



**Tips, Tricks and
Time-Savers:
Features You May
Not Yet Have
Discovered**

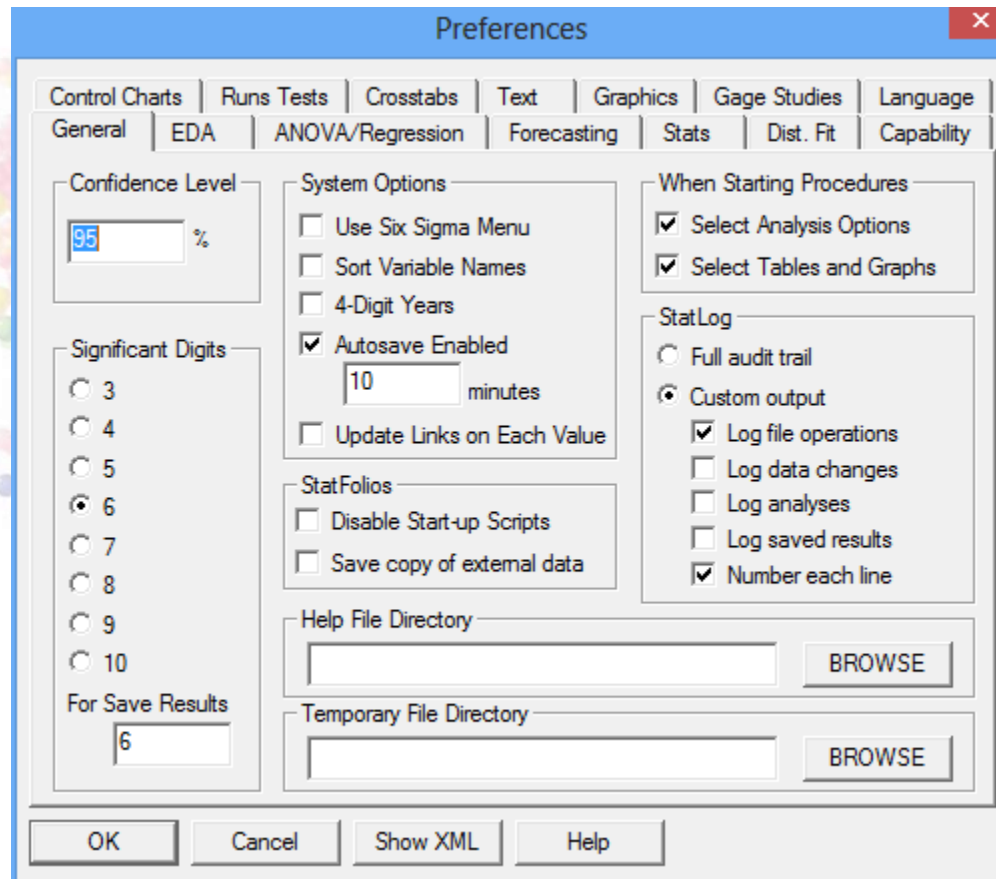
Presented by Dr. Neil W. Polhemus

Outline

- Setting and saving preferences.
- Recoding data.
- Making predictions from fitted models.
- Copying output to other applications.
- Overlaying graphs in the StatGallery.
- Using a “BY” variable to replicate an analysis.
- Using value labels.

