1", numfmt)
```

Arguments:

`sheet` the worksheet

`dims` the cell range

`numfmt` number format id or a character of the format

Returns: The `wbWorksheetObject`, invisibly

Examples:

```
wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_numfmt("S1", "A1:A33", numfmt = 1)
```

Method `add_cell_style()`**:** provide simple cell style format function

Usage:

```
wbWorkbook$add_cell_style(
  sheet = current_sheet(),
  dims = "A1",
  applyAlignment = NULL,
  applyBorder = NULL,
  applyFill = NULL,
  applyFont = NULL,
  applyNumberFormat = NULL,
  applyProtection = NULL,
  borderId = NULL,
  extLst = NULL,
  fillId = NULL,
  fontId = NULL,
  hidden = NULL,
  horizontal = NULL,
  indent = NULL,
  justifyLastLine = NULL,
  locked = NULL,
  numFmtId = NULL,
  pivotButton = NULL,
  quotePrefix = NULL,
  readingOrder = NULL,
  relativeIndent = NULL,
  shrinkToFit = NULL,
  textRotation = NULL,
  vertical = NULL,
  wrapText = NULL,
  xfId = NULL
)
```

Arguments:

`sheet` the worksheet

`dims` the cell range

applyAlignment logical apply alignment
applyBorder logical apply border
applyFill logical apply fill
applyFont logical apply font
applyNumberFormat logical apply number format
applyProtection logical apply protection
borderId border ID to apply
extLst extension list something like <extLst>...</extLst>
fillId fill ID to apply
fontId font ID to apply
hidden logical cell is hidden
horizontal align content horizontal ('left', 'center', 'right')
indent logical indent content
justifyLastLine logical justify last line
locked logical cell is locked
numFmtId number format ID to apply
pivotButton unknown
quotePrefix unknown
readingOrder reading order left to right
relativeIndent relative indentation
shrinkToFit logical shrink to fit
textRotation degrees of text rotation
vertical vertical alignment of content ('top', 'center', 'bottom')
wrapText wrap text in cell
xfId xf ID to apply

Returns: The wbWorksheetObject, invisibly

Examples:

```
wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_cell_style("S1", "A1:K1",
                  textRotation = "45",
                  horizontal = "center",
                  vertical = "center",
                  wrapText = "1")
```

Method `get_cell_style()`**:** get sheet style

Usage:

```
wbWorkbook$get_cell_style(sheet = current_sheet(), dims)
```

Arguments:

sheet sheet
dims dims

Method `set_cell_style()`**:** set sheet style

Usage:

```
wbWorkbook$set_cell_style(sheet = current_sheet(), dims, style)
```

Arguments:

`sheet` sheet

`dims` dims

`style` style

Returns: The `wbWorksheetObject`, invisibly

Method `clone_sheet_style()`**:** clone style from one sheet to another

Usage:

```
wbWorkbook$clone_sheet_style(from = current_sheet(), to)
```

Arguments:

`from` the worksheet you are cloning

`to` the worksheet the style is applied to

Method `add_sparklines()`**:** apply sparkline to worksheet

Usage:

```
wbWorkbook$add_sparklines(sheet = current_sheet(), sparklines)
```

Arguments:

`sheet` the worksheet you are using

`sparklines` sparkline created by `create_sparkline()`

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbWorkbook$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

See Also

create_border

Examples

```
## ------------------------------------------------
## Method `wbWorkbook$add_border`
## ------------------------------------------------


wb <- wb_workbook()
wb$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_border(1, dims = "A1:K1",
 left_border = NULL, right_border = NULL,
 top_border = NULL, bottom_border = "double")
wb$add_border(1, dims = "A5",
 left_border = "dotted", right_border = "dotted",
```

```
 top_border = "hair", bottom_border = "thick")
wb$add_border(1, dims = "C2:C5")
wb$add_border(1, dims = "G2:H3")
wb$add_border(1, dims = "G12:H13",
 left_color = wb_color(hex = "FF9400D3"), right_color = wb_color(hex = "FF4B0082"),
 top_color = wb_color(hex = "FF0000FF"), bottom_color = wb_color(hex = "FF00FF00"))
wb$add_border(1, dims = "A20:C23")
wb$add_border(1, dims = "B12:D14",
 left_color = wb_color(hex = "FFFFFF00"), right_color = wb_color(hex = "FFFF7F00"),
 bottom_color = wb_color(hex = "FFFF0000"))
wb$add_border(1, dims = "D28:E28")
# if (interactive()) wb$open()

wb <- wb_workbook()
wb$add_worksheet("S1")$add_data("S1", mtcars)
wb$add_border(1, dims = "A2:K33", inner_vgrid = "thin", inner_vcolor = c(rgb="FF808080"))

## ------------------------------------------------
## Method `wbWorkbook$add_fill`
## ------------------------------------------------

 # example from the gradient fill manual page
 gradient_fill <- "<gradientFill degree=\"90\">
   <stop position=\"0\"><color rgb=\"FF92D050\"/></stop>
   <stop position=\"1\"><color rgb=\"FF0070C0\"/></stop>
  </gradientFill>"

## ------------------------------------------------
## Method `wbWorkbook$add_font`
## ------------------------------------------------

 wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
 wb$add_font("S1", "A1:K1", name = "Arial", color = wb_color(theme = "4"))

## ------------------------------------------------
## Method `wbWorkbook$add_numfmt`
## ------------------------------------------------

 wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
 wb$add_numfmt("S1", "A1:A33", numfmt = 1)

## ------------------------------------------------
## Method `wbWorkbook$add_cell_style`
## ------------------------------------------------

 wb <- wb_workbook()$add_worksheet("S1")$add_data("S1", mtcars)
 wb$add_cell_style("S1", "A1:K1",
                   textRotation = "45",
                   horizontal = "center",
                   vertical = "center",
                   wrapText = "1")
```

wbWorksheet *R6 class for a Workbook Worksheet*

Description

R6 class for a Workbook Worksheet

R6 class for a Workbook Worksheet

Details

A Worksheet

Value

The wbWorksheet object

The wbWorksheet object

Public fields

sheetPr sheetPr

dimension dimension

sheetViews sheetViews

sheetFormatPr sheetFormatPr

sheet_data sheet_data

cols_attr cols_attr

autoFilter autoFilter

mergeCells mergeCells

conditionalFormatting conditionalFormatting

dataValidations dataValidations

freezePane freezePane

hyperlinks hyperlinks

sheetProtection sheetProtection

pageMargins pageMargins

pageSetup pageSetup

headerFooter headerFooter

rowBreaks rowBreaks

colBreaks colBreaks

drawing drawing

legacyDrawing legacyDrawing

legacyDrawingHF legacyDrawingHF

`oleObjects` oleObjects

`tableParts` tableParts

`extLst` extLst

`cellWatches` cellWatches

`controls` controls

`customProperties` customProperties

`customSheetViews` customSheetViews

`dataConsolidate` dataConsolidate

`drawingHF` drawingHF

`relships` relships

`ignoredErrors` ignoredErrors

`phoneticPr` phoneticPr

`picture` picture

`printOptions` printOptions

`protectedRanges` protectedRanges

`scenarios` scenarios

`sheetCalcPr` sheetCalcPr

`smartTags` smartTags

`sortState` sortState

`webPublishItems` webPublishItems

Methods

Public methods:

- `wbWorksheet$new()`
- `wbWorksheet$get_prior_sheet_data()`
- `wbWorksheet$get_post_sheet_data()`
- `wbWorksheet$unfold_cols()`
- `wbWorksheet$fold_cols()`
- `wbWorksheet$clean_sheet()`
- `wbWorksheet$add_page_break()`
- `wbWorksheet$set_print_options()`
- `wbWorksheet$append()`
- `wbWorksheet$add_sparklines()`
- `wbWorksheet$set_sheetview()`
- `wbWorksheet$clone()`

Method `new()`**:** Creates a new `wbWorksheet` object

Usage:

```
wbWorksheet$new(
  tabColor = NULL,
  oddHeader = NULL,
  oddFooter = NULL,
  evenHeader = NULL,
  evenFooter = NULL,
  firstHeader = NULL,
  firstFooter = NULL,
  paperSize = 9,
  orientation = "portrait",
  hdpi = 300,
  vdpi = 300,
  printGridLines = FALSE
)
```

Arguments:

`tabColor` tabColor

`oddHeader` oddHeader

`oddFooter` oddFooter

`evenHeader` evenHeader

`evenFooter` evenFooter

`firstHeader` firstHeader

`firstFooter` firstFooter

`paperSize` paperSize

`orientation` orientation

`hdpi` hdpi

`vdpi` vdpi

`printGridLines` printGridLines

Returns: a `wbWorksheet` object

Method `get_prior_sheet_data()`**:** Get prior sheet data

Usage:

```
wbWorksheet$get_prior_sheet_data()
```

Returns: A character vector of xml

Method `get_post_sheet_data()`**:** Get post sheet data

Usage:

```
wbWorksheet$get_post_sheet_data()
```

Returns: A character vector of xml

Method `unfold_cols()`**:** unfold `<cols ..>` node to dataframe. `<cols><col ..>` are compressed. Only columns with attributes are written to the file. This function unfolds them so that each cell beginning with the "A" to the last one found in cc gets a value. TODO might extend this to match either largest cc or largest col. Could be that "Z" is formatted, but the last value is written to "Y". TODO might replace the xml nodes with the data frame?

Usage:

```
wbWorksheet$unfold_cols()
```

Returns: The column data frame

Method `fold_cols()`**:** fold the column dataframe back into a node.

Usage:

```
wbWorksheet$fold_cols(col_df)
```

Arguments:

`col_df` the column data frame

Returns: The `wbWorksheetObject`, invisibly

Method `clean_sheet()`**:** clean sheet (remove all values)

Usage:

```
wbWorksheet$clean_sheet(
  numbers = TRUE,
  characters = TRUE,
  styles = TRUE,
  merged_cells = TRUE
)
```

Arguments:

`numbers` remove all numbers

`characters` remove all characters

`styles` remove all styles

`merged_cells` remove all merged_cells

Returns: The `wbWorksheetObject`, invisibly

Method `add_page_break()`**:** add page break

Usage:

```
wbWorksheet$add_page_break(row = NULL, col = NULL)
```

Arguments:

`row` row

`col` col

Method `set_print_options()`**:** add print options

Usage:

```
wbWorksheet$set_print_options(
  gridLines = NULL,
  gridLinesSet = NULL,
  headings = NULL,
  horizontalCentered = NULL,
  verticalCentered = NULL
)
```

Arguments:

`gridLines` gridLines

`gridLinesSet` gridLinesSet

`headings` If TRUE prints row and column headings

`horizontalCentered` If TRUE the page is horizontally centered

`verticalCentered` If TRUE the page is vertically centered

Method `append()`**:** append a field. Intended for internal use only. Not guaranteed to remain a public method.

Usage:

```
wbWorksheet$append(field, value = NULL)
```

Arguments:

`field` a field name

`value` a new value

Returns: The `wbWorksheetObject`, invisibly

Method `add_sparklines()`**:** add sparkline

Usage:

```
wbWorksheet$add_sparklines(sparklines)
```

Arguments:

`sparklines` sparkline created by `create_sparkline()`

Returns: The `wbWorksheetObject`, invisibly

Method `set_sheetview()`**:** add sheetview

Usage:

```
wbWorksheet$set_sheetview(
  colorId = NULL,
  defaultGridColor = NULL,
  rightToLeft = NULL,
  showFormulas = NULL,
  showGridLines = NULL,
  showOutlineSymbols = NULL,
  showRowColHeaders = NULL,
  showRuler = NULL,
  showWhiteSpace = NULL,
  showZeros = NULL,
  tabSelected = NULL,
  topLeftCell = NULL,
  view = NULL,
  windowProtection = NULL,
  workbookViewId = NULL,
  zoomScale = NULL,
  zoomScaleNormal = NULL,
  zoomScalePageLayoutView = NULL,
  zoomScaleSheetLayoutView = NULL
)
```

Arguments:

colorId colorId
defaultGridColor defaultGridColor
rightToLeft rightToLeft
showFormulas showFormulas
showGridLines showGridLines
showOutlineSymbols showOutlineSymbols
showRowColHeaders showRowColHeaders
showRuler showRuler
showWhiteSpace showWhiteSpace
showZeros showZeros
tabSelected tabSelected
topLeftCell topLeftCell
view view
windowProtection windowProtection
workbookViewId workbookViewId
zoomScale zoomScale
zoomScaleNormal zoomScaleNormal
zoomScalePageLayoutView zoomScalePageLayoutView
zoomScaleSheetLayoutView zoomScaleSheetLayoutView

Returns: The `wbWorksheetObject`, invisibly

Method `clone()`**:** The objects of this class are cloneable with this method.

Usage:

```
wbWorksheet$clone(deep = FALSE)
```

Arguments:

`deep` Whether to make a deep clone.

`wb_add_border` *add border for cell region*

Description

wb wrapper to create borders for cell region

Usage

```
wb_add_border(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  bottom_color = wb_color(hex = "FF000000"),
  left_color = wb_color(hex = "FF000000"),
  right_color = wb_color(hex = "FF000000"),
```

