range — Generate numerical range

Description

range generates a numerical range, which is useful for evaluating and graphing functions.

Quick start

Generate newv1 that ranges from 0 to π

```
range newv1 0 _pi
```

As above, but only for the first 50 observations in the dataset

```
range newv1 0 _pi 50
```

Generate newv2 that ranges from the minimum to the maximum of v2 after summarize

```
range newv2 r(min) r(max)
```

Menu

Data > Create or change data > Other variable-creation commands > Generate numerical range

Syntax

```
range varname #_first #_last [#_obs]
```

Remarks and examples

range constructs the variable varname, taking on values #_first to #_last, inclusive, over #_obs. If #_obs is not specified, the number of observations in the current dataset is used.

range can be used to produce increasing sequences, such as

```
. range x 0 12.56 100
```

or it can be used to produce decreasing sequences:

```
. range z 100 1
```

Example 1

To graph \( y = e^{-x/6}\sin(x) \) over the interval \([0, 12.56]\), we can type

```
. range x 0 12.56 100
   number of observations (_N) was 0, now 100
. generate y = exp(-x/6)*sin(x)
```
Example 2

Stata is not limited solely to graphing functions—it can draw parameterized curves as well. For instance, consider the curve given by the polar coordinate relation \( r = 2 \sin(2\theta) \). The conversion of polar coordinates to parameterized form is \((y, x) = (r \sin \theta, r \cos \theta)\), so we can type

```
. clear
. range theta 0 2*_pi 400
   number of observations (_N) was 0, now 400
. generate r = 2*sin(2*theta)
. generate y = r*sin(theta)
. generate x = r*cos(theta)
. line y x, c(l) m(i) yline(0) xline(0) aspectratio(1)
```
Also see

[D] egen — Extensions to generate

[D] obs — Increase the number of observations in a dataset