

Package ‘PSTricks’

March 27, 2024

Title PSTricks, bindings for LaTeX's PSTricks package

Version 0.1.0

Description PSTricks provides R bindings for LaTeX's PSTricks package, higher level plot commands, the capability of generating a complete .tex file, and compiling it to a .pdf file.

License GPL (>= 3)

Depends R (>= 3.5.0)

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.2.3

Imports grDevices,
magrittr,
fs,
scriptName,
methods,
tools,
rconfig

NeedsCompilation no

Author Erik Olofsen [aut, cre]

Maintainer Erik Olofsen <pstricks.for.r@weggetjes.nl>

Suggests knitr,
rmarkdown,
testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

R topics documented:

adjx0y0	5
aes	6
circlenode	6
clipbox	7
Cnode	7
cnode	8
cnodeput	9
cput	10

cx	10
cy	11
degrees	11
dianode	12
dotnode	12
endP2E	13
endpppicture	13
endspicture	14
everypsbox	14
fnode	15
geom_abline	15
geom_ccurve	16
geom_curve	17
geom_dots	18
geom_ecurve	18
geom_errorbar	19
geom_everypsbox	20
geom_frame	20
geom_framebox	21
geom_grid	22
geom_hist	23
geom_hline	24
geom_legend	24
geom_line	25
geom_linewidth	26
geom_polygon	26
geom_rput	27
geom_set	28
geom_uput	29
geom_vline	30
icx	30
icy	31
labs	31
lims	32
MakeShortNab	32
MakeShortTablr	33
merge.list	34
multirput	34
naput	35
nbput	36
ncangle	36
ncangles	37
ncarc	37
ncarcbox	38
ncbar	39
ncbox	39
nccircle	40
nccoil	41
nccurve	41
ncdiag	42
ncdiagg	43
ncline	43

ncloop	44
ncput	45
nczigzag	45
newcmykcolor	46
newgray	47
newsbcolor	47
newrgbcolor	48
nput	48
ovalnode	49
parabola	50
pcangle	50
pcangles	51
pcarc	51
pcarcbox	52
pcbar	53
pcbox	53
pccoil	54
pccurve	54
pcdiag	55
pcdiagg	55
pcline	56
pcloop	57
pczigzag	57
pnode	58
ppappend	58
pparg	59
ppaxis	59
ppbuild	60
ppbuild3D	61
ppclosedoc	62
ppcoords	62
ppcoords3D	63
ppdefpicture	63
ppgeoms	64
ppgrid	64
pplegend	65
pplinewidth	66
ppmansubplot	66
ppnewpage	67
ppnewrgbcolor	68
ppopendoc	68
ppopt	69
pppicture	69
ppsetcartesian	71
ppsetlogx	71
ppsetlogxy	72
ppsetlogy	72
ppsetmargins	73
ppsetnologx	73
ppsetnologxy	74
ppsetnology	74
ppsetpolar	75

ppsetprimary	75
ppsetprimaryx	76
ppsetprimaryy	76
ppsetpsttoeps	77
ppsetsecondary	77
ppsetsecondaryx	78
ppsetsecondaryy	78
ppsetxlabsep	79
ppsetylabsep	79
ppsubplot	80
ppticks	81
pptitle	82
ppwrite	83
ppxticks	84
ppyticks	85
print.PSTricks	86
psarc	86
psarcn	87
psaxes	88
psbezier	89
psccurve	89
pscircle	90
pscirclebox	91
pscircleOA	91
psCoil	92
pscoil	92
pscurve	93
pscustom	94
psdblframebox	94
psdiabox	95
psdiamond	95
psdot	96
psdots	96
psecurve	97
psellipse	98
psellipticarc	98
psellipticarcn	99
psframe	100
psframebox	100
psgrid	101
psline	102
psovalbox	102
pspicture	103
pspolygon	104
psscalebox	104
psscaleboxto	105
psset	105
psshadowbox	106
psTextFrame	106
pstriangle	107
pstribox	107
PSTricks	108

pswedge	109
pszigzag	110
qdisk	111
qline	111
Rnode	112
rnode	112
rotatedown	113
rotateleft	113
rotateright	114
rput	114
sifelse	115
startP2E	116
taput	116
tbput	117
thput	117
ticks	118
tlput	119
trinode	120
trput	120
tvput	121
uput	121
xaspect	122
xlab	123
xlim	124
xyaspect	124
yaspect	125
ylab	126
ylim	127
%>%	127

Index 128

adjx0y0	<i>Calculate Origin of Axis based on Origin of Subplot</i>
---------	--

Description

Calculate Origin of Axis based on Origin of Subplot

Usage

```
adjx0y0(p, xory, secondary)
```

Arguments

p	The PStricks object.
xory	A character 'x' or 'y' designating the axis.
secondary	A flag to designate a secondary axis.

Value

An origin.

 aes

Construct Aesthetic Mappings

Description

Construct Aesthetic Mappings

Usage

```
aes(...)
```

Arguments

... Comma separated mappings such as in the example below.

Details

Note: `aes()` does not evaluate right hand sides of mappings.

Value

A structure containing the mapping.

See Also

[geom_set\(\)](#) for an example.

Examples

```
aes("x=time")
```

 circlenode

Put Stuff in a Circle

Description

Put Stuff in a Circle

Usage

```
circlenode(p = NULL, name, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PStricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

`ovalnode()` for an example.

clipbox

Put Stuff in a Box with Clipping

Description

Put Stuff in a Box with Clipping

Usage

```
clipbox(p = NULL, stuff, dim = NULL)
```

Arguments

<code>p</code>	The PSTricks object.
<code>stuff</code>	The stuff to put in the box.
<code>dim</code>	Distance between the box and clipping.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  rput(8,4,clipbox(",\\parbox[t]{1cm}[t]{2cm}{One of the best
    new plays I have seen all all year}",-0.1))
```

Cnode

Create Circle Node

Description

Create Circle Node

Usage

```
Cnode(p = NULL, x = NULL, y = NULL, name, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the node.
name	The name of the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  psset("radius=0.1") %>%
  Cnode(0,1,"A") %>%
  pnode(3,0,"B") %>%
  ncline("A","B",arrows="<-")
```

cnode

Create Circle Node

Description

Create Circle Node

Usage

```
cnode(p = NULL, x = NULL, y = NULL, radius, name, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the node.
radius	Radius of the circle.
name	The name of the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  cnode(0,1,0.25,"A") %>%
  pnode(3,0,"B") %>%
  ncline("A","B",arrows="<-")
```


cnodeput

*Put Stuff in a Circle***Description**

Put Stuff in a Circle

Usage

```

cnodeput (
  p = NULL,
  x = NULL,
  y = NULL,
  name,
  stuff,
  par = NULL,
  angle = NULL,
  star = FALSE
)

```

Arguments

p	The PSTricks object.
x, y	Coordinates of the node.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PSTricks parameter string.
angle	Angle to put the stuff with.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```

pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  cnodeput(,"A","X",angle=45)

```

cput	<i>Put Stuff in a Circle</i>
------	------------------------------

Description

Put Stuff in a Circle

Usage

```
cput(p = NULL, x, y, stuff, par = NULL, angle = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the center of the circle.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
angle	Rotation to apply to the stuff.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 2, 1, par="showgrid=true") %>%
  cput(1, .5, "\\large $K_1$", "doubleline=true")
```

cx	<i>Convert Unscaled x Values to Scaled</i>
----	--

Description

Convert Unscaled x Values to Scaled

Usage

```
cx(p, x, logx = NULL)
```

Arguments

p	The PSTricks object.
x	Unscaled data.
logx	Flag to request log(10) transformation.

Value

Scaled data.

cy	<i>Convert Unscaled y Values to Scaled</i>
----	--

Description

Convert Unscaled y Values to Scaled

Usage

```
cy(p, y, logy = NULL)
```

Arguments

p	The PStricks object.
y	Unscaled data.
logy	Flag to request log(10) transformation.

Value

Scaled data.

degrees	<i>Set Unit for Angles</i>
---------	----------------------------

Description

Set Unit for Angles

Usage

```
degrees(p, degrees = 360)
```

Arguments

p	The PStricks object.
degrees	The number of units in a circle.

Value

The updated PStricks object.

See Also

`ppsetpolar()`.

dianode	<i>Put Stuff in a Diamond</i>
---------	-------------------------------

Description

Put Stuff in a Diamond

Usage

```
dianode(p = NULL, name, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

[trinode\(\)](#) for an example.

dotnode	<i>Create a Dot Node</i>
---------	--------------------------

Description

Create a Dot Node

Usage

```
dotnode(p = NULL, x = NULL, y = NULL, name, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the node.
name	The name of the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```

pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  dotnode(,"A","dotstyle=triangle*",dotscale=2 1") %>%
  dotnode(3,2,"B","dotstyle=+") %>%
  ncline("A","B","nodesep=3pt")

```

endP2E

End PSTtoEPS Feature

Description

End PSTtoEPS Feature

Usage

```
endP2E(p, fileplot = FALSE)
```

Arguments

p	The PSTricks object.
fileplot	Flag to indicate cated values will be used for fileplot.

Value

The updated PSTricks object.

endppicture

Close the Picture

Description

Close the Picture

Usage

```
endppicture(p, ending = "")
```

Arguments

p	The PSTricks object.
ending	String to end the pppicture environment with.

Value

The updated PSTricks object.

endpspicture	<i>End Picture Environment</i>
--------------	--------------------------------

Description

End Picture Environment

Usage

```
endpspicture(p = NULL)
```

Arguments

p	The PSTricks object.
---	----------------------

Value

The updated PSTricks object.

See Also

`pspicture()` for an example.

everypsbox	<i>Prepend String to every psbox</i>
------------	--------------------------------------

Description

Prepend String to every psbox

Usage

```
everypsbox(p, s)
```

Arguments

p	The PSTricks object.
s	The string to prepend.

Value

The updated PSTricks object.

Examples

```
everypsbox(PSTricks(), "\\Large")$lines[[1]]
```

fnode	<i>Create a Frame Node</i>
-------	----------------------------

Description

Create a Frame Node

Usage

```
fnode(p = NULL, x = NULL, y = NULL, name, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Optional coordinates of the center.
name	The name of the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  fnode(, "A") %>%
  fnode(2,2, "B", "framesize=1 5pt", TRUE) %>%
  ncline("A", "B", "nodesep=3pt")
```

geom_abline	<i>Draw Straight Line</i>
-------------	---------------------------

Description

Draw Straight Line

Usage

```
geom_abline(p, slope = 1, intercept = 0, par = NULL)
```

Arguments

p	The PSTricks object.
slope	The slope of the line, or an <code>lm</code> object.
intercept	The intercept of the line.
par	PSTricks parameter string.

Value

The updated PStricks object.

Examples

```
PStricks() %>%
  pppicture(16,9) %>%
  ppsetlogxy() %>%
  geom_dots(aes(x=hp,y=mpg),mtcars,par="dotstyle=Bo") %>%
  geom_abline(lm(log10(mpg)~log10(hp),data=mtcars),par="linecolor=red") %>%
  geom_hline(20,par="linecolor=green") %>%
  geom_vline(100,par="linecolor=blue")
# Note that log10 needs to be used for lm with log axes
```

geom_ccurve

Connect Observations using Smooth Lines

Description

Connect Observations using Smooth Lines

Usage

```
geom_ccurve(
  p,
  mapping = NULL,
  data = NULL,
  par = NULL,
  dodge = 0,
  star = FALSE
)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PStricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[psccurve\(\)](#) for the base version.

Examples

```
geom_ccurve(PSTricks(),
  data=data.frame(x=c(.5,3.5,3.5,.5),y=c(0,1,0,1)),
  par="showpoints=true") %>%
  xlim(0,4) %>% ylim(-0.5,1.5) %>%
  geom_grid()
```

geom_curve

*Connect Observations using Smooth Lines***Description**

Connect Observations using Smooth Lines

Usage

```
geom_curve(p, mapping = NULL, data = NULL, par = NULL, dodge = 0, star = FALSE)
```

Arguments

p	The PSTricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PSTricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

[pscurve\(\)](#) for the base version.

Examples

```
PSTricks() %>%
  newrgbcolor("verylightgray",.9,.9,.9) %>%
  ppsetmargins(mrgaxes=0) %>%
  geom_grid("linestyle=dotted,linecolor=gray",
    background="verylightgray") %>%
  geom_curve(data=data.frame(x=c(0,.7,3.3,4,.4),y=c(1.3,1.8,.5,1.6,.4)),
    par="showpoints=true") %>%
  geom_legend("top right","showpoints=true") %>%
  xlim(-1,5) %>% ylim(0,2)
# Note that autoscaling which uses the data only does not work optimally
```

geom_dots

*Plot Dots***Description**

Plot Dots

Usage

```
geom_dots(p, mapping = NULL, data = NULL, par = NULL, dodge = 0, star = FALSE)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PStricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[psdots\(\)](#) for the base version and [geom_abline\(\)](#) for another example.