```
  top_color = wb_color(hex = "FF000000"),
  bottom_border = "thin",
  left_border = "thin",
  right_border = "thin",
  top_border = "thin",
  inner_hgrid = NULL,
  inner_hcolor = NULL,
  inner_vgrid = NULL,
  inner_vcolor = NULL,
  ...
)
```

Arguments

wb	workbook
sheet	a worksheet
dims	dimensions on the worksheet e.g. "A1", "A1:A5", "A1:H5"
bottom_color, left_color, right_color, top_color, inner_hcolor, inner_vcolor	a color, either something openxml knows or some RGB color
left_border, right_border, top_border, bottom_border, inner_hgrid, inner_vgrid	the border style, if NULL no border is drawn. See create_border for possible border styles
...	...

See Also

create_border()

Other styles: wb_add_cell_style(), wb_add_fill(), wb_add_font(), wb_add_numfmt(), wb_clone_sheet_style()

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet("S1") %>%  wb_add_data("S1", mtcars)
wb <- wb_add_border(wb, 1, dims = "A1:K1",
 left_border = NULL, right_border = NULL,
 top_border = NULL, bottom_border = "double")
wb <- wb_add_border(wb, 1, dims = "A5",
 left_border = "dotted", right_border = "dotted",
 top_border = "hair", bottom_border = "thick")
wb <- wb_add_border(wb, 1, dims = "C2:C5")
wb <- wb_add_border(wb, 1, dims = "G2:H3")
wb <- wb_add_border(wb, 1, dims = "G12:H13",
 left_color = wb_color(hex = "FF9400D3"), right_color = wb_color(hex = "FF4B0082"),
 top_color = wb_color(hex = "FF0000FF"), bottom_color = wb_color(hex = "FF00FF00"))
wb <- wb_add_border(wb, 1, dims = "A20:C23")
wb <- wb_add_border(wb, 1, dims = "B12:D14",
 left_color = wb_color(hex = "FFFFFF00"), right_color = wb_color(hex = "FFFF7F00"),
 bottom_color = wb_color(hex = "FFFF0000"))
wb <- wb_add_border(wb, 1, dims = "D28:E28")
```

wb_add_cell_style *add cell style for cell region*

Description

add cell style for cell region

Usage

```
wb_add_cell_style(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  applyAlignment = NULL,
  applyBorder = NULL,
  applyFill = NULL,
  applyFont = NULL,
  applyNumberFormat = NULL,
  applyProtection = NULL,
  borderId = NULL,
  extLst = NULL,
  fillId = NULL,
  fontId = NULL,
  hidden = NULL,
  horizontal = NULL,
  indent = NULL,
  justifyLastLine = NULL,
  locked = NULL,
  numFmtId = NULL,
  pivotButton = NULL,
  quotePrefix = NULL,
  readingOrder = NULL,
  relativeIndent = NULL,
  shrinkToFit = NULL,
  textRotation = NULL,
  vertical = NULL,
  wrapText = NULL,
  xfId = NULL
)
```

Arguments

wb	a workbook
sheet	the worksheet
dims	the cell range
applyAlignment	logical apply alignment

applyBorder	logical apply border
applyFill	logical apply fill
applyFont	logical apply font
applyNumberFormat	logical apply number format
applyProtection	logical apply protection
borderId	border ID to apply
extLst	extension list something like <extLst>...</extLst>
fillId	fill ID to apply
fontId	font ID to apply
hidden	logical cell is hidden
horizontal	align content horizontal ('left', 'center', 'right')
indent	logical indent content
justifyLastLine	logical justify last line
locked	logical cell is locked
numFmtId	number format ID to apply
pivotButton	unknown
quotePrefix	unknown
readingOrder	reading order left to right
relativeIndent	relative indentation
shrinkToFit	logical shrink to fit
textRotation	degrees of text rotation
vertical	vertical alignment of content ('top', 'center', 'bottom')
wrapText	wrap text in cell
xfId	xf ID to apply

Value

The wbWorksheetObject, invisibly

See Also

Other styles: wb_add_border(), wb_add_fill(), wb_add_font(), wb_add_numfmt(), wb_clone_sheet_style()

Examples

```
wb <-
  wb_workbook() %>%
  wb_add_worksheet("S1") %>%
  wb_add_data("S1", mtcars)

wb %>%
  wb_add_cell_style(
    "S1",
    "A1:K1",
    textRotation = "45",
    horizontal = "center",
    vertical = "center",
    wrapText = "1"
  )
```

`wb_add_chartsheet` *Add a chartsheet to a workbook*

Description

Add a chartsheet to a workbook

Usage

```
wb_add_chartsheet(
  wb,
  sheet = next_sheet(),
  tabColor = NULL,
  zoom = 100,
  visible = c("true", "false", "hidden", "visible", "veryhidden"),
  ...
)
```

Arguments

`wb`	A Workbook object to attach the new worksheet
`sheet`	A name for the new worksheet
`tabColor`	Color of the worksheet tab. A valid color (belonging to colors()) or a valid hex color beginning with "#"
`zoom`	A numeric between 10 and 400. Worksheet zoom level as a percentage.
`visible`	If FALSE, sheet is hidden else visible.
`...`	...

Details

After chartsheet creation a chart must be added to the sheet. Otherwise the chartsheet will break the workbook.

See Also

wb_add_mschart()

Other workbook wrappers: wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

---

wb_add_chart_xml *add a chart xml to a workbook*

Description

add a chart xml to a workbook

Usage

```
wb_add_chart_xml(wb, sheet = current_sheet(), xml, dims = NULL)
```

Arguments

wb	a workbook
sheet	the sheet on which the graph will appear
xml	chart xml
dims	the dimensions where the sheet will appear

---

wb_add_conditional_formatting *Add conditional formatting to cells*

Description

Add conditional formatting to cells

Usage

```
wb_add_conditional_formatting(
  wb,
  sheet = current_sheet(),
  cols,
  rows,
  rule = NULL,
  style = NULL,
  type = c("expression", "colorScale", "dataBar", "iconSet", "duplicatedValues",
    "uniqueValues", "containsErrors", "notContainsErrors", "containsBlanks",
```

```
    "notContainsBlanks", "containsText", "notContainsText", "beginsWith", "endsWith",
      "between", "topN", "bottomN"),
   params = list(showValue = TRUE, gradient = TRUE, border = TRUE, percent = FALSE, rank =
     5L)
)

wb_conditional_formatting(
  wb,
  sheet,
  cols,
  rows,
  rule = NULL,
  style = NULL,
  type = c("expression", "colorScale", "dataBar", "duplicatedValues", "containsText",
    "notContainsText", "beginsWith", "endsWith", "between", "topN", "bottomN"),
  ...
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
cols	Columns to apply conditional formatting to
rows	Rows to apply conditional formatting to
rule	The condition under which to apply the formatting. See examples.
style	A style to apply to those cells that satisfy the rule. Default is 'font_color = "FF9C0006"' and 'bgFill = "FFFFC7CE"'
type	The type of conditional formatting rule to apply.
params	Additional parameters passed. See **Details** for more
...	passed to params

Details

See Examples.

Conditional formatting types accept different parameters. Unless noted, unlisted parameters are ignored.

`expression` `[style]`
: A `Style` object

  `[rule]`
  An Excel expression (as a character). Valid operators are: <, <=, >, >=, ==, !=

colorScale `[style]`
: A `character` vector of valid colors with length 2 or 3

  `[rule]`
  `NULL` or a `character` vector of valid colors of equal length to `styles`

dataBar [style]
A character vector of valid colors with length 2 or 3

[rule]
A numeric vector specifying the range of the databar colors. Must be equal length to style

[params$showValue]
If FALSE the cell value is hidden. Default TRUE

[params$gradient]
If FALSE color gradient is removed. Default TRUE

[params$border]
If FALSE the border around the database is hidden. Default TRUE

duplicatedValues/uniqueValues/containsErrors [style]
A Style object

contains [style]
A Style object

[rule]
The text to look for within cells

between [style]
A Style object.

[rule]
A numeric vector of length 2 specifying lower and upper bound (Inclusive)

topN [style]
A Style object

[params$rank]
A numeric vector of length 1 indicating number of highest values. Default 5L

[params$percent] If TRUE uses percentage

bottomN [style]
A Style object

[params$rank]
A numeric vector of length 1 indicating number of lowest values. Default 5L

[params$percent]
If TRUE uses percentage

iconSet [params$showValue]
If FALSE the cell value is hidden. Default TRUE

[params$reverse]
If TRUE the order is reversed. Default FALSE

[params$percent]

If TRUE uses percentage

[params$iconSet]
Uses one of the implemented icon sets. Values must match the length of the icons in the set 3Arrows, 3ArrowsGray, 3Flags, 3Signs, 3Symbols, 3Symbols2, 3TrafficLights1, 3TrafficLights2, 4Arrows, 4ArrowsGray, 4Rating, 4RedToBlack, 4TrafficLights, 5Arrows, 5ArrowsGray, 5Quarters, 5Rating. The default is 3TrafficLights1.

Examples

```
wb <- wb_workbook()
wb$add_worksheet("a")
wb$add_data("a", 1:4, colNames = FALSE)
wb$add_conditional_formatting("a", 1, 1:4, ">2")
```

---

wb_add_data *Add data to a worksheet*

Description

Add data to worksheet with optional styling.

Write an object to worksheet with optional styling.

Usage

```
wb_add_data(
  wb,
  sheet = current_sheet(),
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  withFilter = FALSE,
  name = NULL,
  sep = ", ",
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)

write_data(
  wb,
```

```
  sheet,
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  withFilter = FALSE,
  sep = ", ",
  name = NULL,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)
```

Arguments

wb	A Workbook object containing a worksheet.
sheet	The worksheet to write to. Can be the worksheet index or name.
x	Object to be written. For classes supported look at the examples.
startCol	A vector specifying the starting column to write to.
startRow	A vector specifying the starting row to write to.
dims	Spreadsheet dimensions that will determine startCol and startRow: "A1", "A1:B2", "A:B"
array	A bool if the function written is of type array
xy	An alternative to specifying `startCol` and `startRow` individually. A vector of the form `c(startCol, startRow)`.
colNames	If `TRUE`, column names of x are written.
rowNames	If `TRUE`, data.frame row names of x are written.
withFilter	If `TRUE`, add filters to the column name row. NOTE can only have one filter per worksheet.
name	If not NULL, a named region is defined.
sep	Only applies to list columns. The separator used to collapse list columns to a character vector e.g. sapply(x$list_column, paste, collapse = sep).
applyCellStyle	apply styles when writing on the sheet
removeCellStyle	if writing into existing cells, should the cell style be removed?
na.strings	Value used for replacing `NA` values from `x`. Default `na_strings()` uses the special `#N/A` value within the workbook.
inline_strings	write characters as inline strings

Details

Formulae written using write_formula to a Workbook object will not get picked up by read_xlsx(). This is because only the formula is written and left to Excel to evaluate the formula when the file is opened in Excel. The string "_openxlsx_NA" is reserved for openxlsx2. If the data frame contains this string, the output will be broken.

Formulae written using write_formula to a Workbook object will not get picked up by read_xlsx(). This is because only the formula is written and left to Excel to evaluate the formula when the file is opened in Excel. The string "_openxlsx_NA" is reserved for openxlsx2. If the data frame contains this string, the output will be broken.

Value

A clone of 'wb"

invisible(0)

See Also

write_datatable()

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## See formatting vignette for further examples.

## Options for default styling (These are the defaults)
options("openxlsx2.dateFormat" = "mm/dd/yyyy")
options("openxlsx2.datetimeFormat" = "yyyy-mm-dd hh:mm:ss")
options("openxlsx2.numFmt" = NULL)

################################################################################
## Create Workbook object and add worksheets
wb <- wb_workbook()

## Add worksheets
wb$add_worksheet("Cars")
wb$add_worksheet("Formula")

x <- mtcars[1:6, ]
wb$add_data("Cars", x, startCol = 2, startRow = 3, rowNames = TRUE)

################################################################################
## Hyperlinks
## - vectors/columns with class 'hyperlink' are written as hyperlinks'

v <- rep("https://CRAN.R-project.org/", 4)
names(v) <- paste0("Hyperlink", 1:4) # Optional: names will be used as display text
```

```
class(v) <- "hyperlink"
wb$add_data("Cars", x = v, xy = c("B", 32))

################################################################################
## Formulas
## - vectors/columns with class 'formula' are written as formulas'

df <- data.frame(
  x = 1:3, y = 1:3,
  z = paste(paste0("A", 1:3 + 1L), paste0("B", 1:3 + 1L), sep = "+"),
  stringsAsFactors = FALSE
)

class(df$z) <- c(class(df$z), "formula")

wb$add_data(sheet = "Formula", x = df)

################################################################################
# update cell range and add mtcars
xlsxFile <- system.file("extdata", "inline_str.xlsx", package = "openxlsx2")
wb2 <- wb_load(xlsxFile)

# read dataset with inlinestr
wb_to_df(wb2)
# read_xlsx(wb2)
write_data(wb2, 1, mtcars, startCol = 4, startRow = 4)
wb_to_df(wb2)
```

---

wb_add_data_table *Add data to a worksheet as an Excel table*

Description

Add data to a worksheet and format as an Excel table

Usage

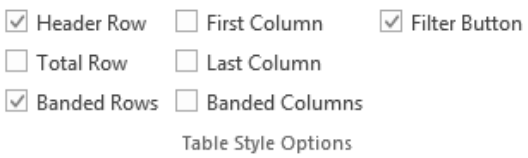
```
wb_add_data_table(
  wb,
  sheet = current_sheet(),
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  tableStyle = "TableStyleLight9",
  tableName = NULL,
```

```
  withFilter = TRUE,
  sep = ", ",
  firstColumn = FALSE,
  lastColumn = FALSE,
  bandedRows = TRUE,
  bandedCols = FALSE,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)
```

Arguments

wb	A Workbook object containing a #' worksheet.
sheet	The worksheet to write to. Can be the worksheet index or name.
x	A dataframe.
startCol	A vector specifying the starting column to write df
startRow	A vector specifying the starting row to write df
dims	Spreadsheet dimensions that will determine startCol and startRow: "A1", "A1:B2", "A:B"
xy	An alternative to specifying startCol and startRow individually. A vector of the form c(startCol, startRow)
colNames	If TRUE, column names of x are written.
rowNames	If TRUE, row names of x are written.
tableStyle	Any excel table style name or "none" (see "formatting" vignette).
tableName	name of table in workbook. The table name must be unique.
withFilter	If TRUE, columns with have filters in the first row.
sep	Only applies to list columns. The separator used to collapse list columns to a character vector e.g. sapply(x$list_column, paste, collapse = sep).

The below options correspond to Excel table options:



firstColumn	logical. If TRUE, the first column is bold
lastColumn	logical. If TRUE, the last column is bold
bandedRows	logical. If TRUE, rows are color banded
bandedCols	logical. If TRUE, the columns are color banded
applyCellStyle	Should we write cell styles to the workbook

removeCellStyle
: keep the cell style?

na.strings
: Value used for replacing NA values from x. Default na_strings() uses the special #N/A value within the workbook.

inline_strings
: write characters as inline strings

Details

columns of x with class Date/POSIXt, currency, accounting, hyperlink, percentage are automatically styled as dates, currency, accounting, hyperlinks, percentages respectively. The string "_openxlsx_NA" is reserved for openxlsx2. If the data frame contains this string, the output will be broken.

