Package 'pref'

May 9, 2026

Title Preference Voting with Explanatory Graphics

Version 0.4.0

Description Implements the Single Transferable Vote (STV) electoral system, with clear explanatory graphics. The core function stv() uses Meek's method, the purest expression of the simple principles of STV, but which requires electronic counting. It can handle votes expressing equal preferences for subsets of the candidates. A function stv.wig() implementing the Weighted Inclusive Gregory method, as used in Scottish council elections, is also provided, and with the same options, as described in the manual. The required vote data format is as an R list: a function pref.data() is provided to transform some commonly used data formats into this format.
References for methodology:
Hill, Wichmann and Woodall (1987) <doi:10.1093/comjnl/30.3.277>,
Hill, David (2006) <https://www.votingmatters.org.uk/ISSUE22/I22P2.pdf>,
Mollison, Denis (2023) <doi:10.48550/arXiv.2303.15310>,
(see also the package manual pref_pkg_manual.pdf).

URL https://github.com/denismollison/pref

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Encoding UTF-8

RoxygenNote 7.2.3

Imports base, graphics, grDevices, jpeg, utils

Depends R (>= 3.5)

LazyData true

BugReports https://github.com/denismollison/pref/issues

NeedsCompilation no

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Repository CRAN

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Contents

`c99` *Example of an election of an academic organisation using STV allowing equal preferences frelection om an*

Description

Votes are in a ballot-format matrix

Usage

```
c99
```

Format

A list with 10 variables, largest the vote matrix (343 x 10)

q()

s number of seats

c number of candidates ...

`cnc17` *Example of a political STV election - Cumnock and New Cumnock 2017*

Description

Votes are in a ballot-format matrix

Usage

```
cnc17
```

Format

A list with 10 variables, largest the vote matrix (930 x 8)

s number of seats

c number of candidates ...

Source

https://www.macs.hw.ac.uk/~denis/stv_elections/SC2017/

---

hc12 *Unusually simple example of a political STV election - Helensburgh Central 2012*

Description

Votes are in a ballot-format matrix

Usage

```
hc12
```

Format

A list with 10 variables, largest the vote matrix (629 x 6)

s number of seats

c number of candidates ...

Source

https://www.macs.hw.ac.uk/~denis/stv_elections/SC2012/

---

j02 *Example of an STV election allowing equal preferences - John Muir Trust 2002*

Description

Votes are in a ballot-format matrix

Usage

```
j02
```

Format

A list with 10 variables, largest the vote matrix (1168 x 10)

q()

s number of seats

c number of candidates ...

Source

https://www.macs.hw.ac.uk/~denis/stv_elections/jmt2002.blt

`nws17` *Example of a political STV election - North West and Central Sutherland 2017 Unusual in that under WIG no candidate reaches the (fixed) quota*

Description

Votes are in a ballot-format matrix

Usage

```
nws17
```

Format

A list with 10 variables, largest the vote matrix (629 x 6)

s number of seats

c number of candidates ...

Source

https://www.macs.hw.ac.uk/~denis/stv_elections/SC2017/

p17 *Example of a political STV election - Partick 2017*

Description

Votes are in a ballot-format matrix

Usage

```
p17
```

Format

A list with 10 variables, largest the vote matrix (1456 x 8)

s number of seats

c number of candidates ...

Source

https://www.macs.hw.ac.uk/~denis/stv_elections/SC2017/

pref.data *put election data in an R file (.rda)*

Description

put election data in an R file (.rda)

Usage

```
pref.data(
  datafile,
  mult = FALSE,
  details = TRUE,
  parties = FALSE,
  ballot = FALSE,
  friendly = FALSE,
  header = FALSE
)
```

Arguments

datafile	File with election data
mult	Whether includes aggregated votes (default FALSE)
details	Whether full election detail (default) or just vote matrix
parties	File with party details (default FALSE, i.e. omit)
ballot	Default FALSE (meaning pref format)
friendly	Default FALSE (meaning most details after votes)
header	Whether a vote matrix has a header

