BARCHART Statement

Creates a bar chart computed from input data.

Tips: For charts that have a large number of bars that are very close together, slight variations in spacing that normally occur due to integer rounding can become more obvious. Subpixel rendering provides more precise bar spacing in that case. In SAS 9.4M2 and in earlier releases, specify SUBPIXEL=ON in the BEGINGRAPH statement to enable subpixel rendering. See SUBPIXEL=. Starting with SAS 9.4M3 , subpixel rendering is enabled by default.

To disable subpixel rendering in SAS 9.4M3 and in later releases, specify SUBPIXEL=OFF in the BEGINGRAPH statement or in an ODS GRAPHICS statement. For information about the BEGINGRAPH statement SUBPIXEL= option, see SUBPIXEL=. For information about the ODS GRAPHICS statement SUBPIXEL= option, see ODS GRAPHICS Statement.

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Syntax

BARCHART CATEGORY=*column* | *expression* </option(s)>;

BARCHART CATEGORY=*column* | *expression*
RESPONSE=*numeric-column* | *expression* </*options*>;

Summary of Optional Arguments

Appearance options

BARWIDTH=*number*
: specifies the width of a bar as a ratio of the maximum possible width.

BASELINEATTRS=*style-element* | (*line-options*)
: specifies the appearance of the baseline.

CLUSTERWIDTH=*number*
specifies the width of the group clusters as a fraction of the midpoint spacing or bin width.

COLORBYFREQ=TRUE | FALSE
specifies whether the bar colors are based on statistical values when the COLORRESPONSE= option is not specified.

COLORMODEL=*color-ramp-style-element* | (*color-list*)
specifies a color ramp to use with the COLORRESPONSE= option or the COLORBYFREQ= option.

COLORRESPONSE=*numeric-column* | *range-attr-var* | *expression*
specifies the column or range attribute variable to use to map the bar colors to a continuous color gradient.

CONNECTATTRS=*style-element* | *style-element* (*line-options*) | (*line-options*)
specifies the appearance of the bar connect lines.

CONNECTBREAK=TRUE | FALSE
specifies whether the connect line is broken for values that have no observations.

DATASKIN=NONE | CRISP | GLOSS | MATTE | PRESSED | SHEEN
enhances the visual appearance of the filled bars.

DATATRANSPARENCY=*number*
specifies the degree of the transparency of the bar fill, bar outline, connect line, and bar labels, if displayed.

DISPLAY=(*display-options*) | STANDARD | ALL
specifies which bar features to display.

DISPLAYBASELINE=ON | OFF | AUTO
specifies whether the baseline is displayed.

DISPLAYZEROLENGTHBAR=TRUE | FALSE
specifies whether zero-length bars are drawn.

FILLATTRS=*style-element* | *style-element* (*fill-options*) | (*fill-options*)
specifies the appearance of the filled bar area.

FILLENDCOLOR=*color*
specifies the end color of the color gradient for the bar fill.

FILLPATTERNATTRS=*style-element* | (*fill-pattern-options*)
specifies the appearance of the pattern-filled areas.

FILLTYPE=SOLID | ALPHAGRADIENT | COLORGRADIENT | GRADIENT
specifies the bar fill type.

INDEX=*positive-integer-column* | *expression*
specifies indices for mapping bar attributes (fill and outline) to one of the GraphData1–GranphDataN style elements.

INTERVALBARWIDTH=*dimension*
specifies the width of the bars in an interval bar chart as a ratio of the interval width.

ORIENT=VERTICAL | HORIZONTAL
specifies the orientation of the Y axis and the bars.

OUTLINEATTRS=*style-element* | *style-element* (*line-options*) | (*line-options*)
specifies the appearance of the bar outlines.

TARGET=*numeric-column* | *expression*
specifies the target value for each bar.

Axes options

BASELINEINTERCEPT=*number*
: specifies the response axis intercept for the baseline.

PRIMARY=TRUE | FALSE
: specifies that the data columns for this plot and the plot type be used for determining default axis features.

XAXIS=X | X2
: specifies whether data are mapped to the primary X (bottom) axis or to the secondary X2 (top) axis.

YAXIS=Y | Y2
: specifies whether data are mapped to the primary Y (left) axis or to the secondary Y2 (right) axis.

Data tip options

TIP=(*role-list*) | NONE
: specifies the information to display when the cursor is positioned over a bar.

TIPFORMAT=(*role-format-list*)
: specifies display formats for tip columns.

TIPLABEL=(*role-label-list*)
: specifies display labels for tip columns.

Label options

BARLABEL=TRUE | FALSE
: specifies whether the bar statistic value is displayed at the end of the bar.

BARLABELATTRS=*style-element* | *style-element* (*text-options*) | (*text-options*)
: specifies the text properties of the bar label text.

BARLABELFITPOLICY=AUTO | NONE | INSIDEPREFERRED
: specifies a policy for avoiding collisions among the bar labels when labels are displayed.

BARLABELFORMAT=*format*
: specifies the text format used to display the bar label.

LEGENDLABEL="*string*"
: specifies a label to be used in a discrete legend for this plot.

SEGMENTLABEL=TRUE | FALSE
: specifies whether a label is displayed inside each bar segment.

SEGMENTLABELATTRS=*style-element* | *style-element* (*text-options*) | (*text-options*)
: specifies the text properties of the text for the bar segment label.

SEGMENTLABELFITPOLICY=NONE | NOCLIP | THIN
: specifies a policy for fitting the bar segment labels within the bar segments.

SEGMENTLABELFORMAT=*format*
: specifies the text format for the bar segment labels.

Midpoint options

DISCRETEOFFSET=*number*
: specifies an amount to offset all bars from the category midpoints.

GROUP=*column* | *discrete-attr-var* | *expression*
: creates a separate bar segment or bar for each unique group value in the specified column.

GROUP100=NONE | MAGNITUDE | POSITIVE
: displays the computed response values (FREQ, SUM, or MEAN), normalized to 100%.

GROUPDISPLAY=STACK | CLUSTER
specifies how to display grouped bars.

GROUPORDER=DATA | REVERSEDATA | ASCENDING | DESCENDING
specifies the ordering of the groups within a category.

INCLUDEMISSINGGROUP=TRUE | FALSE
specifies whether missing values of the group variable are included in the plot.

ODS options

URL=*string-column*
specifies an HTML page to display when the bar is selected.

Plot reference options

NAME="*string*"
assigns a name to this plot statement for reference in other template statements.

Statistics options

COLORSTAT=FREQ | PCT | SUM | MEAN | PROPORTION
specifies the statistic to be calculated for the data range of the bar-color gradient.

STAT=FREQ | PCT | SUM | MEAN | PROPORTION
specifies the statistic to be computed for the Y axis.

Required Arguments

Specifying only CATEGORY= creates a bar chart with bars that, by default, represent frequency counts or percents of CATEGORY. Specifying both CATEGORY= and RESPONSE= creates a bar chart with bars representing summarized values of RESPONSE categorized by CATEGORY.

CATEGORY=*column* | *expression*
specifies the column or expression for the category values.

Notes	You can use X= as an alternative to CATEGORY=. If you use X=, then be aware that the TIP=, TIPFORMAT=, and TIPLABEL= options recognize X as the category role and not as CATEGORY.
	For interval category values, if a user-defined format is applied to the category column, the format should map each category value to only one unique formatted value. Otherwise, unexpected results might occur.

RESPONSE=*numeric-column* | *expression*
specifies the numeric column or expression for the response values.

Notes	You can use Y= as an alternative to RESPONSE=. If you use Y=, then be aware that the TIP=, TIPFORMAT=, and TIPLABEL= options will recognize Y as the response role and not RESPONSE in that case.
	This option is required only when you want summarized values of RESPONSE that are categorized by CATEGORY.

Optional Arguments

BARLABEL=TRUE | FALSE

specifies whether the bar statistic value is displayed at the end of the bar. For grouped clustered bars, each bar is labeled with the summarized value of the bar. For grouped stacked bars, the segmented bar is labeled with the accumulated, summarized value of all the bar segments.

Default	FALSE
Note	By default, the bar-label format is derived from the format that is assigned to the response column or from BEST6 if no format is assigned. The derived format retains the precision of the response-column format and, if necessary, increases the format width to accommodate the summarized value on the response axis.
Tip	The font and color attributes for the label are specified by the BARLABELATTRS= option. The text format is specified by the BARLABELFORMAT= option.
See	boolean for other Boolean values that you can use.

BARLABELATTRS=*style-element* | *style-element* (*text-options*) | (*text-options*)

specifies the text properties of the bar label text.

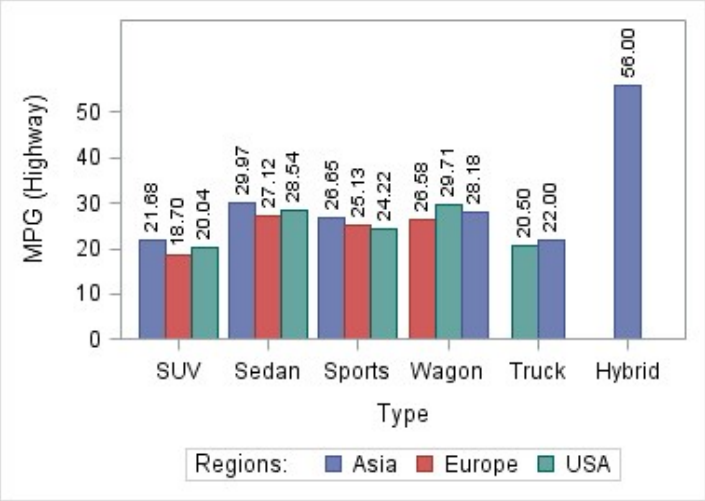
Default	The GraphDataText style element.
Requirement	For this option to take effect, BARLABEL=TRUE must be specified.
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Text Options for available *text-options*.

BARLABELFITPOLICY=AUTO | NONE | INSIDEPREFERRED

specifies a policy for avoiding collisions among the bar labels when labels are displayed.

AUTO

for a vertical bar chart, rotates the bar labels if the labels exceed the midpoint spacing. For a horizontal bar chart, always draws the labels horizontally. The following figure shows an example.

