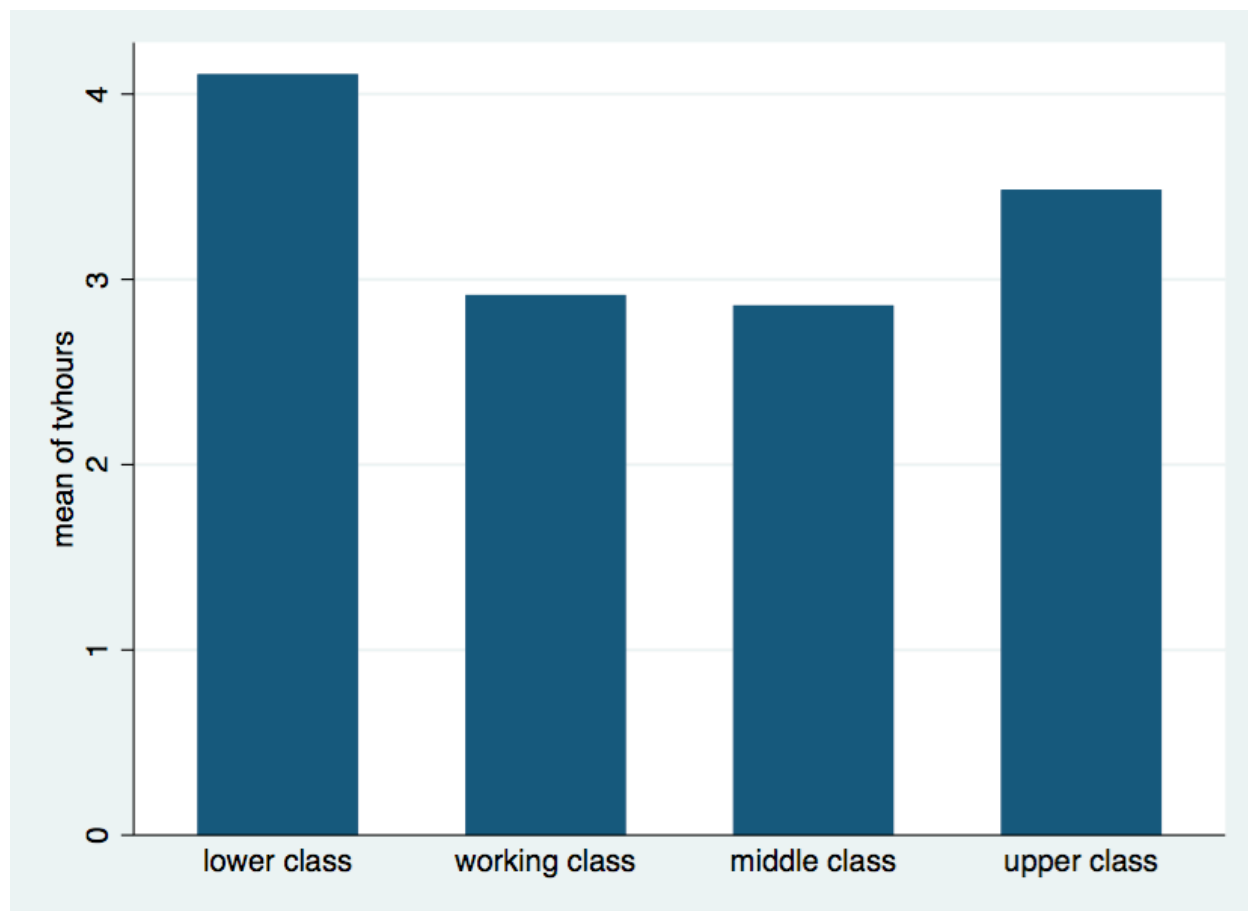


## Bar Charts

This set of notes shows how to construct a bar chart using Stata. It assumes that you have set Stata up on your computer (see the “Getting Started with Stata” handout), and that you have read in the set of data that you want to analyze (see the “Reading in Stata Format (.dta) Data Files” handout).

In Stata, most tasks can be performed either by issuing commands within the “Stata command” window, **or** by using the menus. These notes illustrate both approaches, using the data file “GSS2016.DTA” (this data file is posted here: <https://canvas.harvard.edu/courses/53958>).

