Title

> **levelsof** — Levels of variable

Description

levelsof displays a sorted list of the distinct values of *varname*.

Syntax

> levelsof *varname* [*if*] [*in*] [, *options*]

options	Description
<u>c</u>lean	display string values without compound double quotes
<u>l</u>ocal(*macname*)	insert the list of values in the local macro *macname*
<u>m</u>issing	include missing values of *varname* in calculation
<u>sep</u>arate(*separator*)	separator to serve as punctuation for the values of returned list; default is a space

Options

clean displays string values without compound double quotes. By default, each distinct string value
is displayed within compound double quotes, as these are the most general delimiters. If you know
that the string values in *varname* do not include embedded spaces or embedded quotes, this is an
appropriate option. clean does not affect the display of values from numeric variables.

local(*macname*) inserts the list of values in local macro *macname* within the calling program's space.
Hence, that macro will be accessible after levelsof has finished. This is helpful for subsequent
use, especially with foreach; see [P] **foreach**.

missing specifies that missing values of *varname* be included in the tabulation. The default is to
exclude them.

separate(*separator*) specifies a separator to serve as punctuation for the values of the returned list.
The default is a space. A useful alternative is a comma.

Remarks and examples

levelsof serves two different functions. First, it provides a compact list of the distinct values
of *varname*. More commonly, it is useful when you desire to cycle through the distinct values of
varname with (say) foreach; see [P] **foreach**. levelsof leaves behind a list in r(levels) that
may be used in a subsequent command.

levelsof may hit the limits imposed by your Stata. However, it is typically used when the number
of distinct values of *varname* is modest.

The terminology of levels of a factor has long been standard in experimental design. See Cochran and Cox (1957, 148), Fisher (1942), or Yates (1937, 5).

▷ Example 1

```
. use http://www.stata-press.com/data/r14/auto
(1978 Automobile Data)
. levelsof rep78
1 2 3 4 5
. display "`r(levels)'"
1 2 3 4 5
. levelsof rep78, miss local(mylevs)
1 2 3 4 5 .
. display "`mylevs'"
1 2 3 4 5 .
. levelsof rep78, sep(,)
1,2,3,4,5
. display "`r(levels)'"
1,2,3,4,5
```

Showing value labels when defined:
```
. levelsof factor, local(levels)
. foreach l of local levels {
.         di "-> factor = `: label (factor) `l''"
.         whatever if factor == `l'
. }
```

◁

Stored results

levelsof stores the following in r():

Macros
    r(levels)   list of distinct values

Acknowledgments

References

Cochran, W. G., and G. M. Cox. 1957. *Experimental Designs*. 2nd ed. New York: Wiley.

Cox, N. J. 2001. dm90: Listing distinct values of a variable. *Stata Technical Bulletin* 60: 8–11. Reprinted in *Stata Technical Bulletin Reprints*, vol. 10, pp. 46–49. College Station, TX: Stata Press.

Fisher, R. A. 1942. The theory of confounding in factorial experiments in relation to the theory of groups. *Annals of Eugenics* 11: 341–353.

Yates, F. 1937. *The Design and Analysis of Factorial Experiments*. Harpenden, England: Technical Communication 35, Imperial Bureau of Soil Science.

Also see