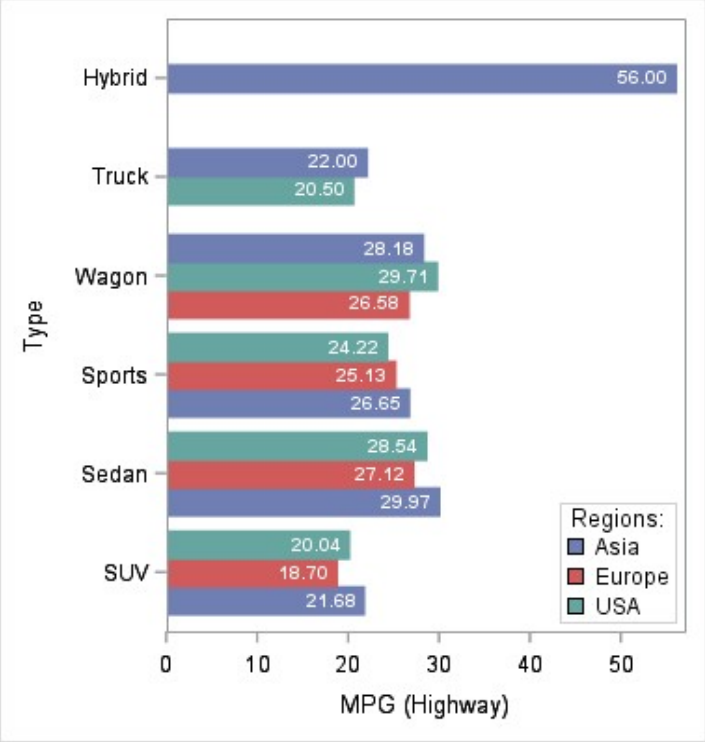


See the BARWIDTH= option for more information about the bar spacing.

NONE
does not rotate the bar labels. Labels that are too long overlap.

INSIDEPREFERRED
attempts to place the bar labels in a horizontal bar chart inside the bars. The following figure shows an example.

Note: This feature applies to SAS 9.4M5 and to later releases.



Restrictions	This option applies to non-grouped or cluster-grouped horizontal bar charts only.
	Label splitting is not supported when a label is placed inside a bar.
Requirement	For a grouped horizontal bar chart, the GROUPDISPLAY=CLUSTER option must be in effect. Otherwise, the INSIDEPREFERRED policy is ignored.
Interaction	If SEGMENTLABEL=TRUE is in effect, the INSIDEPREFERRED policy is ignored, and the labels are placed outside.
Note	If any bar label cannot fit inside the length of its bar, that label is placed outside of its bar and is fit using the AUTO fit policy.

Labels can collide along their length and along their height. In some cases, if one or more labels collide when the specified fit policy is used, then all of the labels are dropped from the display. When that occurs, the following warning message is written to the SAS log:

```
WARNING: The bar labels are suppressed. Use BARLABELFITPOLICY=NONE to
force the labels to be displayed.
```

TIP If the labels collide along their height, then using the BARLABELATTRS= option to reduce the label font size might eliminate the collision.

Default	AUTO
Requirement	For this option to take effect, BARLABEL=TRUE must be specified.

BARLABELFORMAT=*format*
specifies the text format used to display the bar label.

Default	The bar-label format is derived from the format that is applied to the response column or from BEST6 if no format is assigned. The derived format retains the precision of the response-column format and, if necessary, increases the format width to accommodate the summarized value on the response axis.
Requirement	For this option to take effect, BARLABEL=TRUE must be specified.
Note	When a bar-label format is specified with this option, the bar labels are formatted as specified by *format*. The specified format is not automatically expanded to accommodate values that are too wide.
Tip	If you want the bar-label format to expand automatically for summarized values on the response axis, specify the format for the response column rather than in this option.

BARWIDTH=*number*
specifies the width of a bar as a ratio of the maximum possible width.

Default	0.85
Range	0–1, where 0 is the minimum width, which is one pixel wide, and 1 is the maximum possible width
Interaction	Starting with SAS 9.4M3 , the INTERVALBARWIDTH= option overrides this option for an interval bar chart.
Notes	This option is needed only to change the default behavior.
	By default, the bar width automatically adjusts based on the number of bars to be displayed and the wall width.
Tip	To remove any inter-bar gap, set BARWIDTH=1.

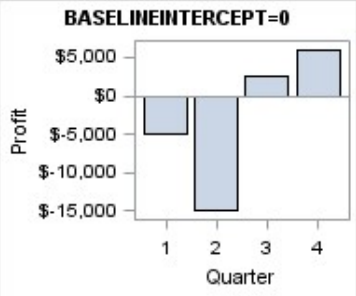
BASELINEATTRS=*style-element* | (*line-options*)
specifies the appearance of the baseline.

Default	The GraphAxisLines style element.
Notes	The baseline is always drawn by default.
	When *style-element* is specified, only the style element's COLOR, LINESTYLE, and LINETHICKNESS attributes are used.

Tip	To suppress the baseline, set the line thickness to 0: `baselineattrs=(thickness=0)`
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Line Options for available *line-options*.

BASELINEINTERCEPT=*number*

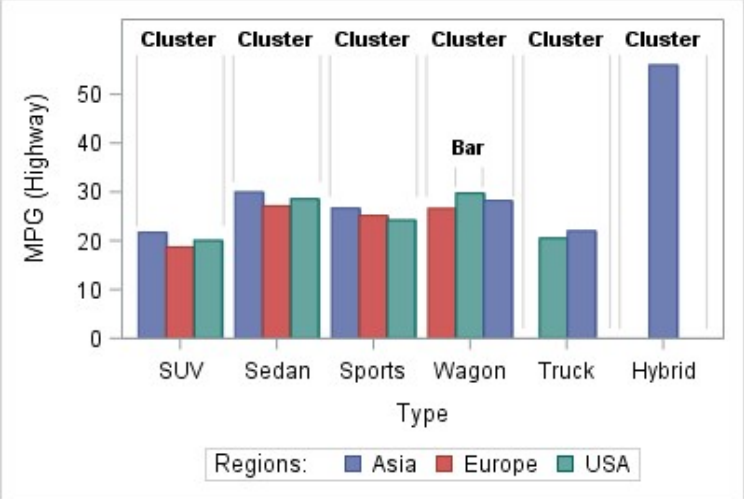
specifies the response axis intercept for the baseline. Prior to SAS 9.4M5, the baseline is always displayed in the chart, whether for a specified value or for the default value. Starting with SAS 9.4M5, the baseline display is controlled by the DISPLAYBASELINE= option, which is ON by default. When the BASELINEINTERCEPT= option is used, the axis range is adjusted to include the baseline, and the baseline is placed at the specified value on the response axis.



Default	0
Interactions	If GROUPDISPLAY=STACK is specified, then this option is ignored and the baseline is not displayed.
	This option is ignored when the GROUP100= option is used.
	If necessary, the response axis data range is extended to include the baseline intercept. When a logarithmic response axis is requested and BASELINEINTERCEPT= specifies 0 or a negative value, the response axis reverts to a linear axis. To restore the log axis in that case, set BASELINEINTERCEPT= to a positive value.
	When DISPLAYBASELINE=AUTO is in effect, the baseline is not displayed if the baseline intercept is equal to the minimum or maximum value of the response-axis range.
Note	Label positions are automatically adjusted to prevent the labels from overlapping.
Tips	Control the appearance of the baseline with the BASELINEATTRS= option.
	To suppress the baseline prior to SAS 9.4M5 , use the BASELINEATTRS= option to set the line thickness to 0. Starting with SAS 9.4M5 , specify DISPLAYBASELINE=OFF.
	The baseline does not add a tick or a tick value to the axis. To label the baseline, use a REFERENCELINE statement to overlay a line with the same X or Y value and include the CURVELABEL= option to specify the label text.

CLUSTERWIDTH=*number*

specifies the width of the group clusters as a fraction of the midpoint spacing or bin width.



Default	0.85
Range	0–1, where 0 is the minimum width, which is one pixel wide, and 1 is the maximum possible width
Requirement	For this option to take effect, the GROUP= option must also be specified, and the GROUPDISPLAY= option must be set to CLUSTER.
Interaction	When GROUPDISPLAY=CLUSTER, the default BARWIDTH is 1.0.

COLORBYFREQ=TRUE | FALSE

specifies whether the bar colors are based on statistical values when the COLORRESPONSE= option is not specified. Setting this option to **TRUE** enables you to color the bars based on frequency counts, percentages, or proportions.

Note: This feature applies to SAS 9.4M3 and to later releases.

Default	FALSE
Requirement	The COLORSTAT= option must be FREQ, PCT, or PROPORTION for this option to have any effect.
Interactions	This option is ignored when the COLORRESPONSE= option is specified.
	When the GROUP= option is specified with the COLORBYFREQ= option, the color attributes are controlled by the COLORBYFREQ= option.
	The COLOR= suboption of the FILLATTRS=, FILLPATTERNATTRS=, and OUTLINEATTRS= options overrides this option for the associated color attribute.
Note	This option is independent of the STAT= and RESPONSE= options.
Tips	Use the COLORSTAT= option to specify whether frequency counts, percentages, or proportions are computed for the COLORRESPONSE= column.
	Use the FILLTYPE= option to specify whether each bar is filled with a solid color or with a gradient color.
See	Bar Chart with Bar Colors Controlled by a Statistic

COLORMODEL=*color-ramp-style-element* | (*color-list*)
specifies a color ramp to use with the COLORRESPONSE= option or the COLORBYFREQ= option.

color-ramp-style-element
specifies the name of a color-ramp style element. The style element should contain these style attributes:

STARTCOLOR
specifies the color for the smallest data value of the COLORRESPONSE= column.

NEUTRALCOLOR
specifies the color for the midpoint of the range of the COLORRESPONSE= column.

ENDCOLOR
specifies the color for the highest data value of the COLORRESPONSE= column.

(*color-list*)
specifies a space-separated list of colors to use in the color ramp. You can use style attribute references such as GraphData3:Color, color names, or RGB, CMYK, HLS, and HSV (HSB) color codes to specify a color. The list can contain a mix of style attribute references, color names, and color codes.

