

Axis Labels

For bar, high–low–close, line, linear XY, scatter, step, text and XY graphs, Enable allows you to set the format of the x– and y–axis labels. Further, you can specify data from your spreadsheet or database for the x–axis labels themselves. See also GR:Fonts.

X– and Y–Axis Format

For bar, high–low–close, line and step graphs, Enable uses the values specified in the data groups to create a scale along the y–axis. For XY, linear XY and step graphs, Enable uses the values specified for the x–axis data to create a scale for the x–axis. Specify how the labels along the x– and y–axes appear by selecting a label format.

To select a label format for the x– or y–axis:

1. At the X–Axis Format box on the third screen of the Design Form, select a format for the x–axis.

or

At the Y–Axis Format box, select a format for the y–axis.

Enable uses a fixed format with two decimal places unless you specify otherwise. See REF1:SS:Format for complete information on value, time or date formats.

The display of label data along the axes is affected by options selected in the system profile and/or Settings dialog box. See REF2:IN:Profiles:Description of Profile Options and REF2:IN:Settings.

2. For the fixed, dollar or comma formats, enter the number of decimal places on the line at the bottom of the box. Enter a 0 (zero) to eliminate decimal places.

or

For time or date formats, enter the time or date format code on the line at the bottom of the box.

X–Axis Data

Enable can display data (values or text up to ten characters in length) as labels along the x–axis. For bar, high–low–close, line, and step graphs, you can specify labels for the x–axis as shown in Figure 1.

For pie charts, specify x–axis data to place labels around the pie.

For step, linear XY and XY graphs, values for x–axis data must be listed in ascending order. Perform a sort in spreadsheet or index a field in the database before specifying a group of values for the x–axis. See also GR:Scale:X–Axis.

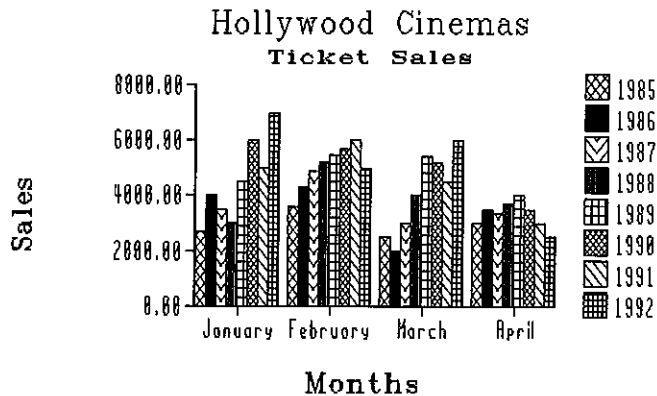


Figure 1: A bar graph with text labels along the x-axis.

To specify data for the x-axis:

1. At the X-Axis and Text Data box on the third screen of the Design Form, specify the location of the x-axis data at the X-axis Data prompt:

From spreadsheet, type the range coordinates or press **F7** to point out the range that contains the data for the x-axis.

or

From database, press **F7**. At the Database prompt, enter the name of the database that contains the data for the x-axis.

At the Index prompt, specify the name of the indexed field (if any) that Enable will use to establish record order for the graph. Press **↓**.

At the Where prompt, specify the condition(s) for selecting records for the graph. To select all records from a database, press **↓**.

For example, the database for the graph in Figure 1 contains sales figures for the entire year. To graph only the numbers for the first four months type *MONTH="January" OR MONTH="February" OR MONTH="March" or MONTH="April"* at the Where prompt. See REF1:DB:Where Prompt.

At the Fields prompt, type the name of the field that includes the data for the x-axis. If the data is stored in more than one field, enter the names separated by commas. Select only fields defined as numeric. See REF1:DB:Fields Prompt.

Skip Points

The skip points feature allows you to skip label points along the x-axis. For example, if a bar graph has a large number of x-axis labels, the labels may be too crowded to display on screen, as in Figure 2.

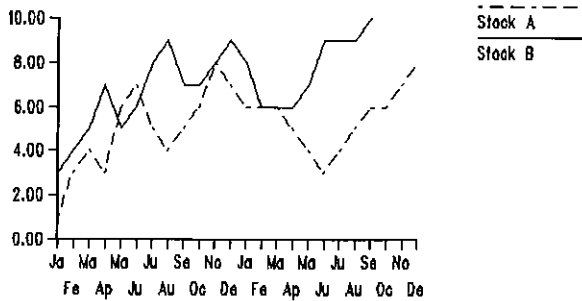


Figure 2: A line graph with crowding x-axis labels.

To skip x-axis data points:

1. At the X-Axis Scaling box on the third page of the Design Form, enter a skip number.
For example, enter 2 to display every other label or enter 3 to display every third label.

After entering a skip number of 3, every third x-axis label displays, as in Figure 3.

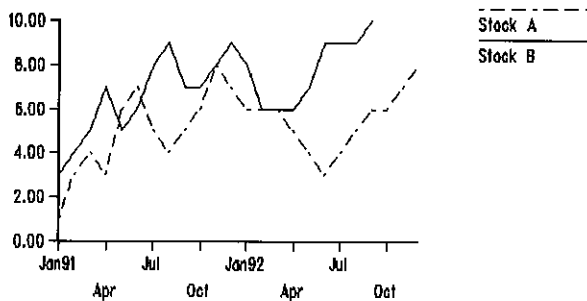


Figure 3: A line graph that displays every third x-axis label.

Bar Graphs

In a bar graph, data is represented as a series of bars. Bar graphs are useful for comparing related data. For example, the three-dimensional graph in Figure 4 might compare product sales for the first four months of 1991 and 1992.

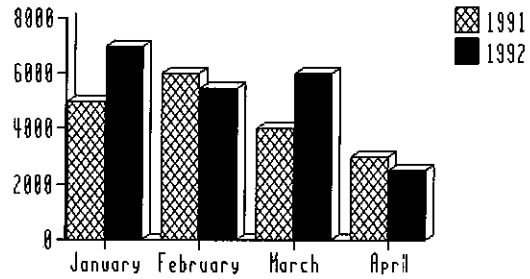


Figure 4: A 3D bar graph.

There are three design options for bar graphs: stacked, horizontal (for 2D graphs only) and by-group. Figures 5 through 7 show some examples of the design options available for bar graphs.

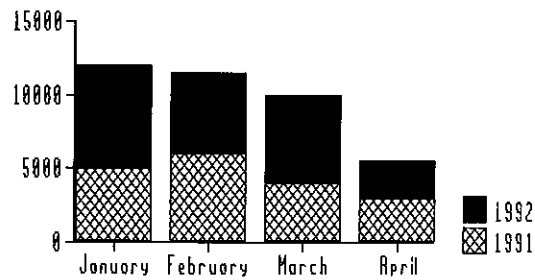


Figure 5: A stacked bar graph.

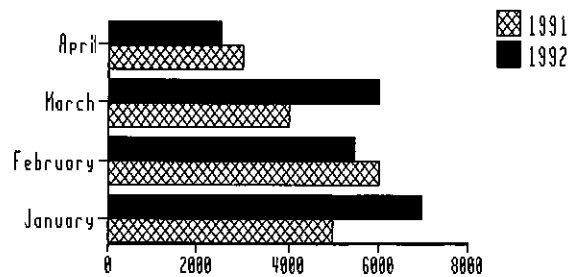


Figure 6: A horizontal bar graph rotates the graph 90 degrees.

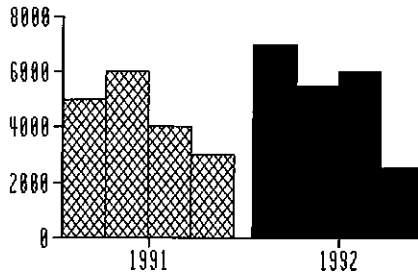


Figure 7: A by-group bar graph represents the sales for each year as separate units.

Create

To create a bar graph:

- From the first screen of the Design Form, select one of the following graph types:
 - 2D Bar.** Create a two-dimensional bar graph.
 - 3D Bar.** Create a three-dimensional bar graph.
- Select one of the following design options:
 - Stacked.** Combine two data groups.
 - Horizontal.** Rotate the graph 90 degrees. (For two-dimensional bar graph only.)
 - By-group.** Display each data group as a set.
- In the Titles, Subtitles and Legend box, type text for the title and subtitle.
- Press **FgDn** to go to the second screen of the Design Form. At the Data Group Definition box, specify the data for the graph. See GR:Data Groups:Define.
- At the Legend box, enter a description of each data group for the legend. Legend text can be up to ten characters long.
- Press **Fgdn** to go to the third screen of the Design Form. At the X-Axis and Text Data box, specify the labels for the x-axis at the X-Axis Data prompt.
You can point out the data from a spreadsheet or database just as when defining a data group. See GR:Data Groups:Define.
- Press **End** to accept the graph setting.

See GR:Display to display your bar graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Colors

If you have a color monitor or a plotter, Enable will automatically assign colors to the graphs. You can also design your own color display by telling Enable what color to use for

the axes, grids and text (or titles) and what colors to use for each data group in the graph. The colors appear when the graph is displayed on-screen or plotted on a plotter.