Bar charts display differences in means for a quantitative variable across two or more groups, as opposed to histogram comparisons which display percentage distributions of a categorical variable within groups. For example, we can construct a bar chart of the mean hours per day of television viewing by self-attributed class:



Simple bar charts can be constructed easily via the Stata command line. The general command structure is

```
graph bar <varname1>, over(<varname2>)
```

where you enter a quantitative variable in place of “varname1” and a categorical variable in place of “varname2”. Using the variables in the above graph, you would issue the command

```
graph bar tvhours, over(class)
```

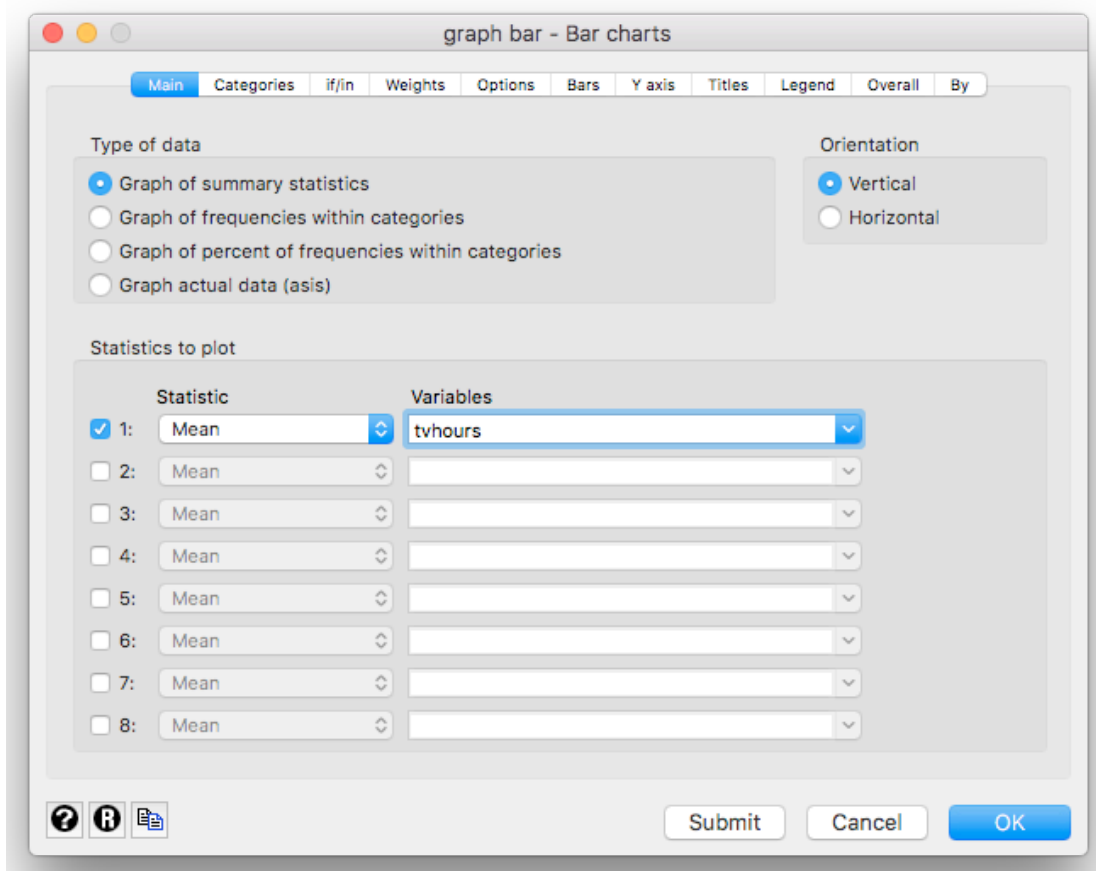
This command produces a bare-bones graph with no enhancements.