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

---

wb_add_data_validation

Add data validation to cells

Description

Add Excel data validation to cells

Usage

```
wb_add_data_validation(
  wb,
  sheet = current_sheet(),
  cols,
  rows,
  type,
  operator,
  value,
  allowBlank = TRUE,
  showInputMsg = TRUE,
  showErrorMsg = TRUE,
  errorStyle = NULL,
  errorTitle = NULL,
  error = NULL,
  promptTitle = NULL,
  prompt = NULL
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
cols	Contiguous columns to apply conditional formatting to
rows	Contiguous rows to apply conditional formatting to
type	One of 'whole', 'decimal', 'date', 'time', 'textLength', 'list' (see examples)
operator	One of 'between', 'notBetween', 'equal', 'notEqual', 'greaterThan', 'lessThan', 'greaterThanOrEqual', 'lessThanOrEqual'
value	a vector of length 1 or 2 depending on operator (see examples)
allowBlank	logical
showInputMsg	logical
showErrorMsg	logical
errorStyle	The icon shown and the options how to deal with such inputs. Default "stop" (cancel), else "information" (prompt popup) or "warning" (prompt accept or change input)
errorTitle	The error title
error	The error text
promptTitle	The prompt title
prompt	The prompt text

Examples

```
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")

wb$add_data_table(1, x = iris[1:30, ])
wb$add_data_validation(1,
  col = 1:3, rows = 2:31, type = "whole",
  operator = "between", value = c(1, 9)
)
wb$add_data_validation(1,
  col = 5, rows = 2:31, type = "textLength",
  operator = "between", value = c(4, 6)
)

## Date and Time cell validation
df <- data.frame(
  "d" = as.Date("2016-01-01") + -5:5,
  "t" = as.POSIXct("2016-01-01") + -5:5 * 10000
)
wb$add_data_table(2, x = df)
wb$add_data_validation(2,
  col = 1, rows = 2:12, type = "date",
  operator = "greaterThanOrEqual", value = as.Date("2016-01-01")
)
```

```
wb$add_data_validation(2,
  col = 2, rows = 2:12, type = "time",
  operator = "between", value = df$t[c(4, 8)]
)


######################################################################
## If type == 'list'
# operator argument is ignored.

wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")

wb$add_data_table(sheet = 1, x = iris[1:30, ])
wb$add_data(sheet = 2, x = sample(iris$Sepal.Length, 10))

wb$add_data_validation(1, col = 1, rows = 2:31, type = "list", value = "'Sheet 2'!$A$1:$A$10")
```

---

wb_add_drawing *add drawings to workbook*

Description

add drawings to workbook

Usage

```
wb_add_drawing(wb, sheet = current_sheet(), xml, dims = NULL)
```

Arguments

wb	a wbWorkbook
sheet	a sheet in the workbook
xml	the drawing xml as character or file
dims	the dimension where the drawing is added. Can be NULL

Examples

```
if (requireNamespace("rvg") && interactive()) {

## rvg example
require(rvg)
tmp <- tempfile(fileext = ".xml")
dml_xlsx(file =  tmp)
plot(1,1)
dev.off()

wb <- wb_workbook()$
```

```
  add_worksheet()$
  add_drawing(xml = tmp)$
  add_drawing(xml = tmp, dims = NULL)
}
```

---

wb_add_fill *add fill for cell region*

Description

wb wrapper to create fill for cell region

Usage

```
wb_add_fill(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  color = wb_color(hex = "FFFFFF00"),
  pattern = "solid",
  gradient_fill = "",
  every_nth_col = 1,
  every_nth_row = 1,
  ...
)
```

Arguments

wb	a workbook
sheet	the worksheet
dims	the cell range
color	the colors to apply, e.g. yellow: wb_color(hex = "FFFFFF00")
pattern	various default "none" but others are possible: "solid", "mediumGray", "darkGray", "lightGray", "darkHorizontal", "darkVertical", "darkDown", "darkUp", "darkGrid", "darkTrellis", "lightHorizontal", "lightVertical", "lightDown", "lightUp", "lightGrid", "lightTrellis", "gray125", "gray0625"
gradient_fill	a gradient fill xml pattern.
every_nth_col	which col should be filled
every_nth_row	which row should be filled
...	...

Value

The wbWorksheetObject, invisibly

See Also

Other styles: wb_add_border(), wb_add_cell_style(), wb_add_font(), wb_add_numfmt(), wb_clone_sheet_style()

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet("S1") %>% wb_add_data("S1", mtcars)
wb <- wb %>% wb_add_fill("S1", dims = "D5:J23", color = wb_color(hex = "FFFFFF00"))
wb <- wb %>% wb_add_fill("S1", dims = "B22:D27", color = wb_color(hex = "FF00FF00"))

wb <- wb %>%  wb_add_worksheet("S2") %>% wb_add_data("S2", mtcars)

gradient_fill1 <- '<gradientFill degree="90">
<stop position="0"><color rgb="FF92D050"/></stop>
<stop position="1"><color rgb="FF0070C0"/></stop>
</gradientFill>'
wb <- wb %>% wb_add_fill("S2", dims = "A2:K5", gradient_fill = gradient_fill1)

gradient_fill2 <- '<gradientFill type="path" left="0.2" right="0.8" top="0.2" bottom="0.8">
<stop position="0"><color theme="0"/></stop>
<stop position="1"><color theme="4"/></stop>
</gradientFill>'
wb <- wb %>% wb_add_fill("S2", dims = "A7:K10", gradient_fill = gradient_fill2)
```

---

wb_add_filter *Add column filters*

Description

Add excel column filters to a worksheet

Usage

```
wb_add_filter(wb, sheet = current_sheet(), rows, cols)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
rows	A row number.
cols	columns to add filter to.

Details

adds filters to worksheet columns, same as filter parameters in write_data. write_datatable automatically adds filters to first row of a table. NOTE Can only have a single filter per worksheet unless using tables.

See Also

write_data()

wb_add_filter()

Examples

```
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")
wb$add_worksheet("Sheet 3")

wb$add_data(1, iris)
wb$add_filter(1, row = 1, cols = seq_along(iris))

## Equivalently
wb$add_data(2, x = iris, withFilter = TRUE)

## Similarly
wb$add_data_table(3, iris)
```

---

wb_add_font *add font for cell region*

Description

add font for cell region

Usage

```
wb_add_font(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  name = "Calibri",
  color = wb_color(hex = "FF000000"),
  size = "11",
  bold = "",
  italic = "",
  outline = "",
  strike = "",
  underline = "",
  charset = "",
  condense = "",
  extend = "",
  family = "",
  scheme = "",
  shadow = "",
```

```
  vertAlign = "",
  ...
)
```

Arguments

wb	a workbook
sheet	the worksheet
dims	the cell range
name	font name: default "Calibri"
color	rgb color: default "FF000000"
size	font size: default "11",
bold	bold, "single" or "double", default: ""
italic	italic
outline	outline
strike	strike
underline	underline
charset	charset
condense	condense
extend	extend
family	font family
scheme	font scheme
shadow	shadow
vertAlign	vertical alignment
...	...

Details

add_font provides all the options openxml accepts for a font node, not all have to be set. Usually name, size and color should be what the user wants.

Value

The `wbWorksheetObject`, invisibly

See Also

Other styles: `wb_add_border()`, `wb_add_cell_style()`, `wb_add_fill()`, `wb_add_numfmt()`, `wb_clone_sheet_style()`

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet("S1") %>% wb_add_data("S1", mtcars)
wb %>% wb_add_font("S1", "A1:K1", name = "Arial", color = wb_color(theme = "4"))
```

wb_add_formula *Add a character vector as an Excel Formula*

Description

Add a character vector containing Excel formula to a worksheet.

Usage

```
wb_add_formula(
  wb,
  sheet = current_sheet(),
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE
)
```

Arguments

wb	A Workbook object containing a worksheet.
sheet	The worksheet to write to. Can be the worksheet index or name.
x	A character vector.
startCol	A vector specifying the starting column to write to.
startRow	A vector specifying the starting row to write to.
dims	Spreadsheet dimensions that will determine startCol and startRow: "A1", "A1:B2", "A:B"
array	A bool if the function written is of type array
xy	An alternative to specifying `startCol` and `startRow` individually. A vector of the form `c(startCol, startRow)`.
applyCellStyle	Should we write cell styles to the workbook
removeCellStyle	keep the cell style?

Details

Currently only the English version of functions are supported. Please don't use the local translation. The examples below show a small list of possible formulas:

- SUM(B2:B4)
- AVERAGE(B2:B4)

- MIN(B2:B4)
- MAX(B2:B4)
- ...

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

---

wb_add_form_control *Add form control Checkbox, Radiobuttons or Dropmenu*

Description

Add form control Checkbox, Radiobuttons or Dropmenu

Usage

```
wb_add_form_control(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  type = NULL,
  text = NULL,
  link = NULL,
  range = NULL,
  checked = FALSE
)
```

Arguments

wb	A workbook object
sheet	A worksheet of the workbook
dims	Optional row and column as spreadsheet dimension, e.g. "A1"
type	A type "Checkbox" (the default), "Radio" a radio button or "Drop" a drop down menu
text	A text to be shown next to the Checkbox or radio button
link	A cell range to link to
range	A cell range used as input
checked	A logical indicating if the Checkbox or radio button is checked

Value

The wbWorkbook object

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet() %>%
  wb_add_form_control()
```

`wb_add_image` *Insert an image into a worksheet*

Description

Insert an image into a worksheet

Usage

```
wb_add_image(
  wb,
  sheet = current_sheet(),
  file,
  width = 6,
  height = 3,
  startRow = 1,
  startCol = 1,
  rowOffset = 0,
  colOffset = 0,
  units = "in",
  dpi = 300
)
```

Arguments

`wb`	A workbook object
`sheet`	A name or index of a worksheet
`file`	An image file. Valid file types are: `"jpeg"`, `"png"`, `"bmp"`
`width`	Width of figure.
`height`	Height of figure.
`startRow`	Row coordinate of upper left corner of the image
`startCol`	Column coordinate of upper left corner of the image
`rowOffset`	offset within cell (row)
`colOffset`	offset within cell (column)
`units`	Units of width and height. Can be `"in"`, `"cm"` or `"px"`
`dpi`	Image resolution used for conversion between units.

See Also

`wb_add_plot()`

Examples

```
## Create a new workbook
wb <- wb_workbook("Ayanami")

## Add some worksheets
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")
wb$add_worksheet("Sheet 3")

## Insert images
img <- system.file("extdata", "einstein.jpg", package = "openxlsx2")
wb$add_image("Sheet 1", img, startRow = 5, startCol = 3, width = 6, height = 5)
wb$add_image(2, img, startRow = 2, startCol = 2)
wb$add_image(3, img, width = 15, height = 12, startRow = 3, startCol = "G", units = "cm")
```

---

wb_add_mschart *Add mschart object to an existing workbook*

Description

Add mschart object to an existing workbook

Usage

```
wb_add_mschart(wb, sheet = current_sheet(), dims = NULL, graph)
```

Arguments

wb	a workbook
sheet	the sheet on which the graph will appear
dims	the dimensions where the sheet will appear
graph	mschart object

See Also

wb_data()

Examples

```
if (requireNamespace("mschart")) {
require(mschart)

## Add mschart to worksheet (adds data and chart)
scatter <- ms_scatterchart(data = iris, x = "Sepal.Length", y = "Sepal.Width", group = "Species")
scatter <- chart_settings(scatter, scatterstyle = "marker")

wb <- wb_workbook() %>%
 wb_add_worksheet() %>%
```

```
 wb_add_mschart(dims = "F4:L20", graph = scatter)

## Add mschart to worksheet and use available data
wb <- wb_workbook() %>%
  wb_add_worksheet() %>%
  wb_add_data(x = mtcars, dims = "B2")

# create wb_data object
dat <- wb_data(wb, 1, dims = "B2:E6")

# call ms_scatterplot
data_plot <- ms_scatterchart(
  data = dat,
  x = "mpg",
  y = c("disp", "hp"),
  labels = c("disp", "hp")
)

# add the scatterplot to the data
wb <- wb %>%
  wb_add_mschart(dims = "F4:L20", graph = data_plot)
}
```

---

wb_add_numfmt *add numfmt for cell region*

Description

add numfmt for cell region

Usage

```
wb_add_numfmt(wb, sheet = current_sheet(), dims = "A1", numfmt)
```

Arguments

wb	a workbook
sheet	the worksheet
dims	the cell range
numfmt	either an id or a character

Value

The `wbWorksheetObject`, invisibly

See Also

Other styles: `wb_add_border()`, `wb_add_cell_style()`, `wb_add_fill()`, `wb_add_font()`, `wb_clone_sheet_style()`

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet("S1") %>% wb_add_data("S1", mtcars)
wb %>% wb_add_numfmt("S1", dims = "F1:F33", numfmt = "#.0")
```

---

wb_add_page_break *Add a page break to a worksheet*

Description

Insert page breaks into a worksheet

Usage

```
wb_add_page_break(wb, sheet = current_sheet(), row = NULL, col = NULL)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
row, col	Either a row number of column number. One must be NULL

See Also

wb_add_worksheet()

Examples

```
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_data(sheet = 1, x = iris)

wb$add_page_break(sheet = 1, row = 10)
wb$add_page_break(sheet = 1, row = 20)
wb$add_page_break(sheet = 1, col = 2)

## In Excel: View tab -> Page Break Preview
```

`wb_add_pivot_table` *Add pivot table to a worksheet*

Description

add pivot table

Usage