Examples

```
geom_dots(PStricks(), data=data.frame(x=c(0,1,2), y=c(1,1,1)),
  par=paste0("dotstyle=", c('*', 'o', 'Bo')))
```

geom_ecurve

*Connect Observations using Smooth Lines***Description**

Connect Observations using Smooth Lines

Usage

```
geom_ecurve(
  p,
  mapping = NULL,
  data = NULL,
  par = NULL,
  dodge = 0,
  star = FALSE
)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PStricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[psecurve\(\)](#) for the base version.

Examples

```
PStricks() %>%
  pppicture(16, 9, star=TRUE) %>%
  geom_ecurve(data=data.frame(x=c(.125, .25, .5, 1, 2, 4, 8),
                               y=c(8, 4, 2, 1, .5, .25, .125)),
             par="showpoints=true") %>%
  xlim(0, 4) %>% ylim(0, 4) %>%
  geom_grid()
```

geom_errorbar

Vertical Errorbars

Description

Vertical Errorbars

Usage

```
geom_errorbar(
  p,
  mapping = NULL,
  data = NULL,
  par = NULL,
  width = 0.1,
  dodge = 0
)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x, y, ymin, and ymax.
data	Data frame with values for the error bars.
par	PStricks parameters.
width	Horizontal width of the error bars.
dodge	Horizontal offset.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9, data=data.frame(x=c(1, 2, 3, 4), y=c(2, 4, 6, 8),
                                              ymin=c(1, 2, 3, 4), ymax=c(3, 6, 9, 12))) %>%
  geom_set("linecolor=blue") %>%
  geom_line(par="showpoints=true", dodge=-0.125) %>%
  geom_errorbar(dodge=-0.125) %>%
  geom_set("linecolor=green") %>%
  geom_line(par="showpoints=true", dodge=0.125) %>%
  geom_errorbar(aes(ymin=NA), dodge=0.125)
```

geom_everypsbox	<i>Set everypsbox during Geom Processing</i>
-----------------	--

Description

Set everypsbox during Geom Processing

Usage

```
geom_everypsbox(p, par = NULL)
```

Arguments

p	The PSTricks object.
par	Stuff to apply to a psbox.

Value

The updated PSTricks object.

See Also

[everypsbox\(\)](#) for the base version and [geom_set\(\)](#) for an example.

geom_frame	<i>Draw Frames</i>
------------	--------------------

Description

Draw Frames

Usage

```
geom_frame(p, mapping = NULL, data = NULL, par = NULL, dodge = 0, star = FALSE)
```

Arguments

<code>p</code>	The PStricks object.
<code>mapping</code>	Aesthetic mapping from column names to x and y .
<code>data</code>	Data frame with coordinates of the observations.
<code>par</code>	PStricks parameter string.
<code>dodge</code>	Horizontal offset.
<code>star</code>	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[psframe\(\)](#) for the base version.

Examples

```
geom_frame(PStricks(),
  data=data.frame(x0=c(0,1),x1=c(4,.5),y0=c(0,.5),y1=c(2,1.5),
    par=c("linewidth=2pt,framearc=.3,fillstyle=solid,fillcolor=lightgray",
      "linecolor=white"),
    star=c(FALSE,TRUE)))
```

geom_framebox

Add Frameboxes

Description

Add Frameboxes

Usage

```
geom_framebox(
  p,
  mapping = NULL,
  data = NULL,
  par = NULL,
  refpoint = NULL,
  rotation = NULL,
  dodge = 0,
  star = FALSE
)
```

Arguments

<code>p</code>	The PStricks object.
<code>mapping</code>	Aesthetic mapping from column names to x and y.
<code>data</code>	Data frame with coordinates of the observations.
<code>par</code>	PStricks parameter string.
<code>refpoint</code>	The reference point for the stuff.
<code>rotation</code>	Rotation to apply to the stuff.
<code>dodge</code>	Horizontal offset.
<code>star</code>	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

`psframebox()` and `rput()` for the base versions and `geom_set()` for an example.

<code>geom_grid</code>	<i>Draw Grid Lines</i>
------------------------	------------------------

Description

Draw Grid Lines

Usage

```
geom_grid(p, par = "linestyle=dotted", background = NULL)
```

Arguments

<code>p</code>	The PStricks object.
<code>par</code>	PStricks parameters.
<code>background</code>	The background color.

Value

The updated PStricks object.

See Also

`ppgrid()` for the base version and `geom_curve()` for an example.

Examples

```
geom_grid(PStricks())
```

geom_hist	<i>Plot a Histogram</i>
-----------	-------------------------

Description

Plot a Histogram

Usage

```
geom_hist(  
  p,  
  mapping = aes(x = breaks, y = counts),  
  data = NULL,  
  par = "fillcolor=lightgray,fillstyle=solid",  
  star = FALSE  
)
```

Arguments

p	The PStricks object.
mapping	Either <code>aes(x=breaks,y=counts)</code> or <code>aes(x=breaks,y=density)</code> .
data	Output of R's <code>hist(..., plot=FALSE)</code> function.
par	PStricks parameters.
star	Flag to use star version of <code>psframe</code> .

Details

Issue: The default mapping containing "breaks" and "counts" leads to a NOTE when running "R CMD check".

Value

The updated PStricks object.

Examples

```
geom_hist(PStricks(), data=hist(mtcars$mpg, plot=FALSE),  
  par="fillcolor=cyan,fillstyle=solid")
```

geom_hline	<i>Draw Horizontal Line</i>
------------	-----------------------------

Description

Draw Horizontal Line

Usage

```
geom_hline(p, yintercept = 0, par = NULL)
```

Arguments

p	The PStricks object.
yintercept	The y-intercept of the line.
par	PStricks parameter string.

Value

The updated PStricks object.

See Also

[geom_abline\(\)](#) for an example.

geom_legend	<i>Add Legend to Plot</i>
-------------	---------------------------

Description

Add Legend to Plot

Usage

```
geom_legend(  
  p,  
  s,  
  par = NULL,  
  position = "tr",  
  dx = 0,  
  dy = 0,  
  w = 1,  
  labelsep = "10pt"  
)
```


Arguments

p	The PStricks object.
s	The legend text.
par	PStricks parameter string.
position	Position for the legend (may be NULL).
dx, dy	x and y offsets w.r.t. default position.
w	Width of the <code>psline</code> that belongs to the legend text.
labelsep	The distance between the line and the label.

Value

The updated PStricks object.

See Also

`pplegend()` for the base version and `geom_curve()` for an example.

geom_line

Connect Observations using Lines

Description

Connect Observations using Lines

Usage

```
geom_line(p, mapping = NULL, data = NULL, par = NULL, dodge = 0, star = FALSE)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PStricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

`psline()` for the base version.

Examples

```
geom_line(PStricks(), aes(x=xdata, y=ydata), data.frame(xdata=c(4, 0, 2), ydata=c(2, 1, 0)),
  "linewidth=2pt, linearc=.25, arrows=->")
# Note that the names in the data frame determine the axis label names by default
# and that a default `pppicture()` is called automatically
```

geom_linewidth	<i>Set PStricks' linewidth Parameter during Geom Processing</i>
----------------	---

Description

Set PStricks' linewidth Parameter during Geom Processing

Usage

```
geom_linewidth(p, linewidth = 0.8 * 2.54/72)
```

Arguments

p	The PStricks object.
linewidth	The linewidth to use (default the PStricks default (0.8 pt)).

Value

The updated PStricks object.

See Also

[ppllinewidth\(\)](#) for the base version and [geom_set\(\)](#) for an example.

geom_polygon	<i>Draw Polygons</i>
--------------	----------------------

Description

Draw Polygons

Usage

```
geom_polygon(
  p,
  mapping = NULL,
  data = NULL,
  par = NULL,
  dodge = 0,
  star = FALSE
)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
par	PStricks parameter string.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[pspolygon\(\)](#) for the base version.

Examples

```
PStricks() %>%
  geom_polygon(data=data.frame(x=c(0,0,1),y=c(0,2,2)),par="linewidth=1.5pt") %>%
  geom_polygon(data=data.frame(x=c(1,1,4,4),y=c(0,2,0,2)),par="lineararc=.2",star=TRUE)
# Note that the first coordinate (0,0) for the first polygon has to be given explicitly
```

geom_rput

Add Text Items

Description

Add Text Items

Usage

```
geom_rput(
  p,
  mapping = NULL,
  data = NULL,
  refpoint = NULL,
  rotation = NULL,
  dodge = 0,
  star = FALSE
)
```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
refpoint	The reference point for the stuff.
rotation	Rotation to apply to the stuff.
dodge	Horizontal offset.
star	Flag to indicate starred version (but see geom_framebox()).

Value

The updated PStricks object.

See Also

[rput\(\)](#) for the base version.

Examples

```
geom_rput (PSTricks(),
  aes(x=wt,y=mpg,stuff=stuff),
  cbind(mtcars,stuff=row.names(mtcars)),
  rotation=45,
  star=TRUE)
```

geom_set

*Set PSTricks Parameter(s) during Geom Processing***Description**

Set PSTricks Parameter(s) during Geom Processing

Usage

```
geom_set(p, par)
```

Arguments

p	The PSTricks object.
par	PSTricks (comma separated) parameter(s).

Value

The updated PSTricks object.

See Also

[psset\(\)](#) for the base version.

Examples

```
mtcars<-cbind(mtcars,stuff=row.names(mtcars));
PSTricks() %>%
  pppicture(16,26) %>%
# the following three commands affect the axes
  psset("arrows=c-c") %>%
  pplinewidth(.3) %>%
  everypsbox("\\large") %>%
# the following three commands affect the frameboxes
  geom_set("framearc=.3,fillstyle=solid,fillcolor=darkgray") %>%
  geom_linewidth(.1) %>%
  geom_everypsbox("\\green") %>%
  geom_framebox(aes(x=wt,y=mpg),mtcars[mtcars$cyl==4,]) %>%
  geom_linewidth(.3) %>%
  geom_everypsbox("\\cyan") %>%
  geom_framebox(aes(x=wt,y=mpg),mtcars[mtcars$cyl==6,]) %>%
  geom_linewidth(.5) %>%
  geom_everypsbox("\\red") %>%
  geom_framebox(aes(x=wt,y=mpg),mtcars[mtcars$cyl==8,]) %>%
  lims(c(1,6),c(10,35)) %>%
  labs("Weight (lb/1000)","Fuel efficiency (miles/gallon)") %>%
```

```

pplegend("4 cylinders",par="linecolor=green",dx=-3) %>%
pplegend("6 cylinders",par="linecolor=cyan",dx=-3,dy=-.5) %>%
pplegend("8 cylinders",par="linecolor=red",dx=-3,dy=-1)

```

geom_uput

*Add Text Items***Description**

Add Text Items

Usage

```

geom_uput (
  p,
  mapping = NULL,
  data = NULL,
  refangle = NULL,
  rotation = NULL,
  labelsep = NULL,
  dodge = 0,
  star = FALSE
)

```

Arguments

p	The PStricks object.
mapping	Aesthetic mapping from column names to x and y.
data	Data frame with coordinates of the observations.
refangle	The reference angle.
rotation	Rotation to apply to the stuff.
labelsep	Distance between coordinates and the stuff.
dodge	Horizontal offset.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also[uput \(\)](#) for the base version.**Examples**

```

geom_uput (PStricks () ,
  aes (x=wt,y=mpg,stuff=stuff) ,
  cbind (mtcars,stuff=row.names (mtcars)) ,
  refangle=0,
  rotation=45,
  star=TRUE)

```

geom_vline	<i>Draw Vertical Line</i>
------------	---------------------------

Description

Draw Vertical Line

Usage

```
geom_vline(p, xintercept = 0, par = NULL)
```

Arguments

p	The PStricks object.
xintercept	The x-intercept of the line.
par	PStricks parameter string.

Value

The updated PStricks object.

See Also

[geom_abline\(\)](#) for an example.

icx	<i>Convert Scaled \times Values to Unscaled</i>
-----	--

Description

Convert Scaled \times Values to Unscaled

Usage

```
icx(p, x, logx = NULL)
```

Arguments

p	The PStricks object.
x	Scaled data.
logx	Flag to request log(10) transformation.

Value

Unscaled data.

icy	<i>Convert Scaled y Values to Unscaled</i>
-----	--

Description

Convert Scaled y Values to Unscaled

Usage

```
icy(p, y, logy = NULL)
```

Arguments

p	The PSTRicks object.
y	Scaled data.
logy	Flag to request log(10) transformation.

Value

Unscaled data.

labs	<i>Set Axis Labels and Title</i>
------	----------------------------------

Description

Set Axis Labels and Title

Usage

```
labs(p, x, y, title = NULL)
```

Arguments

p	The PSTRicks object.
x, y	x and y axis labels.
title	The title for the plot.

Value

The updated PSTRicks object.

See Also

[geom_set\(\)](#) for an example.

lims	<i>Set x and y Axes Limits</i>
------	--------------------------------

Description

Set x and y Axes Limits

Usage

```
lims(p, x = NULL, y = NULL)
```

Arguments

p	The PStricks object.
x, y	x and y lower and upper axis limits (two-element lists or NULL for automatic).

Value

The updated PStricks object.

See Also

[geom_set\(\)](#) for an example.

MakeShortNab	<i>Define Short Form Characters</i>
--------------	-------------------------------------

Description

Define Short Form Characters

Usage

```
MakeShortNab(p = NULL, char1, char2)
```

Arguments

p	The PStricks object.
char1	Short form character for naput.
char2	Short form character for nbput.

Value

The updated PStricks object.

Examples

```

pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  cnode(0,4,".5cm","root") %>%
  cnode(3,5.5,"4pt","A",star=TRUE) %>%
  cnode(3,2.5,"4pt","C",star=TRUE) %>%
  psset("nodesep=3pt,shortput=nab") %>%
  MakeShortNab("+","-") %>%
  ppappend(paste0(ncline("root","A"),"+{$x$}")) %>%
  ppappend(paste0(ncline("root","C"),"-{$y$}"))
# so short forms are not elegantly implemented

```

MakeShortTablr	<i>Define Short Form Characters</i>
----------------	-------------------------------------

Description

Define Short Form Characters

Usage