Axes, Grids and Text

To specify a color for the axes, grids and text:

1. At the Global Color box on the first screen of the Design Form, enter a color code. Refer to the list of color codes in the box at the bottom of the Design Form or see Figure 8.

For example, enter 1 for Red.

0 = Default*	5 = Violet
1 = Red	6 = Gold
2 = Green	7 = Lime
3 = Blue	8 = Turquoise
4 = Brown	9 = Orange

*Default will appear white on screen and will print in black on a plotter.

Figure 8: Color codes.

Data Groups

To specify a color for each data group:

1. At the Color box on the second screen of the Design Form, enter a color code for each data group in the graph.

Refer to the list of color codes in the box at the bottom of the Design Form or see Figure 8.

For example, enter 3 on the first line of the Color box to display the first data group in blue.

Copy Setting

The settings used to design a graph can be copied.

To copy the Design Form settings to a new graph:

1. From the Spreadsheet Top Line Menu, select **Graph, Select**.

or

From the Database Interact or Top Line Menu, select **Graph, Select**. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file you want to use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Copy**.

4. At the **To** prompt, enter a unique name for the graph. Upon accepting the name, Enable displays the Design Form for the newly named graph setting. Review or edit as necessary.
5. Press **End** to accept the graph setting.

See GR:Display to display your bar graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Copy to Word Processing

A displayed graph can be copied to a word processing document. See GR:Display for information on displaying a graph setting and refer to REF2:IN:Windows:Copy Information Between Windows for the steps on how to copy a graph into word processing.

Create

Enable lets you create graphs of spreadsheet or database data. See also GR:Design Form.

Spreadsheet

Create up to eight graph settings for each spreadsheet. Graph settings will be saved along with the spreadsheet file and can be accessed at any time from the Top Line Menu.

To create a graph setting from an Enable spreadsheet:

1. From the Spreadsheet Top Line Menu, select **G**raph, **C**reate.
2. Enter a name for the new graph.
3. Enable displays the graph Design Form. See GR:Bar Graphs, (two- or three-dimensional and stacked), GR:High-Low-Close Graphs, GR:Line Graphs, GR:Linear XY Graphs, GR:Pie Charts, GR:Scatter Charts, GR:Step Graphs and GR:Text Charts for information on designing each type of graph.

Database

Enable creates a graph settings file to store database graphs. Create as many graph settings files as you want. Enable can store up to eight graphs in each settings file.

To create a graph from an Enable database:

1. From the DBMS Interact Menu, select **G**raph, **C**reate.
2. At the Enter the name of the graph settings file prompt, enter a name for the file in which the graph will be stored.
3. Enter a name for the new graph.
4. Enable displays the graph Design Form. See GR:Bar Graphs, (two or three-dimensional and stacked), GR:High-Low-Close Graphs, GR:Line Graphs, GR:Linear XY Graphs, GR:Pie Charts, GR:Scatter Charts, GR:Step Graphs and GR:Text Charts for information on designing each type of graph.

Data Groups

The first step in creating a graph is defining data groups in the spreadsheet or database. A data group can consist of a single number or a list of numbers.

For example, Figure 9 shows the sales data for eight local grocers in both spreadsheet and database form. When defining the data group for the pie chart, each data group contains a single number.

Spreadsheet:

	A	B
1	Local Grocers	
2		
3	Store Name	Sales
4	-----	-----
5	Apple Mini	420,000
6	Farm Store	791,000
7	W-Mart	981,000
8	GreenGro	580,000
9	Veg-Mart	792,000
10	The Corner	294,000
11	Casey's	206,000
12	Soda Mart	302,000
13		

Database:

SYS-RECORD	STORE	SALES
1	Apple Mini	420000 - Data group 1
2	Farm Store	791000 - Data group 2
3	W-Mart	981000 - Data group 3
4	GreenGro	580000 - Data group 4
5	Veg-Mart	792000 - Data group 5
6	The Corner	294000 - Data group 6
7	Casey's	206000 - Data group 7
8	Soda Mart	302000 - Data group 8

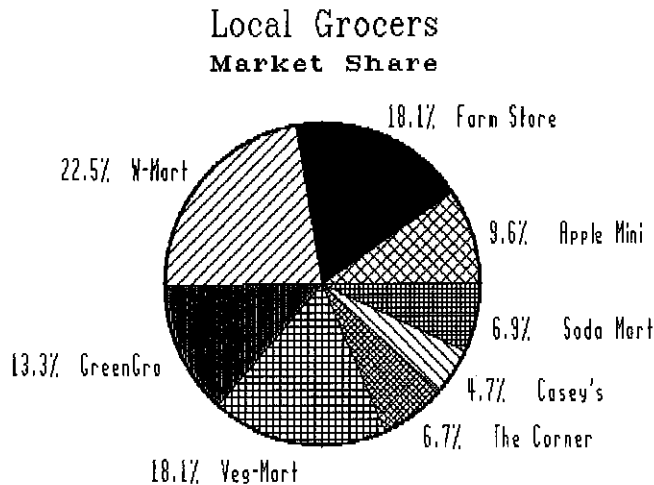


Figure 9: Data groups that contain a single number.

Figure 10 represents the movie ticket sales for the first four months of eight consecutive years in both spreadsheet and database form. Each data group in Figure 10 contains a list of numbers. You may include up to eight data groups in a graph.

Spreadsheet:

	A	B	C	D	E	F	G	H	I
1	Hollywood Cinemas (Ticket Sales)								
2									
3		1985	1986	1987	1988	1989	1990	1991	1992
4									
5	January	2700	4000	3500	3000	4500	6000	5000	7000
6	February	3600	4300	4900	5200	5500	5700	6000	5000
7	March	2500	2000	3000	4000	5400	5200	4500	6000
8	April	3000	3500	3400	3700	4000	3500	3000	2500
9									

Database:

SYS:RECORD	MONTH	..	..	..	..	..	..	..	..
	
1	January	2700	4000	3500	3000	4500	6000	5000	7000
2	February	3600	4300	4900	5200	5500	5700	6000	5000
3	March	2500	2000	3000	4000	5400	5200	4500	6000
4	April	3000	3500	3400	3700	4000	3500	3000	2500

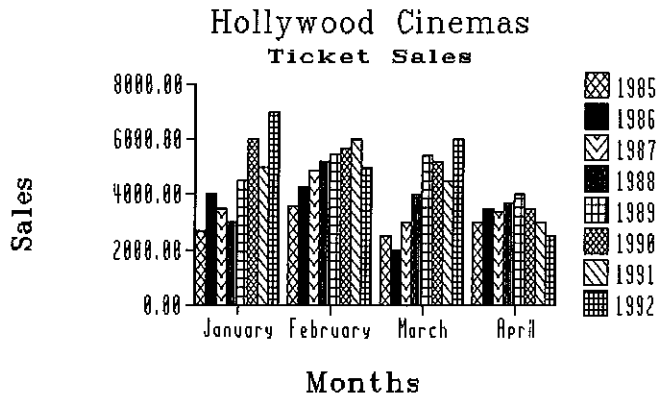


Figure 10: Data groups that contain a list of numbers.

Define

To define data groups for a graph:

1. Follow the instructions for creating any type of graph, such as a Bar Graphs, High-Low-Close Graphs, Line Graphs, Linear XY Graphs, Pie Charts, Step Graphs or XY Graphs.
2. Position the pointer on the first line of the Data Group Definition box on the second screen of the Design Form. (Press PgDn and PgUp to move to different pages of the Design Form.)

From spreadsheet, type the cell address or press **F7** to point out the range containing data you want to graph.

or

From database, press **F7**. At the Database prompt, enter the name of the database that contains the number(s) for the first data group.

At the Index prompt, enter the name of the indexed field (if any) that Enable will use to establish record (data) order for the graph. Press **↓**. (You may need to index data before graphing it. In Figures 9 and 10, the data was already entered in the order it should appear in the graph, so no index was necessary.) You can also select specific records to be graphed at the Index prompt. See REF1:DB:Database Fields:Access Records in Indexed Order for information on selecting records at the Index prompt.

At the Where prompt, enter the condition(s) that must be met before the record (data) is included in the data group. To use all records in the database, press **↓**. For the graph in Figure 9, only one record from the SALES field was included in each data group. The condition SYS:RECORD=1 was entered at the Where prompt for the first data group. The condition SYS:RECORD=2 was entered at the Where prompt for the second data group, and so forth. If the database in Figure 10 contained sales figures for the entire year, you could type the following at the Where prompt to display only the numbers for the first quarter in a graph:
MONTH="January" OR MONTH="February" OR MONTH="March". See REF1:DB:Where Prompt.

At the Fields prompt, type the name of the field that includes the data for the first data group. If the data is stored in more than one field, enter the names separated by commas. Select only fields defined as numeric. See REF1:DB:Fields Prompt.

3. Enable redisplay the Design Form. Press **↓** to move the pointer to the next line of the Data Group Definition box.
4. Repeat steps 2–4 until all the data groups have been defined.

Note that when you are creating a graph from database, Enable skips directly to the Fields prompt as you define the rest of the data groups. In some cases, the data for various data groups may be stored in different databases. To specify another database name, or to enter new criteria at the Index or Where prompts, press **↑**.

