**I PLOT**

**PURPOSE**
Generates an I plot.

**DESCRIPTION**
An I plot is used in 2 ways:

1. As a graphical data analysis technique (similar to the box plot, but simpler) for determining if differences exist between the various levels of a 1-factor model. It is a graphical alternative to 1-factor ANOVA. It consists of:
   - Vertical axis = response variable;
   - Horizontal axis = level identification.
   The bottom of the bar is the data minimum; the middle x in the bar is the data median; the top of the bar is the data maximum.

2. As an uncertainty chart in which the analyst wishes to plot estimated values of a certain quantity and to also illustrate the uncertainty bars associated with each estimate. In this case, a given value of the horizontal axis variable is typically accompanied by exactly 3 values for the vertical axis variable:
   - 1) the estimate - the uncertainty;
   - 2) the estimate;
   - 3) the estimate + the uncertainty.

For both applications, the resulting plot is similar in appearance. Namely, a target value which appears as an X; a vertical bar with small horizontal bars at the extremes (hence the name “I plot”).

The I plot has 3 components (characters and lines) which can be individually controlled. For the I plot to appear as it should, the I PLOT command is usually preceded by 2 commands:

```
CHARACTERS I PLOT
LINES I PLOT
```

These commands automatically define proper values for the 3 components of the I plot. After the I plot is formed, the analyst should redefine plot characters and lines via the usual CHARACTERS and LINES commands.

**SYNTAX**
```
I PLOT <y> <x> <SUBSET/EXCEPT/FOR qualification>
```
where `<y>` is the response (= dependent) variable;
where `<x>` is the horizontal axis (= independent) variable;
and where the `<SUBSET/EXCEPT/FOR qualification>` is optional.

**EXAMPLES**
```
I PLOT Y X
I PLOT Y X SUBSET X > 2
```

**NOTE**
The second use of the I plot (to draw error bars) has been supplanted by an explicit ERROR BAR PLOT command.

**DEFAULT**
None

**SYNONYMS**
None

**RELATED COMMANDS**
```
CHARACTERS = Sets the type for plot characters.
LINES = Sets the type for plot lines.
BOX PLOT = Generates a box plot.
ANOVA = Carries out an ANOVA.
MEDIAN POLISH = Carries out a median polish.
CONTROL CHART = Generates a control chart.
ERROR BAR PLOT = Generates a plot with error bars.
PLOT = Generates a data or function plot.
```
APPLICATIONS
Data Analysis

IMPLEMENTATION DATE
Pre-1987

PROGRAM
LET X = SEQUENCE 1 100 1 10
TITLE AUTOMATIC
LET Z = NORMAL RANDOM NUMBERS FOR I = 1 1 1000
CHARACTERS I PLOT
LINES I PLOT
CHARACTER SIZE 3 ALL
CHARACTER FONT SIMPLEX ALL
XTIC OFFSET 0.5 0.5
I PLOT Z X