```
MakeShortTablr(p = NULL, char1, char2, char3, char4)
```

Arguments

p	The PSTricks object.
char1	Short form character for t _a put.
char2	Short form character for t _b put.
char3	Short form character for t _l put.
char4	Short form character for t _r put.

Value

The updated PSTricks object.

See Also

See [MakeShortNab\(\)](#) for how to use short forms.

<code>merge.list</code>	<i>Merge Two Lists</i>
-------------------------	------------------------

Description

Merge Two Lists

Usage

```
## S3 method for class 'list'
merge(x, y, ...)
```

Arguments

<code>x</code>	The first list.
<code>y</code>	The second list, used to add missing elements in the first list.
<code>...</code>	Not used.

Value

The merged lists.

Examples

```
merge(list(a=3,b=4),list(a=30,c=40))
```

<code>multirput</code>	<i>Put Copies of Stuff</i>
------------------------	----------------------------

Description

Put Copies of Stuff

Usage

```
multirput(
  p = NULL,
  x,
  y,
  n,
  stuff,
  angle = NULL,
  refpoint = NULL,
  star = FALSE
)
```

Arguments

<code>p</code>	The PStricks object.
<code>x, y</code>	Coordinates of the stuff.
<code>n</code>	Number of copies.
<code>stuff</code>	Stuff to put at the reference point.
<code>angle</code>	Angle for the copies.
<code>refpoint</code>	The reference point for the stuff.
<code>star</code>	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PStricks(), 3, 3) %>%
  multirput(c(.5, .3), c(0, .1), 12, '*')
```

naput

Put Label above Line

Description

Put Label above Line

Usage

```
naput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PStricks object.
<code>stuff</code>	The label to put on the line.
<code>par</code>	PStricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[ncput\(\)](#) for an example.

nbput	<i>Put Label below Line</i>
-------	-----------------------------

Description

Put Label below Line

Usage

```
nbput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The label to put on the line.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

[ncput\(\)](#) for an example.

ncangle	<i>Draw Line Segments Between Two Nodes</i>
---------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
ncangle(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,3,rnode("A",psframebox("Node A")), "tl") %>%
  rput(4,0,ovalnode("B", "Node B"), "br") %>%
  ncangle("A", "B", "angleA=-90,angleB=90,armB=1cm")
```

ncangles

*Draw Line Segments Between Two Nodes***Description**

Draw Line Segments Between Two Nodes

Usage

```
ncangles(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,4,rnode("A",psframebox("Node A")), "tl") %>%
  rput(4,0,ovalnode("B", "Node B"), "br") %>%
  ncangles("A", "B", "angleA=-90,armA=1cm,armB=.5cm,linearc=.15")
```

ncarc

*Draw an Arc Between Two Nodes***Description**

Draw an Arc Between Two Nodes

Usage

```
ncarc(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>nodeA, nodeB</code>	Names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the coil.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  cnodeput(0,0,"A","X") %>%
  cnodeput(3,2,"B","Y") %>%
  psset("nodesep=3pt") %>%
  ncarc("A","B",arrows=">") %>%
  ncarc("B","A",arrows=">")
```

ncarcbox

Enclose Two Nodes in Curved Box

Description

Enclose Two Nodes in Curved Box

Usage

```
ncarcbox(p = NULL, nodeA, nodeB, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>nodeA, nodeB</code>	Names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(.5,0,rnode(,"A","1"),"bl") %>%
  rput(3.5,2,rnode(,"B","2"),"tr") %>%
  ncarcbox("A","B",nodesep=.2cm,boxsize=.4,linear=.4,arcangle=50)
```

ncbar

*Draw Line Segments Between Two Nodes***Description**

Draw Line Segments Between Two Nodes

Usage

```
ncbar(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  rput(8,4, paste0(rnode("A", "Connect"), " some ", rnode("B", "words"), "!")) %>%
  ncbar("A", "B", "nodesep=3pt, angle=-90", "<-**") %>%
  ncbar("A", "B", "nodesep=3pt, angle=70")
```

ncbox

*Enclose Two Nodes in a Box***Description**

Enclose Two Nodes in a Box

Usage

```
ncbox(p = NULL, nodeA, nodeB, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(.5,0,rnode("A","Idea 1"),"bl") %>%
  rput(3.5,2,rnode("B","Idea 2"),"tr") %>%
  ncbox("A","B","nodesep=.5cm,boxsize=.6,linear=.2,linestyle=dashed")
```

nccircle

Draw a Circle between a Node and Itself

Description

Draw a Circle between a Node and Itself

Usage

```
nccircle(p = NULL, node, radius, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
node	Name of the node.
radius	Radius of the circle.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rnode("A","\textbf{back}") %>%
  nccircle("A",".7cm","nodesep=3pt","->")
```

nccoil	<i>Draw a Coil between two Nodes</i>
--------	--------------------------------------

Description

Draw a Coil between two Nodes

Usage

```
nccoil(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"),c(-1,5),c(-1,4),par="showgrid=true") %>%
  cnode(.5,.5,.5,"A") %>%
  cnode(3.5,2.5,.5,"B","fillstyle=solid,fillcolor=lightgray") %>%
  nccoil("A","B","coilwidth=.3","<->")
# Note that the `pst-node` macro package does not have to be specified.
```

nccurve	<i>Draw a Bezier Curve between Two Nodes</i>
---------	--

Description

Draw a Bezier Curve between Two Nodes

Usage

```
nccurve(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,0,rnode("A",psframebox("Node A")), "bl") %>%
  rput(4,3,ovalnode("B", "Node B"), "tr") %>%
  nccurve("A", "B", "angleB=180")
```

ncdiag	<i>Draw Line Segments Between Two Nodes</i>
--------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
ncdiag(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,3,rnode("A",psframebox("Node A")), "tl") %>%
  rput(4,0,ovalnode("B", "Node B"), "br") %>%
  ncdiag("A", "B", "angleA=-90,angleB=90,arm=.5,linear=.2")
```

ncdiagg

*Draw Line Segments Between Two Nodes***Description**

Draw Line Segments Between Two Nodes

Usage

```
ncdiagg(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

`p` The PSTricks object.
`nodeA, nodeB` Names of the nodes.
`par` PSTricks parameter string.
`arrows` Arrows at the end of the coil.
`star` Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  cnode(0,4,"12pt","a") %>%
  rput(3,5,rnode("b","H"),"l") %>%
  rput(3,3,rnode("c","T"),"l") %>%
  ncdiagg("b","a","angleA=180,armA=1.5,nodesepA=3pt") %>%
  ncdiag("c","a","angleA=180,armA=1.5,armB=0,nodesepA=3pt")
```

ncline

*Draw a Line Between Two Nodes***Description**

Draw a Line Between Two Nodes

Usage

```
ncline(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

`p` The PSTricks object.
`nodeA, nodeB` Names of the nodes.
`par` PSTricks parameter string.
`arrows` Arrows at the end of the coil.
`star` Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,0,rnode("A","Idea 1"),"bl") %>%
  rput(4,3,rnode("B","Idea 2"),"tr") %>%
  ncline("A","B","nodesep=3pt","<->")
```

ncloop

Draw Line Segments Between a Node and Itself

Description

Draw Line Segments Between a Node and Itself

Usage

```
ncloop(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the node.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rnode("a",psframebox("\\Huge A loop")) %>%
  ncloop("a","a","angleB=180,loopsize=1,arm=.5,linear=.2","->")
```

ncput

*Put Label on Line***Description**

Put Label on Line

Usage

```
ncput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The label to put on the line.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  cnode(0,4, ".5cm", "root") %>%
  cnode(3,5.5, "4pt", "A", star=TRUE) %>%
  cnode(3,4, "4pt", "B", star=TRUE) %>%
  cnode(3,2.5, "4pt", "C", star=TRUE) %>%
  psset("nodesep=3pt") %>%
  ncline("root", "A") %>%
  naput("above") %>%
  ncline("root", "B") %>%
  ncput("on", star=TRUE) %>%
  ncline("root", "C") %>%
  nbput("below")
```

nczigzag

*Draw a Zigzag between two Nodes***Description**

Draw a Zigzag between two Nodes

Usage

```
nczigzag(p = NULL, nodeA, nodeB, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
nodeA, nodeB	Names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the zigzag.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"),c(-1,5),c(-1,4),par="showgrid=true") %>%
  cnode(.5,.5,.5,"A") %>%
  cnode(3.5,2.5,.5,"B","fillstyle=solid,fillcolor=lightgray") %>%
  nczigzag("A","B","coilarm=.5,linear=.1","<->")
```

newcmykcolor

Define New CMYK Color

Description

Define New CMYK Color

Usage

```
newcmykcolor(p = NULL, color, num1, num2, num3, num4)
```

Arguments

p	The PSTricks object.
color	The name of the new color.
num1, num2, num3, num4	The cyan-magenta-yellow-black specification (between 0 and 1).

Value

The updated PSTricks object.

Examples

```
newcmykcolor("mycolor",0.1,0.2,0.3,0.4)
```

newgray	<i>Define New Gray Scale</i>
---------	------------------------------

Description

Define New Gray Scale

Usage

```
newgray(p = NULL, color, num)
```

Arguments

p	The PStricks object.
color	The name of the new gray scale.
num	The scale value (0 is black and 1 is white).

Value

The updated PStricks object.

Examples

```
newgray(, "gray10", 0.1)
```

newhsbcolor	<i>Define New HSB Color</i>
-------------	-----------------------------

Description

Define New HSB Color

Usage

```
newhsbcolor(p = NULL, color, num1, num2, num3)
```

Arguments

p	The PStricks object.
color	The name of the new color.
num1, num2, num3	The hue-saturation-brightness specification (between 0 and 1).

Value

The updated PStricks object.

Examples

```
newhsbcolor(, "mycolor", 0.1, 0.2, 0.3)
```

newrgbcolor	<i>Define New RGB Color</i>
-------------	-----------------------------

Description

Define New RGB Color

Usage

```
newrgbcolor(p = NULL, color, num1, num2, num3)
```

Arguments

p	The PStricks object.
color	The name of the new color.
num1, num2, num3	The red-green-blue specification (0 is dark and 1 is light).

Value

The updated PStricks object.

Examples

```
newrgbcolor(,"mycolor",0.1,0.2,0.3)
```

nput	<i>Attach Label to Node</i>
------	-----------------------------

Description

Attach Label to Node

Usage

```
nput(p = NULL, name, stuff, par = NULL, refangle, star = FALSE)
```

Arguments

p	The PStricks object.
name	The name of the node.
stuff	The label to put on the line.
par	PStricks parameter string.
refangle	The reference angle (see uput()).
star	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(4,0,ovalnode("B","Node B"),"br") %>%
  rput(0,3,rnode("A",psframebox("Node A")), "tl") %>%
  nput("A",paste0(psarcn(,0,0,".4cm",0,-70),
    uput(,0,0,"\\texttt{angleA}",-35,labelsep=".4cm")), "labelsep=0",-70) %>%
  ncangle("A","B","angleA=-70,angleB=90,armB=1cm,linewidth=1.2pt") %>%
  ncput(psframe(,c(0,.35),c(0,.35),"dimen=middle"),"nrot=:U,npos=1")
```

ovalnode	<i>Put Stuff in an Oval</i>
----------	-----------------------------

Description

Put Stuff in an Oval

Usage

```
ovalnode(p = NULL, name, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(8,4,paste(circlenode("A","Circle"),"and",ovalnode("B","Oval"))) %>%
  ncbar("A","B","angle=90")
```

parabola	<i>Draw PSTricks Parabola</i>
----------	-------------------------------

Description

Draw PSTricks Parabola

Usage

```
parabola(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the parabola.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 3, par="showgrid=true") %>%
  parabola(c(1, 2), c(1, 3), star=TRUE) %>%
  psset("xunit=.01") %>%
  parabola(c(400, 200), c(3, 0), arrows="<->")
```

pcangle	<i>Draw Line Segments Between Two Nodes</i>
---------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
pcangle(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates or names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcangle(c(3,6),c(4,9))
```

pcangles	<i>Draw Line Segments Between Two Nodes</i>
----------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
pcangles(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates or names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcangles(c(3,6),c(4,9))
```

pcarc	<i>Draw an Arc Between Two Nodes</i>
-------	--------------------------------------

Description

Draw an Arc Between Two Nodes

Usage

```
pcarc(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates or names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcarc(c(3,6),c(4,9))
```

pcarcbox

Enclose Two Nodes in Curved Box

Description

Enclose Two Nodes in Curved Box

Usage

```
pcarcbox(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates or names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcarcbox(c(3,6),c(4,9))
```

pcbar

*Draw Line Segments Between Two Nodes***Description**

Draw Line Segments Between Two Nodes

Usage

```
pcbar(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates or names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  pcbar(c(3,6), c(4,9))
```

pcbox

*Enclose Two Nodes in a Box***Description**

Enclose Two Nodes in a Box

Usage

```
pcbox(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates or names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pobox(c(3,6),c(4,9))
```

pccoil	<i>Draw a Coil between two Nodes</i>
--------	--------------------------------------

Description

Draw a Coil between two Nodes

Usage

```
pccoil(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates or names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the coil.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"),4,3,par="showgrid=true") %>%
  pccoil(c(.5,3.5),c(.5,2.5),"coilwidth=.3","<->")
```

pccurve	<i>Draw a Bezier Curve Between Two Nodes</i>
---------	--

Description

Draw a Bezier Curve Between Two Nodes

Usage

