Syntax

Define program

```
program [define] program_name [, nclass|rclass|eclass|sclass]
    byable(recall[, noheader]|oncall) properties(namelist) sort
    preserve plugin
```

List names of programs stored in memory

```
program dir
```

Eliminate program from memory

```
program drop { program_name [program_name [...]]|_all|_allado }
```

List contents of program

```
program list [ program_name [program_name [...]]|_all]
```

Description

`program define` defines and manipulates programs. `define` is required if `program_name` is any of the words `define`, `dir`, `drop`, `list`, or `plugin`.

`program dir` lists the names of all the programs stored in memory.

`program list` lists the contents of the named program or programs. `program list _all` lists the contents of all programs stored in memory.

`program drop` eliminates the named program or programs from memory. `program drop _all` eliminates all programs stored in memory. `program drop _allado` eliminates all programs stored in memory that were loaded from ado-files. See [U] 17 Ado-files for an explanation of ado-files.

See [U] 18 Programming Stata for a description of programs. The remarks below address only the use of the `program dir`, `program drop`, and `program list` commands.

See [P] trace for information on debugging programs.

See the Combined subject table of contents, which immediately follows the Contents, for a subject summary of the programming commands.

Options

`nclass` states that the program being defined does not return results in `r()`, `e()`, or `s()`, and is the default.
rclass states that the program being defined returns results in \texttt{r()}. This is done using the \texttt{return} command; see [P] return. If the program is not explicitly declared to be rclass, it may not change or replace results in \texttt{r()}.

eclass states that the program being defined returns results in \texttt{e()} or modifies already existing results in \texttt{e()}. This is done using the \texttt{ereturn} command; see [P] return and [P] ereturn. If the program is not explicitly declared to be eclass, it may not replace or change results in \texttt{e()}.

sclass states that the program being defined returns results in \texttt{s()}. This is done using the \texttt{sreturn} command; see [P] return. If the program is not explicitly declared to be sclass, it may not change or replace results in \texttt{s()}, but it still may clear \texttt{s()} by using \texttt{sreturn clear}; see [P] return.

\texttt{byable(recall[, noheader] | onecall)} specifies that the program allow Stata’s \texttt{by \varlist:} prefix. There are two styles for writing byable programs: \texttt{byable(recall)} and \texttt{byable(onecall)}. The writing of byable programs is discussed in [P] byable.

\texttt{properties(\namelist)} states that \texttt{program\_name} has the specified properties. \texttt{namelist} may contain up to 80 characters, including separating spaces. See [P] program properties.

\texttt{sortpreserve} states that the program changes the sort order of the data and that Stata is to restore the original order when the program concludes; see [P] sortpreserve.

\texttt{plugin} specifies that a plugin (a specially compiled C program) be dynamically loaded and that the plugin define the new command; see [P] plugin.

### Remarks and examples

The \texttt{program dir} command lists the names of all the programs stored in memory. \texttt{program list} lists contents of the program or programs.

#### Example 1

When you start Stata, there are no programs stored in memory. If you type \texttt{program dir}, Stata displays an empty list:

```
. program dir

```

Later during the session, you might see

```
  . program dir
  (output omitted)
ado  756  _pred_se
ado  644  logit_p.GenScores
ado  306  logit_p.GetRhs
ado  5296 logit_p
ado  339  predict
  (output omitted)
ado  559  logit.Replay
ado  4272 logit.Estimate
ado  827  logit
ado  287  webuse.Query
ado  588  webuse.Set
ado  269  webuse.GetDefault
ado  686  webuse
```

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The ado in front indicates that the program was automatically loaded and thus can be automatically dropped should memory become scarce; see [U] 17 Ado-files. The number is the size, in bytes, of the program. The total amount of memory occupied by programs is 114,306 bytes. Notice the logit_p.GetRhs and logit_p.GenScores entries. These programs are defined in the logit_p.ado file and were loaded when logit_p was loaded.

Let's now create two of our own programs with program:

```
. program rng
 1. args n a b
 2. if "'b'"==""
 3. display "You must type three arguments: n a b"
 4. exit
 5. }
 6. drop _all
 7. set obs 'n'
 8. generate x = (_n-1)/(_N-1)*(b-a)+a
. program smooth
 1. args v1 v2
 2. confirm variable 'v1'
 3. confirm new variable 'v2'
 4. generate 'v2' = cond(_n==1|_n==_N,'v1',('v1'[n-1]+v1+v1'[n+1])/3)
 5. end
```

After you type program, lines are collected until you type a line with the word end. For our purposes, it does not matter what these programs do. If we were now to type program dir, we would see

```
. program dir
 286 smooth
 319 rng
(output omitted)
ado 756 _pred_se
ado 644 logit_p.GenScores
ado 306 logit_p.GetRhs
ado 5296 logit_p
ado 339 predict
(output omitted)
ado 559 logit.Replay
ado 4272 logit.Estimate
ado 827 logit
ado 287 webuse.Query
ado 588 webuse.Set
ado 269 webuse.GetDefault
ado 686 webuse
```

We can list a program by using the program list command:

```
. program list smooth

smooth:
 1. args v1 v2
 2. confirm variable 'v1'
 3. confirm new variable 'v2'
 4. generate 'v2' = cond(_n==1|_n==_N,'v1',('v1'[n-1]+v1+v1'[n+1])/3)
```

If we do not specify the program that we want listed, program list lists all the programs stored in memory.
The `program drop` command eliminates programs from memory. Typing `program drop program_name` eliminates `program_name` from memory. Typing `program drop _all` eliminates all programs from memory.

```
. program drop smooth
. program dir
    319   rng
(output omitted)
ado  756   _pred_se
ado  644   logit_p.GenScores
ado  306   logit_p.GetRhs
ado  5296  logit_p
ado  339   predict
(output omitted)
ado  559   logit.Replay
ado  4272  logit.Estimate
ado   827   logit
ado   287   webuse.Query
ado   588   webuse.Set
ado   269   webuse.GetDefault
ado   686   webuse
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. program drop _all
. program dir
```

Also see

[P] `byable` — Make programs byable

[P] `discard` — Drop automatically loaded programs

[D] `clear` — Clear memory

[P] `sortpreserve` — Sort within programs

[P] `trace` — Debug Stata programs

[R] `query` — Display system parameters

[U] 18 Programming Stata