

**drop** — Drop variables or observations

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## Description

`drop` eliminates variables or observations from the data in memory.

`keep` works the same way as `drop`, except that you specify the variables or observations to be kept rather than the variables or observations to be deleted.

Warning: `drop` and `keep` are not reversible. Once you have eliminated observations, you cannot read them back in again. You would need to go back to the original dataset and read it in again. Instead of applying `drop` or `keep` for a subset analysis, consider using `if` or `in` to select subsets temporarily. This is usually the best strategy. Alternatively, applying `preserve` followed in due course by `restore` may be a good approach.

## Quick start

Remove `v1`, `v2`, and `v3` from memory

```
drop v1 v2 v3
```

Remove all variables whose name begins with `code` from memory

```
drop code*
```

Remove observations where `v1` is equal to 99

```
drop if v1==99
```

Also drop observations where `v1` equals 88 or `v2` is missing

```
drop if inlist(v1,88,99) | missing(v2)
```

Keep observations where `v3` is not missing

```
keep if !missing(v3)
```

Keep the first observation from each cluster identified by `cvar`

```
by cvar: keep if _n==1
```

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## Syntax

*Drop variables*

`drop` *varlist*

*Drop observations*

`drop if` *exp*

*Drop a range of observations*

`drop in range` [`if` *exp*]

*Keep variables*

`keep` *varlist*

*Keep observations that satisfy specified condition*

`keep if` *exp*

*Keep a range of observations*

`keep in range` [`if` *exp*]

`by` is allowed with the second syntax of `drop` and the second syntax of `keep`; see [\[D\] by](#).

## Remarks and examples

[stata.com](http://www.stata.com)

You can clear the entire dataset by typing `drop _all` without affecting value labels, macros, and programs. (Also see [\[U\] 12.6 Dataset, variable, and value labels](#), [\[U\] 18.3 Macros](#), and [\[P\] program](#).)

## ▷ Example 1

We will systematically eliminate data until, at the end, no data are left in memory. We begin by describing the data:

```
. use http://www.stata-press.com/data/r15/census11
(1980 Census data by state)
. describe
Contains data from http://www.stata-press.com/data/r15/census11.dta
  obs:                50                1980 Census data by state
  vars:                15                2 Dec 2016 14:31
  size:                3,200
```

---

variable name	storage type	display format	value label	variable label
state	str13	%-13s		State
state2	str2	%-2s		Two-letter state abbreviation
region	byte	%-8.0g	cenreg	Census region
pop	long	%12.0gc		Population
poplt5	long	%12.0gc		Pop, < 5 year
pop5_17	long	%12.0gc		Pop, 5 to 17 years
pop18p	long	%12.0gc		Pop, 18 and older
pop65p	long	%12.0gc		Pop, 65 and older
popurban	long	%12.0gc		Urban population
medage	float	%9.2f		Median age
death	long	%12.0gc		Number of deaths
marriage	long	%12.0gc		Number of marriages
divorce	long	%12.0gc		Number of divorces
mrgrate	float	%9.0g		Marriage rate
dvcrate	float	%9.0g		Divorce rate

---

Sorted by: region

We can eliminate all the variables with names that begin with pop by typing `drop pop*`:

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```
. drop pop*
. describe
Contains data from http://www.stata-press.com/data/r15/census11.dta
obs:          50          1980 Census data by state
vars:         9           2 Dec 2016 14:31
size:        2,000
```

---

variable name	storage type	display format	value label	variable label
state	str13	%-13s		State
state2	str2	%-2s		Two-letter state abbreviation
region	byte	%-8.0g	cenreg	Census region
medage	float	%9.2f		Median age
death	long	%12.0gc		Number of deaths
marriage	long	%12.0gc		Number of marriages
divorce	long	%12.0gc		Number of divorces
mrgrate	float	%9.0g		Marriage rate
dvcrate	float	%9.0g		Divorce rate

---

```
Sorted by: region
Note: Dataset has changed since last saved.
```

Let's eliminate more variables and then eliminate observations:

```
. drop marriage divorce mrgrate dvcrate
. describe
Contains data from http://www.stata-press.com/data/r15/census11.dta
obs:          50          1980 Census data by state
vars:         5           2 Dec 2016 14:31
size:        1,200
```

---

variable name	storage type	display format	value label	variable label
state	str13	%-13s		State
state2	str2	%-2s		Two-letter state abbreviation
region	byte	%-8.0g	cenreg	Census region
medage	float	%9.2f		Median age
death	long	%12.0gc		Number of deaths

---

```
Sorted by: region
Note: Dataset has changed since last saved.
```

Next we will drop any observation for which medage is greater than 32.

```
. drop if medage > 32
(3 observations deleted)
```

Let's drop the first observation in each region:

```
. by region: drop if _n==1
(4 observations deleted)
```

Now we drop all but the last observation in each region:

```
. by region: drop if _n!=_N
(39 observations deleted)
```

Let's now drop the first 2 observations in our dataset:

```
. drop in 1/2
(2 observations deleted)
```

Finally, let's get rid of everything:

```
. drop _all
. describe
Contains data
  obs:          0
  vars:         0
  size:         0
Sorted by:
```

◀

Typing `keep in 10/1` is the same as typing `drop in 1/9`.

Typing `keep if x==3` is the same as typing `drop if x !=3`.

`keep` is especially useful for keeping a few variables from a large dataset. Typing `keep myvar1 myvar2` is the same as typing `drop` followed by all the variables in the dataset *except* `myvar1` and `myvar2`.

#### □ Technical note

In addition to dropping variables and observations, `drop _all` removes any business calendars; see [D] [datetime business calendars](#).

□

## Reference

Cox, N. J. 2001. [dm89: Dropping variables or observations with missing values](#). *Stata Technical Bulletin* 60: 7–8. Reprinted in *Stata Technical Bulletin Reprints*, vol. 10, pp. 44–46. College Station, TX: Stata Press.

## Also see

[D] [clear](#) — Clear memory

[D] [varmanage](#) — Manage variable labels, formats, and other properties

[U] [11 Language syntax](#)

[U] [13 Functions and expressions](#)