```
pccurve(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates or names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pccurve(c(3,6),c(4,9))
```

pcdiag	<i>Draw Line Segments Between Two Nodes</i>
--------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
pcdiag(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates or names of the nodes.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcdiag(c(3,6),c(4,9))
```

pcdiagg	<i>Draw Line Segments Between Two Nodes</i>
---------	---

Description

Draw Line Segments Between Two Nodes

Usage

```
pcdiagg(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates or names of the nodes.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcdiagg(c(3,6),c(4,9))
```

pcline

Draw a Line Between Two Nodes

Description

Draw a Line Between Two Nodes

Usage

```
pcline(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the line segment.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  pcline(c(3,6),c(4,9))
```

pcloop

Draw Line Segments Between a Node and Itself

Description

Draw Line Segments Between a Node and Itself

Usage

```
pcloop(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
x, y	Coordinates or Name of the Node.
par	PStricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PStricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  pcloop(c(3,6), c(4,9))
```

pczigzag

Draw a Zigzag between two Nodes

Description

Draw a Zigzag between two Nodes

Usage

```
pczigzag(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
x, y	Coordinates or names of the nodes.
par	PStricks parameter string.
arrows	Arrows at the end of the zigzag.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"),4,3,par="showgrid=true") %>%
  pczigzag(c(.5,3.5),c(.5,2.5),"coilarm=.5,linear=.1","<->")
```

pnode	<i>Create Zero-dimensional Node</i>
-------	-------------------------------------

Description

Create Zero-dimensional Node

Usage

```
pnode(p = NULL, x = NULL, y = NULL, name)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the node.
name	The name of the node.

Value

The updated PSTricks object.

See Also

[cnode\(\)](#) for an example.

ppappend	<i>Append Line to Lines Attribute in the PSTricks Object</i>
----------	--

Description

Append Line to Lines Attribute in the PSTricks Object

Usage

```
ppappend(p, s)
```

Arguments

p	The PSTricks object.
s	The string to append.

Value

The updated PSTricks object.

pparg	<i>Construct pstricks Argument</i>
-------	------------------------------------

Description

Construct pstricks Argument

Usage

```
pparg(arg = NULL)
```

Arguments

arg	Argument.
-----	-----------

Value

Argument string (using curly braces), or empty string if arg is NULL.

ppaxis	<i>Draw an X or Y Axis</i>
--------	----------------------------

Description

Draw an X or Y Axis

Usage

```
ppaxis(
  p,
  xory,
  lims,
  label = "label",
  labsep = NULL,
  secondary = FALSE,
  noshow = FALSE
)
```

Arguments

p	The PSTricks object.
xory	A character 'x' or 'y' designating which axis to draw.
lims	A vector with two elements, the minimum and maximum values for the axis.
label	The label to show at the middle of the axis.
labsep	The distance between the tickmark labels and the label.
secondary	A flag to indicate that a secondary (at the other side) axis should be drawn.
noshow	A flag to indicate that values should be scaled with respect to the axis, but that the axis should not be drawn.

Value

The updated PStricks object, with attributes `xtpos` and `ytpos` added for `ppgrid()`.

Examples

```
p <- pppicture(PStricks(), 16, 9) %>%
  ppticks('x', 6, 3) %>%
  ppticks('y', 6, 4) %>%
  ppaxis('x', c(1, 6), "wt") %>%
  ppaxis('y', c(10, 35), "mpg") ;
  psdots(p, cx(p, mtcars$wt), cy(p, mtcars$mpg))
# Note that p has to have valid axes before using `cx()` or `cy()`
```

ppbuild

*Construct pstricks Macro Command***Description**

Construct `pstricks` Macro Command

Usage

```
ppbuild(
  psname,
  x = NULL,
  y = NULL,
  opt = NULL,
  arg = NULL,
  arg1 = NULL,
  arg2 = NULL,
  arg3 = NULL,
  arg4 = NULL,
  arg0 = NULL,
  star = FALSE,
  p = NULL
)
```

Arguments

<code>psname</code>	The name of the macro command to construct.
<code>x, y</code>	Coordinates.
<code>opt</code>	Optional parameters.
<code>arg, arg1, arg2, arg3, arg4, arg0</code>	Arguments.
<code>star</code>	Flag to indicate starred version.
<code>p</code>	The PStricks object.

Value

The string or an updated PStricks object.

Examples

```
ppbuild("ppbuild",1,2,"opt","arg","arg1","arg2","arg3","arg4","arg0",TRUE)
```

ppbuild3D

Construct pstricks Macro Command

Description

Construct pstricks Macro Command

Usage

```
ppbuild3D (
  psname,
  x = NULL,
  y = NULL,
  z = NULL,
  opt = NULL,
  arg = NULL,
  arg1 = NULL,
  arg2 = NULL,
  arg3 = NULL,
  arg4 = NULL,
  arg0 = NULL,
  star = FALSE,
  p = NULL
)
```

Arguments

psname	The name of the macro command to construct.
x, y, z	Coordinates.
opt	Optional parameters.
arg, arg1, arg2, arg3, arg4, arg0	Arguments.
star	Flag to indicate starred version.
p	The PSTricks object.

Value

The string or an updated PSTricks object.

Examples

```
ppbuild3D("ppbuild3D",1,2,3,"opt","arg","arg1","arg2","arg3","arg4","arg0",TRUE)
```

ppclosedoc	<i>Close the LaTeX Document</i>
------------	---------------------------------

Description

Adds a line to the `p` object to finish a self-contained LaTeX document. While this function is exported, it is called automatically when necessary.

Usage

```
ppclosedoc(p)
```

Arguments

<code>p</code>	The PSTricks object.
----------------	----------------------

Value

The updated PSTricks object.

Examples

```
p <- ppclosedoc(ppopendoc(PSTricks()))
```

ppcoords	<i>Construct pstricks Macro Coordinates</i>
----------	---

Description

Construct `pstriks` Macro Coordinates

Usage

```
ppcoords(p = NULL, x, y)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates.

Value

Coordinates string (using parentheses), or empty string if `x` or `y` is `NULL`.

ppcoords3D	<i>Construct pstricks Macro Coordinates</i>
------------	---

Description

Construct pstricks Macro Coordinates

Usage

```
ppcoords3D(p = NULL, x, y, z)
```

Arguments

p	The PSTricks object.
x, y, z	Coordinates.

Value

Coordinates string (using parentheses), or empty string if x or y or z is NULL.

ppdefpicture	<i>Open a Default Picture</i>
--------------	-------------------------------

Description

Open a Default Picture

Usage

```
ppdefpicture(p)
```

Arguments

p	The PSTricks object.
---	----------------------

Details

Used by geoms if no picture has been opened.

Value

The updated PSTricks object.

ppgeoms

*Process Geoms***Description**

Process Geoms

Usage

ppgeoms(p)

Arguments

p The PStricks object.

Details

ppgeoms() is called automatically when the current subplot is closed. The example given below shows an instance where it is necessary to call it explicitly.

Value

The updated PStricks object.

Examples

```
pppicture(PStricks(), 16, 9, data=mtcars) %>%
  geom_dots(aes(x=wt, y=mpg), par="linecolor=green") %>%
  ppgeoms() %>%
  ppsetsecondary('y') %>%
  geom_dots(aes(x=wt, y=cyl), par="linecolor=blue")
```

ppgrid

*Draw Grid Lines***Description**

Draw Grid Lines

Usage

ppgrid(p, par = "linestyle=dotted", background = NULL)

Arguments

p The PStricks object.
 par PStricks parameters.
 background The optional background color.

Details

Axes should be drawn before a grid. Issue: with "linestyle=dotted" multiple dots are drawn at identical locations.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  newrgbcolor("verylightgray",.9,.9,.9) %>%
  ppsetmargins(mrgaxes=0) %>%
  ppaxis('x',c(0,1)) %>%
  ppaxis('y',c(0,1)) %>%
  ppgrid("linestyle=dotted,linecolor=gray",background="verylightgray")
```

pplegend

Add Legend to Plot

Description

Add Legend to Plot

Usage

```
pplegend(
  p,
  s,
  par = NULL,
  position = "tr",
  dx = 0,
  dy = 0,
  w = 1,
  labelsep = "10pt"
)
```

Arguments

p	The PSTricks object.
s	The legend text.
par	PSTricks parameter string.
position	Position for the legend (may be NULL).
dx, dy	x and y offsets w.r.t. default position.
w	Width of the <code>psline()</code> that belongs to the legend text.
labelsep	The distance between the line and the label.

Value

The updated PSTricks object.

Examples

```
p <- pppicture(PSTricks(),16,9) %>%
  ppaxis('x',c(0,1)) %>%
  ppaxis('y',c(0,1)) ;
p <- p %>%
  psset("linecolor=green,showpoints=true") %>%
  psline(cx(p,seq(0,1,0.2)),cy(p,rep(0.5,5))) %>%
  pplegend("top right")
```

pplinewidth	<i>Set Line Width</i>
-------------	-----------------------

Description

Set Line Width

Usage

```
pplinewidth(p, linewidth)
```

Arguments

- p The PSTricks object.
- linewidth The new default line width in mm.

Details

Parameter linewidth is a special one because it is needed at some places for proper alignment (geom_frame(),geom_hist(),ppgrid(),pplegend(),cx(),cy(),endP2E()).

Value

The updated PSTricks object.

See Also

[geom_set\(\)](#) for an example.

ppmansubplot	<i>Set Parameters of Subplot Manually</i>
--------------	---

Description

Set Parameters of Subplot Manually

Usage

```
ppmansubplot(p, x0, y0, hx, hy, ntitle = 1)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x0</code>	The reference position of the x axis.
<code>y0</code>	The reference position of the y axis.
<code>hx</code>	The length of the x axis.
<code>hy</code>	The length of the y axis.
<code>ntitle</code>	Number of lines to reserve for the title.

Value

The updated PSTricks object.

See Also

`adjx0y0()` to get axis positions.

Examples

```
pppicture(PSTricks(),20,28,par="showgrid=true") %>% ppmansubplot(2,2,8,6) %>%
  ppaxis('x',c(0,1)) %>% ppaxis('y',c(0,1)) %>% pptitle("title")
# note that (x0,y0) is the reference position, not where the axes start
```

ppnewpage

Close the Current Picture and Open a New One

Description

Close the Current Picture and Open a New One

Usage

```
ppnewpage(p)
```

Arguments

<code>p</code>	The PSTricks object.
----------------	----------------------

Details

Lower level option values will be reset, but higher level options will not.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(engine="latex"),16,9, data=mtcars, par="showgrid=true") %>%
  geom_dots(aes(x=wt,y=mpg)) %>%
  pptitle("\\Large picture 1") %>%
  ppnewpage() %>%
  geom_dots(aes(x=wt,y=cyl)) %>%
  pptitle("\\Large picture 2")
# Engine pdflatex gives one page...
```

ppnewrgbcolor	<i>Define New RGB Color(s) from R Color Specification(s)</i>
---------------	--

Description

Define New RGB Color(s) from R Color Specification(s)

Usage

```
ppnewrgbcolor(p = NULL, names, values = NULL)
```

Arguments

p	The PSTricks object.
names	R color names.
values	Color values to parse.

Value

The updated PSTricks object.

Examples

```
ppnewrgbcolor(,"blue") # p=NULL works for one color only
```

ppopendoc	<i>Open the LaTeX Document</i>
-----------	--------------------------------

Description

Adds lines to the p object to start a self-contained LaTeX document. While this function is exported, it is called automatically when necessary.

Usage

```
ppopendoc(p)
```

Arguments

p	The PSTricks object.
---	----------------------

Value

The updated PStricks object.

Examples

```
p <- ppendoc(PStricks())
```

ppopt

Construct pstricks Option

Description

Construct pstricks Option

Usage

```
ppopt(opt = NULL)
```

Arguments

opt Option.

Value

Option string (using brackets), or empty string if arg is NULL.

pppicture

Open a Picture and Prepare for using PStricks Functions

Description

Open a Picture and Prepare for using PStricks Functions

Usage

```
pppicture(
  p,
  x = NULL,
  y = NULL,
  data = NULL,
  mapping = NULL,
  par = NULL,
  star = FALSE
)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of upper right corner (and optionally lower left corner).
<code>data</code>	Data to use with geoms.
<code>mapping</code>	Mapping to use with geoms.
<code>par</code>	Parameters for the underlying <code>pspicture</code> macro (see Voss' latest documentation).
<code>star</code>	Flag to indicate that objects should be clipped with respect to the boundaries.

Details

`pppicture` is not called `pspicture` because of the large difference in functionality. It is not needed for using PSTricks package per se (as in LaTeX itself). Most examples use `pppicture()`.

Value

The updated PSTricks object with initial default values for the attributes

- `datnam` - Name of the data for reference.
- `data` - Data for geoms.
- `mapping` - Mapping for geoms.
- `geoms` - List of called geoms.
- `xlim,ylim` - Range of `x` and `y` data.
- `xlab,ylab` - Labels for the `x` and `y` axes.
- `xlabssep,ylabssep` - Distance between tickmark and axes labels.
- `xa,xb,ya,yb` - Scaling conversion parameters.
- `xticks` - See below.
- `yticks` - See below.
- `logx,logy` - Flags to indicate logarithmic `x` and/or `y` axes.
- `secondx,secondy` - Flags to indicate secondary `x` and/or `y` axes.
- `pxad,pyad,sxad,syad` - Flags to indicate which axes have been drawn.
- `margin` - Parameter that determines the layout of a graph.
- `mrgaxes` - A factor for the margins between the axes.
- `polar` - Flag to indicate whether coordinates should be interpreted as polar.
- `degrees` - The number of units in a circle.
- `linewidth` - The default line width in cm.
- `picpar` - Parameters saved for a possible subsequent `pspicture` with `ppnewpage()`.
- `psttoeps` - Flag to indicate that the PSTtoEPS feature should be used with geoms.