Requirement	The list of colors must be enclosed in parentheses.
See	color

Default	For outline-only bars, the ThreeColorAltRamp style element
	For bars with fill, the ThreeColorRamp style element
Interaction	For this option to take effect, the COLORRESPONSE= option or the COLORBYFREQ=TRUE option must also be specified.
Tip	Use the DISPLAY= option to specify whether outlines and fills are displayed.

COLORRESPONSE=*numeric-column* | *range-attr-var* | *expression*
specifies the column or range attribute variable to use to map the bar colors to a continuous color gradient.

Note: This feature applies to SAS 9.4M3 and to later releases.

range-attr-var
specifies a range attribute map variable that is defined in a RANGEATTRVAR statement.
RANGEATTRVAR Statement

Restriction	A range attribute map variable specification must be a direct reference to the attribute map variable. It cannot be set as a dynamic variable.
See	RANGEATTRVAR Statement

When a numeric column or expression is specified, the range of column or expression values are linearly mapped to the color ramp that is specified by the COLORMODEL= option. Each bar is colored using one color from the gradient range. When a range attribute map variable is specified, the colors that are defined in the associated range attribute map are used instead.

Requirement	For a grouped plot, the COLORRESPONSE values should remain constant for each group value. If the COLORRESPONSE column has multiple values for a single GROUP value, unexpected results might occur.
Interactions	The COLORBYFREQ= option is ignored when this option is specified.
	When the GROUP= option is specified with the COLORRESPONSE= option, the color attributes are controlled by the COLORRESPONSE= option.
	When fill, fill pattern, or both are displayed, this option overrides suboption COLOR= in the FILLATTRS= option and in the FILLPATTERNATTRS= option and varies the color according to the color gradient or the attribute map.
	When only the outlines are displayed, this option overrides suboption COLOR= in the OUTLINEATTRS= option and varies the outline color according to the color gradient or the attribute map.
Tips	To display a legend with this option in effect, use a CONTINUOUSLEGEND statement.
	Use the COLORSTAT= option to specify the statistic to compute for the COLORRESPONSE= column.
	Use the FILLTYPE= option to specify whether each bar is filled with a solid color or with a gradient color.
	For a numeric column or expression, the ThreeColorRamp style element defines the fill color gradient, and the ThreeColorAltRamp style element defines the outline color gradient.

COLORSTAT=FREQ | PCT | SUM | MEAN | PROPORTION
specifies the statistic to be calculated for the data range of the bar-color gradient.

Note: This feature applies to SAS 9.4M3 and to later releases.

The statistics that are available depend on the COLORRESPONSE= and COLORBYFREQ= option specifications. When the COLORRESPONSE= option is specified, the following values are valid:

SUM

MEAN

When the COLORRESPONSE= option is not specified and COLORBYFREQ=TRUE is in effect, the following values are valid:

FREQ	frequency count
PCT	percentages between 0 and 100
PROPORTION	proportions between 0 and 1

Default	FREQ when the COLORRESPONSE= option is not specified and COLORBYFREQ=TRUE is in effect.
	SUM when the COLORRESPONSE= option is specified.
Interactions	This option is ignored when the COLORRESPONSE= option is not specified and COLORBYFREQ=FALSE is in effect.

	This option might affect existing SAS programs. For programs written before SAS 9.4M3 , if STAT= and COLORRESPONSE= are specified in a BARCHART statement, then the bar-chart colors and color statistic might change from those of the previous SAS releases. To restore the original colors and color statistic in that case, set COLORSTAT= in the BARCHART statement to the same statistic that is specified in STAT=.
Note	This option is independent of the STAT= and RESPONSE= options.
See	COLORBYFREQ=
	COLORRESPONSE=
	STAT=
	Bar Chart with Bar Colors Controlled by a Statistic

CONNECTATTRS=*style-element* | *style-element* (*line-options*) | (*line-options*)
specifies the appearance of the bar connect lines.

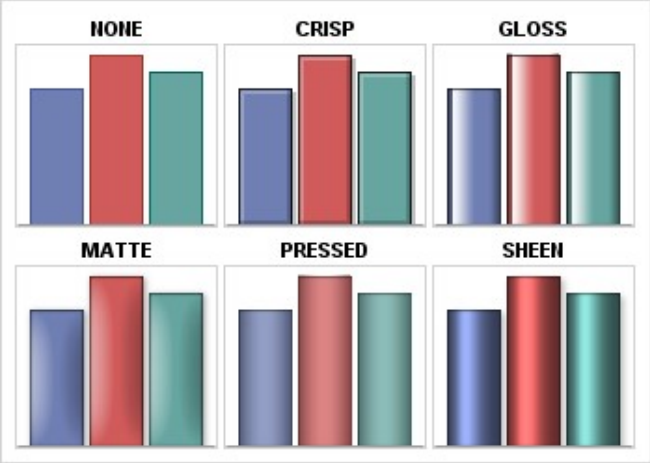
Default	The GraphConnectLine style element.
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Line Options for available *line-options*.

CONNECTBREAK=TRUE | FALSE
specifies whether the connect line is broken for values that have no observations.

Note: This feature applies to SAS 9.4M5 and to later releases.

Default	FALSE
Requirement	DISPLAY= must include CONNECT for this option to have any effect.
Interaction	This option is ignored when the GROUP= option is in effect.

DATASKIN=NONE | CRISP | GLOSS | MATTE | PRESSED | SHEEN
enhances the visual appearance of the filled bars. The following figure shows bars with each of the skins applied.



Default	The DATASKIN= option value that is specified in the BEGINGRAPH statement. If not specified, then the GraphSkins:DataSkin style element value is used.
Restriction	Starting with SAS 9.4M1 , the maximum number of skinned graphical elements is limited to 200 per plot in an OVERLAY or PROTOTYPE layout. When this limit is exceeded for a plot, the specified data skin is not applied to that plot. In that case, use the DATASKINMAX= option in your ODS GRAPHICS statement to increase the maximum limit.
Requirement	For this option to have any effect, the fill must be enabled by the ODS style or the DISPLAY= option.
Interactions	This option overrides the BEGINGRAPH statement DATASKIN= option.
	The data skin appearance is based on the FILLATTRS= color.
	When a data skin is applied, all bar outlines are set by the skin, and the OUTLINEATTRS= option is ignored.
	When FILLTYPE=GRADIENT is in effect, DATASKIN=SHEEN is ignored. In that case, use one of the other skins.

DATATRANSPARENCY=*number*
specifies the degree of the transparency of the bar fill, bar outline, connect line, and bar labels, if displayed.

Default	0
Range	0–1, where 0 is opaque and 1 is entirely transparent
Tip	The FILLATTRS= option can be used to set transparency for just the filled bar area. You can combine this option with FILLATTRS= to set one transparency for the bar outlines and connect lines but a different transparency for the bar fills. Example: `datatransparency=0.2 fillattrs=(transparency=0.6)`

DISCRETEOFFSET=*number*
specifies an amount to offset all bars from the category midpoints.

Default	0 (no offset, all bars are centered on the category midpoints)

Range	-0.5 to +0.5, where 0.5 represents half the distance between category ticks. Normally, a positive offset is to the right when ORIENT=VERTICAL, and up when ORIENT=HORIZONTAL. (If the layout's axis options set REVERSE=TRUE, then the offset direction is also reversed.)
Tip	Setting the discrete offset for the plots does not affect the axis minimum and maximum offsets. In some cases, setting a discrete offset can cause clipping at each end of the axis. In those cases, use the OFFSETMIN= and OFFSETMAX= axis options to increase the axis minimum and maximum offsets to accommodate the discrete offset.
See	About the DISCRETEOFFSET= Option
	About the DISCRETEOFFSET= Option for information about the REVERSE=, OFFSETMIN=, and OFFSETMAX= axis options
	ORIENT=

DISPLAY=(*display-options*) | STANDARD | ALL
specifies which bar features to display.

(*display-options*)
specifies a space-separated list of one or more display options, enclosed in parentheses. The list can contain one or more of the following options:

CONNECT
displays the connect lines, which are line segments that connect adjacent midpoints at the end of each bar.

FILL
displays the bar fill color

FILLPATTERN
displays the bar fill pattern

Tip	For this option to have any effect, the active ODS style must specify a fill pattern or a fill pattern must be specified with the FILLPATTERNATTRS= option.

OUTLINE
displays the bar outline

STANDARD
specifies FILL and OUTLINE

ALL
specifies all features: CONNECT, FILL, FILLPATTERN, and OUTLINE

Default	The GraphBar:DisplayOpts style reference.
Interaction	Connect lines are not drawn when the GROUP= option is in effect.
Note	The connect lines are drawn in axis order starting with SAS 9.4M3 . They are drawn in data order in prior releases.

Tips	Use the OUTLINEATTRS=, FILLATTRS=, and FILLPATTERNATTRS= options to control the appearance of the bars.
	Use CONNECTATTRS= to control the appearance of the connect lines.
	You can specify both FILL and FILLPATTERN to combine solid fills and pattern fills in the bars.

DISPLAYBASELINE=ON | OFF | AUTO
specifies whether the baseline is displayed.

Note: This feature applies to SAS 9.4M5 and to later releases.

ON
always displays the baseline.

OFF
does not display the baseline.

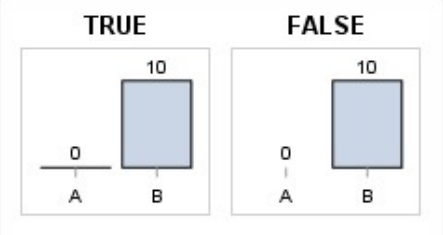
AUTO
displays the baseline if the baseline intercept is within the response-axis range, excluding the minimum and maximum axis values. This is the typical case when the bar chart includes both positive and negative bars, and the default baseline intercept of 0 is used. If the baseline intercept is equal to the minimum or maximum value of the response-axis range, the baseline is not displayed.

Default	ON
Tip	By default, the baseline intercept is 0. Use the BASELINEINTERCEPT= option to change the baseline intercept.

