Description

colorstyle sets the color and opacity of graph components such as lines, backgrounds, and bars. Some options allow a sequence of colorstyles with colorstylelist; see [G-4] stylelists.

Syntax

Set color of ⟨object⟩ to colorstyle

⟨object⟩color(colorstyle)

Set color of all affected objects to colorstyle

color(colorstyle)

Set opacity of ⟨object⟩ to #, where # is a percentage of 100% opacity

⟨object⟩color(%,#)

Set opacity for all affected objects colors to #

color(%,#)

Set both color and opacity of ⟨object⟩

⟨object⟩color(colorstyle%,#)

Set both color and opacity of all affected objects

⟨object⟩color(colorstyle%,#)
<table>
<thead>
<tr>
<th>colorstyle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>black</td>
<td>gs0: gray scale: 0 = black</td>
</tr>
<tr>
<td></td>
<td>gs1: gray scale: very dark gray</td>
</tr>
<tr>
<td></td>
<td>gs2:</td>
</tr>
<tr>
<td></td>
<td>gs15: gray scale: very light gray</td>
</tr>
<tr>
<td></td>
<td>gs16: gray scale: 16 = white</td>
</tr>
<tr>
<td>white</td>
<td></td>
</tr>
<tr>
<td>blue</td>
<td></td>
</tr>
<tr>
<td>bluishgray</td>
<td></td>
</tr>
<tr>
<td>brown</td>
<td></td>
</tr>
<tr>
<td>cranberry</td>
<td></td>
</tr>
<tr>
<td>cyan</td>
<td></td>
</tr>
<tr>
<td>dimgray</td>
<td>between gs14 and gs15</td>
</tr>
<tr>
<td>dkgreen</td>
<td>dark green</td>
</tr>
<tr>
<td>dknavy</td>
<td>dark navy blue</td>
</tr>
<tr>
<td>dkorange</td>
<td>dark orange</td>
</tr>
<tr>
<td>eggshell</td>
<td></td>
</tr>
<tr>
<td>emerald</td>
<td></td>
</tr>
<tr>
<td>forest_green</td>
<td></td>
</tr>
<tr>
<td>gold</td>
<td></td>
</tr>
<tr>
<td>gray</td>
<td>equivalence to gs8</td>
</tr>
<tr>
<td>green</td>
<td></td>
</tr>
<tr>
<td>khaki</td>
<td></td>
</tr>
<tr>
<td>lavender</td>
<td></td>
</tr>
<tr>
<td>lime</td>
<td></td>
</tr>
<tr>
<td>ltblue</td>
<td>light blue</td>
</tr>
<tr>
<td>ltbluishgray</td>
<td>light blue-gray, used by scheme s2color</td>
</tr>
<tr>
<td>ltkhaki</td>
<td>light khaki</td>
</tr>
<tr>
<td>magenta</td>
<td></td>
</tr>
<tr>
<td>maroon</td>
<td></td>
</tr>
<tr>
<td>midblue</td>
<td></td>
</tr>
<tr>
<td>midgreen</td>
<td></td>
</tr>
<tr>
<td>mint</td>
<td></td>
</tr>
<tr>
<td>navy</td>
<td></td>
</tr>
<tr>
<td>olive</td>
<td></td>
</tr>
<tr>
<td>olive_teal</td>
<td></td>
</tr>
<tr>
<td>orange</td>
<td></td>
</tr>
<tr>
<td>orange_red</td>
<td></td>
</tr>
</tbody>
</table>
When specifying RGB, CMYK, or HSV values, it is best to enclose the values in quotes; type "128 128 128" and not 128 128 128.
Remarks are presented under the following headings:

- Adjust opacity
- Adjust intensity
- Specify RGB values
- Specify CMYK values
- Specify HSV values
- Export custom colors
- Video example

### Adjust opacity

Opacity is the percentage of a color that covers the background color. That is, 100% means that the color fully hides the background, and 0% means that the color has no coverage and is fully transparent. If you prefer to think about transparency, opacity is the inverse of transparency. Adjust opacity with the % modifier. For example, type

```
green%50
"0 255 0%50"
%30
```

Omitting the color specification in the command adjusts the opacity of the object while retaining the default color. For instance, specify `mcolor(%30)` with `graph twoway scatter` to use the default fill color at 30% opacity.

Specifying `color%0` makes the object completely transparent and is equivalent to `color none`.

### Adjust intensity

Color intensity (brightness) can be modified by specifying a color, *, and a multiplier value. For example, type

```
green*.8
purple*1.5
"0 255 255*1.2"
"hsv 240 1 1*.5"
```

A value of 1 leaves the color unchanged, a value greater than 1 makes the color darker, and a value less than 1 makes the color lighter. Note that there is no space between `color` and *, even when `color` is a numerical value for RGB or CMYK.