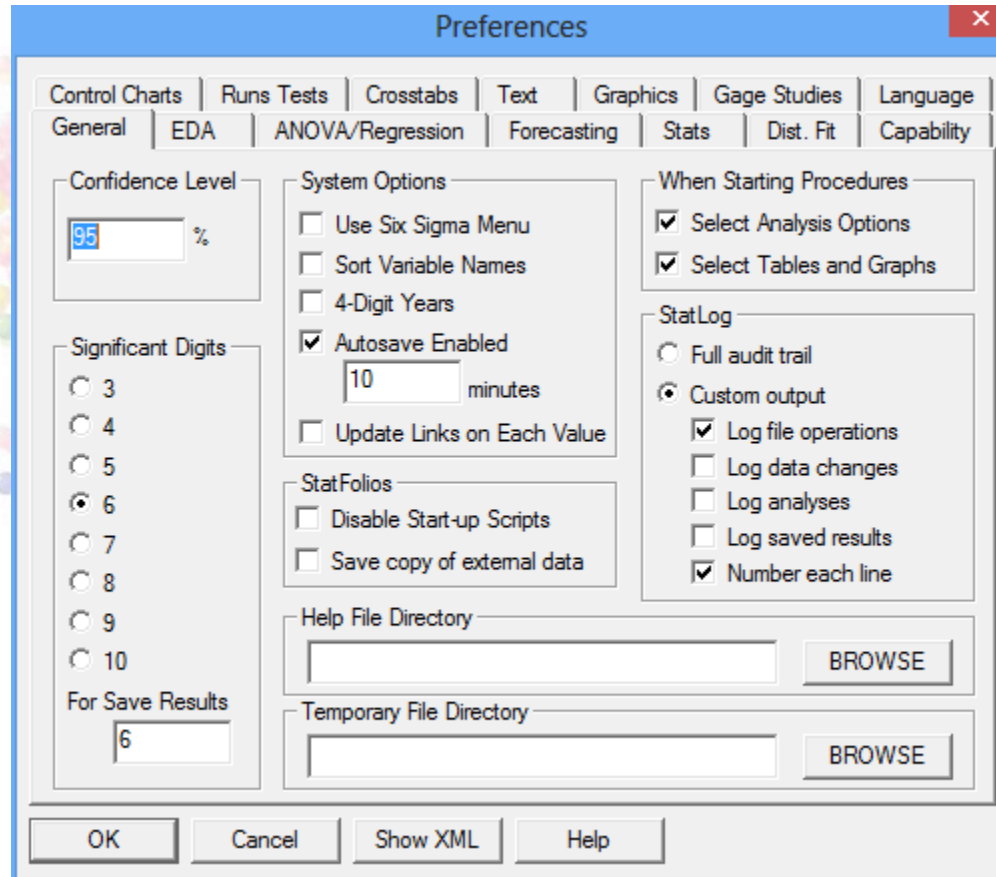
#1: System Preferences

- Accessed from the *Edit* menu.



1. System Preferences

- Accessed from the *Edit* menu.



The screenshot shows the 'Preferences' dialog box in Minitab, with the 'General' tab selected. The dialog box has a blue title bar with a close button (X) in the top right corner. Below the title bar is a tabbed interface with the following tabs: Control Charts, Runs Tests, Crosstabs, Text, Graphics, Gage Studies, Language, General (selected), EDA, ANOVA/Regression, Forecasting, Stats, Dist. Fit, and Capability. The main area is divided into several sections:

- Confidence Level:** A text box containing '95' followed by a '%' symbol.
- Significant Digits:** A vertical list of radio buttons from 3 to 10, with '6' selected.
- For Save Results:** A text box containing '6'.
- System Options:** A group box containing:
 - Use Six Sigma Menu
 - Sort Variable Names
 - 4-Digit Years
 - Autosave Enabled, with a text box containing '10' and the label 'minutes'.
 - Update Links on Each Value
- StatFolios:** A group box containing:
 - Disable Start-up Scripts
 - Save copy of external data
- When Starting Procedures:** A group box containing:
 - Select Analysis Options
 - Select Tables and Graphs
- StatLog:** A group box containing:
 - Full audit trail
 - Custom output
 - Log file operations
 - Log data changes
 - Log analyses
 - Log saved results
 - Number each line
- Help File Directory:** A text box with a 'BROWSE' button to its right.
- Temporary File Directory:** A text box with a 'BROWSE' button to its right.

At the bottom of the dialog box are four buttons: 'OK', 'Cancel', 'Show XML', and 'Help'.

Summary Statistics

Preferences

Control Charts | Runs Tests | Crosstabs | Text | Graphics | Gage Studies | Language
General | EDA | ANOVA/Regression | Forecasting | Stats | Dist. Fit | Capability

Summary Statistics

<input checked="" type="checkbox"/> Average	<input type="checkbox"/> Mean Absolute Dev.	<input type="checkbox"/> Kurtosis
<input checked="" type="checkbox"/> Median	<input type="checkbox"/> MAD	<input checked="" type="checkbox"/> Std. Kurtosis
<input type="checkbox"/> Mode	<input type="checkbox"/> Sbi	<input type="checkbox"/> Sum
<input type="checkbox"/> Geometric Mean	<input checked="" type="checkbox"/> Minimum	<input type="checkbox"/> Sum of Squares
<input type="checkbox"/> Harmonic Mean	<input checked="" type="checkbox"/> Maximum	
<input type="checkbox"/> Trimmed Mean <input type="text" value="5"/> %	<input checked="" type="checkbox"/> Range	
<input type="checkbox"/> Winsorized Mean	<input checked="" type="checkbox"/> Lower Quartile	
<input type="checkbox"/> Variance	<input checked="" type="checkbox"/> Upper Quartile	
<input checked="" type="checkbox"/> Std. Deviation	<input checked="" type="checkbox"/> Interquartile Range	
<input checked="" type="checkbox"/> Coeff. of Variation	<input type="checkbox"/> 1/6 Sextile	
<input type="checkbox"/> Gini Coefficient	<input type="checkbox"/> 5/6 Sextile	
<input type="checkbox"/> Std. Error	<input type="checkbox"/> Intersextile Range	
<input type="checkbox"/> Geometric Std. Dev.	<input type="checkbox"/> Skewness	<input type="button" value="All"/>
<input type="checkbox"/> Winsorized Sigma	<input checked="" type="checkbox"/> Std. Skewness	

OK Cancel Show XML Help

Text

Preferences

General | EDA | ANOVA/Regression | Forecasting | Stats | Dist. Fit | Capability
Control Charts | Runs Tests | Crosstabs | **Text** | Graphics | Gage Studies | Language