Value

A standardised list of election info to save in a .rda file; for details see manual pref_pkg_manual.pdf (section 4)

Examples

```
datafile=system.file("extdata","yale.dat",package="pref")
yale=pref.data(datafile,details=FALSE)
datafile=system.file("extdata","Jedburgh2012.blt",package="pref")
parties12=system.file("extdata","parties_SC2012.txt",package="pref")
jed12=pref.data(datafile,mult=TRUE,parties=parties12)
datafile=system.file("extdata","jmt2002.blt",package="pref")
j02=pref.data(datafile,friendly=TRUE)
```

---

stv *STV election count - uses Meek STV, allows equal preferences*

Description

STV election count - uses Meek STV, allows equal preferences

Usage

```
stv(
  votedata,
  outdirec = tempdir(),
  plot = TRUE,
  webdisplay = FALSE,
  interactive = FALSE,
  messages = TRUE,
  timing = FALSE,
  map = FALSE
)
```

Arguments

votedata	File with vote data
outdirec	Needs to be set for permanent record of results
plot	If =TRUE (default) produces plots of count and webpages in outdirec
webdisplay	If =TRUE displays plots and statistics as web pages
interactive	If =TRUE reports and pauses at each stage of the count (press return to continue to next stage)
messages	If=TRUE prints 1-line initial and final reports
timing	Whether to report computing time at each stage
map	Link to a map or other URL associated with election

Value

A list containing vote and count data, + optional web pages; for details see manual pref_pkg_manual.pdf (section 3)

Examples

```
cnc17meek=stv(cnc17,plot=FALSE)
c99result=stv(c99,plot=FALSE)
y12meek=stv(y12,plot=FALSE)
```

---

stv.plots *Makes webpage plots of result of an STV election*

Description

Makes webpage plots of result of an STV election

Usage

```
stv.plots(elecdata, outdirec = tempdir(), webdisplay = FALSE, map = FALSE)
```

Arguments

elecdata	An R list of results from stv or stv.wig
outdirec	A directory for web page output
webdisplay	If TRUE displays the main output web page
map	A possible extra showing map of election location

Value

Webpages with plots of election count and results

Examples

```
c99result=stv(c99)
c99plots=stv.plots(c99result)
nws17wig=stv.wig(nws17)
nws17plots=stv.plots(nws17wig)
```

`stv.wig` *STV election count using WIG as for Scottish Council elections calculated to 5 places of decimals as used for those elections*

Description

STV election count using WIG as for Scottish Council elections calculated to 5 places of decimals as used for those elections

Usage

```
stv.wig(
  votedata,
  outdirec = tempdir(),
  plot = TRUE,
  webdisplay = FALSE,
  interactive = FALSE,
  messages = TRUE,
  timing = FALSE,
  map = FALSE
)
```

Arguments

`votedata`	File with vote data
`outdirec`	Needs to be set for permanent record of results (press return to continue to next stage)
`plot`	If =TRUE (default) produces plots of count and webpages in outdirec
`webdisplay`	If =TRUE displays plots and statistics as web pages
`interactive`	If =TRUE reports and pauses at each stage of the count
`messages`	If=TRUE prints 1-line initial and final reports
`timing`	Whether to report computing time at each stage
`map`	Link to a map or other URL associated with election

Value

A list containing votes at each stage, + optional web pages; for details see manual pref_pkg_manual.pdf (section 3)

Examples

```
hc12wig=stv.wig(hc12,plot=FALSE,messages=FALSE)
nws17wig=stv.wig(nws17,plot=FALSE)
p17wig=stv.wig(p17,plot=FALSE)
cnc17wig=stv.wig(cnc17,plot=FALSE,timing=TRUE)
```

---

y12 *Example of an STV election - Yale faculty election (last 12)*

Description

Votes are in a ballot-format matrix

Usage

```
y12
```

Format

A list with 10 variables, largest the vote matrix (424 x 44)

s number of seats

c number of candidates ...

Source

https://cran.r-project.org/package=STV

Index