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Description

`vl set` is designed to identify variables that are to be treated as factor variables in Stata's estimation commands.

`vl set` creates the system-defined variable lists `vlcategorical`, `vlcontinuous`, `vluncertain`, and `vlother`. Variables are placed in them based on their values (integer or noninteger, all nonnegative, etc.) and default or user-specified cutoffs for the number of levels in a variable.

`vl move` moves variables from one classification to another.

Variable lists are actually [global macros](#), and they are saved with the dataset. See [\[D\] vl rebuild](#).

For an introduction to the `vl` commands, see [\[D\] vl](#).

Quick start

Classify all numeric variables in the dataset

```
vl set
```

Same as above, and include a `vl dummy` classification for 0/1 variables

```
vl set, dummy
```

Classify all numeric variables in the dataset, and list each variable as it is classified

```
vl set, list
```

Put nonnegative integer variables with 6 or fewer categories into `vlcategorical`; put nonnegative integer variables with 7–20 categories into `vluncertain`; put nonnegative integer variables with more than 20 categories into `vlcontinuous`

```
vl set, categorical(6) uncertain(20)
```

Classify only the variables `x1–x100`

```
vl set x1–x100
```

Discard the existing classifications, and classify all numeric variables again

```
vl set, clear
```

Redo the classification of the variable `age`

```
vl set age, redo
```

Update the stored statistics for the variable `age`, but do not change its classification

```
vl set age, update
```

Move the variables `x8` and `x20` out of their current classification and into `vlcategorical`

```
vl move (x8 x20) vlcategorical
```

Move all the variables in `vluncertain` into `vlcontinuous`

```
vl move vluncertain vlcontinuous
```

Syntax

Create system-defined variable lists

```
v1 set [varlist] [, options]
```

Move variables from their current system-defined variable list to another

```
v1 move (varlist) vlsysname
```

Move all variables in one system-defined variable list to another

```
v1 move vlsysname1 vlsysname2
```

varlist contains only numeric variables. If not specified, then all numeric variables in the dataset are classified.

<i>options</i>	Description
<code>categorical(#)</code>	upper limit for the number of categories in <code>vlcategorical</code>
<code>uncertain(#)</code>	upper limit for the number of categories in <code>vluncertain</code>
<code>dummy</code>	create variable list <code>vlummy</code> containing 0/1 variables
<code>list[(<i>list_options</i>)]</code>	list variables as they are classified
<code>clear</code>	discard all existing classifications and make new classifications
<code>redo</code>	redo classifications for variables in <i>varlist</i>
<code>update</code>	update stored statistics for variables in <i>varlist</i> , but do not change their classification
<code>nonotes</code>	suppress the notes below the summary table

`collect` is allowed with `v1 set`; see [U] 11.1.10 Prefix commands.

Options

`categorical(#)` specifies that variables containing nonnegative integers be put into the `vlcategorical` variable list when the number of levels is between 2 and # inclusive. Variables with only one level (that is, constants) are put into the `vlother` variable list. The default is `categorical(10)`.

`categorical(.)` can be specified to set the upper limit effectively to infinity. That is, all variables containing nonnegative integers (whose values are less than $2^{31} = 2,147,483,648$) are put into `vlcategorical`. Setting # to . or a large value can slow computation time considerably when the number of observations is extremely large.

`uncertain(#)` specifies that variables containing nonnegative integers be put into the `vluncertain` variable list when the number of levels are between `categorical(#)` + 1 and # inclusive. The default is `uncertain(100)`.

must be \geq `categorical(#)`. To omit the `vluncertain` classification, set # = `categorical(#)` or specify `uncertain(0)`.

`uncertain(.)` can be specified to set the upper limit effectively to infinity. That is, all variables containing nonnegative integers (whose values are less than $2^{31} = 2,147,483,648$) with more than `categorical(#)` levels are put into `vluncertain`. Setting # to . or a large value can slow computation time considerably when the number of observations is extremely large.

`dummy` specifies that a `vl` dummy variable list be created containing 0/1 variables. By default, 0/1 variables are put into `vlcategorical`.

`list`[(*list_options*)] lists variables as they are classified. The classification is shown as well as the number of levels for variables in `vlcategorical` and `vluncertain`. *list_options* are as follows:

`minimum` shows the minimum value of each variable;

`maximum` shows the maximum value of each variable; and

`observations` shows the number of nonmissing values of each variable.

The same listing can be obtained using `vl list` after running `vl set`.

`clear` specifies that all the system-defined variable lists (if any) be dropped and the classifications redone. It is equivalent to running `vl clear, system` and then running `vl set`.

`redo` specifies that the classifications be redone for the variables in *varlist*. It is equivalent to running `vl drop (varlist), system` and then running `vl set varlist`.

`update` specifies that all statistics (number of levels, minimum value, maximum value, and number of nonmissing observations) that are saved for the variables in *varlist* be updated but the classifications of the variables not be changed. `update` is intended for use when observations are added to or dropped from the data and you want the classifications to remain unchanged.

`nonotes` specifies that the notes at the bottom of the summary table not be displayed. By default, the notes are shown.