StatAdvisor

- Add to Text Panes
- Highlight References in:
Red

Analysis Headers

- Display in:
Blue

Tables

Max. rows to display:
1000

Max. width:
30 inches

- Split wide tables

Reduce font by:
0

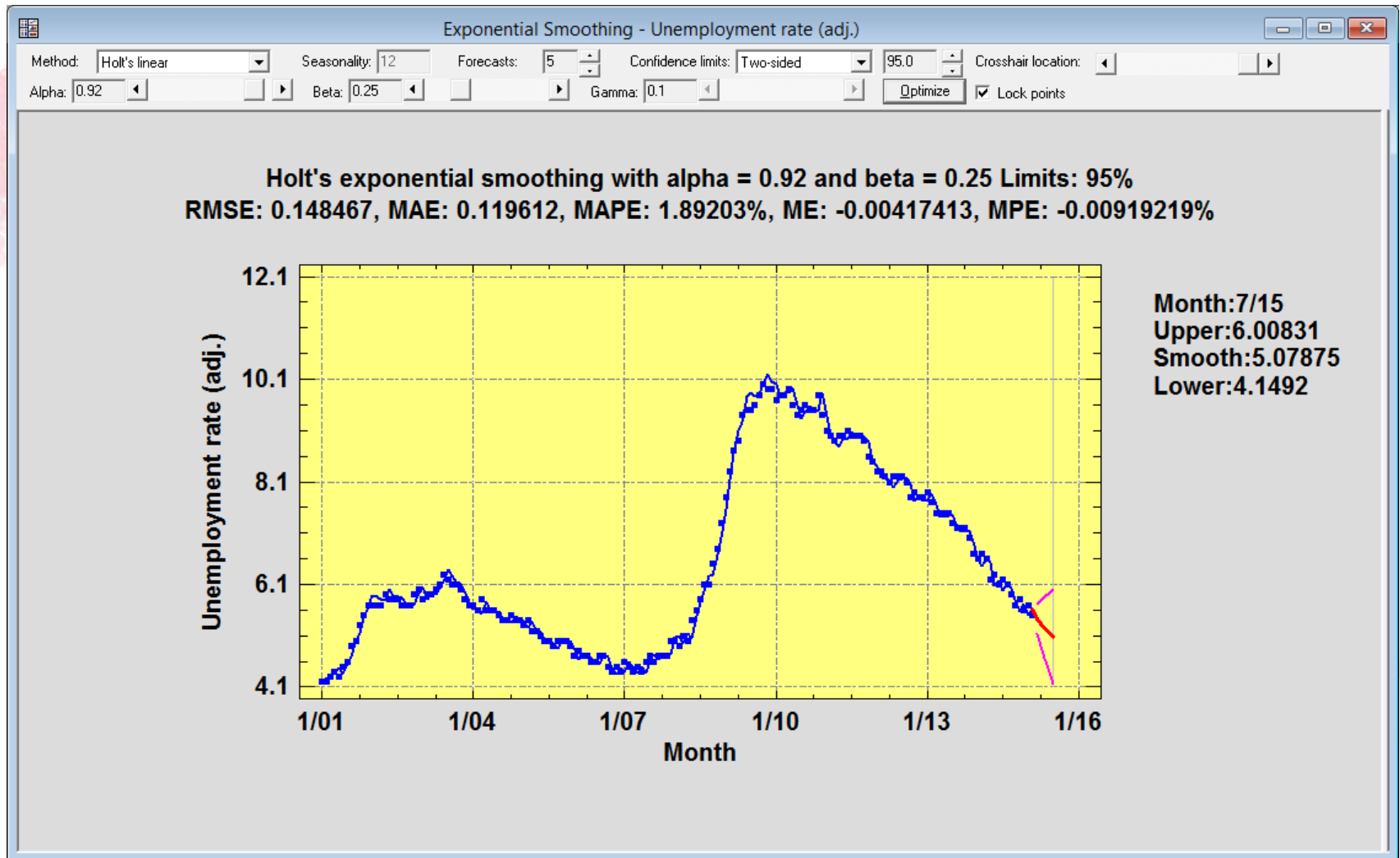
- Replace row numbers with labels

OK Cancel Show XML Help

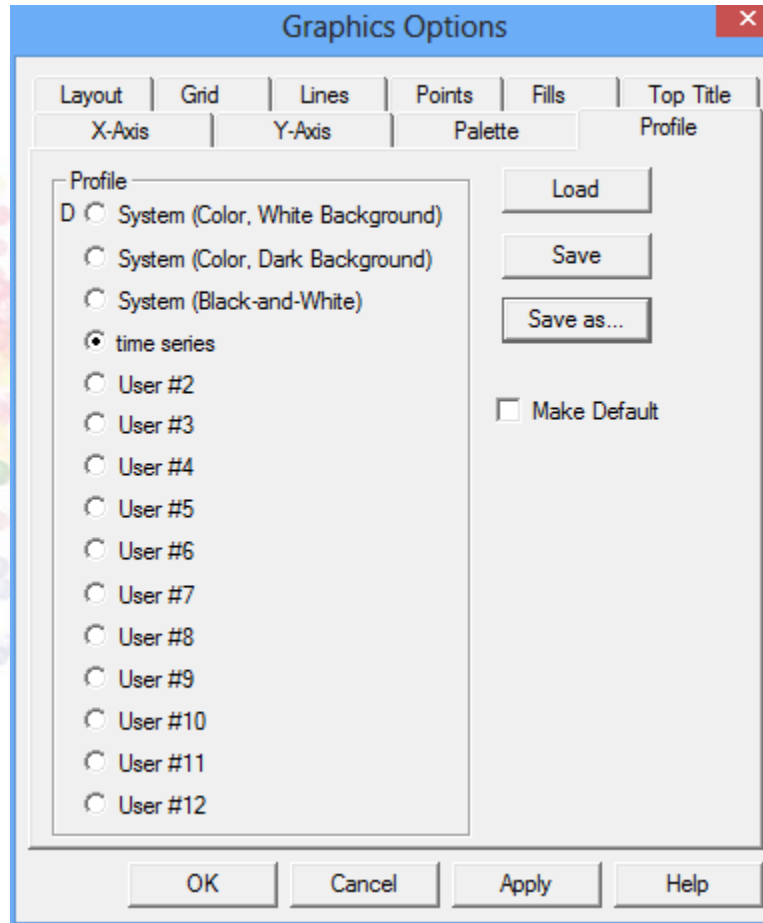
Graphics Preferences

- ❑ Statgraphics maintains a set of default attributes that are applied to newly created graphs.
