



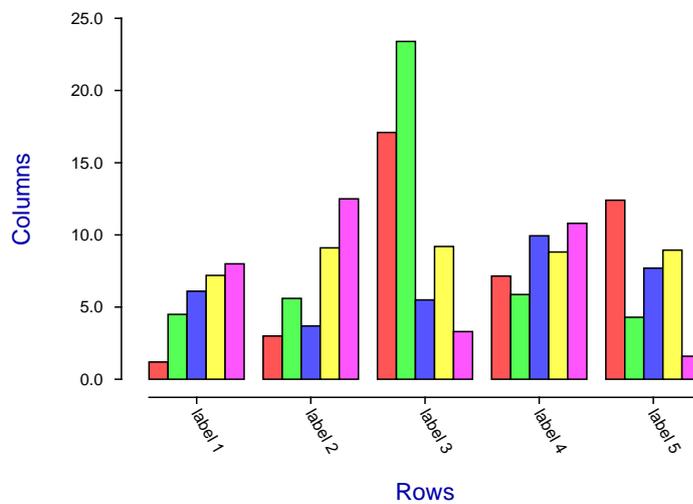
Tutorials and worked examples for simulation,
curve fitting, statistical analysis, and plotting.
<http://www.simfit.org.uk>

The simplest way to plot a bar chart is to prepare a data table with rows representing groups and columns for bars within groups. For example the test file `matrix.tf1` has the following values

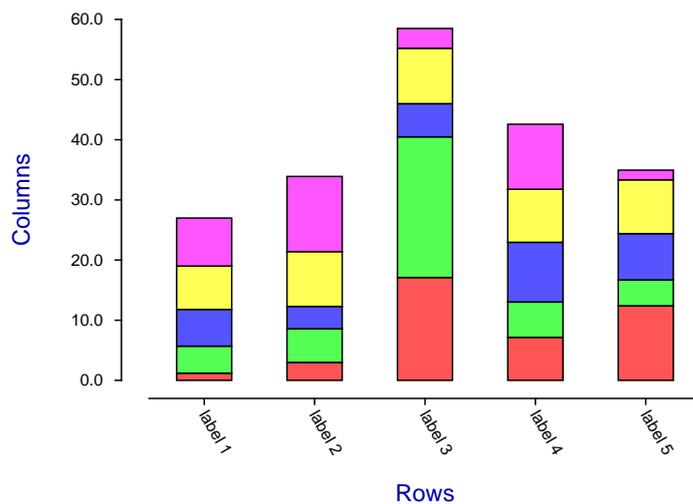
$$A = \begin{pmatrix} 1.20 & 4.50 & 6.10 & 7.20 & 8.00 \\ 3.00 & 5.60 & 3.70 & 9.10 & 12.5 \\ 17.1 & 23.4 & 5.50 & 9.20 & 3.30 \\ 7.15 & 5.87 & 9.94 & 8.82 & 10.8 \\ 12.4 & 4.30 & 7.70 & 8.95 & 1.60 \end{pmatrix}$$

and from the exhaustive analysis procedure in program `simstat` these plots can be displayed.

Bar Chart: Test File matrix.tf1

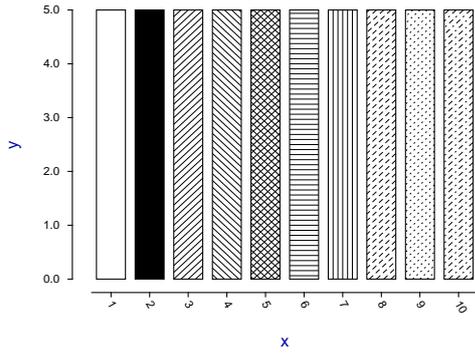


Stacked Bar Chart: Test File matrix.tf1

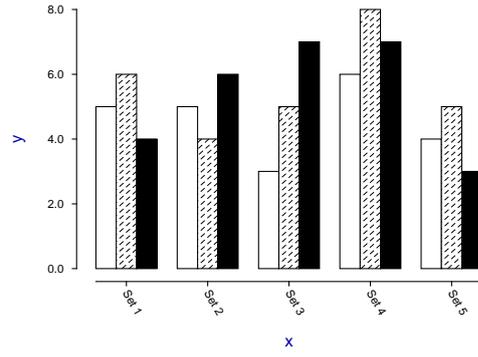


The next plots illustrate the effects created by several test files using program `simplot`.

