

class 5, macros and loops

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this version: Thursday 19th October, 2017 18:12

outline

misc

macros

loops

other things

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ps3

- ◇ make sure you see comments
- ◇ if you have git, you can diff easily
 - if you don't just look in dofile for "aok"
 - "ctrl-f" in stata editor
- ◇ `https://github.com/tomadahan/newrepos`
- ◇ maybe *`https://github.com/shourjyab/Datamanagement`*

are we experiencing the flow yet?

◇ (Csikszentmihalyi, 2010, 1991)

paper

- ◇ today we'll cover most of the basic programming in stata
- ◇ you now have the tools to produce paper/final project
- ◇ again, start early—it takes more time than you think
- ◇ i am only interested in the dofile
- ◇ the most productive use of your time is to apply what we have already learned to your own research
- ◇ i am very happy to have a look at the early drafts of your dofiles/papers
- ◇ we can discuss them in the class, etc.

today

- ◇ we will talk today about basic programming
 - that is, macros and loops
- ◇ later: proper programming: programs or adofiles

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macros

- ◇ stata forgets local macros after a run from the dofile
- ◇ but if you copy-paste, it remembers them...

general idea

- ◇ term “macro” is not very helpful
- ◇ macro is just a variable or an object
 - under which you can assign something
- ◇ i guess stata uses term “macro” because there are already variables in dataset

intuition

- ◇ macro is like a variable that can take on some values
- ◇ value, string, or actually anything including spaces
- ◇ hence, a macro can even contain a chunk of code
- ◇ macro is like an object in Python or R

local/global

- ◇ there are local and global macros
- ◇ i'll mostly use local (but you may prefer global)
- ◇ global always persists during the whole stata session
- ◇ on windows local macros persist within one run (you run a block of code),
 - on windows globals may be better because they persists longer
 - so if local is too shortlived, replace it with global
- ◇ **dofile**

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general idea

- ◇ repeats the code within the loop for different elements
 - (vars, values, items, items in macro, etc)
- ◇ loops are essential for automation
- ◇ loops save time and are fun!
- ◇ they're especially neat when combined with macros

intuition

- ◇ think of a loop as a simple program:
provide items for which the job is to be done (e.g. all vars)
and define the job in a loop (e.g. recode -9 to .)
- ◇ again, you can loop over a list of any
items/numbers/strings/etc

branching

- ◇ branching simply means “if else”:
if something ... do something... else do something
- ◇ it makes your code more general
- ◇ but adds lines
- ◇ dofile

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use

- ◇ macros useful if you need to **repeat the same thing**
 - e.g. path, list of variables, even chunk of code
- ◇ loops useful if you need to **do/execute the same thing**
 - eg replace -9 with ., merge data, run regressions, make graphs
- ◇ make **repetitive strings** (paths,var lists,etc) into macros
- ◇ make **repetitive tasks** (graphs, exporting results, etc) into programs
- ◇ any data management job or really any coding requires macros and loops

tips/tricks

- ◇ try to define macros/programs at the beginning of the dofile/section
so that it is easy to find
- ◇ don't overdo with macros and loops
- ◇ again, do not create fancy code for the sake of fanciness
- ◇ don't create too long loops, say over 50 lines, difficult to debug, better have it in small steps (though some people disagree)
- ◇ i don't do it but it is nice to have indentation

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——— (2010): "Creativity, fulfillment and flow," Ted Talk,
http://blog.ted.com/2008/10/23/creativity_fulf.