- ❑ You may use the *Profile* tab on the Graphics Options dialog box to save and apply other sets of attributes.
- ❑ You can also import and export these settings to move them from one computer to another.

Example

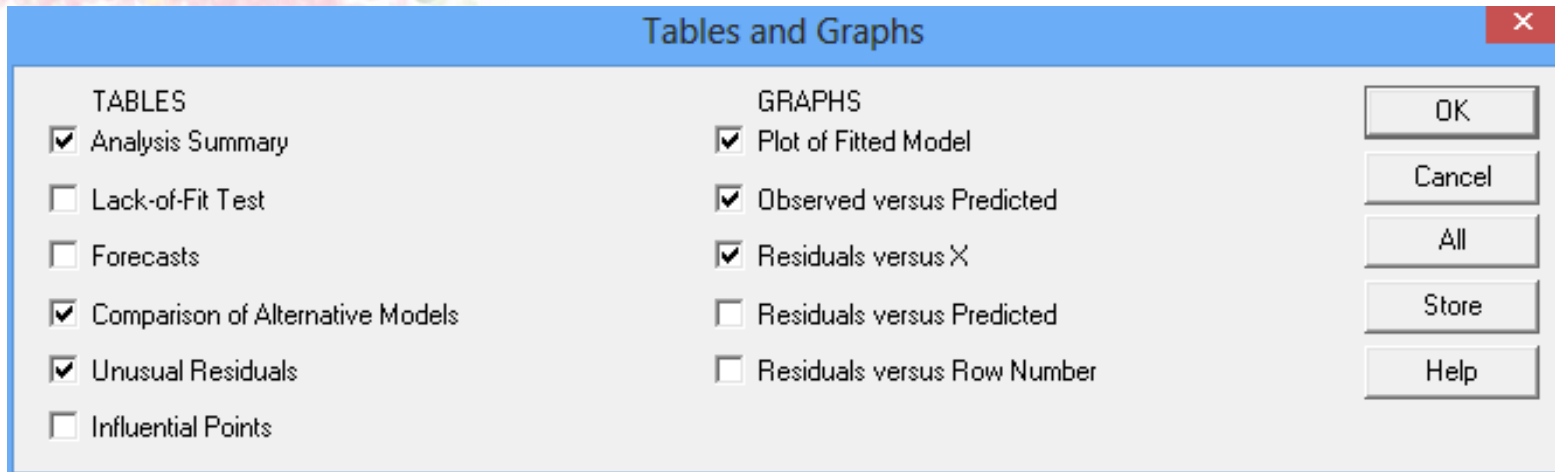


Graphics Profiles



Saving Desired Tables and Graphs

- You may save the default tables and graphs for any procedure. (Use the *Store* button).