Default Setting

A graph often helps in the analysis of data. Even when you have no plans for producing a detailed graph, you may want to graph data quickly. Enable provides a default graph setting (named DEFAULT) so you can specify data and immediately display (or print or plot) the data as a 2D bar graph. Enable scales the y-axis using the data you specify for the data groups. The height of the bars corresponds to the values specified for the data groups. You can elaborate on the default graph for special reporting purposes by changing the graph to a pie, line, or special graph. Since the DEFAULT graph setting always appears first in the list

of graphs, you may want to store the graph you refer to most frequently in the DEFAULT graph setting.

To use the DEFAULT graph setting:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect.

or

From the DBMS Interact Menu, select **G**raph, **S**elect. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file you want to use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select **DEFAULT**.
3. At the Options box, select **Edit**.
4. Select **Accept** to display the Design Form for the DEFAULT graph setting.
5. Press **PgDn** to go to the second page of the Design Form. Define your data groups. See GR:Data Groups:Define.
6. Press **End** to accept the graph setting.

See GR:Display to display your default graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Delete

A graph setting can be deleted. To delete a graph:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect.

or

From the Database Interact Menu, select **G**raph, **S**elect. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file containing a graph you want to delete. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Delete**.
4. Proceed with the deletion or cancel:
Accept. Delete the graph.
Cancel. Void the deletion of the graph setting and return to the spreadsheet.

Design Form

Enable presents all options for creating graphs in a series of dialog boxes. These boxes, which contain four screens of options, are collectively known as the Design Form.

Design Form options include: graph type, user-specified titles, subtitles and legends, global color, data group definition with enhancements for each data group such as color, shading legends, symbols and scaling; x- and y-axis formatting and data specification, layout, grid, skip points and plotting and printing specifications. See GR:Bar Graphs, GR:High-Low-Close Graphs, GR:Line Graphs, GR:Linear XY Graphs, GR:Pie Charts, GR:Step Graphs, GR:Text Charts and GR:XY Graphs. See also GR:Titles and Subtitles, GR:Legends, GR:Color, GR:Shading Patterns, GR:Symbols, GR:Scale, GR:X-Axis Data, GR:Grid Lines, GR:Skip Points, GR:Plot, GR:Print and GR:Save.

When you create or edit a graph setting, the first screen of the Design Form displays. See GR:Create and GR>Edit.

Moving Around

Press **PgDn** and **PgUp** to move among the four screens of the Design Form.

Press **Tab** and **Shift/Tab** to move among the boxes on one screen of the Design Form.

Display

Display graphs using either the Spreadsheet Top Line or Database Interact Menus or directly from the Design Form. You can also quickly redisplay the last spreadsheet graph you worked on.

Top Line or Interact Menus

To display a spreadsheet or database graph:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect.

or

From the Database Interact Menu, select **G**raph, **S**elect. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file you want to use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **D**isplay.
4. Select **A**ccept to display your graph.

Press **Esc** once to return to the Current Settings box, twice to return to the spreadsheet or database.

Design Form

Display a graph while you are working in the Design Form by pressing **F9** or by selecting **D**isplay from the command box in the lower-right corner of the screen.

Last Spreadsheet Graph

During a spreadsheet session, you can quickly display the last graph you worked on. If you just began your session, the first graph in the list under Current Settings will be used for the quick display.

To display the last graph you worked on:

1. From the Spreadsheet Top Line Menu, select **G**raph, **D**isplay.

The graph displays.

Dynamic Graph

Enable's dynamic graph feature allows you to view a spreadsheet and graph simultaneously. As you make changes to spreadsheet data, you can see the changes on the graph immediately. Enable uses the last graph you worked on for the dynamic display. If you just opened a spreadsheet file, then the first graph in the list under Current Settings will be used.

To select a graph for simultaneous display:

1. Select a graph setting. See GR:Select a Setting.
2. Press **Esc** to return to the spreadsheet.
3. Activate the dynamic graph feature by selecting **G**raph, **D**ynamic from the Spreadsheet Top Line Menu.

or

Press **Shift/F7**.

The spreadsheet and graph display on a split screen.

To deactivate the dynamic graph feature:

1. From the Spreadsheet Top Line Menu, select **G**raph, **D**ynamic.

or

Press **Shift/F7**.

The display returns to a view of the spreadsheet.

Edit

Graphs created in Enable are actively linked to their respective spreadsheets or databases. This means that any changes you make to the data in a spreadsheet or database is automatically reflected in the graph (a graph always reflects the current data in the file). You can also edit the Design Form to change the way graphs display.

Design Form

The ability to modify graphs quickly is one of the greatest strengths of Enable's graphics. For example, if you have created a bar graph, you can quickly represent the same data as a pie graph. You simply redisplay the Design Form and select a new graph type. You can

experiment easily with different shading patterns or fonts. All the graphics features are presented in the Design Form on four concise screens, so it is easy to find information and make changes.

To edit a spreadsheet or database graph:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect.

or

From the Database **I**nteract Menu, select **G**raph, **S**elect. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file you want to use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **E**dit.
4. Select **A**ccept to display the Design Form.

Press **PgUp** and **PgDn** to view the four screens of the Design Form. Press **Tab** and **Shift/Tab** to move among the boxes on each screen.

Modify your graph specifications as desired. Press **↓** to accept an option in a box. See also GR:Design Form.

5. From the command box in the lower-right corner of the screen, accept or cancel the modifications:

Accept. Accept the options and data specified in the Design Form and return to the Current Settings and Options boxes. You can also press **E**nd to accept the graph setting.

Cancel. Return to the Current Settings and Options boxes without saving any changes. You can also press **E**sc to cancel the graph setting.

Fonts

Enable provides eight fonts that can be applied to any text on graphs. Enable automatically uses the Default font, shown in Figure 11, for all title, subtitle, x- and y-axes and legend text. You may want to apply other fonts to the text in a graph.

To specify fonts for titles, subtitles, the x- or y-axes or legends:

1. At the Font box on the first screen of the Design Form, enter a font code for the Main 1 title; for the X- and Y-Axis titles; for the Main 2, X Sub and Y Sub subtitles; for the Legend text.

Refer to the list of font codes in the box at the bottom of the Design Form.

Note that you may apply font codes to x- and y-axes labels, even if you do not specify x- and y-axes titles or subtitles.

For example, type 6 on the first line of the Font box to apply the Block2 font to the main title of your graph.

0 = Default	5 = Block1
1 = <i>Italic1</i>	6 = Block2
2 = <i>Italic2</i>	7 = <i>Script1</i>
3 = Roman1	8 = <i>Script2</i>
4 = Roman2	

Figure 11: Font codes.

Graph Types

See GR:Bar Graphs, GR:High-Low-Close Graphs, GR:Line Graphs, GR:Linear XY Graphs, GR:Pie Charts, GR:Scatter Charts, GR:Step Graphs, GR:Symbol Art:Organizational Charts, GR:Text Charts and GR:XY Graphs for instructions on how to create each of Enable's graph types using the Design Form.

Grid Lines

Use grid lines to establish a clear relationship between the data and the x- and y-axes. Figure 12 shows a graph with horizontal and vertical grid lines. See also GR:Colors.

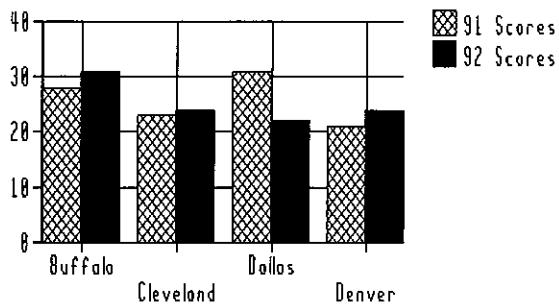


Figure 12: Grid lines.

To apply grid lines to a graph:

- At the Grid Options box on the third screen of the Design Form, select one or both of the following:
 - Horizontal.** Draws horizontal lines from the y-axis.
 - Vertical.** Draws vertical lines from the x-axis.

High-Low-Close Graphs

High-low-close graphs are used to display stock quotations. The high and low prices, as well as the opening and closing prices for the day's business can be displayed on a vertical line.

Each vertical line represents the performance of one stock. A dash to the left on the vertical line indicates the opening stock price position; a dash to the right indicates the stock's closing price.

High and low prices are measured at the end points of the vertical line: the low price for the stock is the value at the lowest point of the vertical line. The high price is the value at the highest point of the vertical line.

The graph in Figure 13 shows the performance of five stocks on April 3, 1992.

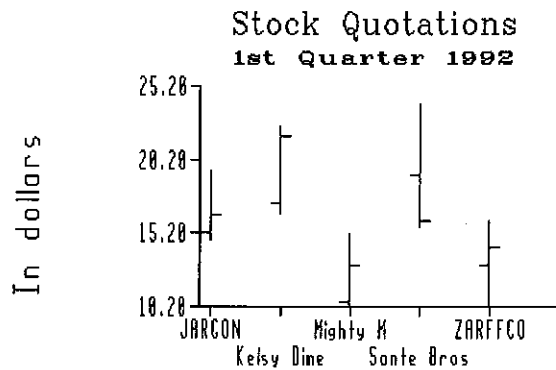


Figure 13: A high-low-close graph.

The spreadsheet in Figure 14 shows the arrangement of the four data groups needed to create a high-low-close graph.