```
wb_add_pivot_table(
  wb,
  x,
  sheet = next_sheet(),
  dims = "A3",
  filter,
  rows,
  cols,
  data,
  fun,
  params
)
```

Arguments

`wb`	A Workbook object containing a #' worksheet.
`x`	a wb_data object
`sheet`	a worksheet
`dims`	the worksheet cell where the pivot table is placed
`filter`	a character object with names used to filter
`rows`	a character object with names used as rows
`cols`	a character object with names used as cols
`data`	a character object with names used as data
`fun`	a character object of functions to be used with the data
`params`	a list of parameters to modify pivot table creation

Details

`fun` can be either of `AVERAGE`, `COUNT`, `COUNTA`, `MAX`, `MIN`, `PRODUCT`, `STDEV`, `STDEVP`, `SUM`, `VAR`, `VARP`.

The sheet will be empty unless it is opened in spreadsheet software.

See Also

Other workbook wrappers: `wb_add_chartsheet()`, `wb_add_data_table()`, `wb_add_data()`, `wb_add_formula()`, `wb_add_worksheet()`, `wb_clone_worksheet()`, `wb_copy_cells()`, `wb_creators`, `wb_freeze_pane()`, `wb_get_base_font()`, `wb_save()`, `wb_set_col_widths()`, `wb_set_last_modified_by()`, `wb_set_row_heights()`, `wb_workbook()`, `workbook_grouping`, `ws_cell_merge`

Examples

```
wb <- wb_workbook() %>% wb_add_worksheet() %>% wb_add_data(x = mtcars)

df <- wb_data(wb)

wb <- wb %>%
wb_add_pivot_table(df, dims = "A3",
  filter = "am", rows = "cyl", cols = "gear", data = "disp")
```

---

wb_add_plot *Insert the current plot into a worksheet*

Description

The current plot is saved to a temporary image file using `grDevices::dev.copy()` This file is then written to the workbook using `wb_add_image()`.

Usage

```
wb_add_plot(
  wb,
  sheet = current_sheet(),
  width = 6,
  height = 4,
  xy = NULL,
  startRow = 1,
  startCol = 1,
  rowOffset = 0,
  colOffset = 0,
  fileType = "png",
  units = "in",
  dpi = 300
)
```

Arguments

`wb`	A workbook object
`sheet`	A name or index of a worksheet
`width`	Width of figure. Defaults to 6in.
`height`	Height of figure . Defaults to 4in.
`xy`	Alternate way to specify `startRow` and `startCol`. A vector of length 2 of form (`startcol`, `startRow`)
`startRow`	Row coordinate of upper left corner of figure. `xy[[2]]` when `xy` is given.
`startCol`	Column coordinate of upper left corner of figure. `xy[[1]]` when `xy` is given.
`rowOffset`	offset within cell (row)

colOffset	offset within cell (column)
fileType	File type of image
units	Units of width and height. Can be "in", "cm" or "px"
dpi	Image resolution

See Also

wb_add_image()

Examples

```
if (requireNamespace("ggplot2") && interactive()) {
## Create a new workbook
wb <- wb_workbook()

## Add a worksheet
wb$add_worksheet("Sheet 1", gridLines = FALSE)

## create plot objects
require(ggplot2)
p1 <- ggplot(mtcars, aes(x = mpg, fill = as.factor(gear))) +
  ggtitle("Distribution of Gas Mileage") +
  geom_density(alpha = I(.5))
p2 <- ggplot(Orange, aes(x = age, y = circumference, color = Tree)) +
  geom_point() + geom_line()

## Insert currently displayed plot to sheet 1, row 1, column 1
print(p1) # plot needs to be showing
wb$add_plot(1, width = 5, height = 3.5, fileType = "png", units = "in")

## Insert plot 2
print(p2)
wb$add_plot(1, xy = c("J", 2), width = 16, height = 10, fileType = "png", units = "cm")

}
```

---

wb_add_sparklines *add sparklines to workbook*

Description

add sparklines to workbook

Usage

```
wb_add_sparklines(wb, sheet = current_sheet(), sparklines)
```

Arguments

wb	workbook
sheet	sheet to add the sparklines to
sparklines	sparklines object created with create_sparklines()

See Also

create_sparklines()

Examples

```
sl <- create_sparklines("Sheet 1", "A3:K3", "L3")
wb <- wb_workbook() %>%
  wb_add_worksheet() %>%
  wb_add_data(x = mtcars) %>%
  wb_add_sparklines(sparklines = sl)
```

---

wb_add_style *add style to workbook*

Description

wb wrapper to add style to workbook

Usage

```
wb_add_style(wb, style = NULL, style_name = NULL)
```

Arguments

wb	workbook
style	style xml character
style_name	style name used optional argument

See Also

create_border(), create_cell_style(), create_dxfs_style(), create_fill(), create_font(), create_numfmt()

Examples

```
yellow_f <- wb_color(hex = "FF9C6500")
yellow_b <- wb_color(hex = "FFFFEB9C")

yellow <- create_dxfs_style(font_color = yellow_f, bgFill = yellow_b)
wb <- wb_workbook() %>% wb_add_style(yellow)
```

wb_add_worksheet *Add a worksheet to a workbook*

Description

Add a worksheet to a workbook

Usage

```
wb_add_worksheet(
  wb,
  sheet = next_sheet(),
  gridLines = TRUE,
  rowColHeaders = TRUE,
  tabColor = NULL,
  zoom = 100,
  header = NULL,
  footer = NULL,
  oddHeader = header,
  oddFooter = footer,
  evenHeader = header,
  evenFooter = footer,
  firstHeader = header,
  firstFooter = footer,
  visible = c("true", "false", "hidden", "visible", "veryhidden"),
  hasDrawing = FALSE,
  paperSize = getOption("openxlsx2.paperSize", default = 9),
  orientation = getOption("openxlsx2.orientation", default = "portrait"),
 hdpi = getOption("openxlsx2.hdpi", default = getOption("openxlsx2.dpi", default = 300)),
 vdpi = getOption("openxlsx2.vdpi", default = getOption("openxlsx2.dpi", default = 300)),
  ...
)
```

Arguments

wb	A Workbook object to attach the new worksheet
sheet	A name for the new worksheet
gridLines	A logical. If FALSE, the worksheet grid lines will be hidden.
rowColHeaders	A logical. If FALSE, the worksheet colname and rowname will be hidden.
tabColor	Color of the worksheet tab. A valid color (belonging to colors()) or a valid hex color beginning with "#"
zoom	A numeric between 10 and 400. Worksheet zoom level as a percentage.
header, oddHeader, evenHeader, firstHeader, footer, oddFooter, evenFooter, firstFooter	Character vector of length 3 corresponding to positions left, center, right. header and footer are used to default additional arguments. Setting even, odd, or first, overrides header/footer. Use NA to skip a position.

visible	If FALSE, sheet is hidden else visible.
hasDrawing	If TRUE prepare a drawing output (TODO does this work?)
paperSize	An integer corresponding to a paper size. See ?ws_page_setup for details.
orientation	One of "portrait" or "landscape"
hdpi	Horizontal DPI. Can be set with options("openxlsx2.dpi" = X) or options("openxlsx2.hdpi" = X)
vdpi	Vertical DPI. Can be set with options("openxlsx2.dpi" = X) or options("openxlsx2.vdpi" = X)
...	...

Details

Headers and footers can contain special tags

- **&[Page]** Page number
- **&[Pages]** Number of pages
- **&[Date]** Current date
- **&[Time]** Current time
- **&[Path]** File path
- **&[File]** File name
- **&[Tab]** Worksheet name

Value

The wbWorkbook object wb

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook
wb <- wb_workbook("Fred")

## Add 3 worksheets
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2", gridLines = FALSE)
wb$add_worksheet("Sheet 3", tabColor = "red")
wb$add_worksheet("Sheet 4", gridLines = FALSE, tabColor = "#4F81BD")

## Headers and Footers
wb$add_worksheet("Sheet 5",
  header = c("ODD HEAD LEFT", "ODD HEAD CENTER", "ODD HEAD RIGHT"),
```

```
  footer = c("ODD FOOT RIGHT", "ODD FOOT CENTER", "ODD FOOT RIGHT"),
  evenHeader = c("EVEN HEAD LEFT", "EVEN HEAD CENTER", "EVEN HEAD RIGHT"),
  evenFooter = c("EVEN FOOT RIGHT", "EVEN FOOT CENTER", "EVEN FOOT RIGHT"),
  firstHeader = c("TOP", "OF FIRST", "PAGE"),
  firstFooter = c("BOTTOM", "OF FIRST", "PAGE")
)

wb$add_worksheet("Sheet 6",
  header = c("&[Date]", "ALL HEAD CENTER 2", "&[Page] / &[Pages]"),
  footer = c("&[Path]&[File]", NA, "&[Tab]"),
  firstHeader = c(NA, "Center Header of First Page", NA),
  firstFooter = c(NA, "Center Footer of First Page", NA)
)

wb$add_worksheet("Sheet 7",
  header = c("ALL HEAD LEFT 2", "ALL HEAD CENTER 2", "ALL HEAD RIGHT 2"),
  footer = c("ALL FOOT RIGHT 2", "ALL FOOT CENTER 2", "ALL FOOT RIGHT 2")
)

wb$add_worksheet("Sheet 8",
  firstHeader = c("FIRST ONLY L", NA, "FIRST ONLY R"),
  firstFooter = c("FIRST ONLY L", NA, "FIRST ONLY R")
)

## Need data on worksheet to see all headers and footers
wb$add_data(sheet = 5, 1:400)
wb$add_data(sheet = 6, 1:400)
wb$add_data(sheet = 7, 1:400)
wb$add_data(sheet = 8, 1:400)
```

`wb_clone_sheet_style` *clone sheets style*

Description

clone sheets style

Usage

```
wb_clone_sheet_style(wb, from = current_sheet(), to)
```

Arguments

`wb`	workbook
`from`	sheet we select the style from
`to`	sheet we apply the style from

See Also

Other styles: `wb_add_border()`, `wb_add_cell_style()`, `wb_add_fill()`, `wb_add_font()`, `wb_add_numfmt()`

wb_clone_worksheet *Clone a worksheet to a workbook*

Description

Clone a worksheet to a Workbook object

Usage

```
wb_clone_worksheet(wb, old = current_sheet(), new = next_sheet())
```

Arguments

wb	A wbWorkbook object
old	Name of existing worksheet to copy
new	Name of New worksheet to create

Value

The wb object

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
# Create a new workbook
wb <- wb_workbook("Fred")

# Add worksheets
wb$add_worksheet("Sheet 1")
wb$clone_worksheet("Sheet 1", "Sheet 2")
```

wb_color *Create a new wbColour object*

Description

Create a new wbColour object

Usage

```
wb_color(
  name = NULL,
  auto = NULL,
  indexed = NULL,
  hex = NULL,
  theme = NULL,
  tint = NULL
)
```

Arguments

name	A name of a color known to R
auto	A boolean.
indexed	An indexed color values.
hex	A rgb color as ARGB hex value "FF000000".
theme	A zero based index referencing a value in the theme.
tint	A tint value applied. Range from -1 (dark) to 1 (light).

Value

a wbColour object

wb_copy_cells *copy cells around*

Description

copy cells around

Usage

```
wb_copy_cells(
  wb,
  sheet = current_sheet(),
  dims = "A1",
  data,
  as_value = FALSE,
  as_ref = FALSE,
  transpose = FALSE
)
```

Arguments

wb	workbook
sheet	a worksheet
dims	cell used as start
data	a wb_data object
as_value	should a copy of the value be written
as_ref	should references to the cell be written
transpose	should the data be written transposed

Value

the wbWorkbook invisibly

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
wb <- wb_workbook()$
add_worksheet()$
  add_data(x = mtcars)$
  add_fill(dims = "A1:F1", color = wb_color("yellow"))

dat <- wb_data(wb, dims = "A1:D4", colNames = FALSE)

wb$
  # 1:1 copy to M2
  clone_worksheet(old = 1, new = "Clone1")$
  copy_cells(data = dat, dims = "M2")
```

wb_creators *Workbook creators*

Description

Modify and get workbook creators

Usage

```
wb_add_creators(wb, creators)

wb_set_creators(wb, creators)

wb_remove_creators(wb, creators)

wb_get_creators(wb)
```

Arguments

wb	A wbWorkbook object
creators	A character vector of names

Value

- wb_set_creators(), wb_add_creators(), and wb_remove_creators() return the wbWorkbook object
- wb_get_creators() returns a character vector of creators

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
# workbook made with default creator (see [wbWorkbook])
wb <- wb_workbook()
wb_get_creators(wb)

# add a new creator (assuming "test" isn't your default creator)
wb <- wb_add_creators(wb, "test")
wb_get_creators(wb)

# remove the creator (should be the same as before)
wb <- wb_remove_creators(wb, "test")
```

```
wb_get_creators(wb)
```

`wb_data` *provide wb_data object as mschart input*

Description

provide wb_data object as mschart input

Usage

```
wb_data(wb, sheet = current_sheet(), dims, ...)
```

Arguments

`wb`	a workbook
`sheet`	a sheet in the workbook either name or index
`dims`	the dimensions
`...`	additional arguments for wb_to_df. Be aware that not every argument is valid.

See Also

`wb_to_df()` `wb_add_mschart()`

Examples

```
wb <- wb_workbook() %>%
  wb_add_worksheet() %>%
  wb_add_data(x = mtcars, dims = "B2")

wb_data(wb, 1, dims = "B2:E6")
```

`wb_freeze_pane` *Freeze a worksheet pane*

Description

Freeze a worksheet pane

Usage

```
wb_freeze_pane(
  wb,
  sheet = current_sheet(),
  firstActiveRow = NULL,
  firstActiveCol = NULL,
  firstRow = FALSE,
  firstCol = FALSE
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
firstActiveRow	Top row of active region
firstActiveCol	Furthest left column of active region
firstRow	If TRUE, freezes the first row (equivalent to firstActiveRow = 2)
firstCol	If TRUE, freezes the first column (equivalent to firstActiveCol = 2)

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook
wb <- wb_workbook("Kenshin")

## Add some worksheets
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")
wb$add_worksheet("Sheet 3")
wb$add_worksheet("Sheet 4")

## Freeze Panes
wb$freeze_pane("Sheet 1", firstActiveRow = 5, firstActiveCol = 3)
wb$freeze_pane("Sheet 2", firstCol = TRUE) ## shortcut to firstActiveCol = 2
wb$freeze_pane(3, firstRow = TRUE) ## shortcut to firstActiveRow = 2
wb$freeze_pane(4, firstActiveRow = 1, firstActiveCol = "D")
```

wb_get_base_font *Return the workbook default font*

Description

Get the base font used in the workbook.

Usage

```
wb_get_base_font(wb)
```

Arguments

wb	A wbWorkbook object

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## create a workbook
wb <- wb_workbook()
wb_get_base_font(wb)

## modify base font to size 10 Arial Narrow in red
wb$set_base_font(fontSize = 10, fontColor = "#FF0000", fontName = "Arial Narrow")

wb_get_base_font(wb)
```

wb_get_sheet_name *Get sheet name*

Description

Get sheet name

Usage

```
wb_get_sheet_name(wb, index = NULL)
```

Arguments

wb	a wbWorkbook object
index	Sheet name index

Value

The sheet index

---

wb_get_sheet_names *Get worksheet names for a workbook*

Description

Gets the worksheet names for a wbWorkbook object

Usage

```
wb_get_sheet_names(wb)
```

Arguments

wb	A wbWorkbook object

Value

A named character vector of sheet names in their order. The names represent the original value of the worksheet prior to any character substitutions.