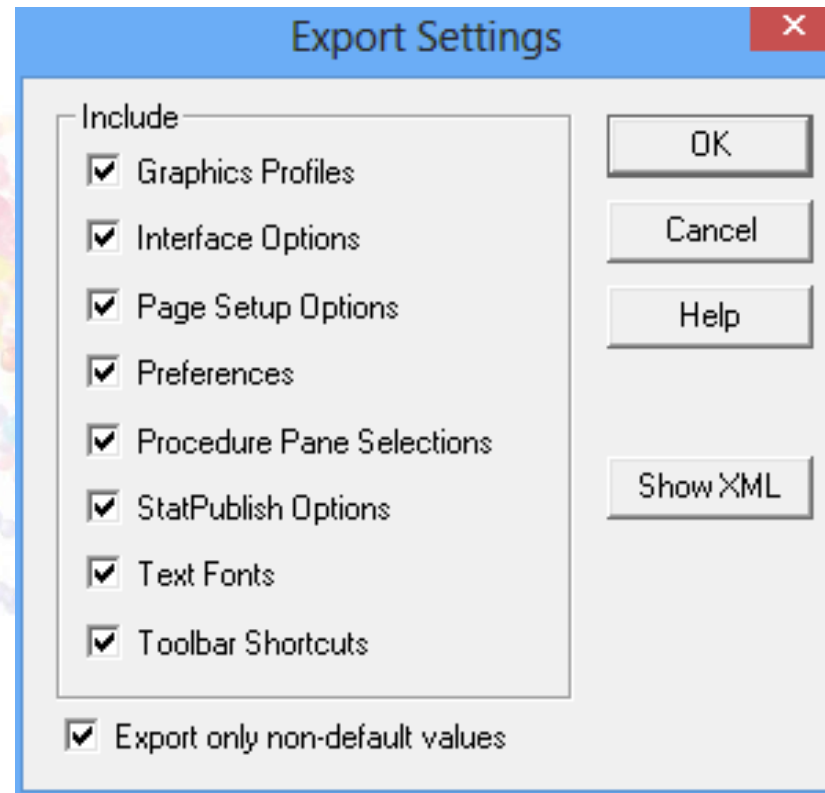


Import/Export Settings

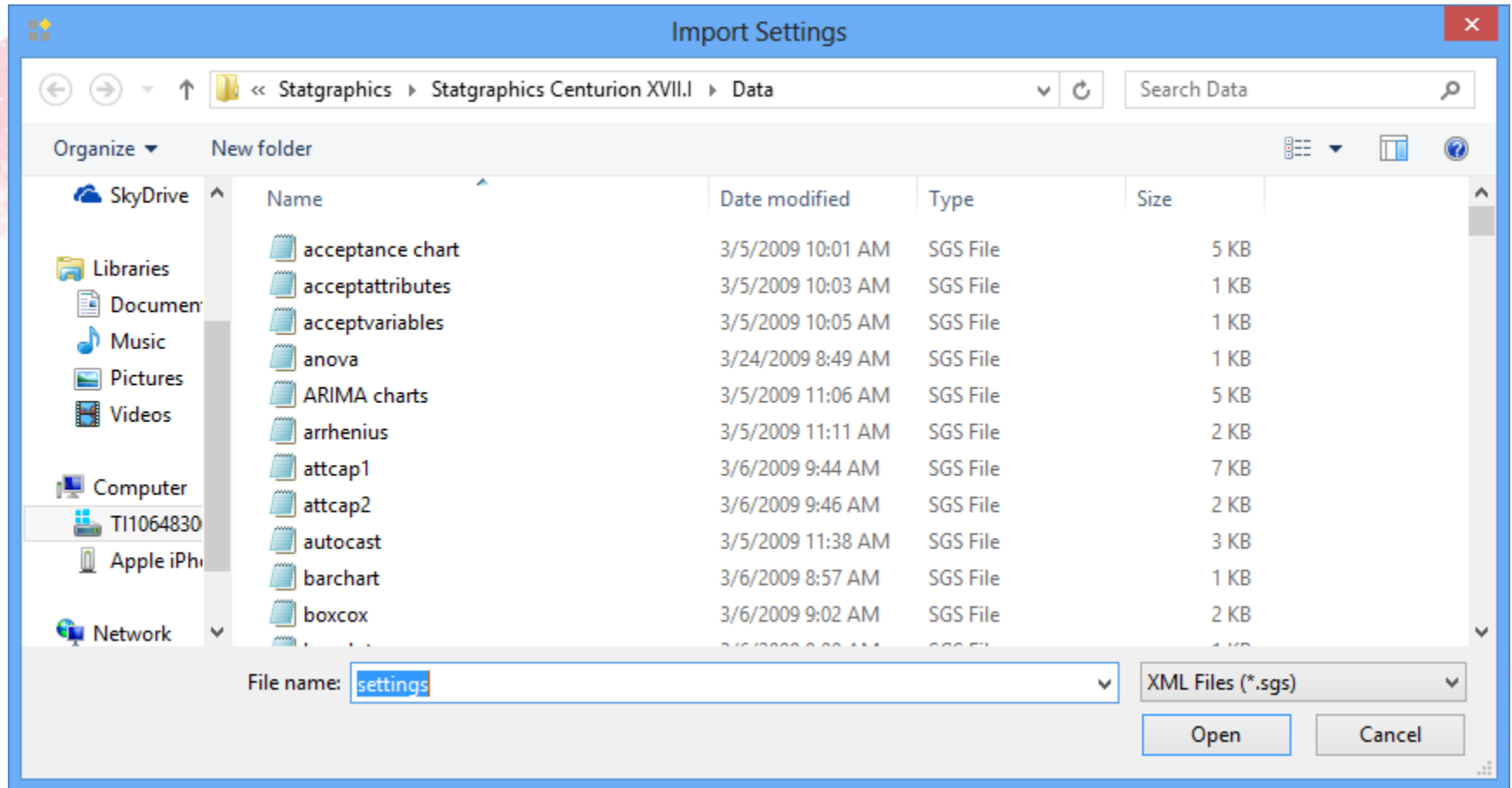
- ❑ Graphics profiles and other system settings may be imported and exported as a group.

- ❑ This lets you:
 - Move settings from one computer to another.
 - Establish an organizational standard and apply it to everyone's computer.