DISPLAYZEROLENGTHBAR=TRUE | FALSE
specifies whether zero-length bars are drawn.

Note: This feature applies to SAS 9.4M3 and to later releases.

A zero-length bar is displayed as a line spanning the normal bar width at the bar-chart baseline on the response axis. When this option is set to TRUE, zero-length bars are displayed. Otherwise, they are suppressed. The following figure shows a simple example of each outcome. In the figure, the plot wall outline, category axis line, and bar-chart baseline are suppressed for clarity.



Default	TRUE

Interaction	This option is ignored when the GROUP= and GROUPDISPLAY=STACK options are in effect. In that case, zero-length bar segments are drawn.
Note	When this option is set to FALSE, the bar is not drawn, but other elements associated with the bar such as the target bar, the error bar, the bar label, and the data label, are drawn.
Tip	This option is useful when the bar-chart baseline is suppressed.

FILLATTRS=*style-element* | *style-element* (*fill-options*) | (*fill-options*)
specifies the appearance of the filled bar area.

Default	For non-grouped data, the GraphDataDefault:Color style reference
	For grouped data, the Color attribute of the GraphData1–GraphDataN style elements.
Interaction	When COLORRESPONSE= is in effect and the DISPLAY= option enables FILL display, the FILLATTRS= suboption COLOR= is ignored, and the bar fill colors vary according to the gradient.
Tip	The DATATRANSPARENCY= option sets the transparency for the bar fills, bar outlines, and connect lines. You can combine this option with DATATRANSPARENCY= to set one transparency for the bar outlines and connect lines but a different transparency for the bar fills. Example: `datatransparency=0.2 fillattrs=(transparency=0.6)`
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Fill Color Options for available *fill-options*.

FILLENDCOLOR=*color*
specifies the end color of the color gradient for the bar fill.

Note: This feature applies to SAS 9.4M5 and to later releases.

Default	the graph wall background color, even when the wall is not displayed
Requirement	FILLTYPE=COLORGRADIENT must be in effect. Otherwise, this option is ignored.
See	color

FILLPATTERNATTRS=*style-element* | (*fill-pattern-options*)
specifies the appearance of the pattern-filled areas.

Default	For non-grouped data, the ContrastColor and FillPattern attributes of GraphDataDefault.
	For grouped data, the ContrastColor and FillPattern attributes of GraphData1–GraphDataN.

Restriction	In SAS 9.4M4 and in earlier releases, the only styles that are delivered by SAS that support fill patterns are JOURNAL2, JOURNAL3, and MONOCHROMEPRINTER. If *style-element* is specified and the active ODS style does not support fill patterns, this option is ignored.
Interactions	For this option to take effect, the DISPLAY= option must include FILLPATTERN among the display options.
	When COLORRESPONSE= is in effect and the DISPLAY= option enables FILLPATTERN display, the FILLPATTERNATTRS= suboption COLOR= is ignored, and the fill-pattern colors vary according to the gradient.
Tip	In order to change the fill pattern for each group value in ODS styles such as HTMLBlue that use color-priority attribute rotation, specify ATTRPRIORITY=NONE in an ODS GRAPHICS statement or in the BEGINGRAPH statement in your graph template. For more information, see Attribute Rotation Patterns in *SAS Graph Template Language: User's Guide*.
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Fill Pattern Options for available *fill-pattern-options*.

FILLTYPE=SOLID | ALPHAGRADIENT | COLORGRADIENT | GRADIENT
specifies the bar fill type.

Note: This feature applies to SAS 9.4M2 and to later releases.

SOLID
fills each bar with the color that is assigned to that bar.

ALPHAGRADIENT
fills each bar with a color and a transparency gradient that starts at the bar top with the initial transparency that is assigned to that bar, and ends with full transparency at the bar baseline.

Note: This feature applies to SAS 9.4M5 and to later releases.

Tips	The fill color is determined by a style element or by the FILLATTRS= option COLOR= suboption. The initial transparency is determined by the DATATRANSPARENCY= option or by the FILLATTRS= option TRANSPARENCY= suboption.
	For grouped plots, use the FILLATTRS= option in a discrete attribute map to set the initial transparency in the gradients for specific values.

COLORGRADIENT
fills each bar with a color gradient that starts with the fill color that is assigned to that bar and ends with the color that is specified in the FILLENDCOLOR= option.

Note: This feature applies to SAS 9.4M5 and to later releases.

Alias	GRADIENT

Interaction	The SHEEN data skin cannot be used when FILLTYPE=GRADIENT is in effect. You can use one of the other data skins.
Tips	Use the DATATRANSPARENCY= option or the FILLATTRS= option TRANSPARENCY= suboption to set the initial transparency in the gradients. For grouped plots, use the FILLATTRS= option in a discrete attribute map to set the initial transparency in the gradients for specific values.
See	FILLENDCOLOR=*color*

GRADIENT
fills each bar with a color and a transparency gradient that starts at the bar top with the initial transparency that is assigned to that bar, and ends with full transparency at the bar baseline.

Note: This option applies to SAS 9.4M2 through SAS 9.4M4. Starting with SAS 9.4M5, ALPHAGRADIENT replaces GRADIENT, and GRADIENT is changed to an alias of COLORGRADIENT.

Interactions	The SHEEN data skin cannot be used when FILLTYPE=GRADIENT is in effect. You can use one of the other data skins. In SAS 9.4M2 , FILLTYPE=GRADIENT is ignored when GROUPDISPLAY=STACK is in effect. Starting with SAS 9.4M3 , FILLTYPE=COLORGRADIENT is honored in that case.
Tips	The initial fill color is determined by a style element or by the FILLATTRS= option COLOR= suboption. The initial transparency is determined by the DATATRANSPARENCY= option or by the FILLATTRS= option TRANSPARENCY= suboption. For grouped plots, use the FILLATTRS= option in a discrete attribute map to set the initial transparency in the gradients for specific values.

Default	SOLID
Interaction	The DISPLAY= option must include FILL for this option to have any effect.
Note	The output for SAS programs written prior to SAS 9.4M5 that specify FILLTYPE=GRADIENT might change starting with SAS 9.4M5 . To restore the original appearance, specify FILLTYPE=ALPHAGRADIENT.
See	DATASKIN=

GROUP=*column* | *discrete-attr-var* | *expression*
creates a separate bar segment or bar for each unique group value in the specified column.

discrete-attr-var
specifies a discrete attribute map variable. The discrete attribute map variable is created by a DISCRETEATTRVAR statement.

Restriction	A discrete attribute map variable specification must be a direct reference to the attribute map variable. It cannot be set by a dynamic variable.

The bar display depends on the setting for the GROUPDISPLAY= option. For example, for a vertical bar chart with GROUPDISPLAY=STACK, bar segments are stacked to form the bar. The height of each segment represents the corresponding group value's proportional contribution to the response value.

A distinct bar or bar segment is created for each group value by varying the visual attributes of the bar display features. The display features are controlled by the current ODS style or by the DISPLAY= option. The default group appearance for each display feature is shown in the following table.

Display Feature [1]	Style Attributes That Control Default Group Appearance
Fill color	Color attribute of a GraphData1–GraphDataN style element or the GraphMissing style element.
Fill pattern	FillPattern and ContrastColor attributes of a GraphData1–GraphDataN style element or the GraphMissing style element. The ContrastColor attribute controls the color of the fill pattern. If the active ODS style does not specify FillPattern, fill patterns are not displayed by default.
Outline	• if the outline is enabled with fill color, fill pattern, or both, ContrastColor attribute of a GraphData1–GraphDataN style element or the GraphMissing style element with a solid line style • if the outline is the only display feature enabled, ContrastColor and LineStyle attributes of a GraphData1–GraphDataN style element or the GraphMissing style element

1 The default display features are determined by the DisplayOpts attribute of the GraphBar style element.

Interactions	Connect lines are not drawn for grouped data.
	By default, the group values are mapped in the order of the data. Use the GROUPORDER= option to control the sorting order of the grouped bar segments. Use the INDEX= option to alter the default sequence of colors and line patterns.
	The INCLUDEMISSINGGROUP option controls whether missing group values are considered a distinct group value.
	When both the GROUP= and COLORRESPONSE= options are specified, the color attributes are controlled by the COLORRESPONSE= option.
Notes	The bar display depends on the setting for the GROUPDISPLAY= option.
	If you specify a column in a SAS data set, the visual attributes for each group value are assigned in data order. If you specify a column in a CAS in-memory table, the visual attributes for each group value are assigned in ascending order of the group column character values or of unformatted numeric values.
Tip	The representations that are used to identify the groups can be overridden individually. For example, each distinct group value is represented by a different line pattern for the bar outlines, but you can use the PATTERN= setting on the OUTLINEATTRS= option to assign the same line pattern to all bar outlines and connect lines.
See	Grouped Vertical Bar Chart

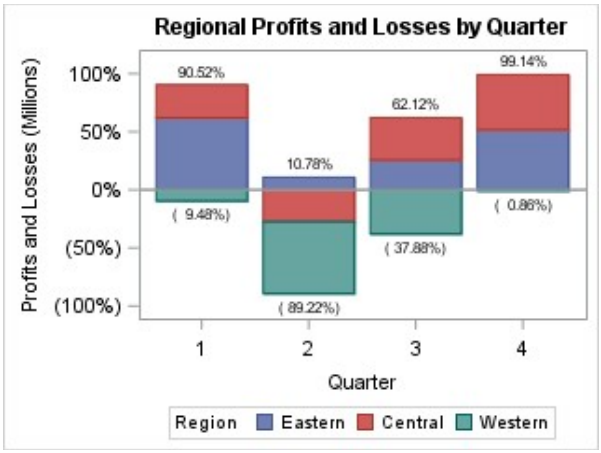
GROUP100=NONE | MAGNITUDE | POSITIVE
displays the computed response values (FREQ, SUM, or MEAN), normalized to 100%.

Note: This feature applies to SAS 9.4M3 and to later releases.