	A	B	C	D	E
1	Stock Review-1st Quarter 1992				
2	April 3, 1992				
3					
4	Stock	High	Low	Close	Open
5	-----				
6	JARCON	19.5	14.7	16.4	15.2
7	Kelsy Dine	22.5	16.5	21.8	17.2
8	Mighty M	15.1	10.3	13	10.5
9	Sante Bros.	24	15.6	16	19.2
10	ZARFFCO	16	10.2	14.2	13
11					

Figure 14: Data groups for high-low-close graph.

Create

To create a high–low–close graph:

1. From the first screen of the Design Form, select graph type H–L–Close.
2. In the Titles, Subtitles and Legend box, type text for the title and subtitle.
3. At the Data Group Definition box on the second screen of the Design Form, specify the data for the graph. See GR:Data Groups:Define. There are only four data groups for the high–low–close graph type and they are defined very specifically:
Data group 1 is the range of high values for the stock prices.
Data group 2 is the range of low values for the stock prices.
Data group 3 is the range of values for the closing prices of the stocks.
Data group 4 is the range of values for the opening prices of the stocks.
Each data group can contain an unlimited number of points.
4. Press **FgDn** to go to the third screen of the Design Form. Go to the X–Axis and Text Data box and at the X–axis Data prompt, specify data for the x–axis. See GR:Axis Labels:X–Axis Data.
5. Press **End** to accept the graph setting.

See GR:Display to display your high–low–close graph; GR:Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Import

Enable imports graphics files created by MacIntosh MacPaint and PC Paintbrush IV and files that can be saved in IBM 6180 plotter format. (For example, Perspective Jr. and Harvard Graphics.) See REF1:WP:Import Graphics for details on importing.

Legends

Use legends to identify your data when graphed. The text for a legend can be up to ten characters long. Legends are not applicable to text charts. For pie charts, select the **Pie Legends** option to display a legend. See GR:Pie Charts.

To include a legend with a graph:

1. At the Legend box on the second screen of the Design Form, enter the text that describes each data group in the graph.

Line Graphs

Line graphs are useful for plotting changes over time. Each line represents a different data group and each point on a line represents one value in the data group at a particular point in time.

For example, the graph in Figure 15 shows comic book sales for four competitors over a five year period. There are two design options for line graphs: draw line and draw symbols. Enable uses a unique line pattern and a unique symbol for each data group. Each symbol on a line represents one value in the data group. You can create a line graph with both symbols and lines as shown in Figure 15, or with lines only or with symbols only. Use the Draw Symbols option alone to create scatter plots.

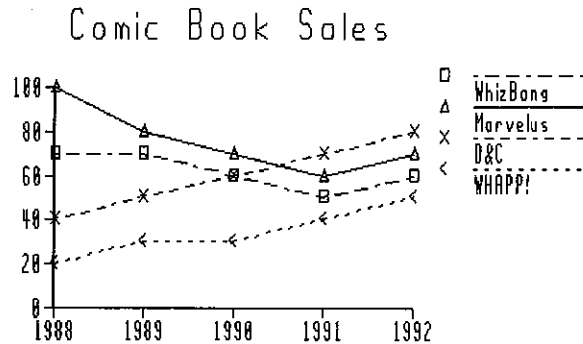


Figure 15: A line graph with both lines and symbols.

Create

To create a line graph:

1. From the first screen of the Design Form, select graph type **Line**.
2. Select either or both of the following design options:
Draw Line. Connect the data points.
Draw Symbols. Display a symbol for each data point.
 To specify your own line patterns and symbol types, see GR:Line Patterns and GR:Symbol Types.
3. In the Titles, Subtitles and Legend box, type text for the title and subtitle.
4. Press **PgDn** to go to the second screen of the Design Form. At the Data Group Definition box, specify the data for the graph. See GR:Data Groups:Define.
5. At the Legend box, enter a description of each data group for the legend. Legend text cannot be longer than ten characters.
6. Press **PgDn** to the third screen of the Design Form. At the X-Axis and Text Data box, specify the labels for the x-axis at the X-Axis Data prompt. See GR:Axis Labels:X-Axis Data.
7. Press **End** to accept the graph setting.

See GR:Display to display your line graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Line Patterns

Line patterns make it easy to differentiate among data groups in a line graph, XY graph or linear XY graph. Enable automatically assigns line patterns to data groups. You can easily override Enable's settings by specifying new line pattern codes. A list of line patterns and their corresponding codes appears in Figure 16.

To specify line patterns for each data group:

1. At the Shade box on the second screen of the Design Form, enter a line pattern code for each data group in the graph.

For example, enter 2 on the first line to apply a solid shading pattern to the first data group.

1	-----	5	-----
2	—————	6	-----
3	-----	7	-----
4	-----	8	-----

Figure 16: Line pattern codes.

Linear XY Graphs

Linear XY (or linear regression) graphs are used to show trends. All data points in a linear XY graph are plotted along both the x- and y-axes. Enable then calculates the straight line that passes closest to each of the data points. A line that slants up from left to right indicates a positive trend. A line that slants down from left to right indicates a negative trend.

For example, the graph in Figure 17 shows the positive trend between SAT scores and college math performance.

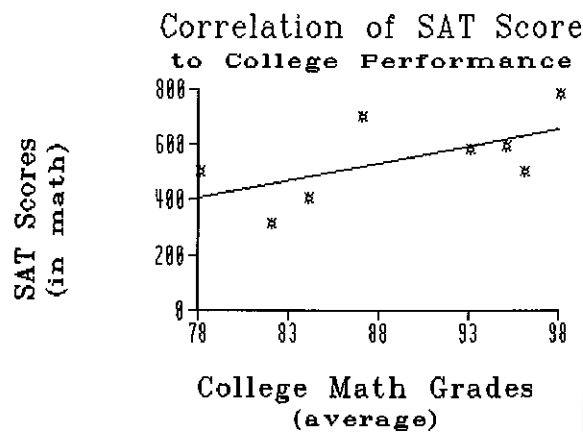


Figure 17: A linear XY graph.

Create

To create a linear XY graph:

1. From the first screen of the Design Form, select graph type **Linear XY**.
2. Select either or both of the following design options:
 - Draw Line.** Connect the data points with a solid line.
 - Draw Symbols.** Display a symbol for each data point.
 To specify your own line patterns and symbol types, see GR:Line Patterns and GR:Symbol Types.
3. In the Titles, Subtitles and Legend box, type text for the title and subtitle.
4. Press **PgDn** to go to the second screen of the Design Form. At the Data Group Definition box, specify the data for the Y-axis. See GR:Data Groups.
5. Press **PgDn** to go the third screen of the Design Form. At the X-Axis and Text Data box, specify the data for the X-axis at the X-axis Data: prompt. See GR:Axis Labels:X-Axis Data.
6. Press **End** to accept the graph setting.

See GR:Display to display your linear XY graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Overlay

Combine a line graph with a 2D bar graph. You can display a line graph as a line, symbols or both for any or all data groups in a bar graph as shown in Figure 18.

To overlay a line graph on a bar graph:

1. At the Option box on the second screen of the Design Form, type the letter O on the line next to each data group that should appear with an overlaid line graph.
For example in Figure 18, a line graph overlays each data group in the graph.

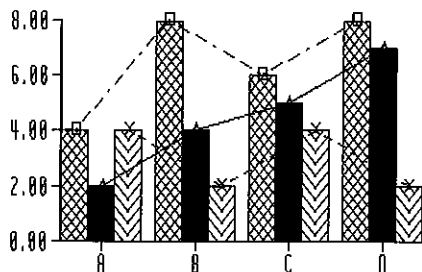


Figure 18: A line graph overlaid on a 2D bar graph.

Perspective

Perspective Junior is an advanced graphics program which lets you create custom graphs of presentation quality. View graphs created in Enable or create new graphs in Perspective Junior.

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect or **C**reate.

or

From the Database Interact or Top Line Menu, select **G**raph, **S**elect or **C**reate. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file you want to create or use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Perspective**.

See REF2:PJ for specific Perspective Junior operation instructions.

Pie Charts

Pie charts show the relationship of parts to a whole.

For example, the chart in Figure 19 shows the percentage of local grocery sales held by eight stores.

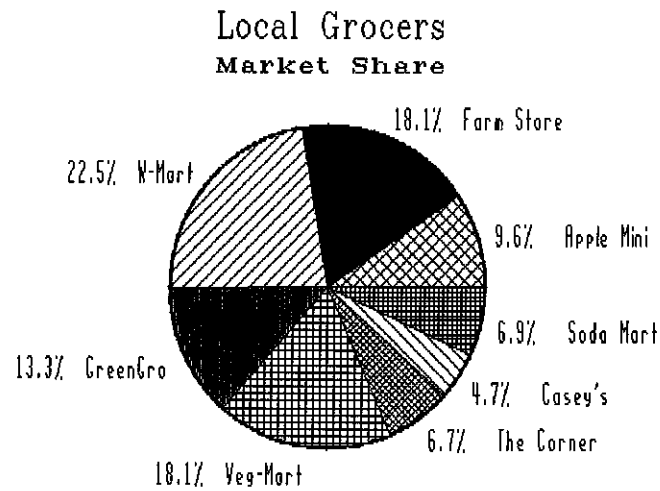


Figure 19: A standard pie chart.