Export Settings



Import Settings



#2. Recoding Data

- The Statgraphics DataBook provides the ability to recode data in a column.

Lower Limit:	Upper Limit:	New Value:
0	14.99	below spec
15.00	25.00	OK
25.01	100.00	above spec

Limit Conditions

- Lower \leq Value \leq Upper
- Lower \leq Value $<$ Upper
- Lower $<$ Value \leq Upper
- Lower $<$ Value $<$ Upper

Unmatched

- Leave as is
- Set to Missing

Extrapolate

OK Cancel Help

#3. Predictions from Fitted Models

- ❑ Many procedures in Statgraphics create statistical models for data.
- ❑ Those procedures fit the models to a set of observations which is sometimes called a “training set”.
- ❑ They can then make predictions for other observations that were not used to fit the model.
- ❑ This is done by adding rows in which values of the predictor variables are entered but the value of the dependent variable is left blank.

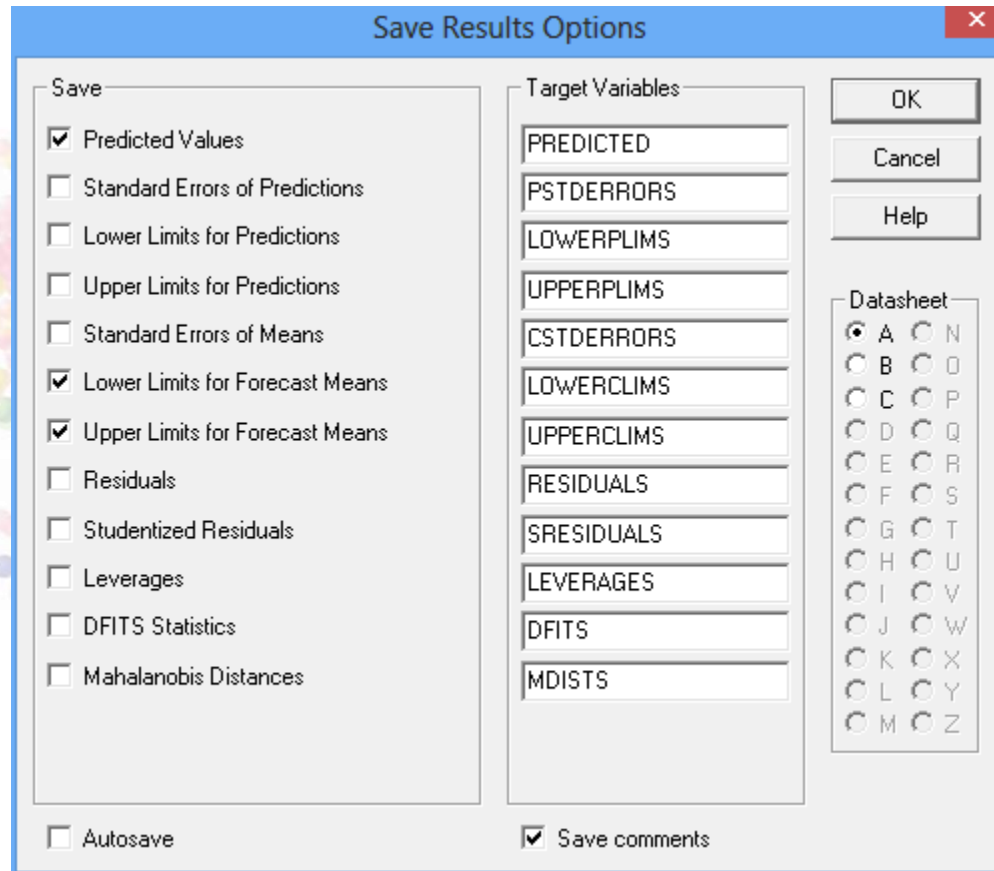
Example – Designed Experiment

C:\DocData17\chemical reaction2.sgx

	BLOCK	feed rate liters/min	catalyst %	agitation rpm	temperature degrees	concentration %	reacted %
1	1	12.5	1.5	110.0	160.0	4.5	65
2	1	10.0	1.0	100.0	140.0	6.0	56
3	1	15.0	1.0	100.0	140.0	3.0	53
4	1	10.0	2.0	100.0	140.0	3.0	63
5	1	15.0	2.0	100.0	140.0	6.0	65
6	1	10.0	1.0	120.0	140.0	3.0	53
7	1	15.0	1.0	120.0	140.0	6.0	55
8	1	10.0	2.0	120.0	140.0	6.0	67
9	1	15.0	2.0	120.0	140.0	3.0	61
10	1	12.5	1.5	110.0	160.0	4.5	67
11	1	10.0	1.0	100.0	180.0	3.0	69
12	1	15.0	1.0	100.0	180.0	6.0	45
13	1	10.0	2.0	100.0	180.0	6.0	78
14	1	15.0	2.0	100.0	180.0	3.0	93
15	1	10.0	1.0	120.0	180.0	6.0	49
16	1	15.0	1.0	120.0	180.0	3.0	60
17	1	10.0	2.0	120.0	180.0	3.0	95
18	1	15.0	2.0	120.0	180.0	6.0	82
19	1	12.5	1.5	110.0	160.0	4.5	63
20	1	14	1.8	115	155	5.5	
21							
22							
23							
24							

chemical reaction2 B C

Save Results



The image shows a 'Save Results Options' dialog box with a blue title bar and a close button (X) in the top right corner. The dialog is divided into several sections:

- Save:** A list of checkboxes for saving various results:
 - Predicted Values
 - Standard Errors of Predictions
 - Lower Limits for Predictions
 - Upper Limits for Predictions
 - Standard Errors of Means
 - Lower Limits for Forecast Means
 - Upper Limits for Forecast Means
 - Residuals
 - Studentized Residuals
 - Leverages
 - DFITS Statistics
 - Mahalanobis Distances
- Target Variables:** A vertical list of text boxes containing the following variable names:
 - PREDICTED
 - PSTDERRORS
 - LOWERPLIMS
 - UPPERPLIMS
 - CSTDERRORS
 - LOWERCLIMS
 - UPPERCLIMS
 - RESIDUALS
 - SRESIDUALS
 - LEVERAGES
 - DFITS
 - MDISTS
- Datasheet:** A grid of radio buttons for selecting a sheet:

<input checked="" type="radio"/> A	<input type="radio"/> N
<input type="radio"/> B	<input type="radio"/> O
<input type="radio"/> C	<input type="radio"/> P
<input type="radio"/> D	<input type="radio"/> Q
<input type="radio"/> E	<input type="radio"/> R
<input type="radio"/> F	<input type="radio"/> S
<input type="radio"/> G	<input type="radio"/> T
<input type="radio"/> H	<input type="radio"/> U
<input type="radio"/> I	<input type="radio"/> V
<input type="radio"/> J	<input type="radio"/> W
<input type="radio"/> K	<input type="radio"/> X
<input type="radio"/> L	<input type="radio"/> Y
<input type="radio"/> M	<input type="radio"/> Z
- Buttons:** 'OK', 'Cancel', and 'Help' buttons are located on the right side.
- Footer:** At the bottom, there are two checkboxes:
 - Autosave
 - Save comments

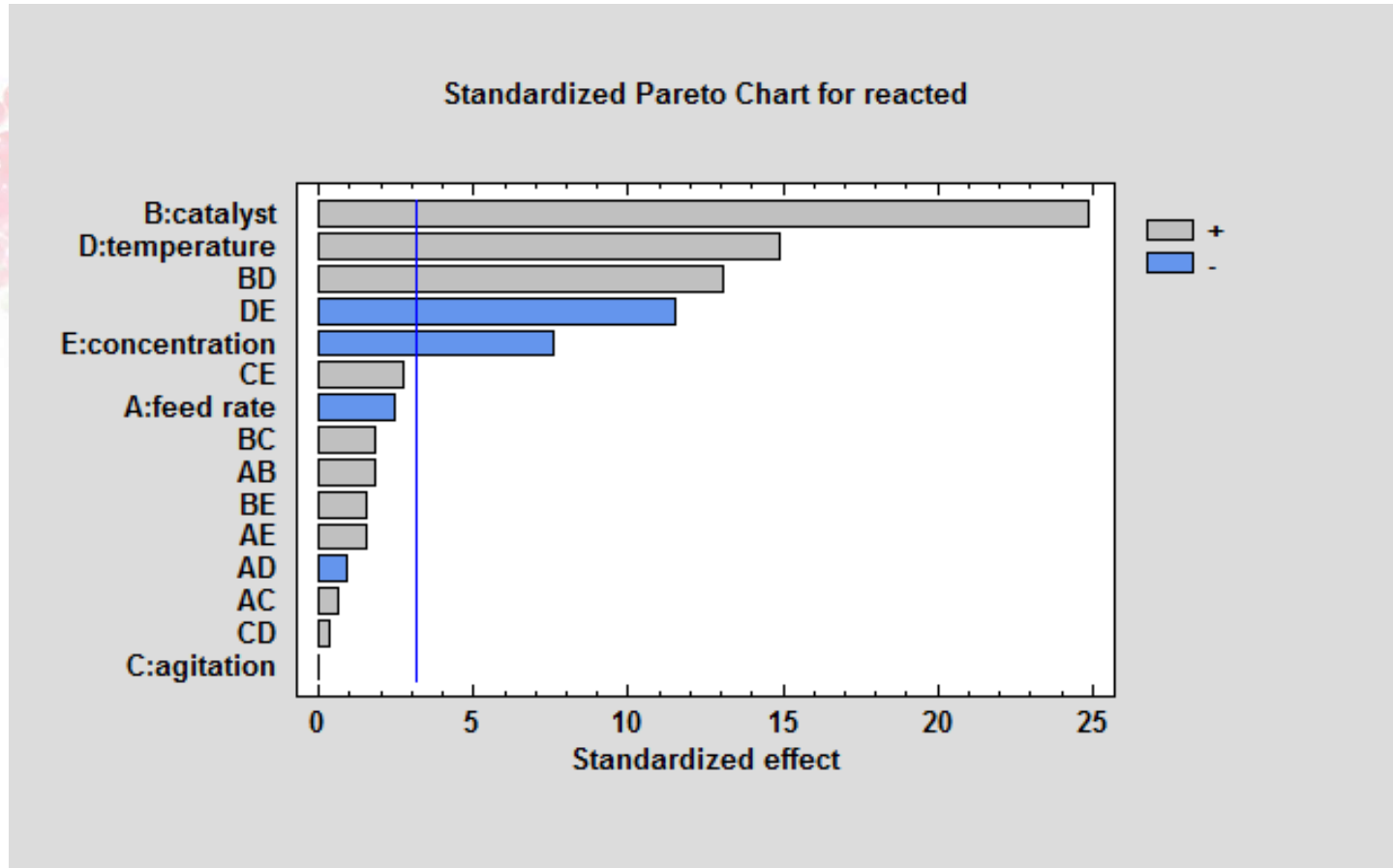
#4. Copying Output to Other Applications