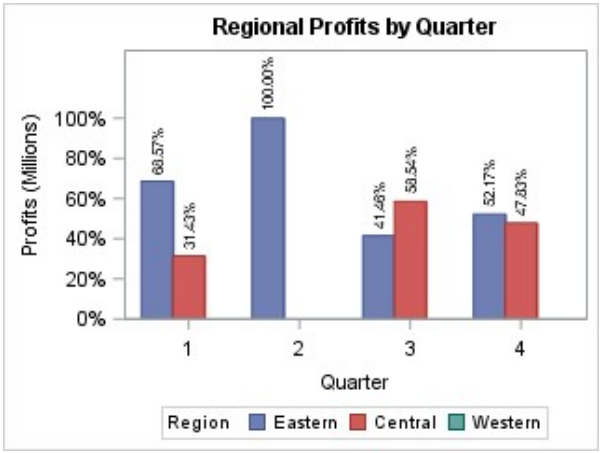
NONE
displays the summarized data.

MAGNITUDE
normalizes both the negative and positive values to 100% by magnitude, and displays the group values, preserving the sign. The positive values are displayed above the bars for a vertical bar chart and on the right end for a horizontal bar chart. The negative values are displayed enclosed in parentheses below the bars for a vertical bar chart and on the left end for a horizontal bar chart.

The following figure illustrates the effect of MAGNITUDE on stacked bars in a vertical bar chart.



POSITIVE
drops the negative values and normalizes only the positive values to 100%. The following figure demonstrates the effect of POSITIVE on clustered bars in a vertical bar chart. This chart uses the same data as the chart in the previous figure.

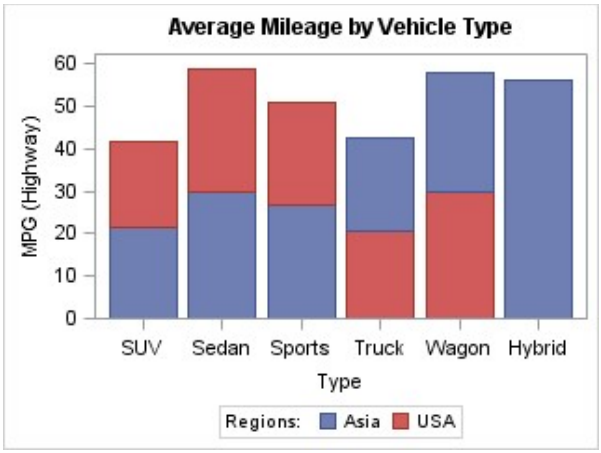


Notice that the negative values are dropped from the chart.

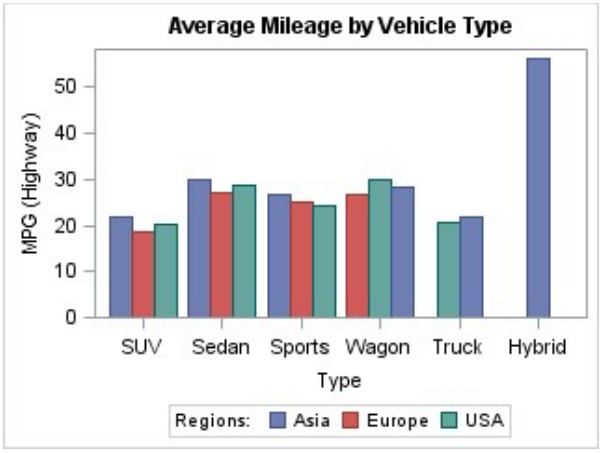
Default	NONE
Requirement	The GROUP= option must be specified for this option to have any effect.
Interaction	When this option is used, the BASELINEINTERCEPT= and TARGET= options are ignored.
Note	You can use this option with any value for the GROUPDISPLAY= option.
Tip	To display the values, specify BARLABEL=TRUE.

GROUPDISPLAY=STACK | CLUSTER
specifies how to display grouped bars.

STACK
displays group values as stacked segments within the category bar.



CLUSTER
displays group values as separate adjacent bars that replace the single category bar. Each cluster of group values is centered at the category midpoint on the axis. This example illustrates the clusters and also how groups are displayed when they have an unequal number of unique values.



Default	STACK

Interaction	When you use the BARLABEL= option and the GROUP= option, the BARLABEL values are displayed for each bar when GROUPDISPLAY=CLUSTER. When GROUPDISPLAY=STACK, the whole bar is labeled at the top.
Note	When you plot a SAS data set, the items for each group value are drawn in data order. When you plot a CAS in-memory table, they are drawn in ascending order of the group column character values or unformatted numeric values.
Tip	For a linear response axis, when STAT=MEAN or STAT=PCT, the axis tick values might be displayed as integer values when GROUPDISPLAY=STACK. Changing GROUPDISPLAY= to CLUSTER in that case might cause the axis values to change to decimal values. To keep the integer axis values in both cases, you can specify the INTEGER=TRUE option for the response axis. See INTEGER=.

GROUPORDER=DATA | REVERSEDATA | ASCENDING | DESCENDING
specifies the ordering of the groups within a category.

DATA
orders the groups within a category in the group-column data order.

REVERSEDATA
orders the groups within a category in the reverse group-column data order.

Note: This feature applies to SAS 9.4M2 and to later releases.

Tip This option is useful when you want to reverse the category axis.

ASCENDING
orders the groups within a category in ascending order.

DESCENDING
orders the groups within a category in descending order.

Default	DATA if the data is a SAS data set.
	ASCENDING if the data is a CAS in-memory table. Sorting is based on nonformatted values for numeric group values or on formatted values for character group values.
Interactions	This option is ignored if the GROUP= option is not also specified.
	By default, the groups in the legend are shown in the order that is specified in GROUPORDER.
Notes	When plotting a SAS data set, attributes such as color, symbol, and pattern are assigned to each group in DATA order by default. When plotting a CAS in-memory table, attributes are assigned in ascending order of the group column character values or unformatted numeric values by default.
	The ASCENDING and DESCENDING settings linguistically sort the group values within each category (or X value) for display position purposes only. For numeric data, the order is based on the unformatted values. For character data, the order is based on the formatted values. The data order of the observations and the visual attributes that are assigned to the group values remain unchanged.

	In SAS 9.4M6 and earlier releases, when data stored in a CAS in-memory table is used and DATA or REVERSEDATA is specified, unpredictable results might occur. To generate consistent graphs in that case, specify ASCENDING or DESCENDING. Starting with SAS Viya 3.5 and SAS Studio 5.2, when data stored in a CAS in-memory table is used and DATA or REVERSEDATA is specified, it is ignored, and ASCENDING is used instead.

INCLUDEMISSINGGROUP=TRUE | FALSE
specifies whether missing values of the group variable are included in the plot.

Default	TRUE
Interaction	For this option to take effect, the GROUP= option must also be specified.
Tip	The attributes of the missing group value are determined by the GraphMissing style element unless a discrete attribute map is in effect, the INDEX= option is used, the MISSING= system option changes the default missing character, or a user-defined format is applied to the group value. In those cases, the attributes of the missing group value are determined by a GraphData1–GraphDataN style element instead of by the GraphMissing style element.
See	boolean for other Boolean values that you can use.

INDEX=*positive-integer-column | expression*
specifies indices for mapping bar attributes (fill and outline) to one of the GraphData1–GranphDataN style elements.

Requirements	The column or expression value must be an integer value of 1 or greater. Otherwise, this option is ignored.
	The positive-integer column must not contain missing values. Otherwise, the entire column is invalidated and this option is ignored.
	All of the indexes for a specific group value must be the same. Otherwise, the results are unpredictable.
Interaction	For this option to take effect, the GROUP= option must also be specified.
Notes	The index values are 1-based indices. For the style attributes in GraphData1–GraphDataN, if the index value is greater than N, then a modulo operation remaps that index value to a number less than N to determine which style to use.
	If you do not use this option, then the group values are mapped in the order of the data.
Tip	You can use indexing to collapse the number of groups that are represented in a graph. For more information, see Remapping Groups for Grouped Data.

INTERVALBARWIDTH=*dimension*
specifies the width of the bars in an interval bar chart as a ratio of the interval width.

Note: This feature applies to SAS 9.4M3 and to later releases.

Default	The width specified by the BARWIDTH= option.
Restriction	This option applies only to an interval category axis. When the category axis is discrete, this option is ignored.
Interaction	When the category data is interval, this option overrides the BARWIDTH= option.
Tips	To make the category axis type linear or time, include TYPE=LINEAR or TYPE=TIME in the category axis options or assign the role of primary plot to a plot that makes the category axis linear or time.
	The bar width that you specify with this option is honored even if the bars overlap. If the bars overlap, reduce the interval bar width or use the BARWIDTH= option instead.
See	dimension

LEGENDLABEL="*string*"
specifies a label to be used in a discrete legend for this plot.

Default	The response-variable label. If a label is not defined, then the response-variable name is used.
Restriction	This option applies only to an associated DISCRETELEGEND statement.
Interaction	If the GROUP= option is specified, then this option is ignored.

NAME="*string*"
assigns a name to this plot statement for reference in other template statements. The specified name is used primarily in legend statements to coordinate the use of colors and line patterns between the plot and the legend.

Restrictions	The *string* is case sensitive, cannot contain spaces, and must define a unique name within the template.
	This option does not support variables that are created by the DYNAMIC, MVAR, and NMVAR template statements.
Interaction	The *string* is used as the default legend label if the LEGENDLABEL= option is not used.

ORIENT=VERTICAL | HORIZONTAL
specifies the orientation of the Y axis and the bars.

Default	VERTICAL
Notes	When this option is set to HORIZONTAL, the category variable appears on the Y (or Y2) axis and the response variable appears on the X (or X2) axis. To set the axis properties for this chart, you should use the appropriate axis options of the layout container.
	When this option is set to VERTICAL, the category variable appears on the X (or X2) axis and the response variable appears on the Y (or Y2) axis. To set the axis properties for this chart, you should use the appropriate axis options of the layout container.
	If you change the orientation of the bar chart, then you should adjust the layout container's axis options appropriately.

OUTLINEATTRS=*style-element* | *style-element* (*line-options*) | (*line-options*)
specifies the appearance of the bar outlines.

