Scatter Plot with Error Bars

Response to a LinkedIn question posed 2014-10

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2014-11-01
The Example Data

- This screenshot shows the example data.

<table>
<thead>
<tr>
<th>X</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>C6</th>
<th>C7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Y1</td>
<td>Y1Lo</td>
<td>Y1Hi</td>
<td>Y2</td>
<td>Y2Lo</td>
<td>Y2Hi</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>12.0</td>
<td>11.0</td>
<td>13.0</td>
<td>6.5</td>
<td>6.0</td>
<td>6.97</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>14.0</td>
<td>13.2</td>
<td>14.7</td>
<td>5.5</td>
<td>4.8</td>
<td>6.10</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>13.8</td>
<td>12.2</td>
<td>14.5</td>
<td>3.2</td>
<td>2.7</td>
<td>3.80</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>15.0</td>
<td>14.0</td>
<td>16.0</td>
<td>1.8</td>
<td>0.2</td>
<td>2.80</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>18.2</td>
<td>17.2</td>
<td>19.0</td>
<td>0.8</td>
<td>-0.2</td>
<td>2.20</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Low end of Y1 Error Bar
- High end of Y1 Error Bar
• This approach is not meant to be a general purpose approach which can handle arbitrary X, and Y names, and arbitrary numbers of Y vs X lines. This very specific code might make sense for a graph that is generated multiple times with updated data.

• The usual approach of doing most of the data manipulation and graphing interactively and then capturing the commands from the session or history window (or for the graph via Editor > Copy Command Language) was used to provide most of the code in the macro.
Approach

• Define the range of the Y values to be used for the graph
• Stack the Y1Lo and Y1Hi values
• Stack the Y2Lo and Y2Hi values
• Create a graph layout with 3 sub-graphs:
  – The graph of Y1 error bars
  – The graph of Y2 error bars
  – The graph with Y1 and Y2 vs X lines
Scatterplot of Y1, Y2 vs X

- Y1 (blue dots)
- Y2 (red squares)

X-axis: 1 to 5
Y-axis: 0 to 20

The Final Graph

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The text editor used – EditPad Pro – provides the colours via a Syntax colouring scheme but Notepad could also be used to create the macro.

This code was generated by use of Data > Stack > Rows
This code was generated by use of Graph > ScatterPlot > With Connect and Groups.

Type 0 makes the data region transparent. Only the last graph provides the coloured background.

This code was generated by use of Graph > ScatterPlot > With Connect Line and then Multiple Graphs > Overlaid on the same Graph.