You can emphasize a data group in a pie chart by exploding it. There are two design options that apply to both standard and exploded pie charts: pie legends and autoshading. Figure 20 shows an exploded pie chart with the pie legend option applied. Select autoshading to graph a group of data specified as a single data group.

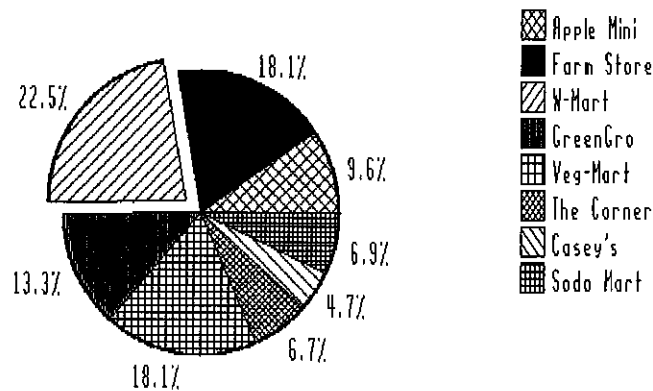


Figure 20: An exploded pie chart with the pie legends option applied.

Create

To create a pie chart:

1. From the first screen of the Design Form, select a pie graph type:
 - Pie.** Create a standard pie chart.
 - Exploded.** Emphasize one or more of the data groups in a pie chart by "exploding" them.
2. Select either or both of the following design options:
 - Pie Legends.** Create a legend for the pie chart.
 - Autoshading.** Assign distinct shading patterns to data that has been specified as one data group.
3. In the Titles, Subtitles and Legend box, enter the text for the graph's heading at the Main1 and Main2 prompts.

X- and y-axis titles and subtitles do not apply to pie charts. The Legend prompt at the bottom of the box is meaningless for pie charts.

To achieve labels around the pie chart, as in Figure 19, specify an x-axis data range. See GR:Axis Labels:X-Axis Data.
4. Press **PgDn** to go to the second screen of the Design Form. At the Data Group Definition box, specify the data for the graph. See GR:Data Groups:Define.
5. At the Legend box, enter a description of each data group. Depending on the design option you selected, Enable will display the labels in a legend or as data labels. Legend text cannot be longer than ten characters.
6. If you selected the exploded pie chart, at the Option box, type **e** next to each data group that you want to explode.
7. Press **End** to accept the graph setting.

See GR:Display to display your pie chart; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Plot

A plotter is a device used to produce high-quality graphs in multiple colors. See the Installation booklet for a list of plotters supported by Enable. Plot graphs using either the Spreadsheet Top Line or Database Interact Menus or directly from the Design Form.

Top Line or Interact Menus

To plot a graph:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect.
or
From the Database Interact Menu, select **G**raph, **S**elect. At the Enter the name of the graph settings file prompt, enter the name of the graph

settings file containing the graph you want to plot. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Plot**.
4. Select **Accept** to display the Plot Positioning Specifications dialog box. The top section displays information about size limits of the plotted graph, its offset position, and the current settings for plotting the graph on paper. In the bottom section, make any necessary changes to the current settings. A description of the size and offset prompts follows:

Size. The size of the plotted graph is measured in character width and height. Limits denote the range of possible plot sizes. A plotted graph can be from 5 to 80 characters wide and from 5 to 25 characters high. Enable will also display the current size settings for the graph. Unless you specify otherwise, Enable will use the maximum size settings (80 x 25). To change the size of the graph, enter new width and height settings in the bottom section of the dialog box.

Offset. The offset is a set of coordinates that specify how far from the left side of the paper and how far from the top of the paper the graph should appear. The size of the graph will determine the limits of the offset. Enable will use an offset of 0 (from the left) by 0 (from the top) unless the graph has been shrunk and/or moved. To change the offset of the graph, enter the number of characters Enable should indent from the left side of the page at the Left heading prompt. Enter the number of characters Enable should indent from the top of the paper at the Top heading prompt.

5. Select **Accept** to plot the graph. Enable will redisplay the spreadsheet or database.

Design Form

Plot a graph directly from the Design Form by pressing **Alt/P** or selecting **Plot** from the command box in the lower-right corner of the screen. The Plot Positioning Specifications box displays. Follow the instructions in steps 4 and 5 under GR:Plot:Top Line or Interact Menus.

Settings

You can specify the pen width, plot speed and the communications port to which the plotter is connected. The setting selected here will override the port selected in the profile.

To specify plotter settings:

1. At the Plot To box on the fourth screen of the Design Form, select the communications port to which your plotter is connected:
PORT 1.
PORT 2.
PORT 3.

2. At the Pen Width box, select one of the following:
Wide. Set a wide pen width. Select this option for transparencies or if the pens are worn. Enable defaults to this option unless you specify otherwise.
Narrow. Set a narrow pen width.
3. At the Plot Speed box, select one of the following:
Fast. Plot a file quickly. Enable defaults to this option unless you specify otherwise.
Slow. Produce smoother, slightly wider lines. Use this option for transparencies or if the pens are worn.

Plot to Word Processing File

To plot to a word processing file on disk so that it can be displayed or printed from Enable's Word Processing module:

1. At the Plot To box on the fourth screen of the Design Form, select **WP File**.
2. At the Optional File Destination for Plot Output box on the fourth screen of the Design Form, type the name of a file. Include a directory path and a file extension if necessary.

Print

A graph can be printed using either the Spreadsheet Top Line or Database Interact Menus or directly from the Design Form. See the Installation booklet for a list of printers supported by Enable.

The printer selected in the Hardware form will be used when printing a graph from spreadsheet; check the spreadsheet's Hardware form before entering the graphics module. (See REF1:SS:Print.) The profile printer will be used when printing a graph in database; check the Hardware section of your profile before entering the graphics module. (See REF2:IN:Profiles:Description of Profile Options.)

Top Line or Interact Menus

To print a graph:

1. From the Spreadsheet Top Line Menu, select **Graph, Select**.
or
From the Database Interact Menu, select **Graph, Select**. At the Enter the name of the graph settings file prompt, enter the name of the graph settings file containing the graph you want to print. Type ? to view a list of available graph settings files.
Enable displays two dialog boxes.
2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Print**.

4. Select whether or not to print the graph:

Accept. Print the graph.

Cancel. Void the print options and returns to the spreadsheet or database.

Design Form

Print a graph directly from the Design Form by pressing **Alt/F2** or by selecting **Print** from the command box at the bottom of the screen.

Cancel

To cancel printing at any time:

1. Press **Ctrl/F2**. Printing will end when the printer's memory buffer is empty of data.

Density

The density at which a graph prints can be varied in Enable. A higher density graph will show fine details more clearly but will print more slowly than a lower density graph. If you do not specify a graph density, Enable will print in single density.

To select graph density:

1. At the Print Density box on the fourth screen of the Design Form, select a print density for the graph:
 - Single.**
 - Double.**
 - Triple.**
 - Quad.**

Orientation

Enable allows you to position a graph on a page horizontally (landscape) or a vertically (portrait). Enable prints graphs in landscape unless you specify otherwise.

A graph printed in landscape occupies a full page with the x-axis parallel to the long side of the page. The graph's x-axis is ten inches long and the y-axis is eight inches long.

A graph printed in portrait also occupies a full page; however, the x-axis is parallel to the bottom (or short side) of the page. The x-axis is eight inches long and the y-axis is ten inches long.

To specify a print orientation:

1. At the Print Format box on the fourth screen of the Design Form, select the graph orientation:
 - Portrait.** Print the graph vertically.
 - Landscape.** Print the graph horizontally.

Save

Save your graph before printing or plotting. Once a graph is saved, you can exit the spreadsheet or database file and revise or redisplay the graph later.

Spreadsheet Graphs

Spreadsheet graph settings are part of the spreadsheet in which they are created. You must save the spreadsheet itself in order to save any accompanying graph settings.

To accept the graph setting and save the spreadsheet:

1. From the Design Form, press **End** to accept the graph setting. Enable displays the Current Settings and Options boxes.
2. Select **Cancel** or press **Esc** to exit the graphics module.
3. From the Spreadsheet Top Line Menu, select **File**, **S**ave.

Database Graphs

Enable saves graphs created from database data in separate graph settings files.

To save the graph settings file:

1. From the Design Form, press **End** to accept the graph setting. Enable displays the Current Settings and Options boxes.
2. Select **Cancel** or press **Esc** to exit the graphics module.
3. At the prompt to save the graph settings file, select **Yes**.
4. Press **↵** to accept the current file name for the graph settings file.

Scale

Use Enable's scaling features to "zoom in" on specific data in the graph.

Data Group

When displaying or printing a graph, Enable automatically creates a proportional scale for the data groups based on the smallest and largest data values. A graph can be difficult to read if one data group contains a value that is much larger or smaller than the other values in the graph.

To scale a particular data group:

1. At the Scale box on the second screen of the Design Form, enter a scaling factor on the line corresponding to the data group you want to modify.
For example, enter 2 to double the size of the data group or enter .5 to display a data group at half its size. If the scaling factor is left blank or the scaling factor is 1, then the data group will assume its normal size.