Default	For non-grouped data, the ContrastColor, LineThickness, and LineStyle attributes of the GraphOutlines style element.
	For grouped data and filled bars, the ContrastColor attribute of the GraphData1–GraphDataN style elements, and the LineThickness and LineStyle attributes of the GraphOutlines style element.
	For grouped data and unfilled bars, the ContrastColor and LineStyle attributes of the GraphData1–GraphDataN style elements, and the LineThickness attribute of the GraphOutlines style element.
Interactions	For this option to have any effect, outlines must be enabled by the ODS style or the DISPLAY= option.
	If the DATASKIN= option applies a data skin, then this option is ignored.
	When the COLORRESPONSE= and DISPLAY=(OUTLINE) options are in effect, the OUTLINEATTRS= suboption COLOR= is ignored, and the bar outline colors vary according to the gradient.
See	General Syntax for Attribute Options for the syntax on using a *style-element*.
	Line Options for available *line-options*.

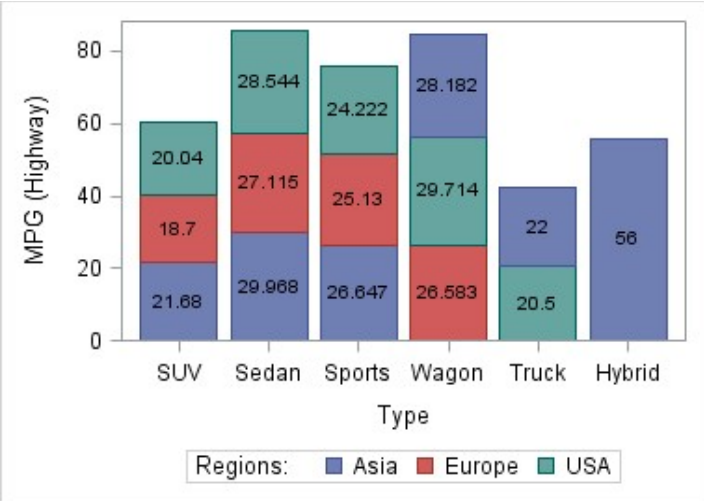
PRIMARY=TRUE | FALSE
specifies that the data columns for this plot and the plot type be used for determining default axis features. This option is needed only when two or more plots within an overlay-type layout contribute to a common axis.

Default	FALSE
Restriction	This option is ignored if the plot is placed under a GRIDDED or LATTICE layout block.
Note	In an OVERLAY layout, only one plot in an overlay can be the primary plot on a per-axis basis. When no plot is designated as the primary plot, the first plot that can be a primary plot is considered the primary plot. If multiple plots specify PRIMARY=TRUE for the same axis, then the last such plot encountered is considered the primary plot.
See	When Plots Share Data and a Common Axis
	boolean for other Boolean values that you can use.

SEGMENTLABEL=TRUE | FALSE
specifies whether a label is displayed inside each bar segment.

Note: This feature applies to SAS 9.4M2 and to later releases.

For an ungrouped bar chart or for a grouped bar chart with GROUPDISPLAY=CLUSTER, AUTO displays a bar label inside each bar. The label displays the statistic for that bar. For a grouped bar chart with GROUPDISPLAY=STACK, AUTO displays a label inside each bar segment. Each segment label displays the statistic for that bar segment, as shown in the following figure.



When this value is set to FALSE, no labels are displayed inside the bars.

Default	FALSE
Note	By default, the segment-label format is derived from the format that is assigned to the response column or from BEST6 if no format is assigned. The derived format retains the precision of the response-column format and, if necessary, increases the format width to accommodate the summarized value on the response axis.
Tips	For a grouped bar chart with GROUPDISPLAY=STACK, specify both SEGMENTLABEL=TRUE and BARLABEL=TRUE to display a label for each bar segment and a label for the entire bar.
	Use the SEGMENTLABELATTRS= option to modify the appearance of the label text.
	Use the SEGMENTLABELFITPOLICY= option to specify a policy for fitting the labels inside the bars.
	Use the SEGMENTLABELFORMAT= option to modify the format of the segment labels.
See	boolean for other Boolean values that you can use.

SEGMENTLABELATTRS=*style-element* | *style-element* (*text-options*) | (*text-options*)
specifies the text properties of the text for the bar segment label.

Note: This feature applies to SAS 9.4M2 and to later releases.

Default	The GraphDataText style element.
Interaction	This option is ignored when SEGMENTLABEL=FALSE.
See	General Syntax for Attribute Options for the syntax for using a *style-element*.
	Text Options for available *text-options*.

SEGMENTLABELFITPOLICY=NONE | NOCLIP | THIN
specifies a policy for fitting the bar segment labels within the bar segments.

Note: This feature applies to SAS 9.4M2 and to later releases.

NONE
no attempt is made to fit each segment label within its bar. Long bar segment labels might overlap other graphical elements. The segment labels are not considered when the axis ranges are computed. As a result, segment labels that extend beyond the plot area are clipped.

NOCLIP
does not clip bar segment labels that extend beyond the plot area. Labels that do not fit within the plot area extend into the graph axis area and might overlap axis elements.

THIN
drops any bar segment label that does not fit within its segment. For a vertical bar chart, the label width must not exceed the bar width, and the text height must not exceed the segment height. For a horizontal bar chart, the label text height must not exceed the bar width, and the label length must not exceed the segment length.

Default	THIN
Interaction	This option is ignored when SEGMENTLABEL=FALSE.

SEGMENTLABELFORMAT=*format*
specifies the text format for the bar segment labels.

Note: This feature applies to SAS 9.4M2 and to later releases.

Default	The segment-label format is derived from the format that is assigned to the response column or from BEST6 if no format is assigned. The derived format retains the precision of the response-column format and, if necessary, increases the format width to accommodate the summarized value on the response axis.
Interaction	This option is ignored when SEGMENTLABEL=FALSE.
Note	When a segment-label format is specified with this option, the segment labels are formatted as specified by *format*. The specified format is not automatically expanded to accommodate values that are too wide.
Tip	If you want the segment-label format to expand automatically for the summarized values on the response axis, specify the format for the response column rather than in this option.

STAT=FREQ | PCT | SUM | MEAN | PROPORTION
specifies the statistic to be computed for the Y axis. For bar charts with no RESPONSE= column:

FREQ	frequency count
PCT	percentages between 0 and 100
PROPORTION	proportions between 0 and 1

Note: Prior to SAS 9.4, PCT displayed proportions between 0 and 1. To restore the original PCT results in SAS 9.4 and later releases, specify PROPORTION instead.

For bar charts with a RESPONSE= column:
SUM
MEAN

Default	For bar charts with no RESPONSE= column, the default is FREQ.
	For bar charts with a RESPONSE= column, the default is SUM.
Note	When this option is used with the GROUP=group option, the specified statistic is computed for each segment that is created for the unique group values.
Tip	If this option is used with COLORRESPONSE= in SAS programs that were written before SAS 9.4M3 , the bar-chart colors and color statistic might change from those of the previous SAS releases. To restore the original colors and color statistic, set COLORSTAT= in the BARCHART statement to the same statistic that is specified in STAT=.

TARGET=*numeric-column* | *expression*
specifies the target value for each bar. The visual representation is a triangle with a line at the target value.

```
layout overlay;
  barchart category=type response=mpg_highway / barwidth=.8
    target=mpg_city group=origin groupdisplay=cluster
    name='bar';
  discretelegend 'bar';
endlayout;

layout overlay;
  barchartparm category=type response=mpg_highway / barwidth=.8
    target=mpg_city group=origin groupdisplay=cluster
    name='bar';
  discretelegend 'bar';
endlayout;
```

Default	No targets are displayed.
Interactions	For this option to take effect, the RESPONSE= argument must also be used.

	If the GROUP= option is used and GROUPDISPLAY= STACK, then this option is ignored.
	This option is ignored when the GROUP100= option is used.
Tips	The statistic indicated by the STAT= option applies to the TARGET=column. If a constant value is desired for each target, then specify it only once for repeated category (X) values (or category and GROUP combinations), and leave the other target values missing.
	The target color is that of the bar outline.

TIP=(*role-list*) | NONE
specifies the information to display when the cursor is positioned over a bar. If this option is used, then the information specified replaces all of the information that is displayed by default.

(*role-list*)
an ordered, space-separated list of unique BARCHART roles. BARCHART roles include CATEGORY or X, RESPONSE or Y, COLORRESPONSE, INDEX, GROUP, and TARGET.

Notes	For the category and response roles, the TIP= option recognizes only the category and response arguments that you use in the BARCHART statement. If you use the CATEGORY= and RESPONSE= arguments, then you must specify roles CATEGORY and RESPONSE. Conversely, if you use the X= and Y= arguments, then you must specify roles X and Y.
	The COLORRESPONSE role is valid starting with SAS 9.4M3 .
Example	The following example displays data tips for the columns assigned only to the roles CATEGORY and RESPONSE: `TIP=(CATEGORY RESPONSE)`

NONE
suppresses data tips and URLs (if requested) from the plot.

Default	The columns assigned to these roles are automatically included in the data tip information: CATEGORY or X, RESPONSE or Y, COLORRESPONSE, and GROUP.
Requirement	To generate data tips in the output, you must include an ODS GRAPHICS ON statement with the IMAGEMAP option specified, and you must write the output to the ODS HTML destination.
Interaction	This option is ignored when the plot statement is in an OVERLAY or PROTOTYPE layout and the INCLUDERANGES= option is specified in the LINEAROPTS= or TIMEOPTS= option for either axis.
Tip	You can control the labels and formats for the TIP roles with the TIPLABEL= and TIPFORMAT= options.

TIPFORMAT=(*role-format-list*)
specifies display formats for tip columns. This option provides a way to control the formats of columns that appear in data tips.

(*role-format-list*)
a space-separated list of *role-name* = *format* pairs.

Example	`TIP=(RESPONSE)` `TIPFORMAT=(RESPONSE=DOLLAR12.)`

Default	The column format of the column assigned to the role or BEST6 if no format is assigned to a numeric column.
Restriction	Only the roles that appear in the TIP= option are used.
Requirement	A column must be assigned to each of the specified roles.

TIPLABEL=(*role-label-list*)
specifies display labels for tip columns. This option provides a way to control the labels of columns that appear in data tips.

role-label-list
a space-separated list of *rolename* ="*string*" pairs.