---

wb_get_tables *List Excel tables in a workbook*

Description

List Excel tables in a workbook

Usage

```
wb_get_tables(wb, sheet = current_sheet())
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet

Value

character vector of table names on the specified sheet

Examples

```
wb <- wb_workbook()
wb$add_worksheet(sheet = "Sheet 1")
wb$add_data_table(sheet = "Sheet 1", x = iris)
wb$add_data_table(sheet = 1, x = mtcars, tableName = "mtcars", startCol = 10)

wb$get_tables(sheet = "Sheet 1")
```

---

wb_get_worksheet *Get a worksheet from a* wbWorkbook *object*

Description

Get a worksheet from a wbWorkbook object

Usage

```
wb_get_worksheet(wb, sheet)

wb_ws(wb, sheet)
```

Arguments

wb	a wbWorkbook object
sheet	A sheet name or index

Value

A wbWorksheet object

---

wb_grid_lines *Set worksheet gridlines to show or hide.*

Description

Set worksheet gridlines to show or hide.

Usage

```
wb_grid_lines(wb, sheet = current_sheet(), show = FALSE, print = show)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
show	A logical. If FALSE, grid lines are hidden.
print	A logical. If FALSE, grid lines are not printed.

Examples

```
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))
wb$get_sheet_names() ## list worksheets in workbook
wb$grid_lines(1, show = FALSE)
wb$grid_lines("testing", show = FALSE)
```

---

wb_hyperlink *Create a new hyperlink object*

Description

Create a new hyperlink object

Usage

```
wb_hyperlink()
```

---

wb_load *Load an existing .xlsx file*

Description

wb_load returns a workbook object conserving styles and formatting of the original .xlsx file.

Usage

```
wb_load(file, xlsxFile = NULL, sheet, data_only = FALSE, calc_chain = FALSE)
```

Arguments

file	A path to an existing .xlsx or .xlsm file
xlsxFile	alias for file
sheet	optional sheet parameter. if this is applied, only the selected sheet will be loaded.
data_only	mode to import if only a data frame should be returned. This strips the wbWorkbook to a bare minimum.
calc_chain	optionally you can keep the calculation chain intact. This is used by spreadsheet software to identify the order in which formulas are evaluated. Removing the calculation chain is considered harmless. The calc chain will be created upon the next time the worksheet is loaded in spreadsheet software. Keeping it, might only speed loading time in said software.

Details

A warning is displayed if an xml namespace for main is found in the xlsx file. Certain xlsx files created by third-party applications contain a namespace (usually x). This namespace is not required for the file to work in spreadsheet software and is not expected by openxlsx2. Therefore it is removed when the file is loaded into a workbook. Removal is generally expected to be safe, but the feature is still experimental.

Value

Workbook object.

See Also

wb_remove_worksheet()

Examples

```
## load existing workbook from package folder
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))
wb$get_sheet_names() # list worksheets
wb ## view object
## Add a worksheet
wb$add_worksheet("A new worksheet")
```

---

wb_modify_basefont *Modify the default font*

Description

Modify the default font for this workbook

Usage

```
wb_set_base_font(
  wb,
  fontSize = 11,
  fontColor = wb_color(theme = "1"),
  fontName = "Calibri",
  ...
)
```

Arguments

wb	A workbook object
fontSize	font size
fontColor	font color
fontName	Name of a font
...	...

Details

The font name is not validated in anyway. Excel replaces unknown font names with Arial. Base font is black, size 11, Calibri.

Examples

```
## create a workbook
wb <- wb_workbook()
wb$add_worksheet("S1")
## modify base font to size 10 Arial Narrow in red
wb$set_base_font(fontSize = 10, fontColor = "#FF0000", fontName = "Arial Narrow")

wb$add_data("S1", iris)
wb$add_data_table("S1", x = iris, startCol = 10) ## font color does not affect tables
```

---

wb_open *little worksheet opener*

Description

little worksheet opener

Usage

```
wb_open(wb)
```

Arguments

wb	a workbook

---

wb_order *Order of worksheets in xlsx file*

Description

Get/set order of worksheets in a Workbook object

Usage

```
wb_get_order(wb)

wb_set_order(wb, sheets)
```

Arguments

wb	A wbWorkbook object
sheets	Sheet order

Details

This function does not reorder the worksheets within the workbook object, it simply shuffles the order when writing to file.

Examples

```
## setup a workbook with 3 worksheets
wb <- wb_workbook()
wb$add_worksheet("Sheet 1", gridLines = FALSE)
wb$add_data_table(sheet = 1, x = iris)

wb$add_worksheet("mtcars (Sheet 2)", gridLines = FALSE)
wb$add_data(sheet = 2, x = mtcars)

wb$add_worksheet("Sheet 3", gridLines = FALSE)
wb$add_data(sheet = 3, x = Formaldehyde)

wb_get_order(wb)
wb$get_sheet_na
wb$set_order(c(1, 3, 2)) # switch position of sheets 2 & 3
wb$add_data(2, 'This is still the "mtcars" worksheet', startCol = 15)
wb_get_order(wb)
wb$get_sheet_names() ## ordering within workbook is not changed
wb$set_order(3:1)
```

---

wb_protect *Protect a workbook from modifications*

Description

Protect or unprotect a workbook from modifications by the user in the graphical user interface. Replaces an existing protection.

Usage

```
wb_protect(
  wb,
  protect = TRUE,
  password = NULL,
  lockStructure = FALSE,
  lockWindows = FALSE,
  type = c("1", "2", "4", "8"),
  fileSharing = FALSE,
  username = unname(Sys.info()["user"]),
  readOnlyRecommended = FALSE
)
```

Arguments

wb	A workbook object
protect	Whether to protect or unprotect the sheet (default=TRUE)
password	(optional) password required to unprotect the workbook
lockStructure	Whether the workbook structure should be locked
lockWindows	Whether the window position of the spreadsheet should be locked
type	Lock type (see details)
fileSharing	Whether to enable a popup requesting the unlock password is prompted
username	The username for the fileSharing popup
readOnlyRecommended	Whether or not a post unlock message appears stating that the workbook is recommended to be opened in readonly mode.

Details

Lock types:

1 xlsx with password (default)

2 xlsx recommends read-only

4 xlsx enforces read-only

8 xlsx is locked for annotation

Examples

```
wb <- wb_workbook()
wb$add_worksheet("S1")
wb_protect(wb, protect = TRUE, password = "Password", lockStructure = TRUE)

# Remove the protection
wb_protect(wb, protect = FALSE)

wb <- wb_protect(
  wb,
  protect = TRUE,
  password = "Password",
  lockStructure = TRUE,
  type = 2L,
  fileSharing = TRUE,
  username = "Test",
  readOnlyRecommended = TRUE
)
```

wb_protect_worksheet *Protect a worksheet from modifications*

Description

Protect or unprotect a worksheet from modifications by the user in the graphical user interface. Replaces an existing protection.

Usage

```
wb_protect_worksheet(
  wb,
  sheet = current_sheet(),
  protect = TRUE,
  password = NULL,
  properties = NULL
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
protect	Whether to protect or unprotect the sheet (default=TRUE)
password	(optional) password required to unprotect the worksheet
properties	A character vector of properties to lock. Can be one or more of the following: "selectLockedCells", "selectUnlockedCells", "formatCells", "formatColumns", "formatRows", "insertColumns", "insertRows", "insertHyperlinks", "deleteColumns", "deleteRows", "sort", "autoFilter", "pivotTables", "objects", "scenarios"

Examples

```
wb <- wb_workbook()
wb$add_worksheet("S1")
wb$add_data_table(1, x = iris[1:30, ])
# Formatting cells / columns is allowed , but inserting / deleting columns is protected:
wb$protect_worksheet("S1",
  protect = TRUE,
  properties = c("formatCells", "formatColumns", "insertColumns", "deleteColumns")
)

# Remove the protection
wb$protect_worksheet("S1", protect = FALSE)
```

wb_read *Read from an Excel file or Workbook object*

Description

Read data from an Excel file or Workbook object into a data.frame

Usage

```
wb_read(
  xlsxFile,
  sheet = 1,
  startRow = 1,
  startCol = NULL,
  rowNames = FALSE,
  colNames = TRUE,
  skipEmptyRows = FALSE,
  skipEmptyCols = FALSE,
  rows = NULL,
  cols = NULL,
  detectDates = TRUE,
  namedRegion,
  na.strings = "NA",
  na.numbers = NA,
  ...
)
```

Arguments

xlsxFile	An xlsx file, Workbook object or URL to xlsx file.
sheet	The name or index of the sheet to read data from.
startRow	first row to begin looking for data.
startCol	first column to begin looking for data.
rowNames	If TRUE, first column of data will be used as row names.
colNames	If TRUE, the first row of data will be used as column names.
skipEmptyRows	If TRUE, empty rows are skipped else empty rows after the first row containing data will return a row of NAs.
skipEmptyCols	If TRUE, empty columns are skipped.
rows	A numeric vector specifying which rows in the Excel file to read. If NULL, all rows are read.
cols	A numeric vector specifying which columns in the Excel file to read. If NULL, all columns are read.
detectDates	If TRUE, attempt to recognize dates and perform conversion.

namedRegion	A named region in the Workbook. If not NULL startRow, rows and cols parameters are ignored.
na.strings	A character vector of strings which are to be interpreted as NA. Blank cells will be returned as NA.
na.numbers	A numeric vector of digits which are to be interpreted as NA. Blank cells will be returned as NA.
...	additional arguments passed to wb_to_df()

Details

Creates a data.frame of all data in worksheet.

Value

data.frame

See Also

get_named_regions() wb_to_df() read_xlsx()

Examples

```
xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
df1 <- wb_read(xlsxFile = xlsxFile, sheet = 1)

xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
df1 <- wb_read(xlsxFile = xlsxFile, sheet = 1, rows = c(1, 3, 5), cols = 1:3)
```

---

wb_remove_col_widths *Remove column widths from a worksheet*

Description

Remove column widths from a worksheet

Usage

```
wb_remove_col_widths(wb, sheet = current_sheet(), cols)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
cols	Indices of columns to remove custom width (if any) from.

See Also

wb_set_col_widths()

Examples

```
## Create a new workbook
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))

## remove column widths in columns 1 to 20
wb_remove_col_widths(wb, 1, cols = 1:20)
```

`wb_remove_filter` *Remove a worksheet filter*

Description

Removes filters from wb_add_filter() and write_data()

Usage

```
wb_remove_filter(wb, sheet = current_sheet())
```

Arguments

`wb`	A workbook object
`sheet`	A vector of names or indices of worksheets

Examples

```
wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")
wb$add_worksheet("Sheet 3")

wb$add_data(1, iris)
wb_add_filter(wb, 1, row = 1, cols = seq_along(iris))

## Equivalently
wb$add_data(2, x = iris, withFilter = TRUE)

## Similarly
wb$add_data_table(3, iris)

## remove filters
wb_remove_filter(wb, 1:2) ## remove filters
wb_remove_filter(wb, 3) ## Does not affect tables!
```

wb_remove_row_heights *Remove custom row heights from a worksheet*

Description

Remove row heights from a worksheet

Usage

```
wb_remove_row_heights(wb, sheet = current_sheet(), rows)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
rows	Indices of rows to remove custom height (if any) from.

See Also

wb_set_row_heights()

Examples

```
## Create a new workbook
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))

## remove any custom row heights in rows 1 to 10
wb$remove_row_heights(1, rows = 1:10)
```

wb_remove_tables *Remove an Excel table in a workbook*

Description

List Excel tables in a workbook

Usage

```
wb_remove_tables(wb, sheet = current_sheet(), table)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
table	Name of table to remove. See wb_get_tables()

Value

character vector of table names on the specified sheet

Examples

```
wb <- wb_workbook()
wb$add_worksheet(sheet = "Sheet 1")
wb$add_worksheet(sheet = "Sheet 2")
wb$add_data_table(sheet = "Sheet 1", x = iris, tableName = "iris")
wb$add_data_table(sheet = 1, x = mtcars, tableName = "mtcars", startCol = 10)


wb <- wb_remove_worksheet(wb, sheet = 1) ## delete worksheet removes table objects

wb$add_data_table(sheet = 1, x = iris, tableName = "iris")
wb$add_data_table(sheet = 1, x = mtcars, tableName = "mtcars", startCol = 10)

## wb_remove_tables() deletes table object and all data
wb_get_tables(wb, sheet = 1)
wb$remove_tables(sheet = 1, table = "iris")
wb$add_data_table(sheet = 1, x = iris, tableName = "iris", startCol = 1)

wb_get_tables(wb, sheet = 1)
wb$remove_tables(sheet = 1, table = "iris")
wb$add_data_table(sheet = 1, x = iris, tableName = "iris", startCol = 1)
```

---

wb_remove_worksheet *Remove a worksheet from a workbook*

Description

Remove a worksheet from a Workbook object

Remove a worksheet from a workbook

Usage

```
wb_remove_worksheet(wb, sheet = current_sheet())
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet

Examples

```
## load a workbook
wb <- wb_load(file = system.file("extdata", "loadExample.xlsx", package = "openxlsx2"))

## Remove sheet 2
wb <- wb_remove_worksheet(wb, 2)
```

---

wb_save *Save Workbook to file*

Description

Save Workbook to file

Usage

```
wb_save(wb, path = NULL, overwrite = TRUE)
```

Arguments

wb	A wbWorkbook object to write to file
path	A path to save the workbook to
overwrite	If FALSE, will not overwrite when path exists

Value

the wbWorkbook object, invisibly

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook and add a worksheet
wb <- wb_workbook("Creator of workbook")
wb$add_worksheet(sheet = "My first worksheet")

## Save workbook to working directory

wb_save(wb, path = temp_xlsx(), overwrite = TRUE)
```

wb_set_bookview *Set the workbook position, size and filter*

Description

Get the base font used in the workbook.

