

while — Looping

[Syntax](#)[Description](#)[Remarks and examples](#)[Also see](#)

Syntax

```
while exp {
    stata_commands
}
```

Braces must be specified with `while`, and

1. the open brace must appear on the same line as `while`;
2. nothing may follow the open brace, except, of course, comments; the first command to be executed must appear on a new line;
3. the close brace must appear on a line by itself.

Description

`while` evaluates *exp* and, if it is true (nonzero), executes the *stata_commands* enclosed in the braces. It then repeats the process until *exp* evaluates to false (zero). `while`s may be nested within `while`s. If the *exp* refers to any variables, their values in the first observation are used unless explicit subscripts are specified; see [\[U\] 13.7 Explicit subscripting](#).

Also see [\[P\] foreach](#) and [\[P\] forvalues](#) for alternatives to `while`.

Remarks and examples

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`while` may be used interactively, but it is most often used in programs. See [\[U\] 18 Programming Stata](#) for a description of programs.

The *stata_commands* enclosed in the braces may be executed once, many times, or not at all. For instance,

```
program demo
    local i = '1'
    while 'i'>0 {
        display "i is now 'i'"
        local i = 'i' - 1
    }
    display "done"
end

. demo 2
i is now 2
i is now 1
done

. demo 0
done
```

The above example is a bit contrived in that the best way to count down to one would be

```
program demo
  forvalues i = '1'(-1)1 {
    display "i is now 'i'"
  }
  display "done"
end
```

`while` is used mostly in parsing contexts

```
program ...
...
gettoken tok 0 : 0
while "'tok'" != "" {
  ...
  gettoken tok 0 : 0
}
...
end
```

or in mathematical contexts where we are iterating

```
program ...
...
scalar 'curval' = .
scalar 'lastval' = .
while abs('lastval' - 'curval') > 'epsilon' {
  scalar 'lastval' = 'curval'
  scalar 'curval' = ...
}
...
end
```

or in any context in which loop termination is based on calculation (whether it be numeric or string).

You can also create endless loops by using `while`,

```
program ...
...
while 1 {
  ...
}
end
```

which is not really an endless loop if the code reads

```
program ...
...
while 1 {
  if (...) exit
  ...
}
// this line is never reached
end
```

Should you make a mistake and really create an endless loop, you can stop program execution by pressing the *Break* key.

Also see

- [P] [continue](#) — Break out of loops
- [P] [foreach](#) — Loop over items
- [P] [forvalues](#) — Loop over consecutive values
- [P] [if](#) — if programming command
- [U] [13 Functions and expressions](#)
- [U] [18 Programming Stata](#)