Example	`TIP=(RESPONSE)` `TIPLABEL=(RESPONSE="Average Sales")`

Default	The column label or column name of the column assigned to the role.
Restriction	Only the roles that appear in the TIP= option are used.
Requirement	A column must be assigned to each of the specified roles.

URL=*string-column*
specifies an HTML page to display when the bar is selected.

string-column
specifies a column that contains a valid HTML page reference (HREF) for each bar that is to have an active link.

Example	`http://www.sas.com`

Requirement	To generate selectable bars, you must include an ODS GRAPHICS ON statement that specifies the IMAGEMAP option, and you must write the output to the ODS HTML destination.
Interactions	This option has no effect when TIP=NONE.
	This option is ignored when the plot statement is in an OVERLAY or PROTOTYPE layout and the INCLUDERANGES= option is specified in the LINEAROPTS= or TIMEOPTS= option for either axis.
Notes	For non-grouped data, the values of the column are expected to be same for each unique category value. If they are not, then the results might be unpredictable.

	For grouped data, the values of the column are expected to be the same for each unique category and GROUP combination.
Tips	The URL value can be blank for some category values, meaning that no action is taken when the bars for those category values are selected.
	The URL value can be the same for different category values, meaning that the same action is taken when the bars for those category values are selected.
	By default, drill-down links open in a new browser window (link target _blank). To specify a different target for your drill-down links, such as _self or _parent, add the DRILLTARGET="*target*" option to your ODS GRAPHICS statement. See DRILLTARGET=.

XAXIS=X | X2
specifies whether data are mapped to the primary X (bottom) axis or to the secondary X2 (top) axis.

Default	X
Interaction	The overall plot specification and the layout type determine the axis display. For more information, see How Axis Features Are Determined.

YAXIS=Y | Y2
specifies whether data are mapped to the primary Y (left) axis or to the secondary Y2 (right) axis.

Default	Y
Interactions	This option is ignored if the RESPONSE= argument is not specified.
	The overall plot specification and the layout type determine the axis display. For more information, see How Axis Features Are Determined.

Details

Statement Description
About the DISCRETEOFFSET= Option

Statement Description

The BARCHART statement creates a bar chart with bars that represent summarized response values. The response values are categorized by the unique category values or, starting with SAS 9.4M3, by the bins in binned category data. The BARCHART statement takes nonsummarized data as input and calculates the appropriate summarization statistics (sum, mean, and so on) for each unique category value or category bin. Prior to SAS 9.4M3, the category axis for a bar chart must be discrete. Starting with SAS 9.4M3, the category axis can be discrete, linear, or time. The response axis in all cases is interval.

When the chart is oriented vertically, the X (or X2) axis is used for CATEGORY and the Y (or Y2) axis is used for RESPONSE. When it is oriented horizontally, the X (or X2) axis is used for RESPONSE and the Y (or Y2) axis is used for CATEGORY. (See ORIENT=.)

By default, if the category column is character, then the bars in the chart appear in the order in which the category values are present in the input data. If the category column is numeric, then the values are presented in ascending order. For non-grouped data, duplicated category values are summarized into a unique value. For grouped data, the category values are summarized as needed. (See the GROUP= option.)

Starting with SAS 9.4M3, for numeric category values, an interval bar chart is generated only when the category axis type is linear or time. To specify a category axis type of linear or time, include the TYPE= option in the category axis options, or assign the role of primary plot to a plot that sets the category axis type to linear or time automatically. By default, a bar is drawn for each unique category value, which can result in a large number of bars for numeric category data.

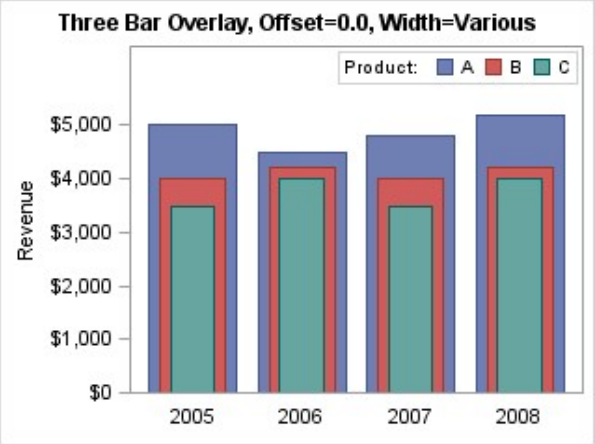
When binning is used, for each bin, a summarization statistic is computed, and a bar is drawn that represents that statistic. The width of each bar spans the width of the bin that it represents. The left-most edge of the bar represents the start of the bin, and the right-most edge represents the end. See Horizontal Bar Chart.

TIP Prior to SAS 9.4M3, use the HISTOGRAM statement to create a bar chart that represents response values along an interval axis.

About the DISCRETEOFFSET= Option

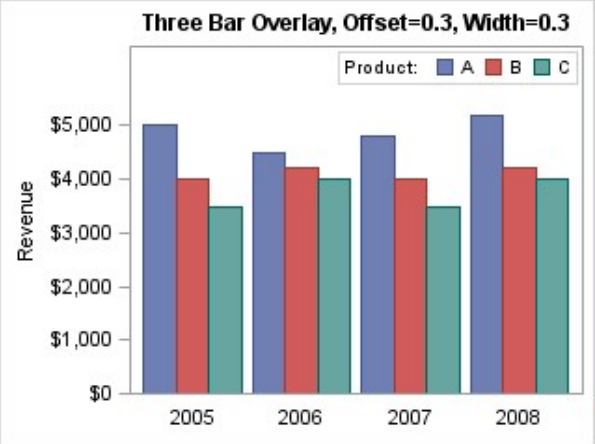
The DISCRETEOFFSET= option is useful for graphing multiple response variables side by side on a common axis. By default within an overlay-type layout, if multiple BARCHART statements are used with different response variables, then the bars for matching category values are centered on the midpoints and the bars are superimposed. To make it easier to distinguish among superimposed bars, you can assign a different BARWIDTH= setting to each BARCHART statement in the overlay:

```
layout overlay / cycleattrs=true
    xaxisopts=(display=(tickvalues))
    yaxisopts=(label="Revenue" offsetmax=0.2);

  barchart category=year response=A_revenue / stat=sum name="A"
    legendlabel="A" barwidth=0.8 ;
  barchart category=year response=B_revenue / stat=sum name="B"
    legendlabel="B" barwidth=0.6 ;
  barchart category=year response=C_revenue / stat=sum name="C"
    legendlabel="C" barwidth=0.4 ;

  discretelegend "A" "B" "C" / title="Product:"
    location=inside halign=right valign=top;
endlayout;
```



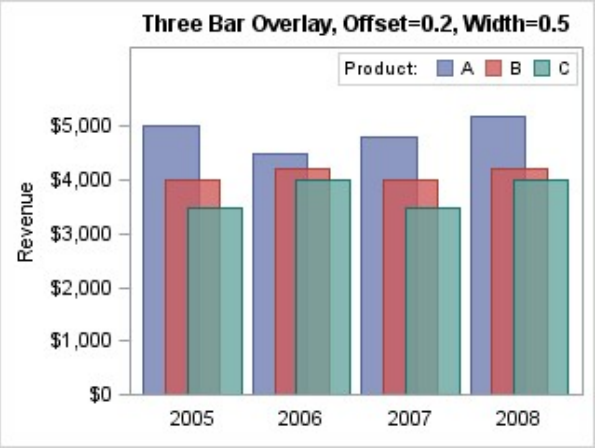
To place the different response values side by side, you can assign a different offset to each BARCHART statement. The BARWIDTH= option can be used with DISCRETEOFFSET= to create narrower bars that require less width within the plot area:

```
layout overlay / cycleattrs=true
    xaxisopts=(display=(tickvalues))
    yaxisopts=(label="Revenue" offsetmax=0.2);

  barchart category=year response=A_revenue / stat=sum name="A"
    legendlabel="A"
    discreteoffset=-0.3 barwidth=0.3 ;
  barchart category=year response=B_revenue / stat=sum name="B"
    legendlabel="B"
    discreteoffset=0    barwidth=0.3 ;
  barchart category=year response=C_revenue / stat=sum name="C"
    legendlabel="C"
    discreteoffset=+0.3 barwidth=0.3 ;

  discretelegend "A" "B" "C" / title="Product:"
    location=inside halign=right valign=top;
endlayout;
```



Different combinations of DISCRETEOFFSET and BARWIDTH can be used to get the effect that you want. Gaps can be created between bars by providing a narrower bar width. Or, bars can be overlapped if the bar widths are increased in proportion to the discrete offset.

