

JACKKNIFE INDEX

PURPOSE

Generate a sequence from 1 to N and then set one of the elements to zero.

DESCRIPTION

The jackknife is a non-parametric method for estimating the sampling distribution of a statistic. Given a sample data set and a desired statistic (e.g., the mean), the jackknife works by computing the desired statistic with an element (or a group of elements) deleted. This is done for each element of the data set. The collection of these statistics is used as an estimate of the sampling distribution. A histogram or some other type of distributional plot is usually performed on the computed values of the statistic. The JACKKNIFE PLOT command can be used to generate a jackknife analysis for about 35 statistics. The JACKKNIFE INDEX command can be used in conjunction with the LOOP and SUBSAMPLE commands to perform a jackknife analysis for an unsupported statistic.

SYNTAX

```
LET <ind> = JACKKNIFE INDEX <i> <max>
```

where <ind> is a variable that contains the computed index numbers;
 <i> is the element to delete;
 and <max> is the size of the sample.

EXAMPLES

```
LET IND = JACKKNIFE INDEX 3 100
LET IND2 = JACKKNIFE INDEX 8 1000
```

NOTE

The bootstrap is a similar technique. However, it uses a different resampling scheme. See the BOOTSTRAP PLOT command for details.

DEFAULT

None

SYNONYMS

None

RELATED COMMANDS

JACKKNIFE PLOT	=	Generate a jackknife plot.
BOOTSTRAP SAMPLE	=	Generate a jackknife or bootstrap sample.
BOOTSTRAP INDEX	=	Generate a bootstrap index.
BOOTSTRAP PLOT	=	Generate a bootstrap plot.
LOOP	=	Initiate a loop.

REFERENCE

"A Leisurely Look at the Bootstrap, the Jackknife, and Cross-Validation," Efron and Gong, The American Statistician, February, 1983.

APPLICATIONS

Sample Distribution of a Statistic

IMPLEMENTATION DATE

89/2

PROGRAM

```
LET Y = NORMAL RANDOM NUMBERS FOR I = 1 1 100
LOOP FOR K = 1 1 100
  LET IND = JACKKNIFE INDEX K 100
  LET YMEAN = MEAN JUNK SUBSET IND > 0
  LET Y0(K) = YMEAN
END OF LOOP
HISTOGRAM Y0
```