Graphs in Reports

Defining a Graph

The Graph block defines the Graph in a report and all statements inside the Graph block relate just to that Graph.

The SIZE and LOCATION statements control the position and size of the Graph. For example to positions a Graph that is 50% of the width and height of the screen and quarter of the way across the screen:

```
GRAPH measure,weekly.*
   SIZE 50%;50%
   LOCATION 25%;25%
END GRAPH
```

Defining and Labelling the Axes

The x and y axis are defined using the X_AXIS and Y_AXIS statements.

```
GRAPH measure,weekly.*
   X_AXIS <BOTTOM> "Weekly"
   Y_AXIS <LEFT> "Measures"
   LINE 'Actual'
   BAR 'Budget'
END GRAPH
```

LEFT or RIGHT can be used to position the Y_AXIS. TOP and BOTTOM position the X_AXIS. Multiple axes can be declared within the one graph block with the list of fields to plot defined immediately after the axis statement:

```
GRAPH measure,weekly.*
   X_AXIS <STEP 5,BOTTOM> "Weekly"
   Y_AXIS <LEFT> "Measures"
   LINE 'Actual';'Budget'
   Y_AXIS <RIGHT> "Variance"
   LINE '% Variance'
END GRAPH
```

The STEP attribute specifies how often to print ticks on the X-axis.

Adding Text and Labels to a Graph

Use the TITLE statement in the Graph block to add a title:

```
TITLE "Breakdown Of Product Sales"
```

Labels, defined using the LABEL block, are attached to either a plot or anchored to a point on the graph.

The LEGEND statement in the LABEL block writes out the legends for the graph:

```
LABEL 1
   CENTRE,MIDDLE
   LOCATION RIGHT;MIDDLE
   LEGEND
END LABEL
```

Changing the Graph's Border and Background

The [NO] BORDER statement controls the style of the Border and the BACK-GROUND statement controls the background colour:

```
GRAPH
   …
   BACKROUND PCFILE "gray.bmp"
   BORDER <STYLE  90 + 1 + 100>
END GRAPH
```

1 Single line
2 Thick line
3 Beaded (raised effect)
4 3D bump
5 3D recessed
6 3D bevel
7 3D recessed bevel
8 Button
9 3D button
10 3D shallow border button
11 Raised beading
12 Recessed beading
	90 Scroll Bars along
	     the whole width
	+1 Scroll Bars up to
	     the headings
	+2 Fit Height to an
	     exact number of
	     rows
	+4 Fit width to an
	     exact number of
	     columns
		100 Add a
		       drop
		       shadow

Border Styles can be in the range 1-12 or 90-97 or 190-197.

Graphs in Reports (cont'd)

Adding Grid Lines

Grid lines are lines on the graph that can be placed to highlight a position. For example to show a grid at each major tick, at the value 5, at the Wk 40 field and at today's date:

```
GRID
GRID 5
GRID 'Wk 40'
GRID DATE ""
```

Using Colors and Fonts

To colour the whole Graph in red background:

```
COLOUR ;RED    ! Positioned in the Graph block
```

Individual lines and bars are coloured using attributes (See drawing pie or bar chart)

The Font can also be set for the whole graph using a FONT statement:

```
GRAPH Products,Weekly.Q1;Q2;Q3
   ...
   COLOUR;lemon
   FONT Arial;10 POINTS
END GRAPH
```

Selecting or Excluding values

Use the SELECT or EXCLUDE statements in the graph block. For example:

```
SELECT TOP 10 REFERENCE
EXCLUDE BOTTOM 5 PLOT
EXCLUDE PLOT * WHERE 'variance' <NEGATIVE>
EXCLUDE REFERENCE * WHERE * <INVALID>
SELECT PLOT * WHERE '% Variance' <RANGE 1:>
```

Usually placed after the appropriate sort statements

Sorting the Graph

The SORT block is used to sort the rows in a Graph. For example to sort the Graph based on the Actual Figures:

```
GRAPH
   ...
   SORT REFERENCE *
     FIELDS 'Actual' <ASCENDING>
   END SORT
END GRAPH
```

To sort the Graph based on the Headings:

```
GRAPH
   ...
   SORT PLOT *
   HEADINGS * <ASCENDING>
   END SORT
END GRAPH
```

Drawing a Bar Graph

The Bar statement controls the list of fields that is to be displayed from the tuple that is used to invoke the report. The using clause can optionally be used to control the plotting fields

```
GRAPH measure,weekly.*
   BAR 'Actual' <COLOUR GREEN>
   BAR 'Budget' <COLOUR GREY>
   BAR 'Forecast' USING &
   weekly.'Wk41':'Wk52'
END GRAPH
```

Drawing a Pie

The Pie chart is drawn using a PIE statement in the Graph block:

```
GRAPH measure,product.*
   PIE *
   PULLOUT <MAX > 10%
   EXPAND < RANGE 0:20>
END GRAPH
```

Drawing a HILO/HILOCLOSE

HILO is used to show a graph with an upper and lower value for each plot value. HILOCLOSE can also show a closing point ideal for showing currency and stock and share price variations:

```
GRAPH Measure,Weekly.*
   X_AXIS <CLUSTER,BOTTOM,FONT Arial>
   Y_AXIS <LEFT,FONT Arial>
   HILO 'Startlo';'Endhigh'<STYLE 1>
END GRAPH

GRAPH Measure,Weekly.*
   X_AXIS <CLUSTER,BOTTOM,FONT Arial>
   Y_AXIS <LEFT,FONT Arial>
   HILOCLOSE 'Startlo';'Endhigh';'Middle'
END GRAPH
```

Drawing a Line Graph

The Line statement controls the list of fields that is to be displayed from the tuple that is used to invoke the report:

```
GRAPH measure,weekly.*
   LINE 'Actual' <COLOUR GREEN>
   LINE 'Budget' <COLOUR GREY>
   LINE 'Forecast' USING weekly.'Wk41'Wk52'
END GRAPH
```

Drawing a Scatter Chart

A scatter chart is drawn using two or more fields from one dimension:

```
GRAPH Measure,Weekly.*
   X_AXIS <BOTTOM,FONT Arial>
   Y_AXIS <LEFT,FONT Arial>
   Scatter 'Actual';'Budget'
END GRAPH
```

Standard Curves to include on Graphs

The following statements if included in a graph block give examples of the standard curves which can be drawn on a Graph.

```
EXPONENTIAL 3,2 "Expo" <COLOUR BLUE>
GEOMETRIC 3,2 "Geometric" <COLOUR LIGHT_BLUE>
HYPERBOLIC 10,3 "Hyper" <COLOUR ORANGE>
LINEAR 10,3 "Straight Line" <COLOUR LEMON>
LOG QUADRATIC 10,3,2 "Log Quad" <COLOUR RED>
MODIFIED HYPERBOLIC 10,3 "MH" <COLOUR WHITE>
MODIFIED EXPONENTIAL 10,3 "ME" <COLOUR CYAN>
POLYNOMIAL 1,3,2 "Poly" <COLOUR LIGHT_RED>
QUADRATIC 1,1,0 "Quadratic" <COLOUR BROWN>
RATIONAL 3,3 "Rational" <COLOUR BLACK>
SEMILOG 3,3 "Semi log" <COLOUR GREY>
```

SEE HOLOS HELP REPORT GRAPH regression curves.

PG Chart Object

The Object Block defines a PG chart in a report. It is not part of the GRAPH block syntax and is a separate block in the report language. See the Reporting Quick Reference Card.

Graphs in Reports (cont'd)