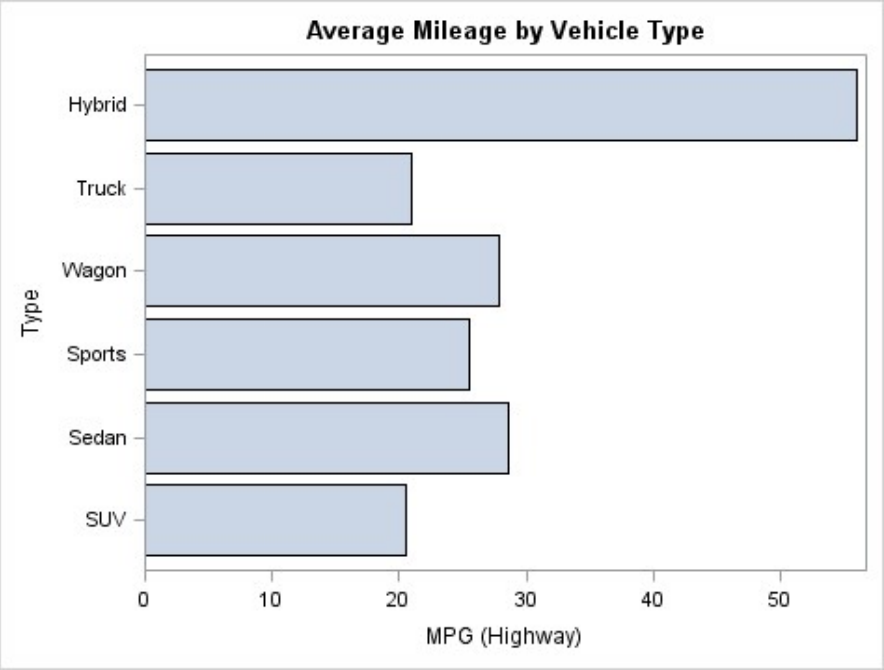
```
layout overlay / cycleattrs=true
    xaxisopts=(display=(tickvalues))
    yaxisopts=(label="Revenue" offsetmax=0.2);

  barchart category=year response=A_revenue / stat=sum name="A"
    legendlabel="A" datatransparency=0.2
    discreteoffset=-0.2 barwidth=0.5 ;
  barchart category=year response=B_revenue / stat=sum name="B"
    legendlabel="B" datatransparency=0.2
    discreteoffset=0   barwidth=0.5 ;
  barchart category=year response=C_revenue / stat=sum name="C"
    legendlabel="C" datatransparency=0.2
    discreteoffset=+0.2 barwidth=0.5 ;

  discretelegend "A" "B" "C" / title="Product:"
    location=inside halign=right valign=top;
endlayout;
```



Examples

Example 1: Horizontal Bar Chart

The following graph was generated by the Example Program:

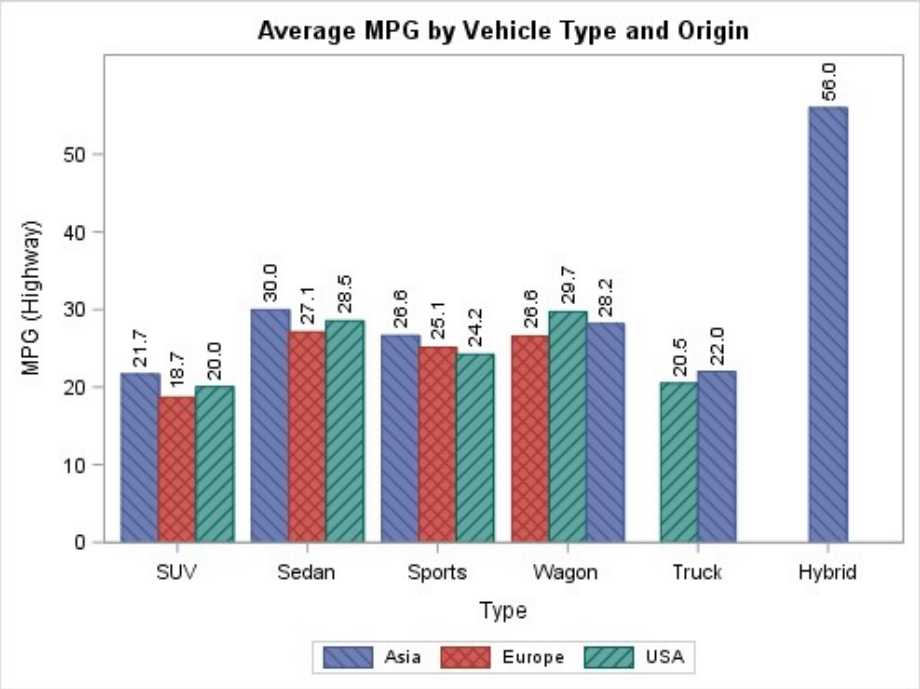


Example Program

```
proc template;
  define statgraph barchart;
    begingraph;
      entrytitle "Average Mileage by Vehicle Type";
      layout overlay;
        barchart category=type  response=mpg_highway /
          stat=mean orient=horizontal;
      endlayout;
    endgraph;
  end;

proc sgrender data=sashelp.cars template=barchart;
run;
```

Example 2: Grouped Vertical Bar Chart

The following graph was generated by the Example Program:

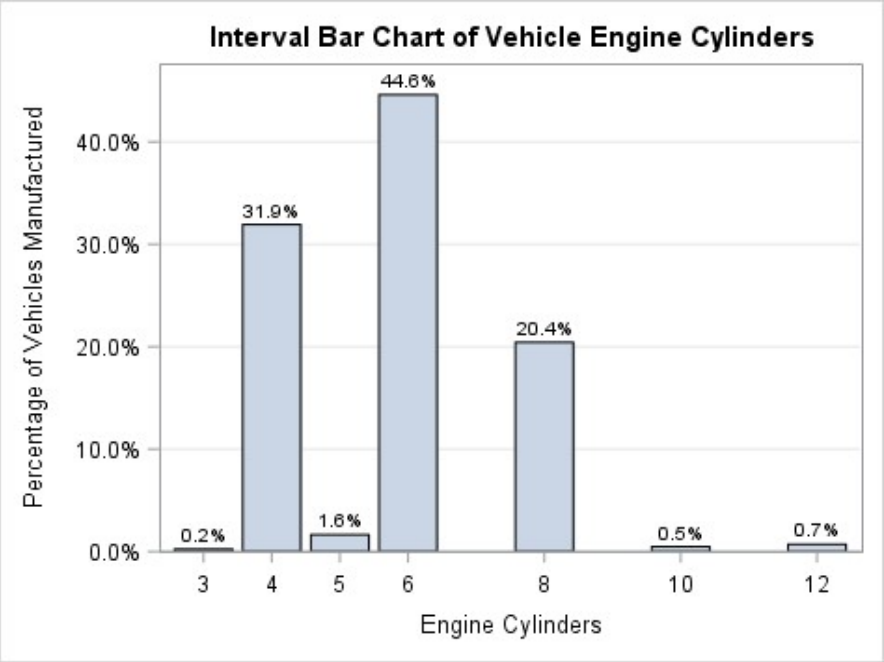


Example Program

```
proc template;
  define statgraph barchart;
    begingraph / attrpriority=none;
      entrytitle "Average MPG by Vehicle Type and Origin";
      layout overlay;
        barchart x=type y=mpg_highway / name="meanmpg"
          stat=mean display=all
          group=origin groupdisplay=cluster
          barlabel=true barlabelformat=5.1;
        discretelegend "meanmpg";
      endlayout;
    endgraph;
  end;
run;

proc sgrender data=sashelp.cars template=barchart;
run;
```

Example 3: Interval Bar Chart

Interval bar charts are available starting with SAS 9.4M3. In SAS 9.4M2 and in earlier releases, use the HISTOGRAM statement to generate an interval bar chart. The following graph was generated by the Example Program:



Example Program

Here is the SAS code.

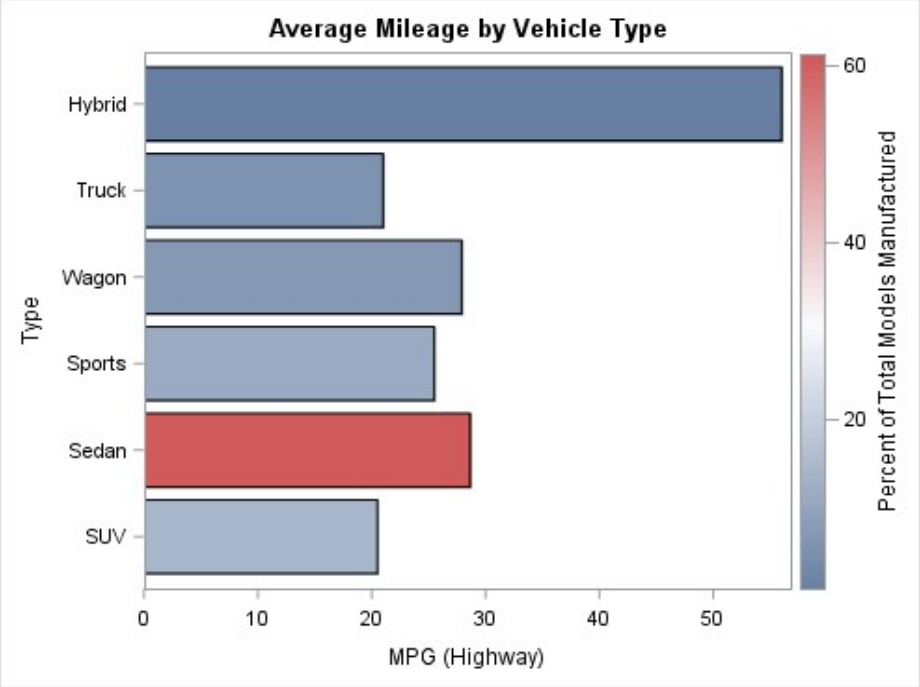
```
proc template;
  define statgraph cylinders;
    begingraph;
      entrytitle "Interval Bar Chart of Vehicle Engine Cylinders";
      layout overlay /
        xaxisopts=(label="Engine Cylinders" type=linear
          linearopts=(tickvaluelist=(3 4 5 6 8 10 12)))
        yaxisopts=(label="Percentage of Vehicles Manufactured"
          griddisplay=on linearopts=(tickvalueformat=percent7.1));
        barchart category=cylinders / stat=proportion
          barlabel=true barlabelformat=percent7.1;
      endlayout;
    endgraph;
  end;
run;

proc sgrender data=sashelp.cars template=cylinders;
run;
```

Details

An interval bar chart can be generated only when the category axis type is LINEAR or TIME. In this example, the TYPE=LINEAR option is included in the XAXISOPTS= options. With numeric category data, a bar is drawn for each unique category value. In some cases, that can generate too many bars in the resulting chart. In this example, there are only seven unique values. The TICKVALUELIST= option is used in the XAXISOPTS= option to display all of the values on the category axis.

Example 4: Bar Chart with Bar Colors Controlled by a Statistic

The ability to use a computed statistic to control the bar colors in a bar chart is available starting with SAS 9.4M3. This example uses the COLORBYFREQ=TRUE option to enable a computed statistic to control the bar colors and the COLOSTAT=PCT to specify percentage as the controlling statistic. Here is the output from Example Program.



Example Program

Example 5: Bar-Line Chart

This example uses the BARCHART and LINECHART statements to overlay a bar chart and line chart to create a bar-line chart. The following figure was generated by the Example Program.

Example Program

Last updated: November 21, 2019