program — Define and manipulate programs

Description Also see Syntax

Options

Remarks and examples

Reference

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 for programming*, which immediately follows the *Contents*, for a subject summary of the programming commands.

Syntax

```
Define program
```

List names of programs stored in memory

```
program dir
```

Eliminate program from memory

```
\verb|program_name| [program_name| [\dots]] | \_all | \_allado | |
```

List contents of program

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

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 r(). This is done using the return command; see [P] return. If the program is not explicitly declared to be rclass, then it may not change or replace results in r().
- eclass states that the program being defined returns results in e() or modifies already existing results in e(). This is done using the ereturn command; see [P] return and [P] ereturn. If the program is not explicitly declared to be eclass, it may not directly replace or change results in e().
- sclass states that the program being defined returns results in s(). This is done using the sreturn command; see [P] return. If the program is not explicitly declared to be sclass, then it may not directly change or replace results in s(), but it still may clear s() by using sreturn clear.
- byable(recall[, noheader]|onecall) specifies that the program allow Stata's by varlist: prefix. There are two styles for writing byable programs: byable(recall) and byable(onecall). The writing of byable programs is discussed in [P] byable.
- properties (namelist) states that program_name has the specified properties. namelist may contain up to 80 characters, including separating spaces. See [P] program properties.
- 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.
- 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 program dir command lists the names of all the programs stored in memory. 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 program dir, Stata displays an empty list:

. program dir

Later during the session, you might see

```
. program dir
 (output omitted)
               _pred_se
 ado
          756
 ado
          644 logit_p.GenScores
          306 logit_p.GetRhs
 ado
 ado
         5296 logit_p
 ado
          339 predict
 (output omitted)
          559 logit.Replay
 ado
         4272 logit.Estimate
 ado
 ado
          827 logit
          287 webuse.Query
 ado
 ado
          588 webuse.Set
 ado
          269 webuse.GetDefault
 ado
          686 webuse
       118187
```

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. 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'"=="" {
       display "You must type three arguments: n a b"
 4.
 5. }
 6. drop _all
 7. set obs 'n'
 8. generate x = (_n-1)/(_N-1)*('b'-'a')+'a'
 9. end
. 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)
                _pred_se
           756
           644 logit_p.GenScores
 ado
 ado
           306 logit_p.GetRhs
          5296 logit_p
 ado
 ado
           339 predict
 (output omitted)
           559 logit.Replay
 ado
          4272 logit.Estimate
827 logit
 ado
 ado
 ado
           287 webuse.Query
           588 webuse.Set
 ado
 ado
           269 webuse.GetDefault
 ado
           686 webuse
        118792
```

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)
                _pred_se
 ado
           756
 ado
           644 logit_p.GenScores
 ado
           306 logit p.GetRhs
 ado
          5296
                logit_p
 ado
           339
                predict
 (output omitted)
           559 logit.Replay
 ado
 ado
          4272
               logit.Estimate
 ado
           827
               logit
 ado
           287 webuse.Query
           588 webuse.Set
 ado
 ado
           269
                webuse.GetDefault
 ado
           686
               webuse
        118506
 program drop _all
 program dir
```

Reference

Klein, D. 2025. Stata tip 160: Drop capture program drop from ado-files. Stata Journal 25: 252–253.

Also see

- [P] byable Make programs byable
- [P] discard Drop automatically loaded programs
- [P] **sortpreserve** Sort within programs
- [P] trace Debug Stata programs
- [D] clear Clear memory
- [R] query Display system parameters
- [U] 18 Programming Stata

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