To enhance and improve the display, it is probably easier to use the Stata menus. For a bar chart,

Click on “Graphics”

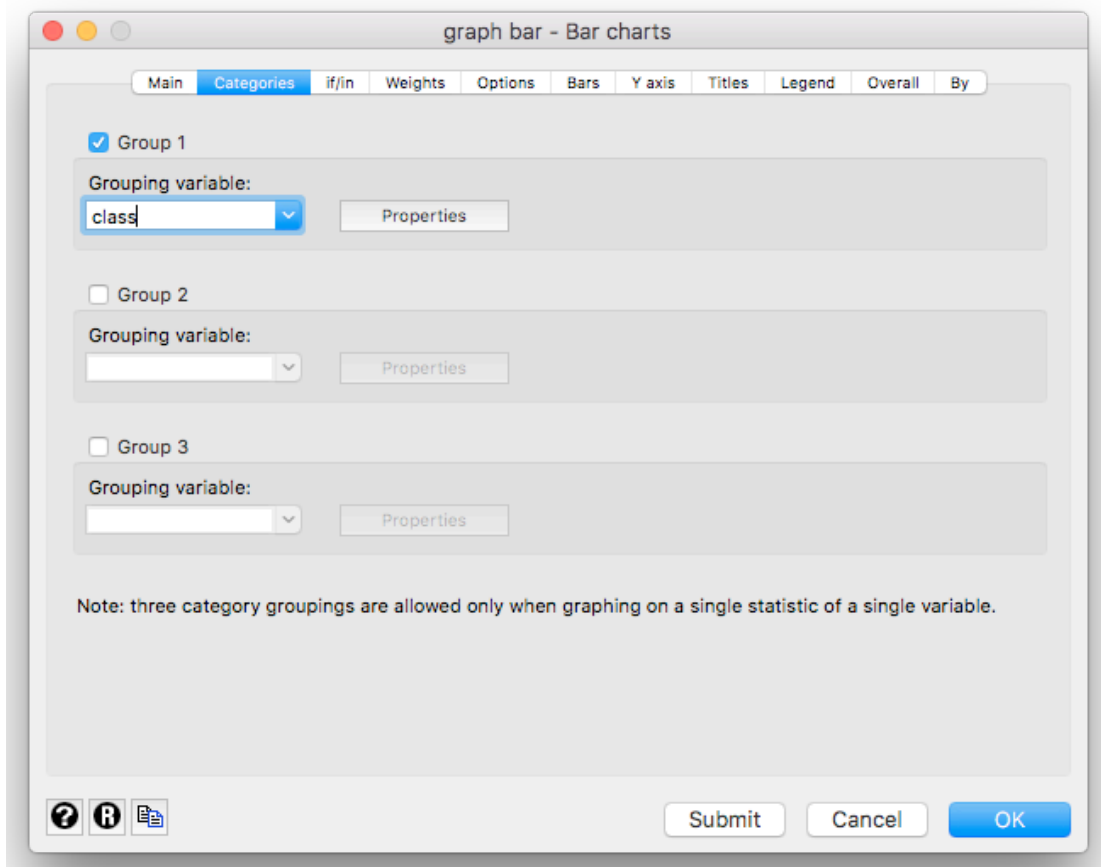
Click on “Bar chart”

When you do this, the “graph bar – Bar chart” window shown below opens up:



Under “Type of data” select “Graph of summary statistics.” Enter the name of your quantitative variable in the “Variable(s)” box in the middle of the window. Usually one will want a bar chart of group means, but you can select other summary statistics using the drop-down list under “Statistic” if you want to plot them instead.

Then click on the “Categories” tab to call up the following screen:



Check the “Group 1” box and then fill in the name of your categorical (group) variable in the “Grouping variable” field. Clicking “OK” at this point will produce a simple, unenhanced bar chart like the one shown earlier.