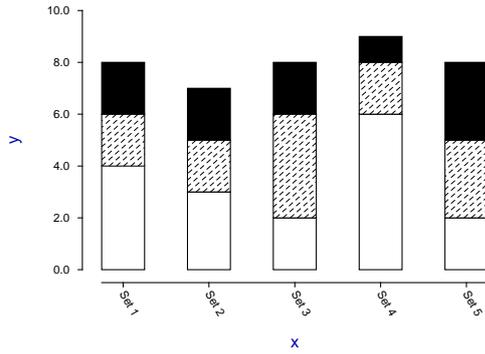
Test File barchart.tf2: 10 Fill Styles



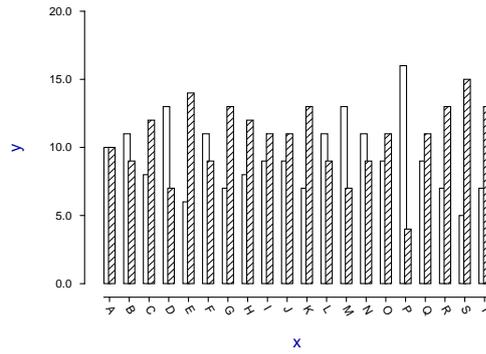
Test File barchart.tf3: Adjacent Groups



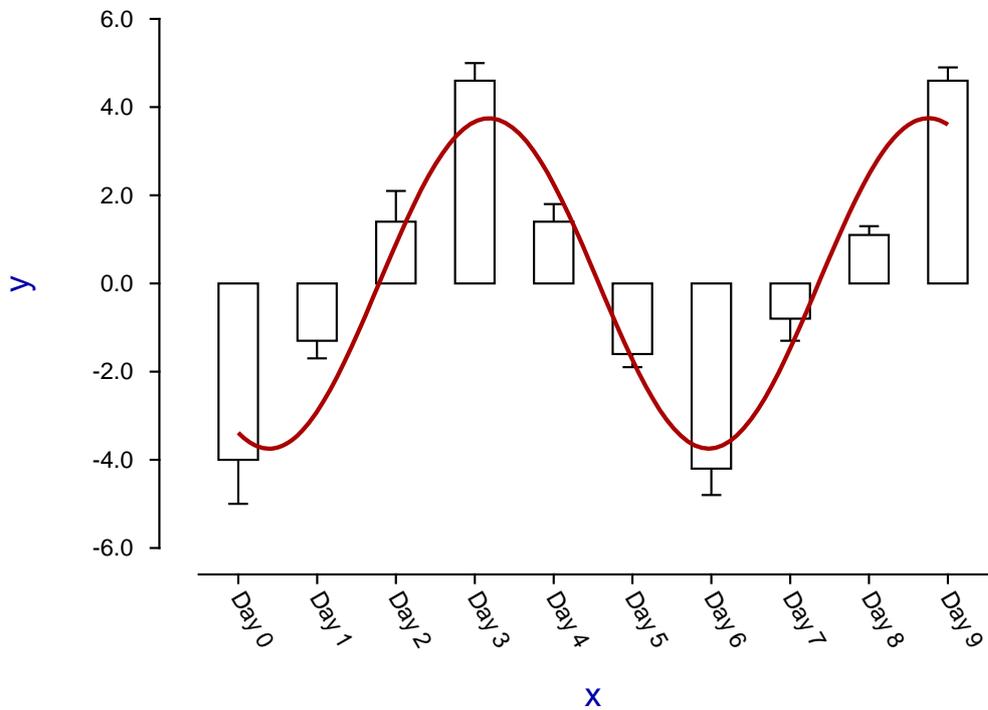
Test File barchart.tf4: Stacked Bars



Test File barchart.tf5: Overlaid Bars



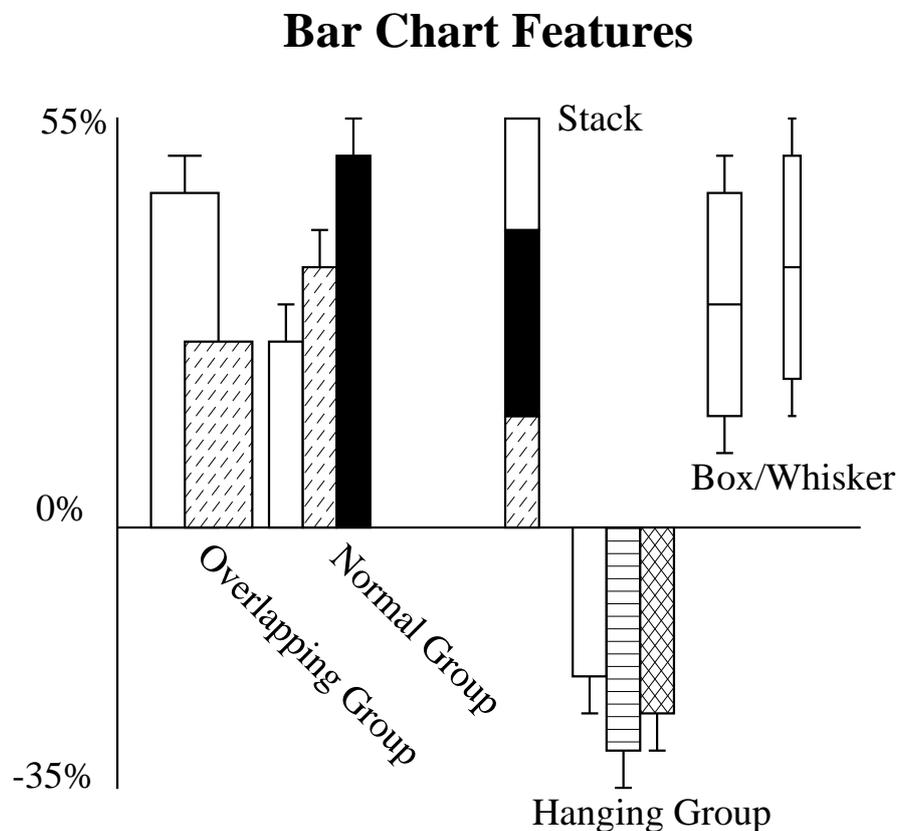
Test Files barchart.tf6 and barchart.tf7



The way that SIMFIT creates bar charts is as follows.

1. If the data matrix input does not have precisely 9 columns then a special advanced barchart file is created with exactly 9 columns, where the value in each column represents a graphical feature.
2. In case you want to plot a data matrix with 9 columns, simply add an extra column 10 containing all values equal to 0 and **simplot** will display the barchart correctly.
3. The format for such files can be seen from examining the barchart test files then checking the features as displayed previously.
4. It will be appreciated from the explanations added after the data sections in the test files that this method allows tremendous possibilities to sculpture barcharts with almost every possible variation concerning upper and lower error bars, fill styles, colors, labels, sizes and positions.
5. Once a matrix or advanced barchart file has been input, program **simplot** allows other data files to be input, for instance to represent error bars, or another curve to be overlayed as in the previous plot where the curve from `barchart.tf7` is overlayed on the barchart from `barchart.tf6`.

Some features that are possible with advanced barcharts are illustrated by the following figure.



Adding error bars to the barchart from `matrix.tf1`, and further editing that is possible after program **simplot** has displayed the default barchart are demonstrated in the next plots.