Usage

```
wb_set_bookview(
  wb,
  activeTab = NULL,
  autoFilterDateGrouping = NULL,
  firstSheet = NULL,
  minimized = NULL,
  showHorizontalScroll = NULL,
  showSheetTabs = NULL,
  showVerticalScroll = NULL,
  tabRatio = NULL,
  visibility = NULL,
  windowHeight = NULL,
  windowWidth = NULL,
  xWindow = NULL,
  yWindow = NULL
)
```

Arguments

wb	A wbWorkbook object
activeTab	activeTab
autoFilterDateGrouping	autoFilterDateGrouping
firstSheet	firstSheet
minimized	minimized
showHorizontalScroll	showHorizontalScroll
showSheetTabs	showSheetTabs
showVerticalScroll	showVerticalScroll
tabRatio	tabRatio
visibility	visibility
windowHeight	windowHeight
windowWidth	windowWidth
xWindow	xWindow
yWindow	yWindow

Value

The wbWorkbook object

---

wb_set_col_widths *Set worksheet column widths*

Description

Set worksheet column widths to specific width or "auto".

Usage

```
wb_set_col_widths(
  wb,
  sheet = current_sheet(),
  cols,
  widths = 8.43,
  hidden = FALSE
)
```

Arguments

wb	A wbWorkbook object
sheet	A name or index of a worksheet
cols	Indices of cols to set width
widths	width to set cols to specified in Excel column width units or "auto" for automatic sizing. The widths argument is recycled to the length of cols. The default width is 8.43. Though there is no specific default width for Excel, it depends on Excel version, operating system and DPI settings used. Setting it to specific value also is no guarantee that the output will be of the selected width.
hidden	Logical vector. If TRUE the column is hidden.

Details

The global min and max column width for "auto" columns is set by (default values show):

- options("openxlsx2.minWidth" = 3)
- options("openxlsx2.maxWidth" = 250) ## This is the maximum width allowed in Excel

NOTE: The calculation of column widths can be slow for large worksheets.

NOTE: The hidden parameter may conflict with the one set in wb_group_cols; changing one will update the other.

See Also

wb_remove_col_widths()

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook
wb <- wb_workbook()

## Add a worksheet
wb$add_worksheet("Sheet 1")

## set col widths
wb$set_col_widths(1, cols = c(1, 4, 6, 7, 9), widths = c(16, 15, 12, 18, 33))

## auto columns
wb$add_worksheet("Sheet 2")
wb$add_data(sheet = 2, x = iris)
wb$set_col_widths(sheet = 2, cols = 1:5, widths = "auto")
```

---

wb_set_header_footer *Set document headers and footers*

Description

Set document headers and footers

Usage

```
wb_set_header_footer(
  wb,
  sheet = current_sheet(),
  header = NULL,
  footer = NULL,
  evenHeader = NULL,
  evenFooter = NULL,
  firstHeader = NULL,
  firstFooter = NULL
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet

header	document header. Character vector of length 3 corresponding to positions left, center, right. Use NA to skip a position.
footer	document footer. Character vector of length 3 corresponding to positions left, center, right. Use NA to skip a position.
evenHeader	document header for even pages.
evenFooter	document footer for even pages.
firstHeader	document header for first page only.
firstFooter	document footer for first page only.

Details

Headers and footers can contain special tags

- **&[Page]** Page number
- **&[Pages]** Number of pages
- **&[Date]** Current date
- **&[Time]** Current time
- **&[Path]** File path
- **&[File]** File name
- **&[Tab]** Worksheet name

See Also

wb_add_worksheet() to set headers and footers when adding a worksheet

Examples

```
wb <- wb_workbook()

wb$add_worksheet("S1")
wb$add_worksheet("S2")
wb$add_worksheet("S3")
wb$add_worksheet("S4")

wb$add_data(1, 1:400)
wb$add_data(2, 1:400)
wb$add_data(3, 3:400)
wb$add_data(4, 3:400)

wb$set_header_footer(
  sheet = "S1",
  header = c("ODD HEAD LEFT", "ODD HEAD CENTER", "ODD HEAD RIGHT"),
  footer = c("ODD FOOT RIGHT", "ODD FOOT CENTER", "ODD FOOT RIGHT"),
  evenHeader = c("EVEN HEAD LEFT", "EVEN HEAD CENTER", "EVEN HEAD RIGHT"),
  evenFooter = c("EVEN FOOT RIGHT", "EVEN FOOT CENTER", "EVEN FOOT RIGHT"),
  firstHeader = c("TOP", "OF FIRST", "PAGE"),
  firstFooter = c("BOTTOM", "OF FIRST", "PAGE")
)
```

```
wb$set_header_footer(
  sheet = 2,
  header = c("&[Date]", "ALL HEAD CENTER 2", "&[Page] / &[Pages]"),
  footer = c("&[Path]&[File]", NA, "&[Tab]"),
  firstHeader = c(NA, "Center Header of First Page", NA),
  firstFooter = c(NA, "Center Footer of First Page", NA)
)

wb$set_header_footer(
  sheet = 3,
  header = c("ALL HEAD LEFT 2", "ALL HEAD CENTER 2", "ALL HEAD RIGHT 2"),
  footer = c("ALL FOOT RIGHT 2", "ALL FOOT CENTER 2", "ALL FOOT RIGHT 2")
)

wb$set_header_footer(
  sheet = 4,
  firstHeader = c("FIRST ONLY L", NA, "FIRST ONLY R"),
  firstFooter = c("FIRST ONLY L", NA, "FIRST ONLY R")
)
```

`wb_set_last_modified_by` *Add another author to the meta data of the file.*

Description

Just a wrapper of wb$set_last_modified_by()

Usage

```
wb_set_last_modified_by(wb, LastModifiedBy)
```

Arguments

`wb`	A workbook object
`LastModifiedBy`	A string object with the name of the LastModifiedBy-User

See Also

Other workbook wrappers: `wb_add_chartsheet()`, `wb_add_data_table()`, `wb_add_data()`, `wb_add_formula()`, `wb_add_pivot_table()`, `wb_add_worksheet()`, `wb_clone_worksheet()`, `wb_copy_cells()`, `wb_creators`, `wb_freeze_pane()`, `wb_get_base_font()`, `wb_save()`, `wb_set_col_widths()`, `wb_set_row_heights()`, `wb_workbook()`, `workbook_grouping`, `ws_cell_merge`

Examples

```
wb <- wb_workbook()
wb_set_last_modified_by(wb, "test")
```

wb_set_row_heights *Set worksheet row heights*

Description

Set worksheet row heights

Usage

```
wb_set_row_heights(
  wb,
  sheet = current_sheet(),
  rows,
  heights = NULL,
  hidden = FALSE
)
```

Arguments

wb	A wbWorkbook object
sheet	A name or index of a worksheet
rows	Indices of rows to set height
heights	Heights to set rows to specified in Excel column height units.
hidden	Option to hide rows.

See Also

wb_remove_row_heights()

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_workbook(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook
wb <- wb_workbook()

## Add a worksheet
wb$add_worksheet("Sheet 1")

## set row heights
wb <- wb_set_row_heights(
  wb, 1,
  rows = c(1, 4, 22, 2, 19),
  heights = c(24, 28, 32, 42, 33)
)
```

```
## overwrite row 1 height
wb <- wb_set_row_heights(wb, 1, rows = 1, heights = 40)
```

`wb_set_sheet_names` *Set worksheet names for a workbook*

Description

Sets the worksheet names for a wbWorkbook object

Usage

```
wb_set_sheet_names(wb, old = NULL, new)
```

Arguments

`wb`	A wbWorkbook object
`old`	The name (or index) of the old sheet name. If `NULL` will assume all worksheets are to be renamed.
`new`	The name of the new sheet

Value

The wbWorkbook object

`wb_to_df` *Create Dataframe from Workbook*

Description

Simple function to create a dataframe from a workbook. Simple as in simply written down and not optimized etc. The goal was to have something working.

Usage

```
wb_to_df(
  xlsxFile,
  sheet,
  startRow = 1,
  startCol = NULL,
  rowNames = FALSE,
  colNames = TRUE,
  skipEmptyRows = FALSE,
  skipEmptyCols = FALSE,
```

```
  rows = NULL,
  cols = NULL,
  detectDates = TRUE,
  na.strings = "#N/A",
  na.numbers = NA,
  fillMergedCells = FALSE,
  dims,
  showFormula = FALSE,
  convert = TRUE,
  types,
  definedName,
  named_region
)
```

Arguments

xlsxFile	An xlsx file, Workbook object or URL to xlsx file.
sheet	Either sheet name or index. When missing the first sheet in the workbook is selected.
startRow	first row to begin looking for data.
startCol	first column to begin looking for data.
rowNames	If TRUE, the first col of data will be used as row names.
colNames	If TRUE, the first row of data will be used as column names.
skipEmptyRows	If TRUE, empty rows are skipped.
skipEmptyCols	If TRUE, empty columns are skipped.
rows	A numeric vector specifying which rows in the Excel file to read. If NULL, all rows are read.
cols	A numeric vector specifying which columns in the Excel file to read. If NULL, all columns are read.
detectDates	If TRUE, attempt to recognize dates and perform conversion.
na.strings	A character vector of strings which are to be interpreted as NA. Blank cells will be returned as NA.
na.numbers	A numeric vector of digits which are to be interpreted as NA. Blank cells will be returned as NA.
fillMergedCells	If TRUE, the value in a merged cell is given to all cells within the merge.
dims	Character string of type "A1:B2" as optional dimensions to be imported.
showFormula	If TRUE, the underlying Excel formulas are shown.
convert	If TRUE, a conversion to dates and numerics is attempted.
types	A named numeric indicating, the type of the data. 0: character, 1: numeric, 2: date, 3: posixt, 4:logical. Names must match the returned data
definedName	(deprecated) Character string with a definedName. If no sheet is selected, the first appearance will be selected.
named_region	Character string with a named_region (defined name or table). If no sheet is selected, the first appearance will be selected.

Examples

```
################################################################################
# numerics, dates, missings, bool and string
xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
wb1 <- wb_load(xlsxFile)

# import workbook
wb_to_df(wb1)

# do not convert first row to colNames
wb_to_df(wb1, colNames = FALSE)

# do not try to identify dates in the data
wb_to_df(wb1, detectDates = FALSE)

# return the underlying Excel formula instead of their values
wb_to_df(wb1, showFormula = TRUE)

# read dimension withot colNames
wb_to_df(wb1, dims = "A2:C5", colNames = FALSE)

# read selected cols
wb_to_df(wb1, cols = c(1:2, 7))

# read selected rows
wb_to_df(wb1, rows = c(1, 4, 6))

# convert characters to numerics and date (logical too?)
wb_to_df(wb1, convert = FALSE)

# erase empty Rows from dataset
wb_to_df(wb1, sheet = 3, skipEmptyRows = TRUE)

# erase rmpty Cols from dataset
wb_to_df(wb1, skipEmptyCols = TRUE)

# convert first row to rownames
wb_to_df(wb1, sheet = 3, dims = "C6:G9", rowNames = TRUE)

# define type of the data.frame
wb_to_df(wb1, cols = c(1, 4), types = c("Var1" = 0, "Var3" = 1))

# start in row 5
wb_to_df(wb1, startRow = 5, colNames = FALSE)

# na string
wb_to_df(wb1, na.strings = "")

# read_xlsx(wb1)

################################################################################
```

```
# inlinestr
xlsxFile <- system.file("extdata", "inline_str.xlsx", package = "openxlsx2")
wb2 <- wb_load(xlsxFile)

# read dataset with inlinestr
wb_to_df(wb2)
# read_xlsx(wb2)

################################################################################
# named_region // namedRegion
xlsxFile <- system.file("extdata", "namedRegions3.xlsx", package = "openxlsx2")
wb3 <- wb_load(xlsxFile)

# read dataset with named_region (returns global first)
wb_to_df(wb3, named_region = "MyRange", colNames = FALSE)

# read named_region from sheet
wb_to_df(wb3, named_region = "MyRange", sheet = 4, colNames = FALSE)
```

---

wb_workbook *Create a new Workbook object*

Description

Create a new Workbook object

Usage

```
wb_workbook(
  creator = NULL,
  title = NULL,
  subject = NULL,
  category = NULL,
  datetimeCreated = Sys.time()
)
```

Arguments

creator	Creator of the workbook (your name). Defaults to login username
title	Workbook properties title
subject	Workbook properties subject
category	Workbook properties category
datetimeCreated	The time of the workbook is created

Value

A wbWorkbook object

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), workbook_grouping, ws_cell_merge

Examples

```
## Create a new workbook
wb <- wb_workbook()

## Set Workbook properties
wb <- wb_workbook(
  creator  = "Me",
  title    = "Expense Report",
  subject  = "Expense Report - 2022 Q1",
  category = "sales"
)
```

---

workbook_grouping *Group Rows and Columns*

Description

Group a selection of rows or cols

Usage

```
wb_group_cols(
  wb,
  sheet = current_sheet(),
  cols,
  collapsed = FALSE,
  levels = NULL
)

wb_ungroup_cols(wb, sheet = current_sheet(), cols)

wb_group_rows(
  wb,
  sheet = current_sheet(),
  rows,
  collapsed = FALSE,
  levels = NULL
)

wb_ungroup_rows(wb, sheet = current_sheet(), rows)
```

Arguments

wb	A wbWorkbook object
sheet	A name or index of a worksheet
collapsed	If TRUE the grouped columns are collapsed
levels	levels
rows, cols	Indices of rows and columns to group

Details

If row was previously hidden, it will now be shown

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), ws_cell_merge

Examples