The bar graph in Figure 21 illustrates the need for scaling data groups. In this graph, the first data group represents the value 30; the second data group represents the value 40 and the

third data group represents the value 1000. The values in the first two data groups are relatively insignificant compared to the value of the third data group. This makes the graph difficult to interpret.

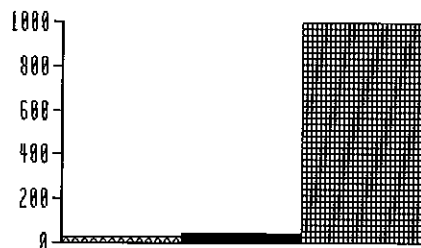


Figure 21: A bar graph with a disproportionate data group.

Use the scale feature to proportion the display of a data group whose value is far from that of other data groups. For example, in Figure 22 the third data group was scaled by a factor of .1. Note that a legend was also added.

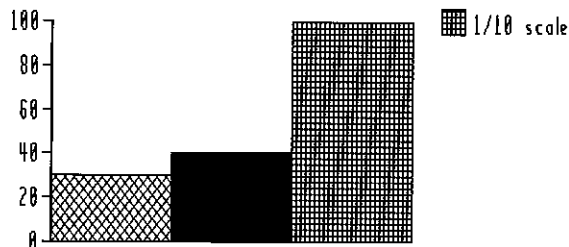


Figure 22: A bar graph with a scaled data group.

X-Axis

X-axis scaling allows you to isolate a specific segment of an XY or linear XY graph.

To specify a scale for the x-axis:

- At the X-Axis Scaling box on the third screen of the Design Form, set the criteria for the x-axis scale:
 - Minimum.** Enter the lowest value for the scale.
 - Maximum.** Enter the highest value for the scale.
 - Increment.** Enter the increment to be used on the scale.

For example, the Figure 23 shows an XY line graph containing heart rate data at ten minute intervals for a two and a half hour (150 minutes) period. Enable automatically generates a

scale of 0 to 150 for the x-axis, with an increment of 50. Suppose you want to view just the data for the first hour (60 minutes).

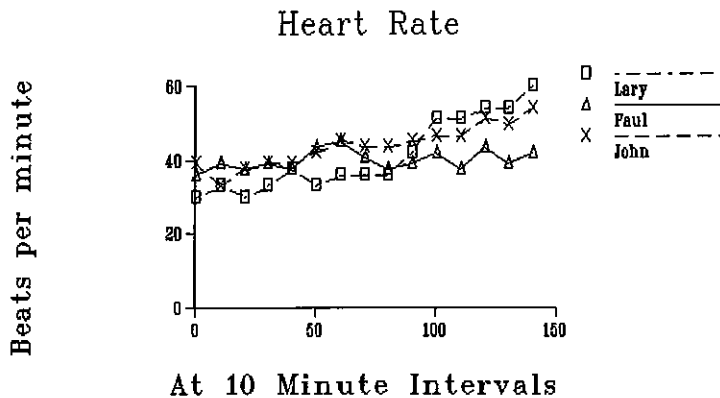


Figure 23: An XY line graph with many data points.

Change the scale of the x-axis to capture only the data points you want to examine more closely. For example, specify 0 as the minimum value and 60 as the maximum value for the scale. Select a scale increment of 20. The graph will display as shown in Figure 24.

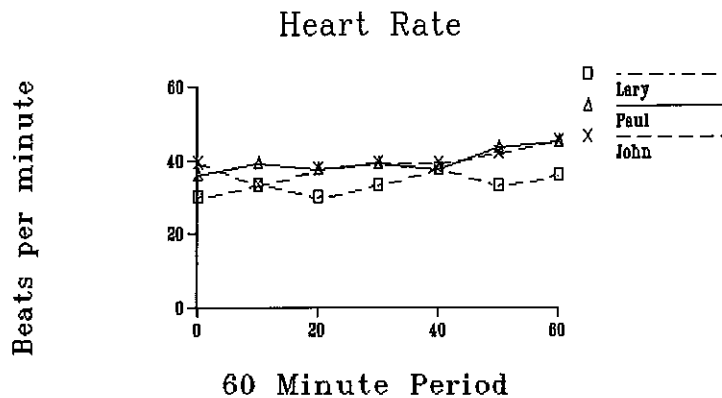


Figure 24: An XY line graph with a user-specified x-axis scale.

Y-Axis

Use the y-axis scaling feature to focus on a specific area of a graph. When a graph contains values that are very close, the differences between data groups may be hard to discern. Use

the y-axis scaling feature to make these differences clear. The y-axis scaling feature can be used with bar, line, step graphs, linear XY, and XY.

To specify a scale for the y-axis:

1. At the Y-Axis Scaling box on the third screen of the Design Form, set the criteria for the y-axis scale:

Minimum. Enter the lowest value for the scale.

Maximum. Enter the highest value for the scale.

Increment. Enter the increment to be used on the scale.

For example, Figure 25 shows a bar graph that displays values between 11 and 12. Enable automatically generated a scale for the y-axis that started at 0, used an increment of 5 and stopped at 15. Since the values are very close, it is hard to distinguish the difference between the bars' heights.

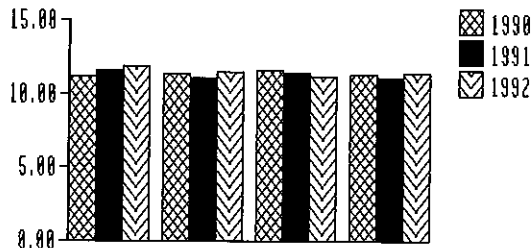


Figure 25: A bar graph with an automatically generated y-axis scale.

You can change the scale of the y-axis to make the graph more readable. For example, specify 11 as the minimum value and 12 as the maximum value for the scale. Select a scale increment of .1. The graph will display as shown in Figure 26.

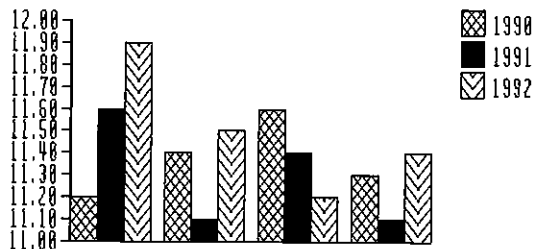


Figure 26: A bar graph with a user-specified y-axis scale.

Scatter Charts

A scatter chart is simply a line graph without the line to connect the data points. See GR:Line Graphs for the steps to create a line graph. Use the Draw Symbols option alone to create scatter plots.

Select a Setting

Select a graph setting for edit, display, print, plot, delete or Perspective:

1. From the Spreadsheet Top Line Menu, select **Graph, Select**.

or

From the DBMS Interact or Top Line Menu, select **Graph, Select**. At the Enter the name of the graph settings file, enter the name of the graph settings file you want to use. Type ? to view a list of available graph settings files.

Enable displays two dialog boxes.

2. At the Current Settings box, select a graph name.
3. At the Options box, select an option.
4. Select **Accept** to display the Design Form for the graph setting.

Shading Patterns

Shading patterns are used to distinguish the different data groups in a bar graph or pie chart. Enable automatically assigns shading patterns to graphs. You can also select your own shading patterns. Figure 27 shows the different shading patterns and their corresponding codes.

To specify shading patterns for each data group in a bar graph or pie chart:

1. At the Shade box on the second screen of the Design Form, enter a shading pattern code next to each data group.

For example, enter 2 on the first line to apply a solid shading pattern to the first data group.

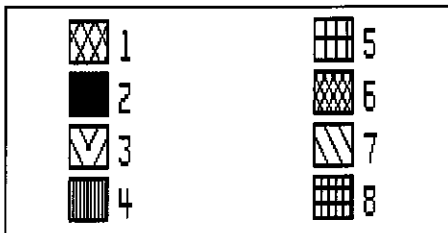


Figure 27: Shading patterns with codes.

Size

When Enable displays a graph, it designates most of the middle of the screen for the graph itself and reserves space around the edges for titles, legends and labels. You can increase the size of the graph area by reducing the area reserved for the peripheral information.

To stretch the dimensions of a graph:

1. At the Layout Options box on the third screen of the Design Form, select one or both of the following:
Taller. Stretch the graph vertically.
Wider. Stretch the graph horizontally.

Step Graphs

The data in a step graph are represented as horizontal plateaus. Each plateau is connected by vertical lines. Step graphs are used to show progressions over time.

Create

To create a step graph:

1. From the first screen of the Design Form, select graph type **Step**.
2. At the Titles, Subtitles and Legend box, enter any text that should appear in the graph.
The Legend prompt at the bottom of the box is a feature that is available in Perspective only.
3. Press **PgDn** to go to the second screen of the Design Form. At the Data Group Definition box, specify the data for the graph. See GR:Data Groups:Define.
4. At the Legend box, enter a description of each data group. Legend text can be up to ten characters long.
For the graph in Figure 28, the Legend box was left blank since there was only one data group represented.
5. Press **PgDn** to go to the third screen of the Design Form. At the X-Axis and Text Data box, specify the data for the x-axis at the X-axis Data prompt. See GR:Axis Labels:X-Axis Data.
6. Press **End** to accept the graph setting.

See GR:Display to display your step graph; GR:Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

For example, the graph in Figure 28 shows the six month increase in productivity due to an employee incentive program.