Omitting the color specification in the command adjusts the intensity of the object’s default color. For instance, specify `bcolor(*.7)` with `graph twoway bar` to use the default fill color at reduced brightness, or specify `bcolor(*2)` to increase the brightness of the default color.

Specifying `color*0` makes the color as light as possible, but it is not equivalent to `color none`. `color*255` makes the color as dark as possible, although values much smaller than 255 usually achieve the same result.

For an example using the intensity adjustment, see Typical use in [G-2] `graph twoway kdensity`. 
Specify RGB values

In addition to specifying named colors such as yellow, you can specify colors with RGB values. An RGB value is a triplet of numbers ranging from 0 to 255 that describes the level of red, green, and blue light that must be emitted to produce a given color. RGB is used to define colors for on-screen display and in nonprofessional printing. Examples of RGB values are

\[
\begin{align*}
\text{red} & = 255 \quad 0 \quad 0 \\
\text{green} & = 0 \quad 255 \quad 0 \\
\text{blue} & = 0 \quad 0 \quad 255 \\
\text{white} & = 255 \quad 255 \quad 255 \\
\text{black} & = 0 \quad 0 \quad 0 \\
\text{gray} & = 128 \quad 128 \quad 128 \\
\text{navy} & = 26 \quad 71 \quad 111
\end{align*}
\]

Specify CMYK values

You can specify colors using CMYK values. You will probably only use CMYK values when they are provided by a journal or publisher. You can specify CMYK values either as integers from 0 to 255 or as proportions of ink using real numbers from 0.0 to 1.0. If all four values are 1 or less, the numbers are taken to be proportions of ink. For example,

\[
\begin{align*}
\text{red} & = 0 \quad 255 \quad 255 \quad 0 \quad \text{or, equivalently,} \quad 0 \quad 1 \quad 1 \quad 0 \\
\text{green} & = 255 \quad 0 \quad 255 \quad 0 \quad \text{or, equivalently,} \quad 1 \quad 0 \quad 1 \quad 0 \\
\text{blue} & = 255 \quad 255 \quad 0 \quad 0 \quad \text{or, equivalently,} \quad 1 \quad 1 \quad 0 \quad 0 \\
\text{white} & = 0 \quad 0 \quad 0 \quad 0 \quad \text{or, equivalently,} \quad 0 \quad 0 \quad 0 \quad 0 \\
\text{black} & = 0 \quad 0 \quad 0 \quad 255 \quad \text{or, equivalently,} \quad 0 \quad 0 \quad 0 \quad 1 \\
\text{gray} & = 0 \quad 0 \quad 0 \quad 128 \quad \text{or, equivalently,} \quad 0 \quad 0 \quad 0 \quad .5 \\
\text{navy} & = 85 \quad 40 \quad 0 \quad 144 \quad \text{or, equivalently,} \quad .334 \quad .157 \quad 0 \quad .565
\end{align*}
\]

Specify HSV values

You can specify colors with HSV (hue, saturation, and value), also called HSL (hue, saturation, and luminance) and HSB (hue, saturation, and brightness). HSV is often used in image editing software. An HSV value is a triplet of numbers. So that Stata can differentiate them from RGB values, HSV colors must be prefaced with hsv. The first number specifies the hue from 0 to 360, the second number specifies the saturation from 0 to 1, and the third number specifies the value (luminance or brightness) from 0 to 1. For example,

\[
\begin{align*}
\text{red} & = \text{hsv} \quad 0 \quad 1 \quad 1 \\
\text{green} & = \text{hsv} \quad 120 \quad 1 \quad .502 \\
\text{blue} & = \text{hsv} \quad 240 \quad 1 \quad 1 \\
\text{white} & = \text{hsv} \quad 0 \quad 0 \quad 1 \\
\text{black} & = \text{hsv} \quad 0 \quad 0 \quad 0 \\
\text{navy} & = \text{hsv} \quad 209 \quad .766 \quad .435
\end{align*}
\]
Export custom colors

`graph export` stores all colors as RGB+opacity values, that is, RGB values 0–255 and opacity values 0–1. If you need color values from Stata in CMYK format, use the `graph export` command with the `cmyk(on)` option, and save the graph in one of the following formats: PostScript, Encapsulated PostScript, or PDF.

You can set Stata to permanently use CMYK colors for PostScript export files by typing `translator set Graph2ps cmyk on` and for EPS export files by typing `translator set Graph2eps cmyk on`.

The CMYK values returned in `graph export` may differ from the CMYK values that you entered. This is because Stata normalizes CMYK values by reducing all CMY values until one value is 0. The difference is added to the K (black) value. For example, Stata normalizes the CMYK value 10 10 5 0 to 5 5 0 5. Stata subtracts 5 from the CMY values so that Y is 0 and then adds 5 to K.

Video example

Transparency in Stata graphs

References


Also see

[G-2] `palette` — Display palettes of available selections
[G-4] `Schemes intro` — Introduction to schemes