```
# create matrix
t1 <- AirPassengers
t2 <- do.call(cbind, split(t1, cycle(t1)))
dimnames(t2) <- dimnames(.preformat.ts(t1))

wb <- wb_workbook()
wb$add_worksheet("AirPass")
wb$add_data("AirPass", t2, rowNames = TRUE)

# groups will always end on/show the last row. in the example 1950, 1955, and 1960
wb <- wb_group_rows(wb, "AirPass", 2:3, collapsed = TRUE) # group years < 1950
wb <- wb_group_rows(wb, "AirPass", 4:8, collapsed = TRUE) # group years 1951-1955
wb <- wb_group_rows(wb, "AirPass", 9:13)                  # group years 1956-1960

wb$createCols("AirPass", 13)

wb <- wb_group_cols(wb, "AirPass", 2:4, collapsed = TRUE)
wb <- wb_group_cols(wb, "AirPass", 5:7, collapsed = TRUE)
wb <- wb_group_cols(wb, "AirPass", 8:10, collapsed = TRUE)
wb <- wb_group_cols(wb, "AirPass", 11:13)

### create grouping levels
grp_rows <- list(
  "1" = seq(2, 3),
  "2" = seq(4, 8),
  "3" = seq(9, 13)
)

grp_cols <- list(
  "1" = seq(2, 4),
```

```
  "2" = seq(5, 7),
  "3" = seq(8, 10),
  "4" = seq(11, 13)
)

wb <- wb_workbook()
wb$add_worksheet("AirPass")
wb$add_data("AirPass", t2, rowNames = TRUE)

wb$createCols("AirPass", 13)

wb$group_cols("AirPass", cols = grp_cols)
wb$group_rows("AirPass", rows = grp_rows)
```

`write_datatable` *Write to a worksheet as an Excel table*

Description

Write to a worksheet and format as an Excel table

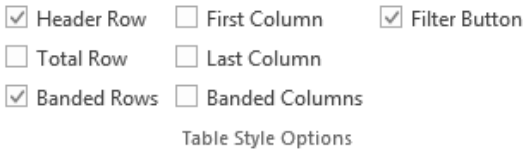
Usage

```
write_datatable(
  wb,
  sheet,
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  xy = NULL,
  colNames = TRUE,
  rowNames = FALSE,
  tableStyle = "TableStyleLight9",
  tableName = NULL,
  withFilter = TRUE,
  sep = ", ",
  firstColumn = FALSE,
  lastColumn = FALSE,
  bandedRows = TRUE,
  bandedCols = FALSE,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE,
  na.strings = na_strings(),
  inline_strings = TRUE
)
```

Arguments

wb	A Workbook object containing a worksheet.
sheet	The worksheet to write to. Can be the worksheet index or name.
x	A data frame.
startCol	A vector specifying the starting column to write df
startRow	A vector specifying the starting row to write df
dims	Spreadsheet dimensions that will determine startCol and startRow: "A1", "A1:B2", "A:B"
xy	An alternative to specifying startCol and startRow individually. A vector of the form c(startCol, startRow)
colNames	If TRUE, column names of x are written.
rowNames	If TRUE, row names of x are written.
tableStyle	Any excel table style name or "none" (see "formatting" vignette).
tableName	name of table in workbook. The table name must be unique.
withFilter	If TRUE, columns with have filters in the first row.
sep	Only applies to list columns. The separator used to collapse list columns to a character vector e.g. sapply(x$list_column, paste, collapse = sep).

The below options correspond to Excel table options:



firstColumn	logical. If TRUE, the first column is bold
lastColumn	logical. If TRUE, the last column is bold
bandedRows	logical. If TRUE, rows are color banded
bandedCols	logical. If TRUE, the columns are color banded
applyCellStyle	apply styles when writing on the sheet
removeCellStyle	if writing into existing cells, should the cell style be removed?
na.strings	Value used for replacing NA values from x. Default na_strings() uses the special #N/A value within the workbook.
inline_strings	write characters as inline strings

Details

columns of x with class Date/POSIXt, currency, accounting, hyperlink, percentage are automatically styled as dates, currency, accounting, hyperlinks, percentages respectively. The string "_openxlsx_NA" is reserved for openxlsx2. If the data frame contains this string, the output will be broken.

See Also

wb_add_worksheet()

write_data()

wb_remove_tables()

wb_get_tables()

Examples

```
## see package vignettes for further examples.

################################################################################
## Create Workbook object and add worksheets
wb <- wb_workbook()
wb$add_worksheet("S1")
wb$add_worksheet("S2")
wb$add_worksheet("S3")

################################################################################
## -- write data.frame as an Excel table with column filters
## -- default table style is "TableStyleMedium2"

wb$add_data_table("S1", x = iris)

wb$add_data_table("S2",
  x = mtcars, xy = c("B", 3), rowNames = TRUE,
  tableStyle = "TableStyleLight9"
)

df <- data.frame(
  "Date" = Sys.Date() - 0:19,
  "T" = TRUE, "F" = FALSE,
  "Time" = Sys.time() - 0:19 * 60 * 60,
  "Cash" = paste("$", 1:20), "Cash2" = 31:50,
  "hLink" = "https://CRAN.R-project.org/",
  "Percentage" = seq(0, 1, length.out = 20),
  "TinyNumbers" = runif(20) / 1E9, stringsAsFactors = FALSE
)

## openxlsx will apply default Excel styling for these classes
class(df$Cash) <- c(class(df$Cash), "currency")
class(df$Cash2) <- c(class(df$Cash2), "accounting")
class(df$hLink) <- "hyperlink"
class(df$Percentage) <- c(class(df$Percentage), "percentage")
class(df$TinyNumbers) <- c(class(df$TinyNumbers), "scientific")

wb$add_data_table("S3", x = df, startRow = 4, rowNames = TRUE, tableStyle = "TableStyleMedium9")

################################################################################
## Additional Header Styling and remove column filters

write_datatable(wb,
```

```
  sheet = 1,
  x = iris,
  startCol = 7,
  withFilter = FALSE,
  firstColumn = TRUE,
  lastColumn = TRUE,
  bandedRows = TRUE,
  bandedCols = TRUE
)

################################################################################
## Pre-defined table styles gallery

wb <- wb_workbook(paste0("tableStylesGallery.xlsx"))
wb$add_worksheet("Style Samples")
for (i in 1:21) {
  style <- paste0("TableStyleLight", i)
  write_datatable(wb,
    x = data.frame(style), sheet = 1,
    tableStyle = style, startRow = 1, startCol = i * 3 - 2
  )
}

for (i in 1:28) {
  style <- paste0("TableStyleMedium", i)
  write_datatable(wb,
    x = data.frame(style), sheet = 1,
    tableStyle = style, startRow = 4, startCol = i * 3 - 2
  )
}

for (i in 1:11) {
  style <- paste0("TableStyleDark", i)
  write_datatable(wb,
    x = data.frame(style), sheet = 1,
    tableStyle = style, startRow = 7, startCol = i * 3 - 2
  )
}
```

`write_file` *write xml file*

Description

brings the added benefit of xml checking

Usage

```
write_file(head = "", body = "", tail = "", fl = "", escapes = FALSE)
```

Arguments

head	head part of xml
body	body part of xml
tail	tail part of xml
fl	file name with full path
escapes	bool if characters like "&" should be escaped. The default is no escape, assuming that xml to export is already valid.

---

write_formula *Write a character vector as an Excel Formula*

Description

Write a a character vector containing Excel formula to a worksheet.

Usage

```
write_formula(
  wb,
  sheet,
  x,
  startCol = 1,
  startRow = 1,
  dims = rowcol_to_dims(startRow, startCol),
  array = FALSE,
  xy = NULL,
  applyCellStyle = TRUE,
  removeCellStyle = FALSE
)
```

Arguments

wb	A Workbook object containing a worksheet.
sheet	The worksheet to write to. Can be the worksheet index or name.
x	A character vector.
startCol	A vector specifying the starting column to write to.
startRow	A vector specifying the starting row to write to.
dims	Spreadsheet dimensions that will determine startCol and startRow: "A1", "A1:B2", "A:B"
array	A bool if the function written is of type array
xy	An alternative to specifying `startCol` and `startRow` individually. A vector of the form `c(startCol, startRow)`.
applyCellStyle	apply styles when writing on the sheet
removeCellStyle	if writing into existing cells, should the cell style be removed?

Details

Currently only the English version of functions are supported. Please don't use the local translation. The examples below show a small list of possible formulas:

- SUM(B2:B4)
- AVERAGE(B2:B4)
- MIN(B2:B4)
- MAX(B2:B4)
- ...

See Also

write_data()

Examples

```
## There are 3 ways to write a formula

wb <- wb_workbook()
wb$add_worksheet("Sheet 1")
wb$add_data("Sheet 1", x = iris)

## SEE int2col() to convert int to Excel column label

## 1. -  As a character vector using write_formula

v <- c("SUM(A2:A151)", "AVERAGE(B2:B151)") ## skip header row
write_formula(wb, sheet = 1, x = v, startCol = 10, startRow = 2)
write_formula(wb, 1, x = "A2 + B2", startCol = 10, startRow = 10)


## 2. - As a data.frame column with class "formula" using write_data

df <- data.frame(
  x = 1:3,
  y = 1:3,
  z = paste(paste0("A", 1:3 + 1L), paste0("B", 1:3 + 1L), sep = " + "),
  z2 = sprintf("ADDRESS(1,%s)", 1:3),
  stringsAsFactors = FALSE
)

class(df$z) <- c(class(df$z), "formula")
class(df$z2) <- c(class(df$z2), "formula")

wb$add_worksheet("Sheet 2")
wb$add_data(sheet = 2, x = df)
```

```
## 3. - As a vector with class "formula" using write_data

v2 <- c("SUM(A2:A4)", "AVERAGE(B2:B4)", "MEDIAN(C2:C4)")
class(v2) <- c(class(v2), "formula")

wb$add_data(sheet = 2, x = v2, startCol = 10, startRow = 2)

## 4. - Writing internal hyperlinks

wb <- wb_workbook()
wb$add_worksheet("Sheet1")
wb$add_worksheet("Sheet2")
write_formula(wb, "Sheet1", x = '=HYPERLINK("#Sheet2!B3", "Text to Display - Link to Sheet2")')

## 5. - Writing array formulas

set.seed(123)
df <- data.frame(C = rnorm(10), D = rnorm(10))

wb <- wb_workbook()
wb <- wb_add_worksheet(wb, "df")

wb$add_data("df", df, startCol = "C")

write_formula(wb, "df", startCol = "E", startRow = "2",
              x = "SUM(C2:C11*D2:D11)",
              array = TRUE)
```

`write_xlsx` *write data to an xlsx file*

Description

write a data.frame or list of data.frames to an xlsx file

Usage

```
write_xlsx(x, file, asTable = FALSE, ...)
```

Arguments

`x`	object or a list of objects that can be handled by `write_data()` to write to file
`file`	xlsx file name
`asTable`	write using write_datatable as opposed to write_data
`...`	optional parameters to pass to functions: • `wb_workbook()` • `wb_add_worksheet()`

- wb_add_data()
- wb_freeze_pane
- wb_save()

see details.

Details

Optional parameters are:

wb_workbook Parameters

- **creator** A string specifying the workbook author

wb_add_worksheet() Parameters

- **sheetName** Name of the worksheet
- **gridLines** A logical. If FALSE, the worksheet grid lines will be hidden.
- **tabColor** Color of the worksheet tab. A valid color (belonging to colors()) or a valid hex color beginning with "#".
- **zoom** A numeric between 10 and 400. Worksheet zoom level as a percentage.

write_data/write_datatable Parameters

- **startCol** A vector specifying the starting column(s) to write df
- **startRow** A vector specifying the starting row(s) to write df
- **xy** An alternative to specifying startCol and startRow individually. A vector of the form c(startCol, startRow)
- **colNames or col.names** If TRUE, column names of x are written.
- **rowNames or row.names** If TRUE, row names of x are written.
- **na.string** If not NULL NA values are converted to this string in Excel. Defaults to NULL.

freezePane Parameters

- **firstActiveRow** Top row of active region to freeze pane.
- **firstActiveCol** Furthest left column of active region to freeze pane.
- **firstRow** If TRUE, freezes the first row (equivalent to firstActiveRow = 2)
- **firstCol** If TRUE, freezes the first column (equivalent to firstActiveCol = 2)

colWidths Parameters

- **colWidths** May be a single value for all columns (or "auto"), or a list of vectors that will be recycled for each sheet (see examples)

wb_save Parameters

- **overwrite** Overwrite existing file (Defaults to TRUE as with write.table)

columns of x with class Date or POSIXt are automatically styled as dates and datetimes respectively.

Value

A workbook object

See Also

wb_add_worksheet(), write_data()

Examples

```
## write to working directory
write_xlsx(iris, file = temp_xlsx(), colNames = TRUE)

write_xlsx(iris,
  file = temp_xlsx(),
  colNames = TRUE
)

## Lists elements are written to individual worksheets, using list names as sheet names if available
l <- list("IRIS" = iris, "MTCATS" = mtcars, matrix(runif(1000), ncol = 5))
write_xlsx(l, temp_xlsx(), colWidths = c(NA, "auto", "auto"))

## different sheets can be given different parameters
write_xlsx(l, temp_xlsx(),
  startCol = c(1, 2, 3), startRow = 2,
  asTable = c(TRUE, TRUE, FALSE), withFilter = c(TRUE, FALSE, FALSE)
)

# specify column widths for multiple sheets
write_xlsx(l, temp_xlsx(), colWidths = 20)
write_xlsx(l, temp_xlsx(), colWidths = list(100, 200, 300))
write_xlsx(l, temp_xlsx(), colWidths = list(rep(10, 5), rep(8, 11), rep(5, 5)))
```

---

ws_cell_merge *Worksheet cell merging*

Description

Merge cells within a worksheet

Usage

```
wb_merge_cells(wb, sheet = current_sheet(), rows = NULL, cols = NULL)

wb_unmerge_cells(wb, sheet = current_sheet(), rows = NULL, cols = NULL)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
cols, rows	Column and row specifications to merge on. Note: min() and max() of each vector are provided for specs. Skipping rows or columns is not recognized.