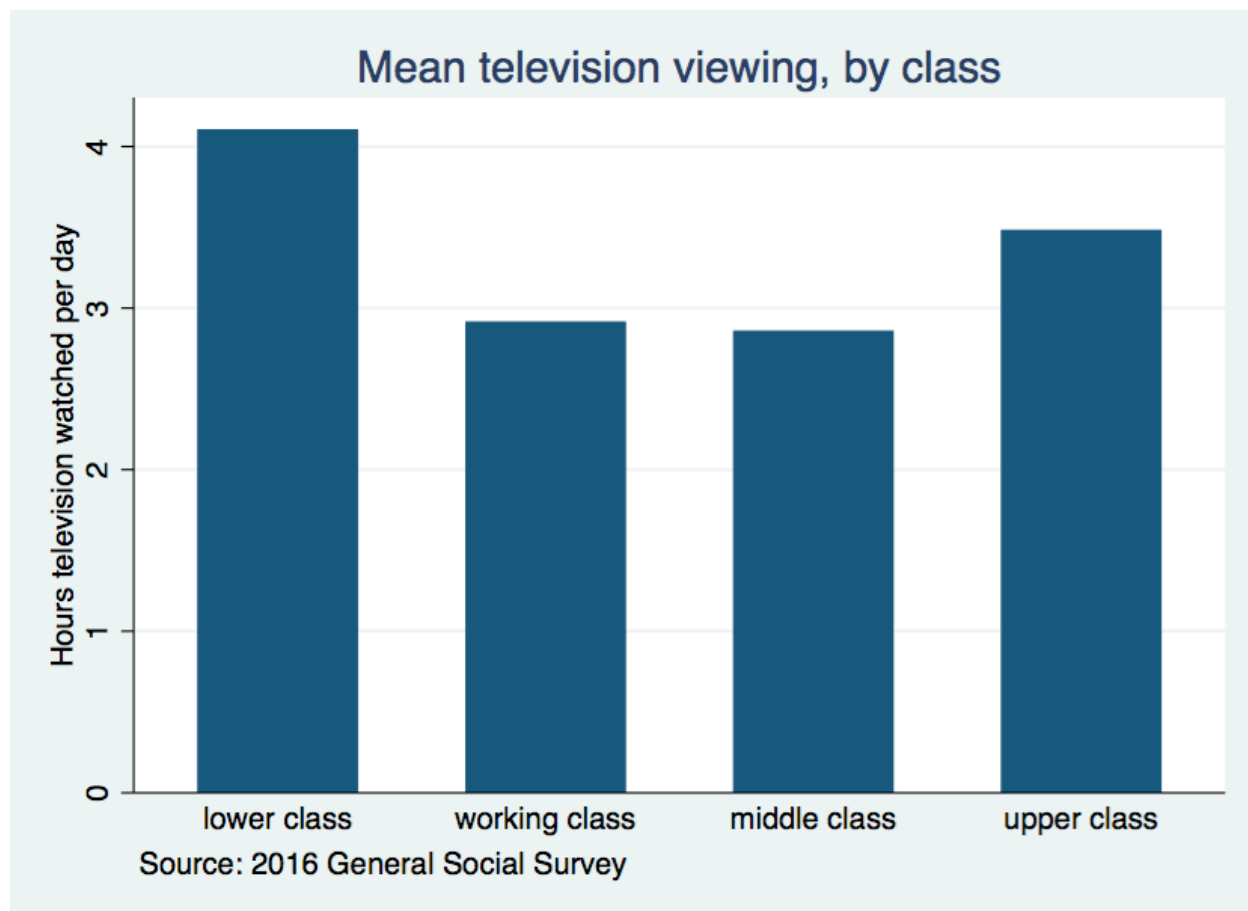
If you want to add enhancements beyond this, you can do so by adding a title, subtitle, and/or caption via the “Title” tab. As well, you can use the “Y-axis” tab to change the labeling of the vertical axis. Note: use quotation marks around titles, axis labels, and captions when entering them in the appropriate fields in the pop-up window. The quotation marks will not appear in the graph output. For example, to add a title to your graph, see the screenshot of the “Bar Chart” window on the following page:

The image shows a software window titled "graph bar - Bar charts". It features a tabbed interface with the following tabs: Main, Categories, if/in, Weights, Options, Bars, Y axis, Titles (selected), Legend, Overall, and By. The "Titles" tab is active, displaying four text input fields, each with a "Properties" button to its right:

- Title:** The input field contains the text "Mean television viewing, by class".
- Subtitle:** The input field is empty.
- Caption:** The input field is empty.
- Note:** The input field is empty.

At the bottom of the window, there are three icons on the left (a question mark, a registered trademark symbol, and a document icon) and three buttons on the right: "Submit", "Cancel", and "OK".

To further illustrate the use of these, the same bar chart is shown on the following page, with a title (at top) and a caption (bottom) added, and with a different title for the vertical (Y) axis.



### Saving Graphs

To save your bar chart(s), see the “Saving Graphs” handout.