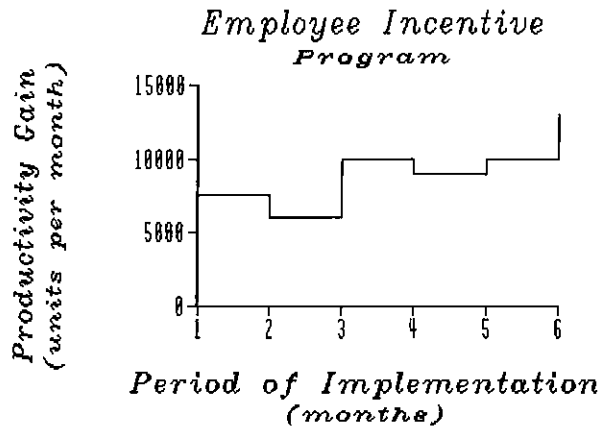


Figure 28: A step graph.

Symbol Art

Enable has a library of symbols that can be used to enhance documents. The symbols are listed in the chart in Figure 31. Use the symbols alone or copy them into a word processing document. To access a drawing from the symbol art library, you must create a specification chart in your spreadsheet and then display the drawing using the Text Chart feature.

Create Specification Chart

To use symbols from the symbol art library on a spreadsheet graph, set up a specification chart in the spreadsheet that contains the data for the graph.

To create a specification chart, create a column containing labels for the eight specifications as shown in Column A of Figure 29. Enter the specifications for a symbol in an adjacent column of cells (B1 through B8 in Figure 29). To use more than one symbol in your spreadsheet, create additional columns in adjacent cells. (For example C1 through C8 and D1 through D8.)

	A	B	C
1	Left	0	
2	Width	350	
3	Bottom	50	
4	Height	100	
5	Font	180	
6	Color	2	
7	Rotation	0	
8	Text	6	
9			

Figure 29: A symbol art specification chart.

Requirements for the specifications are described in the following steps:

1. The first four numbers in the specification chart are pixel coordinates that tell Enable where to position the symbol on the screen. You specify how far the symbol should be from the left side of the screen (Left), how wide to draw the symbol (Width), how far the symbol should be from the bottom of the screen (Bottom) and how tall to draw the symbol (Height).

Since all symbols are not uniform, the easiest way to position a symbol is to experiment with different settings. Use Enable's dynamic graph feature to see the effect of changes to the coordinates. See GR:Dynamic Graph.

2. The next number in the specification is the font library number. Type *100* to access the symbol art library (Font).
3. Next, select a color code (Color) from the color chart in Figure 30.

0 = Default*	5 = Violet
1 = Red	6 = Gold
2 = Green	7 = Lime
3 = Blue	8 = Turquoise
4 = Brown	9 = Orange

*Default will appear white on screen and will print in black on a plotter.

Figure 30: Color codes.

4. Specify the degree of rotation (Rotation). Enter a number from 0 to 359 for the rotation. Enable will rotate the symbols in a clockwise fashion from 0 degrees to 359 degrees.
5. The last number in the specification chart is the code for the symbol itself (Text). A list of the 142 drawings in Enable's symbol art library appears in Figure 31 along with the corresponding codes. It is important to remember that all codes that are numbers or math symbols must be preceded by a space when entered in a specification chart.

For example, to enter the code 6 (for the phone symbol), press **Space Bar**, type 6 and then press ↵. Be sure to enter all codes that are uppercase letters in uppercase; and all codes that are lowercase letters in lowercase.

To enter a code such as Alt/149 (for the dolphin symbol), press the **Alt** key and type the numbers 1 4 9 using the number keypad. A symbol (ð in this example) displays in the cell.

Several symbols can be displayed simultaneously by creating a separate specification chart for each symbol you want to display. Since the coordinates for the specification charts must be defined as a single range, enter all specification charts side-by-side or in the same column.

Symbol Codes

Symbol codes available in the symbol art library are shown here. Enable also provides a spreadsheet file, symbols.ssf, which is copied to your data directory at installation time.

Display symbols.ssf and follow the instructions to view some of the symbols contained in the symbol art library.

Symbol	Code	Symbol	Code	Symbol	Code
Airplane	2	Eiffel tower	Alt/156	Phone	6
Anteater	Alt/144	Elephant	Alt/146	Pig	Alt/140
Balloon	Alt/133	Envelope	+	Pine tree	(
Bear	Alt/142	Film	^	Plunger	N
Beetle	Alt/163	Fire	5	Rabbit	Alt/134
Bell	g	Fluerdelis	%	Racket	K
Benzene	,	Fork	X	Recycle	<
Boeing 747	p	Fragile	;	Refrigerator	\
Bomb	k	Frog	Alt/151	Rocket	s
Book	R	Funnel	-	Safe	I
Boot	f	Gas pump	0	Satellite	r
Bread	Alt/152	Gem	/	Saw	B
Brush	F	Giraffe	Alt/145	Scale	O
Bulb	i	Glass	V	Scissors	D
Bull	Alt/139	Hammer	?	Screwdriver	@
Bullet	j	Hand	{	Shaker	T
Butterfly	Alt/164	Heart	!	Shamrock	&
CRT	y	Hinges	G	Shark	Alt/160
Caduceus	.	House	Alt/162	Smile	l
Calculator	u	Interstate		Spade	\$
Caliper	E	highway	8	Spoon	Z
Canada (leaf)	9	Jar	W	Squid	Alt/161
Candle	S	Karate	Alt/138	Statue of	
Car	m	Key	b	Liberty	Alt/147
Carp	Alt/157	Ladies shoe	d	Store	Alt/159
Cat	Alt/136	Lady	}	Stove	[
Chicken	Alt/153	Lens	]	Swordfish	Alt/155
Chip	c	Lizard	Alt/154	System 38	x
Chopper	o	Lock	H	T-square	a
Clamp	C	Mailbox	h	TV	⌋
Club	#	Man	=	Thermometer	⌋
Comb	J	Mens shoe	e	Tuna	Alt/158
Computer	t	Modem	v	Turkey	Alt/130
Crown	Alt/141	Mouse	Alt/132	US highway	7
Dagger	3	"No" sign	:	USA map	Alt/135
Deer	Alt/137	Nursing bottle	U	Umbrella	M
Diamond	"	Oak tree	)	V-sign	q
Diskette	w	Ostrich	Alt/131	Walrus	Alt/148
Displaywriter	z	Owl	Alt/128	Whale	Alt/150
Dolphin	Alt/149	Palette	L	Willow tree	*
Double dagger	4	Palm tree	'	Witch	Y
Dove	~	Parachute	l	Woman	>
Duck	Alt/127	Parakeet	Alt/129	Wrench	A
Eagle	l	Pen	Q	Yacht	n
Eggplant	Alt/143	Pencil	P		

Figure 31: Codes for the symbol art library.

Display

To display the symbol art:

1. From the Spreadsheet Top Line Menu, select **G**raph, **S**elect. Enable displays two dialog boxes.
2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **E**dit.
4. Select **A**cept to display the Design Form.
5. From the first screen of the Design Form, select **T**ext.
6. Press **PgDn** twice to go to the third screen of the Design Form. Press **Tab** twice. At the X-Axis and Text Data box, specify the range coordinates for the specification chart at the User Text Data prompt. Do not include the labels that describe the specification chart in the range. Include only the numbers themselves.
7. From the command box in the lower-right corner of the screen, select **D**isplay.

Copy to Word Processing

Use Enable's Interwindow Copy feature to copy a symbol to a Word Processing document.

To copy a symbol to a Word Processing document:

1. Display the symbol art in a window.
2. Open a Word Processing document. See REF2:IN:Windows:Open.
3. Position the cursor in the word processing document and press **Alt/F5**.
4. Select the window number that contains the symbol art from the list of open windows.
5. Press **Alt/F5** again.

You may need to change the video mode of the screen in order to see the copied symbol. From the Top Line Menu, select **D**isplay, **V**ideo mode, **G**raphics.

Return the video mode to its normal display after viewing the copied symbol since graphics mode will slow down Enable's performance:

1. From the Top Line Menu, select **D**isplay, **V**ideo mode and press **↓** on the monitor of your choice.

Organizational Charts

Enable has special symbols that can be used to create organizational charts. Follow the instructions above for creating a specification chart and displaying symbol art, but refer to Figure 32 for a list of the special symbols. You can combine the symbols to create boxes and lines and incorporate text using the Text Chart feature. See GR:Text Charts.

Symbol	Code	Symbol	Code	Symbol	Code
|	Alt/179	⊥	Alt/193	⊕	Alt/197
⊥	Alt/180	⊤	Alt/194	⊖	Alt/217
⊤	Alt/191	⊥	Alt/195	⊗	Alt/218
⊖	Alt/192	—	Alt/196	■	Alt/219

Figure 32: Symbols used for creating an organizational chart.

Symbol Types

Several symbol types are available for use on line, XY or linear XY graphs. Enable automatically assigns symbols to data groups. You can easily override Enable's settings by specifying new symbols. A list of symbol types and their corresponding codes appears in Figure 33.