`xticks` and `yticks` are lists with the items

- `nticks` - Number of tickmarks; if `nticks=0`, pretty tickmarks will be determined automatically.
- `mticks` - Number of minor tickmarks.
- `nolabels` - Flag to indicate that no labels should be printed.
- `extlabs` - Flag to indicate that labels at axis extrema should be printed.
- `labels` - List of labels instead of numbers to print at the tickmarks.
- `ticklength` - The length of the ticks.
- `ticklengthi` - The inward length of the ticks (default same as outward).
- `rotation` - The rotation for the labels at the tickmarks.

See Also

See `tvput()` for a rare example where `pppicture()` is not used. And see `pppicture()` for the lower level function.

ppsetcartesian	<i>Set Interpretation of Coordinates to Cartesian</i>
----------------	---

Description

Set Interpretation of Coordinates to Cartesian

Usage

```
ppsetcartesian(p)
```

Arguments

p	The PStricks object.
---	----------------------

Value

The updated PStricks object.

See Also

`ppsetpolar()`.

ppsetlogx	<i>Set Flag to use Logarithmic X Axis</i>
-----------	---

Description

Set Flag to use Logarithmic X Axis

Usage

```
ppsetlogx(p, logx = TRUE)
```

Arguments

p	The PStricks object.
logx	The flag.

Value

The updated PStricks object.

`ppsetlogxy`*Set Flags to use Logarithmic X and Y Axes*

Description

Set Flags to use Logarithmic X and Y Axes

Usage

```
ppsetlogxy(p, logxy = TRUE)
```

Arguments

<code>p</code>	The PStricks object.
<code>logxy</code>	The flag.

Value

The updated PStricks object.

See Also

[geom_abline\(\)](#) for an example.

`ppsetlogy`*Set Flag to use Logarithmic Y Axis*

Description

Set Flag to use Logarithmic Y Axis

Usage

```
ppsetlogy(p, logy = TRUE)
```

Arguments

<code>p</code>	The PStricks object.
<code>logy</code>	The flag.

Value

The updated PStricks object.

ppsetmargins	<i>Set Overall Margin</i>
--------------	---------------------------

Description

Set Overall Margin

Usage

```
ppsetmargins(p, margin = 1, mrgaxes = 1)
```

Arguments

p	The PSTricks object.
margin	Parameter that determines the layout of a graph.
mrgaxes	A factor for the margins between the axes.

Value

The updated PSTricks object with respect to the attributes `margin` and `mrgaxes`.

See Also

[ppgrid\(\)](#) for an example.

ppsetnologx	<i>Reset Flag to use Logarithmic X Axis</i>
-------------	---

Description

Reset Flag to use Logarithmic X Axis

Usage

```
ppsetnologx(p)
```

Arguments

p	The PSTricks object.
---	----------------------

Value

The updated PSTricks object.

ppsetnologxy

Reset Flags to use Logarithmic X and Y Axes

Description

Reset Flags to use Logarithmic X and Y Axes

Usage

```
ppsetnologxy (p)
```

Arguments

p The PSTricks object.

Value

The updated PSTricks object.

ppsetnology

Reset Flag to use Logarithmic Y Axis

Description

Reset Flag to use Logarithmic Y Axis

Usage

```
ppsetnology (p)
```

Arguments

p The PSTricks object.

Value

The updated PSTricks object.

`ppsetpolar`*Set Interpretation of Coordinates to Polar*

Description

Set Interpretation of Coordinates to Polar

Usage

```
ppsetpolar(p)
```

Arguments

`p` The PStricks object.

Value

The updated PStricks object.

See Also

`degrees()` and `ppsetcartesian()`, and `psarcn()` for an example.

`ppsetprimary`*Set Flag to use Primary X or Y Axis*

Description

Set Flag to use Primary X or Y Axis

Usage

```
ppsetprimary(p, xory, secondary = FALSE)
```

Arguments

`p` The PStricks object.
`xory` A character 'x' or 'y' designating the axis.
`secondary` The flag.

Value

The updated PStricks object.

ppsetprimaryx	<i>Set Flag to use Primary X Axis</i>
---------------	---------------------------------------

Description

Set Flag to use Primary X Axis

Usage

```
ppsetprimaryx(p, secondary = FALSE)
```

Arguments

p	The PStricks object.
secondary	The flag.

Value

The updated PStricks object.

ppsetprimaryy	<i>Set Flag to use Primary Y Axis</i>
---------------	---------------------------------------

Description

Set Flag to use Primary Y Axis

Usage

```
ppsetprimaryy(p, secondary = FALSE)
```

Arguments

p	The PStricks object.
secondary	The flag.

Value

The updated PStricks object.

ppsetpsttoeps

Set Flag to use PSTtoEPS Feature

Description

Set Flag to use PSTtoEPS Feature

Usage

```
ppsetpsttoeps(p, psttoeps = TRUE)
```

Arguments

p	The PSTricks object.
psttoeps	A flag to indicate that the PSTtoEPS feature should be used with geoms.

Details

The PSTtoEPS feature is explained in the original manual in section 55. It may be used for efficient EPS file processing, in particular in cases where TeX's capacity becomes exceeded with many plotting commands. It is needed only for the "latex" engine; "xelatex" and "lualatex" do not handle it properly. The "pstpks="pst-eps" must be used when creating the PSTricks() object.

ppsetsecondary

Set Flag to use Secondary X or Y Axis

Description

Set Flag to use Secondary X or Y Axis

Usage

```
ppsetsecondary(p, xory, secondary = TRUE)
```

Arguments

p	The PSTricks object.
xory	A character 'x' or 'y' designating the axis.
secondary	The flag.

Value

The updated PSTricks object.

See Also

[ppgeoms\(\)](#) for an example.

`ppsetsecondaryx` *Set Flag to use Secondary X Axis*

Description

Set Flag to use Secondary X Axis

Usage

```
ppsetsecondaryx(p, secondary = TRUE)
```

Arguments

`p` The PStricks object.
`secondary` The flag.

Value

The updated PStricks object.

See Also

[ppgeoms\(\)](#) for an example.

`ppsetsecondaryy` *Set Flag to use Secondary Y Axis*

Description

Set Flag to use Secondary Y Axis

Usage

```
ppsetsecondaryy(p, secondary = TRUE)
```

Arguments

`p` The PStricks object.
`secondary` The flag.

Value

The updated PStricks object.

See Also

[ppgeoms\(\)](#) for an example.

ppsetxlabsep	<i>Set x label separation distance</i>
--------------	--

Description

Set x label separation distance

Usage

```
ppsetxlabsep(p, labsep = 0.7)
```

```
ppxlabsep(p, labsep = 0.7)
```

Arguments

p	The PStricks object.
labsep	The distance.

Value

The updated PStricks object.

See Also

[geom_line\(\)](#) to view the default distances.

Examples

```
geom_line(PStricks(), data=data.frame(x=c(4,0,2), y=c(2,1,0)),
  par="linewidth=2pt, linearc=.25, arrows=->" %>%
  ppsetxlabsep(1.5) %>% ppsetylabsep(2)
```

ppsetylabsep	<i>Set y label separation distance</i>
--------------	--

Description

Set y label separation distance

Usage

```
ppsetylabsep(p, labsep = 1)
```

```
ppylabsep(p, labsep = 1)
```

Arguments

p	The PStricks object.
labsep	The distance.

Value

The updated PStricks object.

See Also

[ppsetxlabsep\(\)](#) for an example.

ppsubplot

Divide the Picture in Subplots

Description

Divide the Picture in Subplots

Usage

```
ppsubplot (
  p,
  nx = NULL,
  ny = NULL,
  n = NULL,
  nxaxes = 1,
  nyaxes = 1,
  ntitle = NULL,
  width = 1,
  height = 1,
  newpage = FALSE,
  data = NULL,
  mapping = NULL
)
```

Arguments

<code>p</code>	The PStricks object.
<code>nx</code>	Number of plots in the x direction (if NULL, increment n automatically).
<code>ny</code>	Number of plots in the y direction.
<code>n</code>	Number of current plot (by default 1 if nx and ny specified).
<code>nxaxes</code>	Number of x axes to make space for.
<code>nyaxes</code>	Number of y axes to make space for.
<code>ntitle</code>	Number of title lines to make space for.
<code>width</code>	Number of subplots to occupy in the x direction.
<code>height</code>	Number of subplots to occupy in the y direction.
<code>newpage</code>	Flag to skip remaining subplots for the current page and go to the next page.
<code>data</code>	Override earlier specified data (in <code>pppicture</code> or <code>ppsubplot</code>).
<code>mapping</code>	Override earlier specified mapping (in <code>pppicture</code> or <code>ppsubplot</code>).

Details

Subsequent coordinates are relative to (p\$x0,p\$y0), so possibly different from (0,0). Plot parameters such as limits, ticks, and labels are not reset to default values.

Value

The updated PStricks object, with respect to the attributes

- x0 - The position of the x axis.
- y0 - The position of the y axis.
- dx - The space allocated for the subplot in the x direction.
- dy - The space allocated for the subplot in the y direction.
- hx - The length of the x axis.
- hy - The length of the y axis.
- nx - Saved nx for subsequent subplots.
- ny - Saved ny for subsequent subplots.
- isub - Saved n for subsequent subplots.
- pxad - Flag to indicate that primary x axis has been drawn.
- pyad - Flag to indicate that primary y axis has been drawn.
- sxad - Flag to indicate that secondary x axis has been drawn.
- syad - Flag to indicate that secondary y axis has been drawn.

Examples

```
pppicture(PStricks(), data=mtcars) %>%
  ppsubplot(2, 3, data=mtcars, mapping=aes(x=wt, y=mpg)) %>%
  geom_dots() %>%
  ppsubplot() %>%
  geom_dots(aes(x=wt, y=cyl))
```

ppticks

Define Major and Minor Tickmarks at X or Y Axis

Description

Define Major and Minor Tickmarks at X or Y Axis

Usage

```
ppticks(
  p,
  xory,
  nticks = 0,
  mticks = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)
```

Arguments

<code>p</code>	The PStricks object.
<code>xory</code>	A character 'x' or 'y' designating which axis to draw.
<code>nticks</code>	Number of tickmarks; if <code>nticks=0</code> , pretty tickmarks will be determined automatically.
<code>mticks</code>	Number of minor tickmarks.
<code>nolabels</code>	Flag to indicate that no labels should be printed.
<code>extlabs</code>	Flag to indicate that labels at axis extrema should be printed (however labels cannot be used).
<code>labels</code>	List of labels instead of numbers to print at the tickmarks.
<code>rotation</code>	The rotation for the labels at the tickmarks.
<code>ticklength</code>	The length of the ticks.
<code>ticklengthi</code>	<ul style="list-style-type: none"> The inward length of the ticks (default same as outward).

Details

To be used with `ppaxis()`.

Value

The updated PStricks object.

See Also

`ppaxis()` for an example.

<code>pptitle</code>	<i>Set Plot Title</i>
----------------------	-----------------------

Description

Set Plot Title

Usage

```
pptitle(p, title, dx = 0, dy = 0)
```

Arguments

<code>p</code>	The PStricks object.
<code>title</code>	The title.
<code>dx, dy</code>	Offset with respect to the default position (top left).

Details

The title is shown using `uput()`.

Value

The updated PSTricks object.

See Also

`ppmansubplot()` for an example.

ppwrite

Write Assembled PSTricks Picture(s) to a File

Description

`ppwrite()` is used to write the assembled LaTeX document to a file. It does not return the PSTricks object, as it will no longer be useful (a new `PSTricks()` call is needed). `ppwrite` may be called automatically by R via `print(print.PSTricks)`.

Usage

```
ppwrite(
  p,
  filename = NULL,
  topdf = TRUE,
  crop = FALSE,
  topng = FALSE,
  dsf = 4,
  toeps = FALSE,
  clean = TRUE
)
```

Arguments

<code>p</code>	The PSTricks object.
<code>filename</code>	The name of the .tex file to write the document to (by default the name of the script, or "pp" when interactive).
<code>topdf</code>	Flag to specify if a .pdf should be generated by the engine as specified with <code>PSTricks()</code> .
<code>crop</code>	Flag if a cropped version with name <code>-crop.pdf</code> should be created.
<code>topng</code>	Flag to specify if the .pdf should be converted to a .png.
<code>dsf</code>	DownScaleFactor for Ghostscript when converting to .png (resolution is 4x72=288 pixels per inch).
<code>toeps</code>	Flag to specify if an .eps should be generated (using latex and dvips -E).
<code>clean</code>	Flag to specify if intermediate files should be deleted after generating the .pdf.

Value

Nothing.

Examples

```
ppwrite(pppicture(PSTricks(engine="pdflatex"),par="showgrid=true"))
# where the "pdflatex" engine is the only one showing the grid labels
# with a full A4 picture.
```

ppxticks

Define Major and Minor Tickmarks at the X Axis

Description

Define Major and Minor Tickmarks at the X Axis

Usage

```
ppxticks(
  p,
  nticks = 0,
  mticks = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)

xticks(
  p,
  nticks = 0,
  mticks = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)
```

Arguments

p	The PSTricks object.
nticks	Number of tickmarks; if nticks=0, pretty tickmarks will be determined automatically.
mticks	Number of minor tickmarks.
nolabels	Flag to indicate that no labels should be printed.
extlabs	Flag to indicate that labels at axis extrema should be printed (however labels cannot be used).
labels	List of labels instead of numbers to print at the tickmarks.
rotation	The rotation for the labels at the tickmarks.
ticklength	The length of the ticks.
ticklengthi	<ul style="list-style-type: none"> The inward length of the ticks (default same as outward).

Value

The updated PStricks object.