Remarks and examples

`vl set` creates the system-defined variable lists `vlcategorical`, `vlcontinuous`, `vluncertain`, and `vlother`.

The `vlcategorical` variable list is intended for variables that will be used as factor variables in estimation commands.

The `vlcontinuous` variable list is intended for variables that will be used as continuous variables in estimation commands.

The `vluncertain` variable list is intended for variables that we may want to treat as factors or as continuous, and we will decide which on a case-by-case basis. As we decide, we use `vl move` to move them out of `vluncertain` and into `vlcategorical` or `vlcontinuous`. For example, we decide we want variable `q31`, currently in `vluncertain`, to be a factor variable. We type

```
. vl move (q31) vlcategorical
```

In the above, note that `q31` is enclosed in parentheses. *varlists* must always be enclosed in parentheses in `vl move`.

When `q31` is moved into `vlcategorical`, it is automatically moved out of `vluncertain`. The system-defined variable lists are always kept as disjoint sets. That is, a variable can only appear in one system-defined variable list. User-defined variable lists can be made to be overlapping. See [D] [vl create](#) and [D] [vl](#).

Suppose we look at the remaining variables in `vluncertain`, and we decide that they all should be treated as continuous. We type

```
. vl move vluncertain vlcategorical
```

Suppose we look at the remaining variables in `vluncertain`, and we decide we do not want any of them in any of the estimation commands we wish to run. We could move them to `vlother`.

```
. vl move vluncertain vlother
```

`vlother` is intended to be a garbage classification for variables you do not want to use in estimation commands. `vl set` puts variables that are constant and variables that are missing for all observations into `vlother`.

Suppose, however, we simply want some variables gone from the system-defined variable lists. We do not want them shown when we do a `vl list`. To make them gone, gone, gone, use `vl drop`.

```
. vl drop (varlist), system
```

This removes the variables in *varlist* from the system-defined variable lists.

We can also

```
. vl drop vluncertain
```

This removes all the variables in `vluncertain`. `vluncertain` still exists, but it is empty. We can still move other variables into it if we want. System-defined variable lists always exist although they may be empty. They cannot be renamed. If you do not like this behavior, you can create your own variable lists using `vl create`. For example,

```
. vl create mycat = vlcategorical
. vl create mycont = vlcontinuous
```

If you are done using the system-defined variable lists and do not want them around, you can remove them by typing

```
. vl clear, system
```

The system-defined variable lists will be gone, but user-defined variable lists will remain. When you clear the system-defined variable lists, you also erase the statistics that are stored with each variable in the system.

When `vl set` runs, it calculates the minimum, maximum, and number of nonmissing observations for each variable. It also computes the number of levels for the variables in `vlcategorical` and `vluncertain`. It does not compute the number of levels for other variables. That is why `vl set` is so fast even when there are millions of observations.

Computing the exact number of levels when there are thousands of levels can be time consuming. You can have `vl set` compute the number of levels for more variables by specifying the option `uncertain(#)` and setting `#` to a large number or missing (`.`). But expect it to be much slower when there are lots of observations.

To use variable lists with other Stata commands, type `$` in front of the variable-list name. Remember: With the `vl` commands, do not use `$`. With other Stata commands, use `$`.

```
. display "$vlcategorical"
. summarize $vlcontinuous
. regress y i.($vlcategorical) $vlcontinuous
```

If you know Stata, you will have already sensed that variable lists are [global macros](#).

In this example, we used `i. ($vlcategorical)` to turn the variables in `vlcategorical` into factor variables. More likely, however, you will want to create your own variable lists based on the system-defined variable lists, and then apply factor-variable operators. The `vl create`, `vl modify`, and `vl substitute` commands were designed for this purpose. See [\[D\] vl create](#).

Variable lists are saved with the dataset. Not only are variable lists saved but also all the `vl` system information and variable statistics are saved. To make the `vl` system come back to life in the state we last had it, after we [use](#) a dataset, we type

```
. vl rebuild
```

See [\[D\] vl rebuild](#).

For examples of using `vl set` and its options, see [\[D\] vl](#).

Stored results

`vl set` stores the following in `r()`:

Scalars

<code>r(k_system)</code>	number of variables in system-defined variable lists
<code>r(k_vlcategorical)</code>	number of variables in <code>vlcategorical</code>
<code>r(k_vlcontinuous)</code>	number of variables in <code>vlcontinuous</code>
<code>r(k_vluncertain)</code>	number of variables in <code>vluncertain</code>
<code>r(k_vlother)</code>	number of variables in <code>vlother</code>
<code>r(k_vldummy)</code>	number of variables in <code>vldummy</code> when defined

Macros

<code>r(vlsynames)</code>	names of system-defined variable lists
---------------------------	--

Also see

[\[D\] vl](#) — Manage variable lists

[\[D\] vl create](#) — Create and modify user-defined variable lists

[\[D\] vl drop](#) — Drop variable lists or variables from variable lists

[\[D\] vl list](#) — List contents of variable lists

[\[D\] vl rebuild](#) — Rebuild variable lists

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