Box plot are useful when we want to compare groups based on the 0.25 quantile, the median, and the 0.75 quantile. However, sometimes we are just interested in comparing groups on a single statistic. In this case, using a bar graph makes more sense. The power of bar graphs is when there are two or more group variables. However, this section will be useful because it will introduce the student to the bar graph using the simple example of having a single group variable. As a starting point, let us look at gender differences in the grade on the English course:

graph bar english, by(gender)
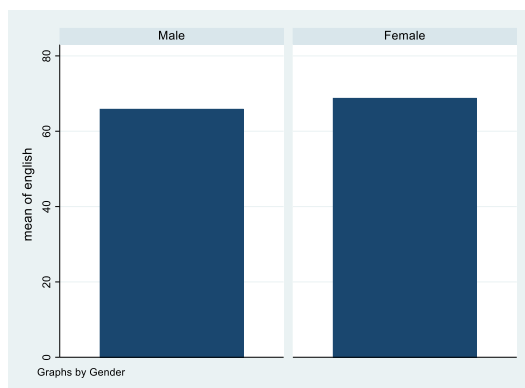
By default, the **graph bar** command calculates the average of the variable, which in this case is *english*. It is possible to tell Stata to calculate the median instead:

*graph bar (median) english, by(gender)*
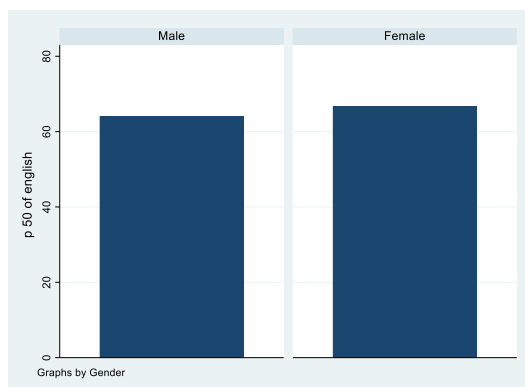
Notice that the y-axis now states that the value of the "p 50 of english" which is the value below which there are 50% of the observations. This, as you recall, is the 0.5 quantile, which is the median. The graphs show that the median and the mean for females is higher.

As usual, the **by()** option plot two separate graphs. What we usually want is to have both bars on the same graph. Just like in the case of the box plot, instead of specifying the **by()** option, we should specify the **over()** option:
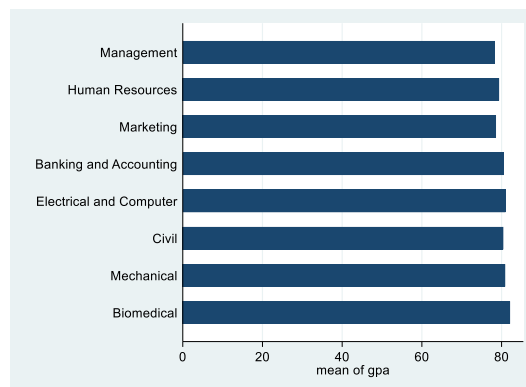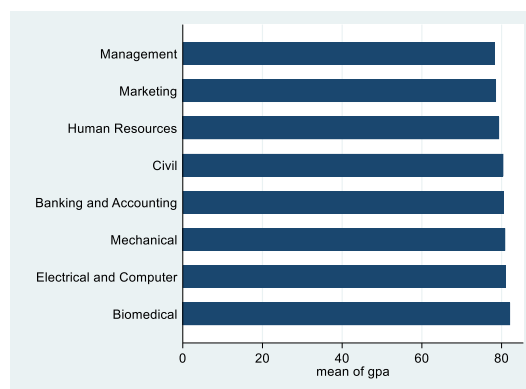
graph bar english, over(gender)
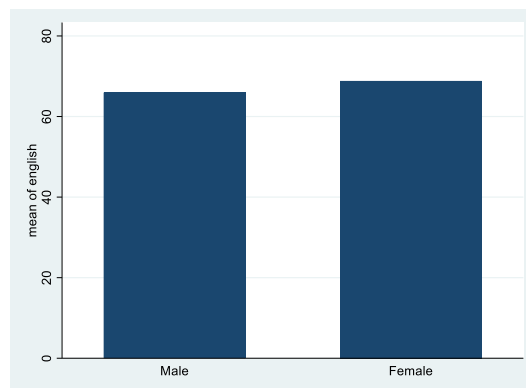
Also like box plots, we have draw the graph horizontally:

graph hbar gpa, over(major)

In this case we plotted the mean of the variable *gender* for each *major*. We can also tell Stata to sort the bars:
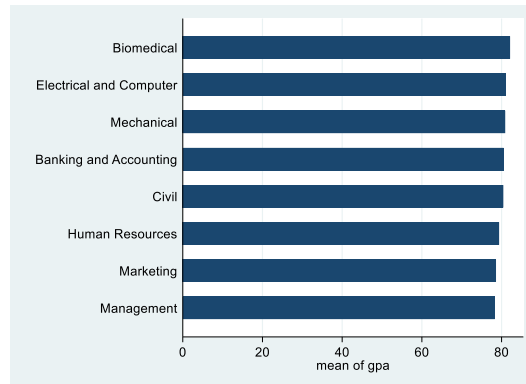
graph hbar gpa, over(major, sort(1))

We are using the same logic that we used in plotting the box plots. To tell Stata to sort the bars in descending order, we specify the descending option:

graph hbar gpa, over(major, sort(1) descending)

We can also tell Stata to tilt the labels:

graph hbar gpa, over(major, sort(1) descending label(angle(45)))