10 = Square 11 = Triangle 12 = X 13 = Less
 14 = Plus 15 = Greater 16 = Diamond 17 = Block
 18 = ♣ 19 = ♦ 20 = ♠ 21 = ♡ 22 = * 23 = ▶ 24 = ◀
 25 = ¶ 26 = § 27 = ↑ 28 = ↓ 29 = → 30 = ← 31 = ▲ 32 = ▼
 33 = ◀ 34 = ▶ 35 = ■ 36 = ■ 37 = | 38 = | 39 = ■

Figure 33: Symbol codes.

To specify symbols for each data group:

1. At the Symbol box on the second screen of the Design Form, enter a symbol code from the symbol list displayed on-screen.

For example, enter 22 on the first line of the Symbol box to display the asterisk symbol (*) at each data point for data group 1.

Text Charts

Text can be displayed anywhere on the graph by itself (as a text chart) or with any Enable graph created from spreadsheet data. Specify the location of the text on the screen, the font, the size, and the rotation. See also GR:Legends, Titles and Subtitles.

Figure 34 shows a step graph containing the text label "Projected Impact" on the graph.

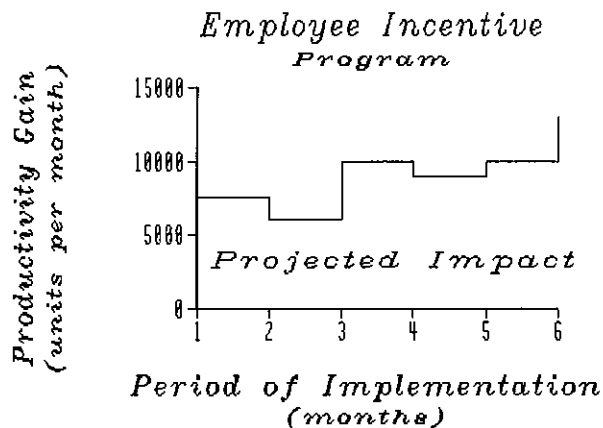


Figure 34: Text label on the graph.

Create Specification Chart

To design text to display on a spreadsheet graph, set up a text specification chart in the spreadsheet that contains the data for the graph. Create a column containing labels for the eight specifications as shown in Column E of Figure 35. Enter the specifications for your text in an adjacent column of cells (F1 through F8 in Figure 35). Requirements for the specifications are described in the following steps:

	E	F	G
1	Left	180	
2	Width	400	
3	Bottom	78	
4	Height	12	
5	Font	1	
6	Color	1	
7	Rotation	0	
8	Text	Projected Impact	
9			

Figure 35: A text specification chart.

1. The first four numbers in the specification chart are pixel coordinates that tell Enable where to position the text on the screen. You specify how far the text should be from the left side of the screen (Left), how wide to draw the text (Width), how far the text should be from the bottom of the screen (Bottom) and how tall to draw the text (Height).

The easiest way to calculate coordinates is to experiment with different settings. Use Enable's dynamic graph feature to see the effect of changes to the coordinates. See GR:Dynamic Graph.

2. Next, specify a font code (Font). See GR:Fonts for font codes.

3. Select a color code (Color) from the color code chart in Figure 36.

0 = Default*	5 = Violet
1 = Red	6 = Gold
2 = Green	7 = Lime
3 = Blue	8 = Turquoise
4 = Brown	9 = Orange

*Default will appear white on screen and will print in black on a plotter.

Figure 36: Color codes.

4. Specify the degree of rotation (Rotation). Enter a number between 0 and 359. Enable will slant the text in clockwise fashion from 0 degrees to 359 degrees.
5. You must also specify the text that should appear in the graph (Text) as shown in Figure 35.

Several text labels can be displayed simultaneously by creating separate specification charts for each label. Since the coordinates for the text must be defined as a single range, enter all user specification charts either side-by-side or in the same column.

Display Text Only

To display text as a text chart:

1. From the Spreadsheet Top Line Menu, select **Graph**, **Select**. Enable displays two dialog boxes.
2. At the Current Settings box, select a graph from the list.
3. At the Options box, select **Edit**.
4. Select **Accept** to display the Design Form.
5. From the first screen of the Design Form, select **Text**.
6. Press **Pgdn** twice to go to the third screen of the Design Form. Press **Tab** twice. At the X-Axis and Text Data box, specify the range coordinates for the specification chart(s) at the User Text Data prompt. Only numbers should be included in this range. Do not specify a range that includes the labels for the coordinates.
7. Press **End** to accept the graph setting.

See GR:Display to display your text chart; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Display on a Graph

To display text on an Enable graph:

1. Follow the instructions for creating any type of graph. See GR:Bar Graphs, GR:High-Low-Close Graphs, GR:Line Graphs, GR:Linear XY Graphs, GR:Pie Charts, GR:Step Graphs and GR:XY Graphs.

- At the X-Axis and Text Data box on the third screen of the Design Form, specify the range coordinates for the specification chart(s) at the User Text Data prompt. Only numbers should be included in this range. Do not specify a range that includes the label names for the coordinates.

Note that if you display an Enable graph with text on it in Perspective Junior, the text is passed to Perspective as a column header. See REF2:PJ:Graph Parameters:Row and Column Headers.

- Press **End** to accept the graph setting.

See GR:Display to display your text chart; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Titles and Subtitles

Titles and subtitles are used on the graph to identify the data presented. See also GR:Fonts.

To include a main title, a main subtitle, and titles and subtitles for the x- and y-axes:

- At the Titles, Subtitles and Legend box on the first screen of the Design Form, enter descriptive text for the graph. Titles and subtitles can be up to 24 characters long.

The Legend prompt at the bottom of the box is used to pass a column title to Perspective Junior. See REF2:PJ:Graph Parameters:Row and Column Titles for more information.

Figure 37 shows a main title, a main subtitle, y-axis title and subtitle and x-axis title and subtitle.

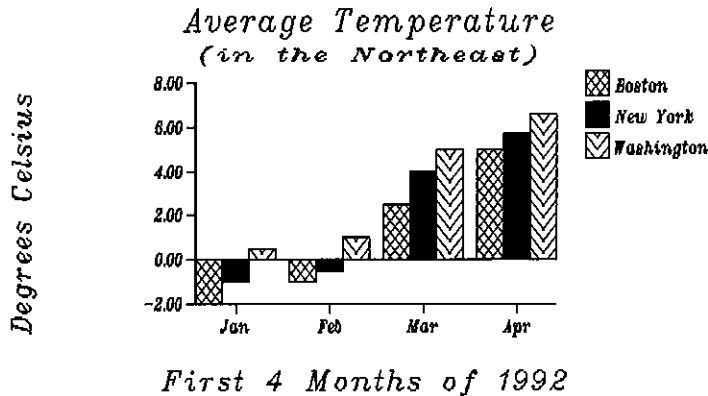


Figure 37: Titles and subtitles displayed in a bar graph.

XY Graphs

An XY graph is a two-dimensional line graph used to show the relationship between two variables. For example, the graph in Figure 38 shows the correlation between SAT scores and college math performance.

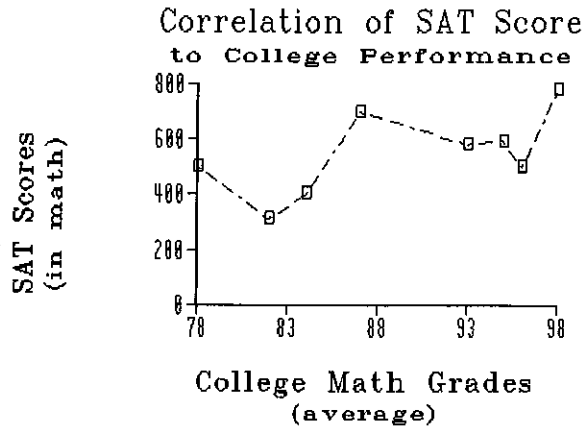


Figure 38: An XY Graph.

Data points in an XY graph are plotted relative to both the x- and y-axes. The difference between a line graph and an XY graph is that the x-axis in an XY graph is a numeric scale. Therefore, the data you specify for the x-axis must be listed in ascending order. Perform a sort in spreadsheet or index a field in the database before using the data to create an XY graph.

Create

To create an XY graph:

1. From the first screen of the Design Form, select **X-Y**.
2. Select either or both of the following design options:
 - Draw Line.** Connect the data points with a solid line.
 - Draw Symbols.** Display a symbol for each data point.
 To specify your own line patterns and symbol types, see GR:Line Patterns and GR:Symbol Types.
3. At the Titles, Subtitles and Legend box, type text for the title and subtitles.
4. At the Data Group Definition box on the second screen of the Design Form, specify the Y-axis data. See GR:Data Groups.

5. At the X-Axis and Text Data box on the third screen of the Design Form, specify the x-axis data at the X-axis Data prompt. See GR:Axis Labels:X-Axis Data.
6. Press **End** to accept the graph setting.

See GR:Display to display your XY graph; GR>Edit to make modifications; GR:Save to save your graph setting; GR:Print to print and GR:Plot to plot.

Graphics Quick Commands

In addition to using the Top Line Menu to accomplish your word processing tasks, Enable also provides an extensive range of quick commands. Reviewing these commands, and noting which of them are most applicable to the type of tasks you perform regularly, will facilitate your work.

To use the quick commands, press the appropriate sequence of keystrokes:

Function	Keystroke Combination
Display Dynamic Graph	Shift/F7

GR:44

Enable