Details

As merged region must be rectangular, only min and max of cols and rows are used.

See Also

Other workbook wrappers: wb_add_chartsheet(), wb_add_data_table(), wb_add_data(), wb_add_formula(), wb_add_pivot_table(), wb_add_worksheet(), wb_clone_worksheet(), wb_copy_cells(), wb_creators, wb_freeze_pane(), wb_get_base_font(), wb_save(), wb_set_col_widths(), wb_set_last_modified_by(), wb_set_row_heights(), wb_workbook(), workbook_grouping

Examples

```
# Create a new workbook
wb <- wb_workbook()

# Add a worksheets
wb$add_worksheet("Sheet 1")
wb$add_worksheet("Sheet 2")

# Merge cells: Row 2 column C to F (3:6)
wb <- wb_merge_cells(wb, "Sheet 1", cols = 2, rows = 3:6)

# Merge cells:Rows 10 to 20 columns A to J (1:10)
wb <- wb_merge_cells(wb, 1, cols = 1:10, rows = 10:20)

# Intersecting merges
wb <- wb_merge_cells(wb, 2, cols = 1:10, rows = 1)
wb <- wb_merge_cells(wb, 2, cols = 5:10, rows = 2)
wb <- wb_merge_cells(wb, 2, cols = c(1, 10), rows = 12) # equivalent to 1:10
try(wb_merge_cells(wb, 2, cols = 1, rows = c(1,10)))    # intersects existing merge

# remove merged cells
wb <- wb_unmerge_cells(wb, 2, cols = 1, rows = 1)  # removes any intersecting merges
wb <- wb_merge_cells(wb, 2, cols = 1, rows = 1:10) # Now this works
```

---

ws_page_setup *Set page margins, orientation and print scaling*

Description

Set page margins, orientation and print scaling

Usage

```
wb_page_setup(
  wb,
  sheet = current_sheet(),
  orientation = NULL,
  scale = 100,
  left = 0.7,
  right = 0.7,
  top = 0.75,
  bottom = 0.75,
  header = 0.3,
  footer = 0.3,
  fitToWidth = FALSE,
  fitToHeight = FALSE,
  paperSize = NULL,
  printTitleRows = NULL,
  printTitleCols = NULL,
  summaryRow = NULL,
  summaryCol = NULL
)
```

Arguments

wb	A workbook object
sheet	A name or index of a worksheet
orientation	Page orientation. One of "portrait" or "landscape"
scale	Print scaling. Numeric value between 10 and 400
left	left page margin in inches
right	right page margin in inches
top	top page margin in inches
bottom	bottom page margin in inches
header	header margin in inches
footer	footer margin in inches
fitToWidth	If TRUE, worksheet is scaled to fit to page width on printing.
fitToHeight	If TRUE, worksheet is scaled to fit to page height on printing.
paperSize	See details. Default value is 9 (A4 paper).
printTitleRows	Rows to repeat at top of page when printing. Integer vector.
printTitleCols	Columns to repeat at left when printing. Integer vector.
summaryRow	Location of summary rows in groupings. One of "Above" or "Below".
summaryCol	Location of summary columns in groupings. One of "Right" or "Left".

Details

paperSize is an integer corresponding to:

- **1** Letter paper (8.5 in. by 11 in.)
- **2** Letter small paper (8.5 in. by 11 in.)
- **3** Tabloid paper (11 in. by 17 in.)
- **4** Ledger paper (17 in. by 11 in.)
- **5** Legal paper (8.5 in. by 14 in.)
- **6** Statement paper (5.5 in. by 8.5 in.)
- **7** Executive paper (7.25 in. by 10.5 in.)
- **8** A3 paper (297 mm by 420 mm)
- **9** A4 paper (210 mm by 297 mm)
- **10** A4 small paper (210 mm by 297 mm)
- **11** A5 paper (148 mm by 210 mm)
- **12** B4 paper (250 mm by 353 mm)
- **13** B5 paper (176 mm by 250 mm)
- **14** Folio paper (8.5 in. by 13 in.)
- **15** Quarto paper (215 mm by 275 mm)
- **16** Standard paper (10 in. by 14 in.)
- **17** Standard paper (11 in. by 17 in.)
- **18** Note paper (8.5 in. by 11 in.)
- **19** #9 envelope (3.875 in. by 8.875 in.)
- **20** #10 envelope (4.125 in. by 9.5 in.)
- **21** #11 envelope (4.5 in. by 10.375 in.)
- **22** #12 envelope (4.75 in. by 11 in.)
- **23** #14 envelope (5 in. by 11.5 in.)
- **24** C paper (17 in. by 22 in.)
- **25** D paper (22 in. by 34 in.)
- **26** E paper (34 in. by 44 in.)
- **27** DL envelope (110 mm by 220 mm)
- **28** C5 envelope (162 mm by 229 mm)
- **29** C3 envelope (324 mm by 458 mm)
- **30** C4 envelope (229 mm by 324 mm)
- **31** C6 envelope (114 mm by 162 mm)
- **32** C65 envelope (114 mm by 229 mm)
- **33** B4 envelope (250 mm by 353 mm)
- **34** B5 envelope (176 mm by 250 mm)
- **35** B6 envelope (176 mm by 125 mm)

- **36** Italy envelope (110 mm by 230 mm)
- **37** Monarch envelope (3.875 in. by 7.5 in.).
- **38** 6 3/4 envelope (3.625 in. by 6.5 in.)
- **39** US standard fanfold (14.875 in. by 11 in.)
- **40** German standard fanfold (8.5 in. by 12 in.)
- **41** German legal fanfold (8.5 in. by 13 in.)
- **42** ISO B4 (250 mm by 353 mm)
- **43** Japanese double postcard (200 mm by 148 mm)
- **44** Standard paper (9 in. by 11 in.)
- **45** Standard paper (10 in. by 11 in.)
- **46** Standard paper (15 in. by 11 in.)
- **47** Invite envelope (220 mm by 220 mm)
- **50** Letter extra paper (9.275 in. by 12 in.)
- **51** Legal extra paper (9.275 in. by 15 in.)
- **52** Tabloid extra paper (11.69 in. by 18 in.)
- **53** A4 extra paper (236 mm by 322 mm)
- **54** Letter transverse paper (8.275 in. by 11 in.)
- **55** A4 transverse paper (210 mm by 297 mm)
- **56** Letter extra transverse paper (9.275 in. by 12 in.)
- **57** SuperA/SuperA/A4 paper (227 mm by 356 mm)
- **58** SuperB/SuperB/A3 paper (305 mm by 487 mm)
- **59** Letter plus paper (8.5 in. by 12.69 in.)
- **60** A4 plus paper (210 mm by 330 mm)
- **61** A5 transverse paper (148 mm by 210 mm)
- **62** JIS B5 transverse paper (182 mm by 257 mm)
- **63** A3 extra paper (322 mm by 445 mm)
- **64** A5 extra paper (174 mm by 235 mm)
- **65** ISO B5 extra paper (201 mm by 276 mm)
- **66** A2 paper (420 mm by 594 mm)
- **67** A3 transverse paper (297 mm by 420 mm)
- **68** A3 extra transverse paper (322 mm by 445 mm)

Examples

```
wb <- wb_workbook()
wb$add_worksheet("S1")
wb$add_worksheet("S2")
wb$add_data_table(1, x = iris[1:30, ])
wb$add_data_table(2, x = iris[1:30, ], xy = c("C", 5))
```

```
## landscape page scaled to 50%
wb$page_setup(sheet = 1, orientation = "landscape", scale = 50)

## portrait page scales to 300% with 0.5in left and right margins
wb$page_setup(sheet = 2, orientation = "portrait", scale = 300, left = 0.5, right = 0.5)


## print titles
wb$add_worksheet("print_title_rows")
wb$add_worksheet("print_title_cols")

wb$add_data("print_title_rows", rbind(iris, iris, iris, iris))
wb$add_data("print_title_cols", x = rbind(mtcars, mtcars, mtcars), rowNames = TRUE)

wb$page_setup(sheet = "print_title_rows", printTitleRows = 1) ## first row
wb$page_setup(sheet = "print_title_cols", printTitleCols = 1, printTitleRows = 1)
```

`xl_open` *Open a Microsoft Excel file (xls/xlsx) or an openxlsx2 wbWorkbook*

Description

This function tries to open a Microsoft Excel (xls/xlsx) file or an openxlsx2 wbWorkbook with the proper application, in a portable manner.

In Windows it uses `base::shell.exec()` (Windows only function) to determine the appropriate program.

In Mac (c) it uses system default handlers, given the file type.

In Linux it searches (via `which`) for available xls/xlsx reader applications (unless `options('openxlsx2.excelApp')` is set to the app bin path), and if it finds anything, sets `options('openxlsx2.excelApp')` to the program chosen by the user via a menu (if many are present, otherwise it will set the only available). Currently searched for apps are Libreoffice/Openoffice (`soffice` bin), Gnumeric (`gnumeric`) and Calligra Sheets (`calligrasheets`).

Usage

```
xl_open(x, file, interactive = NA)

## S3 method for class 'wbWorkbook'
xl_open(x, file, interactive = NA)

## Default S3 method:
xl_open(x, file, interactive = NA)
```

Arguments

`x`	A path to the Excel (xls/xlsx) file or Workbook object.
`file`	Deprecated
`interactive`	If `FALSE` will throw a warning and not open the path. This can be manually set to `TRUE`, otherwise when `NA` (default) uses the value returned from `base::interactive()`

Examples

```
if (interactive()) {
  xlsxFile <- system.file("extdata", "readTest.xlsx", package = "openxlsx2")
  xl_open(xlsxFile)

  # (not yet saved) Workbook example
  wb <- wb_workbook()
  x <- mtcars[1:6, ]
  wb$add_worksheet("Cars")
  wb$add_data("Cars", x, startCol = 2, startRow = 3, rowNames = TRUE)
  xl_open(wb)
}
```

`xml_add_child` *append xml child to node*

Description

append xml child to node

Usage

```
xml_add_child(xml_node, xml_child, level, pointer = FALSE, ...)
```

Arguments

`xml_node`	xml_node
`xml_child`	xml_child
`level`	optional level, if missing the first child is picked
`pointer`	pointer
`...`	additional arguments passed to `read_xml()`

Examples

```
xml_node <- "<a><b/></a>"
xml_child <- "<c/>"

# add child to first level node
xml_add_child(xml_node, xml_child)

# add child to second level node as request
xml_node <- xml_add_child(xml_node, xml_child, level = c("b"))

# add child to third level node as request
xml_node <- xml_add_child(xml_node, "<d/>", level = c("b", "c"))
```

`xml_attr_mod` *adds or updates attribute(s) in existing xml node*

Description

Needs xml node and named character vector as input. Modifies the arguments of each first child found in the xml node and adds or updates the attribute vector.

Usage

```
xml_attr_mod(xml_content, xml_attributes, escapes = FALSE, declaration = FALSE)
```

Arguments

`xml_content`	some valid xml_node
`xml_attributes`	R vector of named attributes
`escapes`	bool if escapes should be used
`declaration`	bool if declaration should be imported

Details

If a named attribute in `xml_attributes` is "" remove the attribute from the node. If `xml_attributes` contains a named entry found in the xml node, it is updated else it is added as attribute.

Examples

```
# add single node
  xml_node <- "<a foo=\"bar\">openxlsx2</a><b />"
  xml_attr <- c(qux = "quux")
  # "<a foo=\"bar\" qux=\"quux\">openxlsx2</a><b qux=\"quux\"/>"
  xml_attr_mod(xml_node, xml_attr)

# update node and add node
  xml_node <- "<a foo=\"bar\">openxlsx2</a><b />"
  xml_attr <- c(foo = "baz", qux = "quux")
  # "<a foo=\"baz\" qux=\"quux\">openxlsx2</a><b foo=\"baz\" qux=\"quux\"/>"
  xml_attr_mod(xml_node, xml_attr)

# remove node and add node
  xml_node <- "<a foo=\"bar\">openxlsx2</a><b />"
  xml_attr <- c(foo = "", qux = "quux")
  # "<a qux=\"quux\">openxlsx2</a><b qux=\"quux\"/>"
  xml_attr_mod(xml_node, xml_attr)
```

`xml_node_create` *create xml_node from R objects*

Description

takes xml_name, xml_children and xml_attributes to create a new xml_node.

Usage

```
xml_node_create(
  xml_name,
  xml_children = NULL,
  xml_attributes = NULL,
  escapes = FALSE,
  declaration = FALSE
)
```

Arguments

`xml_name`	the name of the new xml_node
`xml_children`	character vector children attached to the xml_node
`xml_attributes`	named character vector of attributes for the xml_node
`escapes`	bool if escapes should be used
`declaration`	bool if declaration should be imported

Details

if xml_children or xml_attributes should be empty, use NULL

Examples

```
xml_name <- "a"
# "<a/>"
xml_node_create(xml_name)

xml_child <- "openxlsx"
# "<a>openxlsx</a>"
xml_node_create(xml_name, xml_children = xml_child)

xml_attr <- c(foo = "baz", qux = "quux")
# "<a foo=\"baz\" qux=\"quux\"/>"
xml_node_create(xml_name, xml_attributes = xml_attr)

# "<a foo=\"baz\" qux=\"quux\">openxlsx</a>"
xml_node_create(xml_name, xml_children = xml_child, xml_attributes = xml_attr)
```

`xml_rm_child` *remove xml child to node*

Description

remove xml child to node

Usage

```
xml_rm_child(xml_node, xml_child, level, which = 0, pointer = FALSE, ...)
```

Arguments

`xml_node`	xml_node
`xml_child`	xml_child
`level`	optional level, if missing the first child is picked
`which`	optional index which node to remove, if multiple are available. Default disabled all will be removed
`pointer`	pointer
`...`	additional arguments passed to `read_xml()`

Examples

```
xml_node <- "<a><b><c><d/></c></b><c/></a>"
xml_child <- "c"

xml_rm_child(xml_node, xml_child)

xml_rm_child(xml_node, xml_child, level = c("b"))

xml_rm_child(xml_node, "d", level = c("b", "c"))
```

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