Examples

```
PStricks() %>%
  geom_dots(aes(x=wt, y=mpg), mtcars) %>%
  xlim(0, 6) %>%
  xticks(3, 2)
```

ppyticks

Define Major and Minor Tickmarks at the Y Axis

Description

Define Major and Minor Tickmarks at the Y Axis

Usage

```
ppyticks(
  p,
  nticks = 0,
  mticks = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)

yticks(
  p,
  nticks = 0,
  mticks = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)
```

Arguments

p	The PStricks object.
nticks	Number of tickmarks; if nticks=0, pretty tickmarks will be determined automatically.
mticks	Number of minor tickmarks.
nolabels	Flag to indicate that no labels should be printed.

extlabs	Flag to indicate that labels at axis extrema should be printed (however labels cannot be used).
labels	List of labels instead of numbers to print at the tickmarks.
rotation	The rotation for the labels at the tickmarks.
ticklength	The length of the ticks.
ticklengthi	<ul style="list-style-type: none"> The inward length of the ticks (default same as outward).

Value

The updated PStricks object.

Examples

```
PStricks() %>%
  geom_dots(aes(x=wt,y=mpg),mtcars) %>%
  ylim(10,35) %>%
  yticks(6,0)
```

print.PStricks	print a <i>PStricks</i> Object
----------------	--------------------------------

Description

print a PStricks Object

Usage

```
## S3 method for class 'PStricks'
print(x, ...)
```

Arguments

x	The PStricks object.
...	Parameters for ppwrite.

psarc	Draw <i>PStricks</i> Arc
-------	--------------------------

Description

Draw PStricks Arc

Usage

```
psarc(
  p = NULL,
  x = NULL,
  y = NULL,
  radius,
  angleA,
  angleB,
  par = NULL,
  arrows = NULL,
  star = FALSE
)
```

Arguments

p	The PStricks object.
x, y	Coordinates of the arc.
radius	Radius of the arc.
angleA, angleB	Start and end angles of the arc.
par	PStricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PStricks(), 3, 2, par="showgrid=true") %>%
  psarc(1.5, 1.5, 1.5, 215, 0, "showpoints=true", star=TRUE)
```

psarcn

Draw PStricks Arc Clockwise

Description

Draw PStricks Arc Clockwise

Usage

```
psarcn(
  p = NULL,
  x = NULL,
  y = NULL,
  radius,
  angleA,
  angleB,
  par = NULL,
```

```
arrows = NULL,  
star = FALSE  
)
```

Arguments

- p The PSTricks object.
- x, y Coordinates of the arc.
- radius Radius of the arc.
- angleA, angleB End and start angles of the arc.
- par PSTricks parameter string.
- arrows Arrows at the end of the line.
- star Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 3, par="showgrid=true") %>%  
  ppsetpolar() %>%  
  psline(c(4, 0, 4), c(50, 0, 10), "linewidth=2pt") %>%  
  psarcn(0, 0, 3, 50, 10, "arcsepB=2pt", arrows="<-")
```

psaxes	<i>Draw PSTricks Axes</i>
--------	---------------------------

Description

Draw PSTricks Axes

Usage

```
psaxes(p = NULL, x, y, par = NULL, arrows = NULL)
```

Arguments

- p The PSTricks object.
- x, y Coordinates of the axes.
- par PSTricks parameter string.
- arrows Arrows at the end of the line.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-plot"),4,3,par="showgrid=true") %>%
  psaxes(c(2,0,4), c(1,0,3),
    "linewidth=1.2pt,labels=none,ticks=none", "<->")
# observe interesting showgrid
```

psbezier

*Draw PSTricks Bezier Curve***Description**

Draw PSTricks Bezier Curve

Usage

```
psbezier(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the line segment(s).
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),4,4) %>%
  psbezier(c(0,1,2,4),c(0,4,1,3.5),"linewidth=2pt,showpoints=true","->")
```

psccurve

*Draw PSTricks Closed Curve***Description**

Draw PSTricks Closed Curve

Usage

```
psccurve(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the curve.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 1, par="showgrid=true") %>%
  pscurve(c(.5, 3.5, 3.5, .5), c(0, 1, 0, 1), "showpoints=true")
```

pscircle

Draw PSTricks Circle

Description

Draw PSTricks Circle

Usage

```
pscircle(p = NULL, x = NULL, y = NULL, radius, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the center of the circle.
<code>radius</code>	Radius of the circle.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), c(-1, 2), c(-1, 2), par="showgrid=true") %>%
  pscircle(.5, .5, 1.5, "linewidth=2pt")
```

pscirclebox	<i>Draw a Circle Box</i>
-------------	--------------------------

Description

Draw a Circle Box

Usage

```
pscirclebox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9) %>%
  rput(8, 4, pscirclebox("{\\begin{tabular}{c} You are \\\\ here \\end{tabular}}"))
```

pscircleOA	<i>Draw PSTricks Circle</i>
------------	-----------------------------

Description

Draw PSTricks Circle

Usage

```
pscircleOA(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the center of the circle and one point on the circle.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```

pppicture(PSTricks(engine="latex"),8,8,par="showgrid=true") %>%
  pscircleOA(c(6,4),c(4,4)) %>%
  pscircleOA(c(4,4),c(6,4),"linecolor=blue") %>%
  pscircleOA(c(3,4),c(5,4),"linewidth=2pt,linecolor=yellow") %>%
  pscircleOA(c(2,4),c(4,4),"opacity=0.3,linecolor=red",TRUE)

```

psCoil

*Draw PSTricks Coil***Description**

Draw PSTricks Coil

Usage

```
psCoil(p = NULL, angle1, angle2, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
angle1, angle2	First and last angles of the coil.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```

pppicture(PSTricks(pstpkgs="pst-coil"),c(-1,5),c(-1,1),par="showgrid=true") %>%
  psCoil(0,1440,"coilaspect=0,coilheight=1.33,coilwidth=.75,linewidth=1.5pt")

```

pscoil

*Draw PSTricks Coil***Description**

Draw PSTricks Coil

Usage

```
pscoil(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the coil.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the coil.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"), c(-1,5), c(-1,3), par="showgrid=true") %>%
  pscoil(4,2, "coilarm=.5cm,linewidth=1.5pt,coilwidth=.5cm", "<-|")
```

pscurve

Draw PSTricks Curve

Description

Draw PSTricks Curve

Usage

```
pscurve(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the curve.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4,2, par="showgrid=true") %>%
  pscurve(c(0,0.7,3.3,4,0.4), c(1.3,1.8,0.5,1.6,0.4),
    "showpoints=true", "<->")
```

pscustom	<i>Custom graphics</i>
----------	------------------------

Description

Custom graphics

Usage

```
pscustom(p = NULL, commands, par = NULL)
```

Arguments

p	The PStricks object.
commands	Commands to call.
par	PStricks parameter string.

Value

The updated PStricks object.

Examples

```
PStricks() %>%
  pppicture(4,3,par="showgrid=true") %>%
  pscustom(paste0(pscurve(c(0,1,2,4),c(2,2.5,1.5,3)),
    pscurve(c(4,3,2,1,0),c(1,0.5,1,0,0.5),"liftpen=1")),
    "linewidth=2pt,fillstyle=solid,fillcolor=gray")
```

psdblframebox	<i>Put Stuff in a Box with a Double Frame</i>
---------------	---

Description

Put Stuff in a Box with a Double Frame

Usage

```
psdblframebox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
stuff	The stuff to put in the box.
par	PStricks parameter string.
star	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  rput(8,4,psdblframebox(", "\\parbox[c]{6cm}{\\raggedright
    A double frame is drawn with the gap between lines equal to \\texttt{doublesep}}")
```

psdiabox	<i>Put Stuff in a Diamond Box</i>
----------	-----------------------------------

Description

Put Stuff in a Diamond Box

Usage

```
psdiabox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  rput(8,4,psdiabox(", "\\Large\\textbf{Happy?}","shadow=true"))
```

psdiamond	<i>Draw PSTricks Diamond</i>
-----------	------------------------------

Description

Draw PSTricks Diamond

Usage

```
psdiamond(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the diamond.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),4,2,par="showgrid=true") %>%
  psdiamond(c(2,1.5),c(1,1),"framearc=.3,fillstyle=solid,fillcolor=lightgray")
```

psdot	<i>Draw PSTricks Dot</i>
-------	--------------------------

Description

Draw PSTricks Dot

Usage

```
psdot(p = NULL, x = NULL, y = NULL, par = NULL, star = FALSE)
```

Arguments

- p The PSTricks object.
- x, y Coordinates of the dot.
- par PSTricks parameter string.
- star Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),2,2) %>%
  psdot(1,1)
```

psdots	<i>Draw PSTricks Dots</i>
--------	---------------------------

Description

Draw PSTricks Dots

Usage

```
psdots(p = NULL, x, y, par = NULL, star = FALSE)
```


Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the dots.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 2, 2) %>%
  psdots(c(0, 1, 2), c(1, 1, 1), "dotstyle=Bo")
```

psecurve	<i>Draw PSTricks Extended Curve</i>
----------	-------------------------------------

Description

Draw PSTricks Extended Curve

Usage

```
psecurve(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the curve.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the line.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 4, par="showgrid=true") %>%
  psecurve(c(.125, .25, .5, 1, 2, 4, 8), c(8, 4, 2, 1, .5, .25, .125),
    "showpoints=true")
```

psellipse	<i>Draw PSTricks Ellipse</i>
-----------	------------------------------

Description

Draw PSTricks Ellipse

Usage

```
psellipse(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the center of and the horizontal and vertical radii.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), c(-1, 2), c(-1, 1), par="showgrid=true") %>%
  psellipse(c(.5, 1.5), c(0, 1), "fillcolor=lightgray")
```

psellipticarc	<i>Draw PSTricks Elliptic Arc</i>
---------------	-----------------------------------

Description

Draw PSTricks Elliptic Arc

Usage

```
psellipticarc(
  p = NULL,
  x,
  y,
  angleA,
  angleB,
  par = NULL,
  arrows = NULL,
  star = FALSE
)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the elliptic arc.
angleA, angleB	Start and end angles of the arc.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),c(-1,2),c(-1,1),par="showgrid=true") %>%
  psellipticarc(c(.5,1.5),c(0,1),215,0,"showpoints=true,arrowscale=2","->")
```

psellipticarcn	<i>Draw PSTricks Elliptic Arc Clockwise</i>
----------------	---

Description

Draw PSTricks Elliptic Arc Clockwise

Usage

```
psellipticarcn(
  p = NULL,
  x,
  y,
  angleA,
  angleB,
  par = NULL,
  arrows = NULL,
  star = FALSE
)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the elliptic arc.
angleA, angleB	Start and end angles of the arc.
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),c(-1,2),c(-1,1),par="showgrid=true") %>%
  psellipticarcn(c(.5,1.5),c(0,1),0,215,"showpoints=true,arrowscale=2","<-")
```

psframe

Draw PSTricks Frame

Description

Draw PSTricks Frame

Usage

```
psframe(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the frame.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),4,2,par="showgrid=true") %>%
  psframe(4,2,"linewidth=2pt,framearc=.3,fillstyle=solid,fillcolor=lightgray") %>%
  psframe(c(1,2),c(.5,1.5),"linecolor=white",star=TRUE)
```

psframebox

Put Stuff in a Box with a Frame

Description

Put Stuff in a Box with a Frame

Usage

```
psframebox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>stuff</code>	The stuff to put in the box.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),3,2) %>%
  pspolygon(c(0,3,3,2),c(0,0,2,2),"fillcolor=gray,fillstyle=crosshatch*") %>%
  rput(2,1,psframebox("Label","framearc=.3",star=TRUE))
```

<code>psgrid</code>	<i>Draw PSTricks Grid</i>
---------------------	---------------------------

Description

Draw PSTricks Grid

Usage

```
psgrid(p = NULL, x = NULL, y = NULL, par = NULL)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the grid.
<code>par</code>	PSTricks parameter string.

Value

The updated PSTricks object.

Examples

```
PSTricks() %>%
  pppicture(c(-2,4),c(-2,3)) %>%
  psgrid(c(0,-1,3), c(0,-1,2)) %>%
  pppicture(c(-1,3),c(-1,2)) %>%
  psgrid()
```

psline	<i>Draw PSTricks Line</i>
--------	---------------------------

Description

Draw PSTricks Line

Usage

```
psline(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the line segment(s).
par	PSTricks parameter string.
arrows	Arrows at the end of the line.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

[geom_line\(\)](#) for the version with scaling.

Examples

```
pppicture(PSTricks(), 4, 2, par="showgrid=true") %>%
  psline(c(4, 0, 2), c(2, 1, 0), "linewidth=2pt, lineararc=.25", "->")
```

psovalbox	<i>Put Stuff in an Oval Box</i>
-----------	---------------------------------

Description

Put Stuff in an Oval Box

Usage

```
psovalbox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  rput(8,4,paste0("\\parbox{3.75cm}{At the introductory price of ",
    psovalbox("\\$13.99","boxsep=false,linecolor=darkgray"),
    ", it pays to act now!}"))
```

pspicture

Begin Picture Environment

Description

Begin Picture Environment

Usage

```
pspicture(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of upper right corner (and optionally lower left corner).
par	Parameters (see Voss' latest documentation).
star	Flag to indicate that objects should be clipped with respect to the boundaries.

Details

Available, but see `pppicture()`.

Value

The updated PSTricks object.

