How to Create a Stem-and-Leaf Plot in Stata: A Simple Guide

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A Stem-and-Leaf Plot is a useful tool for organizing and visually representing numerical data. In Stata, creating a Stem-and-Leaf Plot is a simple process that involves using the "stemplot" command. This command allows users to specify which variables to include in the plot, as well as customize the appearance of the plot. The resulting plot consists of a "stem" column, which displays the first digit of the data, and a "leaf" column, which displays the remaining digits. This allows for a quick and easy way to identify the distribution and range of the data. By following a few steps, users can efficiently create a Stem-and-Leaf Plot in Stata to effectively analyze and communicate their numerical data.

Create a Stem-and-Leaf Plot in Stata

A is a chart we can use to display data by splitting up each value in a dataset into a *stem* and a *leaf*.

Here is an example of a stem-and-leaf plot for a given dataset, created by the :

14, 14, 15, 16, 17, 28, 29, 30, 34, 35

GENERATE STEM AND LEAF PLOT

Stem	Leaf				
1	4	4	5	6	7
2	8	9			
3	0	4	5		

The *stem* for each value is simply the first digit of the value while the *leaf* is the second digit of the value.

Now let's find out how to create a stem-and-leaf plot in Stata.

Example: Stem-and-Leaf Plot in Stata

Use the following steps to create a stem-and-leaf plot in Stata.

Step 1: Load the data.

We'll use a built-in Stata dataset called *auto* for this example. Load this dataset by typing the following into the command box:

use http://www.stata-press.com/data/r13/auto

Step 2: Create a stem-and-leaf plot for the variable *mpg*.

Type the following into the Command box and click *Enter*:

stem mpg

This produces the following stem-and-leaf plot for all of the values for *mpg*:

```
. stem mpg

Stem-and-leaf plot for mpg (Mileage (mpg))

  1t | 22
  1f | 44444455
  1s | 66667777
  1. | 88888888899999999
  2* | 00011111
  2t | 22222333
  2f | 444455555
  2s | 666
  2. | 8889
  3* | 001
  3t |
  3f | 455
  3s |
  3. |
  4* | 1
```

By default, Stata splits the stems into multiple lines. You can specify that each stem only uses one line by using the lines() command:

stem mpg, lines(1)

```
. stem mpg, lines(1)

Stem-and-leaf plot for mpg (Mileage (mpg))

  1* | 22444444556666777788888888899999999
  2* | 000111112222233344445555566688889
  3* | 001455
  4* | 1
```

Notice how each stem now has all of its values on one line.

We can also create a stem-and-leaf plot for another variable in the dataset called *price*, which represents the price of each car in the dataset and takes on values in the thousands.

stem price

```
Stem-and-leaf plot for price (Price)

  3***  | 291,299
  3***  | 667,748,798,799,829,895,955,984,995
  4***  | 010,060,082,099,172,181,187,195,296,389,424,425,453,482,499
  4***  | 504,516,589,647,697,723,733,749,816,890,934
  5***  | 079,104,172,189,222,379,397
  5***  | 705,719,788,798,799,886,899
  6***  | 165,229,295,303,342,486
  6***  | 850
  7***  | 140
  7***  | 827
  8***  | 129
  8***  | 814
  9***  |
  9***  | 690,735
 10***  | 371,372
 10***  |
 11***  | 385,497
 11***  | 995
 12***  |
 12***  | 990
 13***  | 466
 13***  | 594
 14***  |
 14***  | 500
 15***  |
 15***  | 906
```


We can also use the round() command to round numbers. For example, we can use round(100) to specify that each value of price should be rounded to the hundreds place:

stem price, round(100)

```
. stem price, round(100)

Stem-and-leaf plot for price (Price)

price rounded to nearest multiple of 100
plot in units of 100

   3* | 33778889
   4* | 000011122223444555556677778899
   5* | 11222447788899
   6* | 2233359
   7* | 18
   8* | 18
   9* | 77
  10* | 44
  11* | 45
  12* | 0
  13* | 056
  14* | 5
  15* | 9
```


Or we can specify each price to be rounded to the tens place:

stem price, round(10)

```
. stem price, round(10)

Stem-and-leaf plot for price (Price)

price rounded to nearest multiple of 10
plot in units of 10

   3** | 29,30
   3** | 67,75,80,80,83,90,96,98
   4** | 00,01,06,08,10,17,18,19,20,30,39,42,43,45,48
   4** | 50,50,52,59,65,70,72,73,75,82,89,93
   5** | 08,10,17,19,22,38,40
   5** | 71,72,79,80,80,89,90
   6** | 17,23,30,30,34,49
   6** | 85
   7** | 14
   7** | 83
   8** | 13
   8** | 81
   9** |
   9** | 69,74
  10** | 37,37
  10** |
  11** | 39
  11** | 50
  12** | 00
  12** | 99
  13** | 47
  13** | 59
  14** |
  14** | 50
  15** |
  15** | 91
```


Lastly, we can use the command prune to avoid printing any stems that have no leaves:

stem price, round(10) prune

```
. stem price, round(10) prune

Stem-and-leaf plot for price (Price)

price rounded to nearest multiple of 10
plot in units of 10

   3** | 29,30
   3** | 67,75,80,80,83,90,96,98
   4** | 00,01,06,08,10,17,18,19,20,30,39,42,43,45,48
   4** | 50,50,52,59,65,70,72,73,75,82,89,93
   5** | 08,10,17,19,22,38,40
   5** | 71,72,79,80,80,89,90
   6** | 17,23,30,30,34,49
   6** | 85
   7** | 14
   7** | 83
   8** | 13
   8** | 81
   9** | 69,74
  10** | 37,37
  11** | 39
  11** | 50
  12** | 00
  12** | 99
  13** | 47
  13** | 59
  14** | 50
  15** | 91
```

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