Examples

```
PSTricks(engine="pdflatex") %>%
  psset("linecolor=red") %>%
  pspicture(1,1,"showgrid") %>%
  rput(0,0,
    paste(pspicture(1,1,star=TRUE),
      psline(c(-1,2),c(-1,2)),
      endpspicture()),
    "lb") %>%
  endpspicture()
# Example found on the internet for clipping while showing labels
```

pspolygon	<i>Draw PSTricks Polygon</i>
-----------	------------------------------

Description

Draw PSTricks Polygon

Usage

```
pspolygon(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the line segment(s).
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 2, par="showgrid=true") %>%
  pspolygon(c(0, 1), c(2, 2), "linewidth=1.5pt") %>%
  pspolygon(c(1, 1, 4, 4), c(0, 2, 0, 2), "linearc=.2", star=TRUE)
```

psscalebox	<i>Scale Box</i>
------------	------------------

Description

Scale Box

Usage

```
psscalebox(p = NULL, stuff, num1, num2)
```

Arguments

p	The PSTricks object.
stuff	Stuff to scale.
num1, num2	Numbers to scale horizontally and vertically

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9) %>%
  rput(8, 4, psscalebox("Big and long", 4, 2))
```

psscaleboxto

*Scale Box To***Description**

Scale Box To

Usage

```
psscaleboxto(p = NULL, x, y, stuff)
```

Arguments

p	The PSTricks object.
x, y	Width and height to scale to.
stuff	Stuff to rotate.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9) %>%
  rput(8, 4, psscaleboxto(4, 2, "Big and long"))
```

psset

*Set Any Native PSTricks Option***Description**

Set Any Native PSTricks Option

Usage

```
psset(p = NULL, s)
```

Arguments

p	The PSTricks object.
s	A string with par=value specifications (comma separated).

Value

The updated PSTricks object.

Examples

```
psset("linewidth=0.1mm")
```

psshadowbox	<i>Put Stuff in a Box with a Frame and a Shadow</i>
-------------	---

Description

Put Stuff in a Box with a Frame and a Shadow

Usage

```
psshadowbox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9) %>%
  rput(8, 4, "\\psshadowbox{\\textbf{Great Idea!!}}")
```

psTextFrame	<i>Draw PSTricks Text Frame</i>
-------------	---------------------------------

Description

Draw PSTricks Text Frame

Usage

```
psTextFrame(p = NULL, x, y, text, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the frame.
text	Text to display in the frame.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 8, 6, par="showgrid=true") %>%  
  psTextFrame(c(0, 4), c(0.5, 1.5), "Hallo", "linecolor=lightgray, ref=1")
```

pstriangle	<i>Draw PSTricks Triangle</i>
------------	-------------------------------

Description

Draw PSTricks Triangle

Usage

```
pstriangle(p = NULL, x, y, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the triangle.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 2, par="showgrid=true") %>%  
  pstriangle(c(2, 4), c(.5, 1), "gangle=10", star=TRUE)
```

pstribox	<i>Put Stuff in a Triangle Box</i>
----------	------------------------------------

Description

Put Stuff in a Triangle Box

Usage

```
pstribox(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The stuff to put in the box.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 16, 9) %>%
  rput(8, 4, pstribox("\\Large\\textbf{Begin}", "trimode=R, framesep=5pt"))
```

PSTricks

Create a PSTricks Object

Description

Create a PSTricks Object

Usage

```
PSTricks(
  x = NULL,
  y = NULL,
  engine = c("default", "lualatex", "xelatex", "pdflatex", "latex"),
  paper = c("default", "a4", "letter"),
  landscape = FALSE,
  center = TRUE,
  packages = NULL,
  pstpkgs = NULL,
  familydefault = NULL,
  tmpdir = "."
)
```

Arguments

<code>x</code>	Width of paper (default A4).
<code>y</code>	Height of paper (default A4).
<code>engine</code>	Engine to produce a .pdf from the output .tex file. One of "lualatex" (default), "xelatex", "pdflatex", and "latex". No pdf will be produced if the engine name is not recognized.
<code>paper</code>	Paper size specification. One of "a4" (default) or "letter".
<code>landscape</code>	Flag to indicate landscape paper.
<code>center</code>	Flag to use LaTeX offsets to center pictures based on the first one.
<code>packages</code>	Font or other packages to load (default default).
<code>pstpkgs</code>	PSTricks packages in addition to pstricks itself (default none).
<code>familydefault</code>	Familydefault (default \sfdefault).
<code>tmpdir</code>	Temporary directory for the PSTtoEPS feature.

Value

An initial PSTricks object with attributes

- docOpened - A flag indicating that the LaTeX document has been opened (in the `lines` attribute).
- picOpened - A flag indicating that the `pspicture` PSTricks environment has been opened.
- paperx - The horizontal paper size in cm.
- papery - The vertical paper size in cm.
- x - The horizontal picture size in cm.
- y - The vertical picture size in cm.
- landscape - A flag indicating portrait or landscape output mode.
- center - A flag indicating that the `pspicture` will be centered on the paper.
- config - A list of configuration items (see below).
- lines - A list of LaTeX lines to be created.

The configuration list may consist of the following items:

- engine - The engine used to process the generated .tex file.
- familydefault - The default font family.
- packages - A list of additional LaTeX packages to be used.
- paper - The type of paper, for example "a4" or "letter".
- pstpks - A list of additional PSTricks packages (normally only "pstricks.sty").
- tmpdir - The temporary directory for the PSTtoEPS feature.
- gscmd - The name of the Ghostscript executable to use (default "gs").

Examples

```
names(PSTricks())
```

pswedge

Draw PSTricks Wedge

Description

Draw PSTricks Wedge

Usage

```
pswedge (
  p = NULL,
  x = NULL,
  y = NULL,
  radius,
  angle1,
  angle2,
  par,
  star = FALSE
)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the center of and the horizontal and vertical radii.
<code>radius</code>	Radius of the wedge.
<code>angle1, angle2</code>	End and start angles of the wedge.
<code>par</code>	PSTricks parameter string.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 2, 2, par="showgrid=true") %>%
  pswedge(0, 0, 2, 0, 70, "linecolor=gray, linewidth=2pt, fillstyle=solid")
```

pszigzag

Draw PSTricks Zigzag

Description

Draw PSTricks Zigzag

Usage

```
pszigzag(p = NULL, x, y, par = NULL, arrows = NULL, star = FALSE)
```

Arguments

<code>p</code>	The PSTricks object.
<code>x, y</code>	Coordinates of the zigzag.
<code>par</code>	PSTricks parameter string.
<code>arrows</code>	Arrows at the end of the zigzag.
<code>star</code>	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-coil"), c(-1, 5), c(-1, 1), par="showgrid=true") %>%
  pszigzag(4, 0, "coilarm=.5, linear=.1", "<->")
# Note that the zigzag is drawn partly outside the pppicture.
```

qdisk	<i>Draw PSTricks Disk</i>
-------	---------------------------

Description

Draw PSTricks Disk

Usage

```
qdisk(p = NULL, x, y, radius)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the center of the disk.
radius	Radius of the disk.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 4, 6) %>%  
  psset("linecolor=gray") %>%  
  qdisk(2, 3, 4*2.54/72)
```

qline	<i>Draw PSTricks Line Segment</i>
-------	-----------------------------------

Description

Draw PSTricks Line Segment

Usage

```
qline(p = NULL, x, y)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the line segment.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 2, 1, par="showgrid=true") %>%  
  qline(c(0, 2), c(0, 1))
```

Rnode	<i>Put Stuff in a Box at a Node</i>
-------	-------------------------------------

Description

Put Stuff in a Box at a Node

Usage

```
Rnode(p = NULL, name, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"), c(-2,14), c(-2,10), par="showgrid=true") %>%
  rput(8,4,paste("\\Large",Rnode(,"A","sp"), "\\hskip 2cm",Rnode(,"B","Bit"))) %>%
  ncline("A","B")
```

rnode	<i>Put Stuff in a Box at a Node</i>
-------	-------------------------------------

Description

Put Stuff in a Box at a Node

Usage

```
rnode(p = NULL, name, stuff, refpoint = NULL)
```

Arguments

p	The PSTricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
refpoint	The reference point (see rput()).

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(8,4,paste("\\Large",rnode("A","sp"), "\\hskip 2cm",rnode("B","Bit"))) %>%
  ncline("A","B")
```

rotatedown

Rotate Box Down

Description

Rotate Box Down

Usage

```
rotatedown(p = NULL, stuff)
```

Arguments

p	The PSTricks object.
stuff	Stuff to rotate.

Value

The updated PSTricks object.

See Also

[rotateleft\(\)](#) for an example.

rotateleft

Rotate Box Left

Description

Rotate Box Left

Usage

```
rotateleft(p = NULL, stuff)
```

Arguments

p	The PSTricks object.
stuff	Stuff to rotate.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(),16,9) %>%
  rput(8,4,paste("\\Large\\bfseries",
    rotateleft("Left"),rotatedown("Down"),rotateright("Right")))
```

rotateright	<i>Rotate Box Right</i>
-------------	-------------------------

Description

Rotate Box Right

Usage

```
rotateright(p = NULL, stuff)
```

Arguments

p	The PSTricks object.
stuff	Stuff to rotate.

Value

The updated PSTricks object.

See Also

[rotateleft\(\)](#) for an example.

rput	<i>Put Stuff at Refpoint</i>
------	------------------------------

Description

Put Stuff at Refpoint

Usage

```
rput (
  p = NULL,
  x = NULL,
  y = NULL,
  stuff,
  refpoint = NULL,
  rotation = NULL,
  star = FALSE
)
```

Arguments

<code>p</code>	The PStricks object.
<code>x, y</code>	Coordinates of the stuff (may be omitted if <code>rotation</code> is present).
<code>stuff</code>	Stuff to put at the reference point.
<code>refpoint</code>	The reference point for the stuff.
<code>rotation</code>	Rotation to apply to the stuff.
<code>star</code>	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
pppicture(PStricks(), c(-1, 4), c(-1, 4)) %>%
  rput(stuff=paste0(psframe(c(-1, 2), c(0, 1)),
    rput(, 2, 1, "\\emph{stuff}", "br", "*0")), rotation=34)
```

sifelse

Conditional Object Selection

Description

Conditional Object Selection

Usage

```
sifelse(test, rt, rf)
```

Arguments

<code>test</code>	An object which can be coerced to logical mode.
<code>rt</code>	Return value if <code>test</code> is true.
<code>rf</code>	Return value if <code>test</code> is false.

Details

This is like `ifelse`, but for a scalar test, and any object may be returned.

Value

Appropriate return value.

startP2E	<i>Start PSTtoEPS Feature</i>
----------	-------------------------------

Description

Start PSTtoEPS Feature

Usage

```
startP2E(p, fileplot = FALSE)
```

Arguments

p	The PStricks object.
fileplot	Flag to indicate cated values will be used for fileplot.

Value

The updated PStricks object.

taput	<i>Put Stuff on Line</i>
-------	--------------------------

Description

Put Stuff on Line

Usage

```
taput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
stuff	The label to put on the line.
par	PStricks parameter string.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

[tlput\(\)](#) for an example.

tbput	<i>Put Stuff on Line</i>
-------	--------------------------

Description

Put Stuff on Line

Usage

```
tbput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
stuff	The label to put on the line.
par	PStricks parameter string.
star	Flag to indicate starred version.

Value

The updated PStricks object.

See Also

`tlput()` for an example.

thput	<i>Put Stuff on Line</i>
-------	--------------------------

Description

Put Stuff on Line

Usage

```
thput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PStricks object.
stuff	The label to put on the line.
par	PStricks parameter string.
star	Flag to indicate starred version.

Value

The updated PStricks object.

Examples

```
PSTricks(engine="lualatex",pstpkgs="pst-node") %>%
  ppappend("\\[") %>%
  ppappend("\\setlength{\\arraycolsep}{1.1cm}") %>%
  ppappend("\\begin{array}{cc}") %>%
  ppappend(paste(Rnode("a","(X-A)"), "&", Rnode("b","A"), "\\[1.5cm]")) %>%
  ppappend(paste(Rnode("c","x"), "&", Rnode("d","\\tilde{X}"))) %>%
  ppappend("\\end{array}") %>%
  psset("nodesep=5pt,arrows=->") %>%
  everypsbox("\\scriptstyle") %>%
  ncline("a","c") %>% thput("h") %>%
  ncline("a","b") %>% thput("h") %>%
  ncline("b","d") %>% tvput("v") %>%
  ncline("c","d") %>% tvput("v") %>%
  ppappend("\\]")
```

ticks

Define Major and Minor Tickmarks at the Axes

Description

Define Major and Minor Tickmarks at the Axes

Usage

```
ticks(
  p,
  x = 0,
  y = 0,
  nolabels = FALSE,
  extlabs = FALSE,
  labels = NULL,
  rotation = 0,
  ticklength = 0.2,
  ticklengthi = NULL
)
```

Arguments

p	The PSTricks object.
x, y	Lists with number of major and minor tickmarks.
nolabels	Flag to indicate that no labels should be printed.
extlabs	Flag to indicate that labels at axis extrema should be printed (however labels cannot be used).
labels	List of labels instead of numbers to print at the tickmarks.
rotation	The rotation for the labels at the tickmarks.
ticklength	The length of the ticks.
ticklengthi	<ul style="list-style-type: none"> The inward length of the ticks (default same as outward).

Value

The updated PSTricks object.

Examples

```
PSTricks() %>%
  geom_dots(aes(x=wt,y=mpg),mtcars) %>%
  lims(c(1,6),c(10,35)) %>%
  ticks(c(6,0),c(6,1))
```

tlput	<i>Put Stuff on Line</i>
-------	--------------------------

Description

Put Stuff on Line

Usage

```
tlput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The label to put on the line.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
PSTricks(engine="lualatex",pstpkgs="pst-node") %>%
  ppappend("\\[") %>%
  ppappend("\\setlength{\\arraycolsep}{1.1cm}") %>%
  ppappend("\\begin{array}{cc}") %>%
  ppappend(paste(Rnode(", "a", "(X-A)"), "&", Rnode(", "b", "A"), "\\[1.5cm]")) %>%
  ppappend(paste(Rnode(", "c", "x"), "&", Rnode(", "d", "\\tilde{X}"))) %>%
  ppappend("\\end{array}") %>%
  psset("nodesep=5pt,arrows=->") %>%
  everypsbox("\\scriptstyle") %>%
  ncline("a", "c") %>% tlput("r") %>%
  ncline("a", "b") %>% taput("u") %>%
  ncline("c", "d", "linestyle=dashed") %>% tbput("b") %>%
  ncline("b", "d") %>% trput("s") %>% ppappend("\\]")
# Note: no pppicture because of array
```

trinode	<i>Put Stuff in a Triangle</i>
---------	--------------------------------

Description

Put Stuff in a Triangle

Usage

```
trinode(p = NULL, name, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
name	The name of the node.
stuff	Stuff to put in a box at the node.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(pstpkgs="pst-node"),c(-2,14),c(-2,10),par="showgrid=true") %>%
  rput(0,3,dianode("A","Diamond"),"tl") %>%
  rput(4,0,trinode("B","Triangle","trimode=L"),"br") %>%
  nccurve("A","B","angleA=-135,angleB=90")
```

trput	<i>Put Stuff on Line</i>
-------	--------------------------

Description

Put Stuff on Line

Usage

```
trput(p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The label to put on the line.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

`tlput()` for an example.

tvput

Put Stuff on Line

Description

Put Stuff on Line

Usage

```
tvput (p = NULL, stuff, par = NULL, star = FALSE)
```

Arguments

p	The PSTricks object.
stuff	The label to put on the line.
par	PSTricks parameter string.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

See Also

`thput()` for an example.

uput

Put Stuff as Label

Description

Put Stuff as Label

Usage

```
uput (
  p = NULL,
  x = NULL,
  y = NULL,
  stuff,
  refangle = NULL,
  rotation = NULL,
  labelsep = NULL,
  star = FALSE
)
```

Arguments

p	The PSTricks object.
x, y	Coordinates of the stuff (may be omitted if rotation is present).
stuff	Stuff to put at the reference point.
refangle	The reference angle.
rotation	Rotation to apply to the stuff.
labelsep	Distance between coordinates and the stuff.
star	Flag to indicate starred version.

Value

The updated PSTricks object.

Examples

```
pppicture(PSTricks(), 3, 3) %>%
  qdisk(1, 1, "1pt") %>%
  uput(1, 1, "(1, 1)", 45)
```

xaspect

*Calculate x for pppicture given y to get $hy = aspect * hx$*

Description

Calculate x for pppicture given y to get $hy = aspect * hx$

Usage

```
xaspect (
  y,
  aspect = 1,
  nx = 1,
  ny = 1,
  nxaxes = 1,
  nyaxes = 1,
  ntitle = 1,
  width = 1,
  height = 1,
  margin = 1
)
```

Arguments

y	Desired space in y direction.
aspect	Desired aspect ratio of axes.
nx	Number of plots in the x direction (if NULL, increment n automatically).
ny	Number of plots in the y direction.
nxaxes	Number of x axes to make space for.

nyaxes	Number of y axes to make space for.
ntitle	Number of title lines to make space for.
width	Number of subplots to occupy in the x direction.
height	Number of subplots to occupy in the y direction.
margin	Margin.

Value

The x value.

Examples

```
pppicture(PSTricks(), xaspect(12), 12, par="showgrid=true") %>%  
  geom_dots(aes(x=wt, y=mpg), mtcars) %>%  
  xticks(extlabs=TRUE) %>% yticks(extlabs=TRUE) %>%  
  pptitle("\\Large mtcars")
```

xlab	<i>Set x Axis Label</i>
------	-------------------------

Description

Set x Axis Label

Usage

```
xlab(p, lab)
```

Arguments

p	The PSTricks object.
lab	x axis label.

Value

The updated PSTricks object.

xlim

Set x Axis Limits

Description

Set x Axis Limits

Usage

```
xlim(p, xl = NULL, xu = NULL)
```

Arguments

p The PStricks object.
 xl, xu Lower and upper axis limits.

Value

The updated PStricks object.

See Also

See [geom_curve\(\)](#) for an example.

xyaspect

Calculate x,y for pppicture given x,y (in p) to get $hy = aspect \cdot hx$

Description

Calculate x,y for pppicture given x,y (in p) to get $hy = aspect \cdot hx$

Usage

```
xyaspect (
  p,
  aspect = 1,
  nx = 1,
  ny = 1,
  nxaxes = 1,
  nyaxes = 1,
  ntitle = 1,
  width = 1,
  height = 1,
  margin = 1
)
```

Arguments

<code>p</code>	The PStricks object.
<code>aspect</code>	Desired aspect ratio of axes.
<code>nx</code>	Number of plots in the x direction (if NULL, increment n automatically).
<code>ny</code>	Number of plots in the y direction.
<code>nxaxes</code>	Number of x axes to make space for.
<code>nyaxes</code>	Number of y axes to make space for.
<code>ntitle</code>	Number of title lines to make space for.
<code>width</code>	Number of subplots to occupy in the x direction.
<code>height</code>	Number of subplots to occupy in the y direction.
<code>margin</code>	Margin.

Value

The updated PStricks object.

Examples

```
PStricks() %>% xyaspect(ntitle=0) %>% pppicture(par="showgrid=true") %>%
  geom_dots(aes(x=wt,y=mpg),mtcars)
```

`yaspect`

*Calculate y for pppicture given x to get $hy = aspect * hx$*

Description

Calculate y for pppicture given x to get $hy = aspect * hx$

Usage

```
yaspect (
  x,
  aspect = 1,
  nx = 1,
  ny = 1,
  nxaxes = 1,
  nyaxes = 1,
  ntitle = 1,
  width = 1,
  height = 1,
  margin = 1
)
```

Arguments

x	Desired space in x direction.
aspect	Desired aspect ratio of axes.
nx	Number of plots in the x direction (if NULL, increment n automatically).
ny	Number of plots in the y direction.
nxaxes	Number of x axes to make space for.
nyaxes	Number of y axes to make space for.
ntitle	Number of title lines to make space for.
width	Number of subplots to occupy in the x direction.
height	Number of subplots to occupy in the y direction.
margin	Margin.

Value

The y value.

Examples

```
pppicture(PSTricks(), 12, yaspect(12), par="showgrid=true") %>%
  geom_dots(aes(x=wt, y=mpg), mtcars) %>%
  xticks(extlabs=TRUE) %>% yticks(extlabs=TRUE) %>%
  pptitle("\\Large mtcars")
```

ylab	<i>Set y Axis Label</i>
------	-------------------------

Description

Set y Axis Label

Usage

```
ylab(p, lab)
```

Arguments

p	The PSTricks object.
lab	y axis label.

Value

The updated PSTricks object.

ylim

*Set y Axis Limits***Description**

Set y Axis Limits

Usage

```
ylim(p, yl = NULL, yu = NULL)
```

Arguments

`p` The PSTricks object.

`yl, yu` Lower and upper axis limits.

Value

The updated PSTricks object.

See AlsoSee [geom_curve\(\)](#) for an example.

%>%

*Pipe PSTricks Object***Description**

Like `dplyr`, PSTricks also uses the pipe function, `%>%`, to pass information from one function to another. But this is unlike `ggplot2`, which uses the `+` operator.

Arguments

`lhs, rhs` A PSTricks object and a function to apply to it.

Examples

```
# Instead of
geom_dots(PSTricks(), aes(x=wt, y=mpg), mtcars)
# one may write
PSTricks() %>% geom_dots(aes(x=wt, y=mpg), mtcars)
```

Index

`%>%`, 127

`adjx0y0`, 5
`adjx0y0()`, 67
`aes`, 6

`circlenode`, 6
`clipbox`, 7
`Cnode`, 7
`cnode`, 8
`cnode()`, 58
`cnodeput`, 9
`cput`, 10
`cx`, 10
`cy`, 11

`degrees`, 11
`degrees()`, 75
`dianode`, 12
`dotnode`, 12

`endP2E`, 13
`endpppicture`, 13
`endspicture`, 14
`everypsbox`, 14
`everypsbox()`, 20

`fnode`, 15

`geom_abline`, 15
`geom_abline()`, 18, 24, 30, 72
`geom_ccurve`, 16
`geom_curve`, 17
`geom_curve()`, 22, 25, 124, 127
`geom_dots`, 18
`geom_ecurve`, 18
`geom_errorbar`, 19
`geom_everypsbox`, 20
`geom_frame`, 20
`geom_framebox`, 21
`geom_grid`, 22
`geom_hist`, 23
`geom_hline`, 24
`geom_legend`, 24
`geom_line`, 25
`geom_line()`, 79, 102
`geom_linewidth`, 26
`geom_polygon`, 26
`geom_rput`, 27
`geom_set`, 28
`geom_set()`, 6, 20, 22, 26, 31, 32, 66
`geom_uput`, 29
`geom_vline`, 30

`icx`, 30
`icy`, 31

`labs`, 31
`lims`, 32

`MakeShortNab`, 32
`MakeShortNab()`, 33
`MakeShortTablr`, 33
`merge.list`, 34
`multirput`, 34

`naput`, 35
`nbput`, 36
`ncangle`, 36
`ncangles`, 37
`ncarc`, 37
`ncarcbox`, 38
`ncbar`, 39
`ncbox`, 39
`nccircle`, 40
`nccoil`, 41
`nccurve`, 41
`ncdiag`, 42
`ncdiagg`, 43
`ncline`, 43
`ncloop`, 44
`ncput`, 45
`ncput()`, 35, 36
`nczigzag`, 45
`newcmkcolor`, 46
`newgray`, 47
`newhsbcolor`, 47
`newrgbcolor`, 48
`nput`, 48

ovalnode, 49
 ovalnode(), 7

 parabola, 50
 pcangle, 50
 pcangles, 51
 pcarc, 51
 pcarcbox, 52
 pcbar, 53
 pcbox, 53
 pccoil, 54
 pccurve, 54
 pcdiag, 55
 pcdiagg, 55
 pcline, 56
 pcloop, 57
 pczigzag, 57
 pnode, 58
 ppappend, 58
 pparg, 59
 ppaxis, 59
 ppaxis(), 82
 ppbuild, 60
 ppbuild3D, 61
 ppclosedoc, 62
 ppcoords, 62
 ppcoords3D, 63
 ppdefpicture, 63
 ppgeoms, 64
 ppgeoms(), 77, 78
 ppgrid, 64
 ppgrid(), 22, 73
 pplegend, 65
 pplegend(), 25
 pplinewidth, 66
 pplinewidth(), 26
 ppmansubplot, 66
 ppmansubplot(), 83
 ppnewpage, 67
 ppnewrgbcolor, 68
 ppopendoc, 68
 ppopt, 69
 pppicture, 69
 ppsetcartesian, 71
 ppsetcartesian(), 75
 ppsetlogx, 71
 ppsetlogxy, 72
 ppsetlogy, 72
 ppsetmargins, 73
 ppsetnologx, 73
 ppsetnologxy, 74
 ppsetnology, 74
 ppsetpolar, 75
 ppsetpolar(), 11, 71
 ppsetprimary, 75
 ppsetprimaryx, 76
 ppsetprimaryy, 76
 ppsetpsttoeps, 77
 ppsetsecondary, 77
 ppsetsecondaryx, 78
 ppsetsecondaryy, 78
 ppsetxlabsep, 79
 ppsetxlabsep(), 80
 ppsetylabsep, 79
 ppsubplot, 80
 ppticks, 81
 pptitle, 82
 ppwrite, 83
 ppxlabsep(ppsetxlabsep), 79
 ppxticks, 84
 ppylabsep(ppsetylabsep), 79
 ppyticks, 85
 print.PSTricks, 86
 psarc, 86
 psarcn, 87
 psarcn(), 75
 psaxes, 88
 psbezier, 89
 psccurve, 89
 psccurve(), 16
 pscircle, 90
 pscirclebox, 91
 pscircleOA, 91
 psCoil, 92
 pscoil, 92
 pscurve, 93
 pscurve(), 17
 pscustom, 94
 psdblframebox, 94
 psdiabox, 95
 psdiamond, 95
 psdot, 96
 psdots, 96
 psdots(), 18
 psecurve, 97
 psecurve(), 19
 psellipse, 98
 psellipticarc, 98
 psellipticarcn, 99
 psframe, 100
 psframe(), 21
 psframebox, 100
 psframebox(), 22
 psgrid, 101
 psline, 102

`psline()`, 25
`psovalbox`, 102
`pspicture`, 103
`pspicture()`, 14, 71
`pspolygon`, 104
`pspolygon()`, 27
`psscalebox`, 104
`psscaleboxto`, 105
`psset`, 105
`psset()`, 28
`psshadowbox`, 106
`psTextFrame`, 106
`pstriangle`, 107
`pstribox`, 107
`PSTricks`, 108
`pswedge`, 109
`pszigzag`, 110

`qdisk`, 111
`qline`, 111

`Rnode`, 112
`rnode`, 112
`rotatedown`, 113
`rotateleft`, 113
`rotateleft()`, 113, 114
`rotateright`, 114
`rput`, 114
`rput()`, 22, 27, 112

`sifelse`, 115
`startP2E`, 116

`taput`, 116
`tbput`, 117
`thput`, 117
`thput()`, 121
`ticks`, 118
`tlput`, 119
`tlput()`, 116, 117, 121
`trinode`, 120
`trinode()`, 12
`trput`, 120
`tvput`, 121
`tvput()`, 71

`uput`, 121
`uput()`, 29, 48

`xaspect`, 122
`xlab`, 123
`xlim`, 124
`xticks` (*ppxticks*), 84
`xyaspect`, 124

`yaspect`, 125
`ylab`, 126
`ylim`, 127
`yticks` (*ppyticks*), 85