- Tables
- Graphs
- Numerical results

Methods:

- Copy and paste
- Save graphs as image files
- Using the StatReporter

Copy and Paste

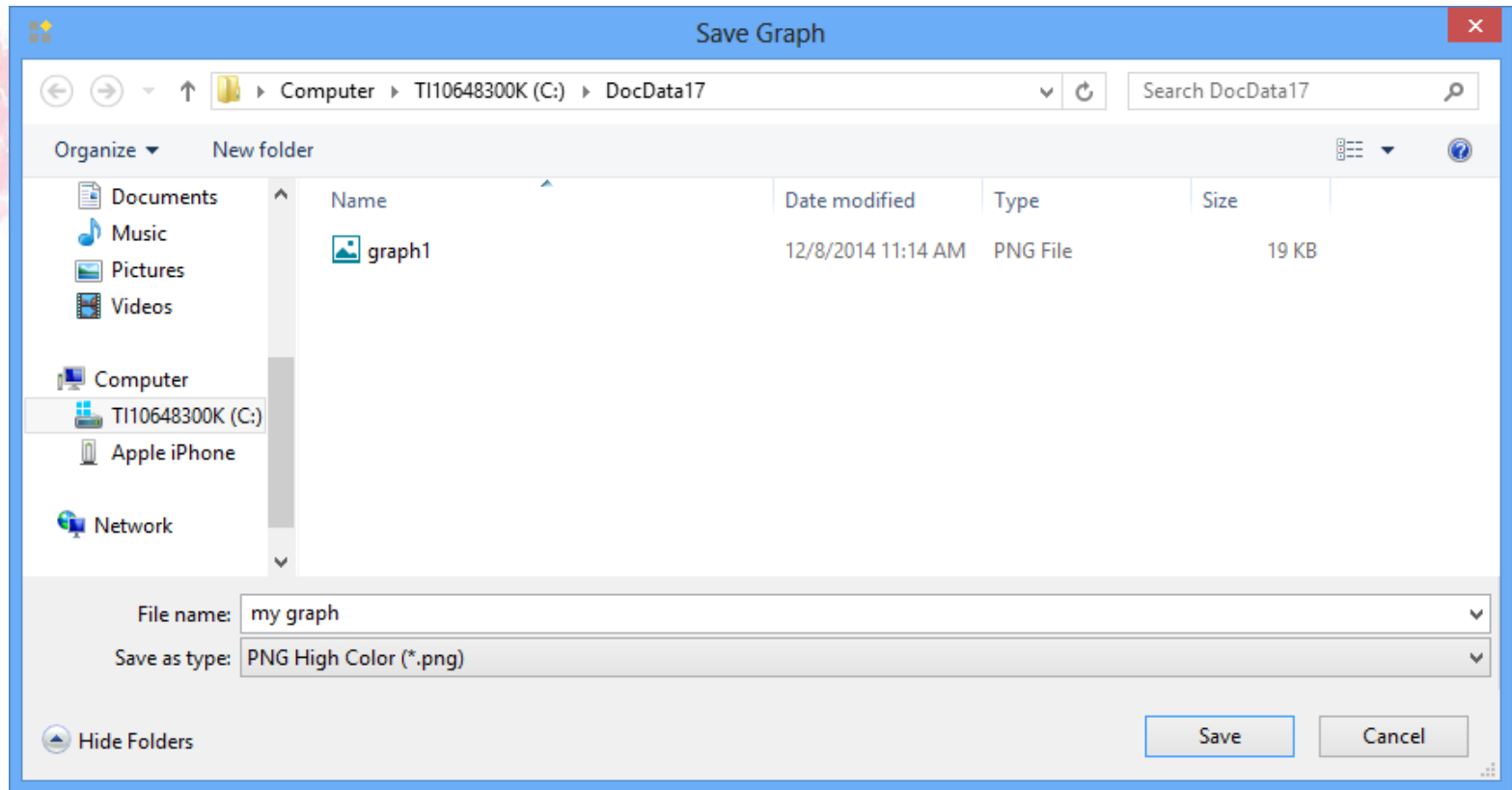


Copy and Paste

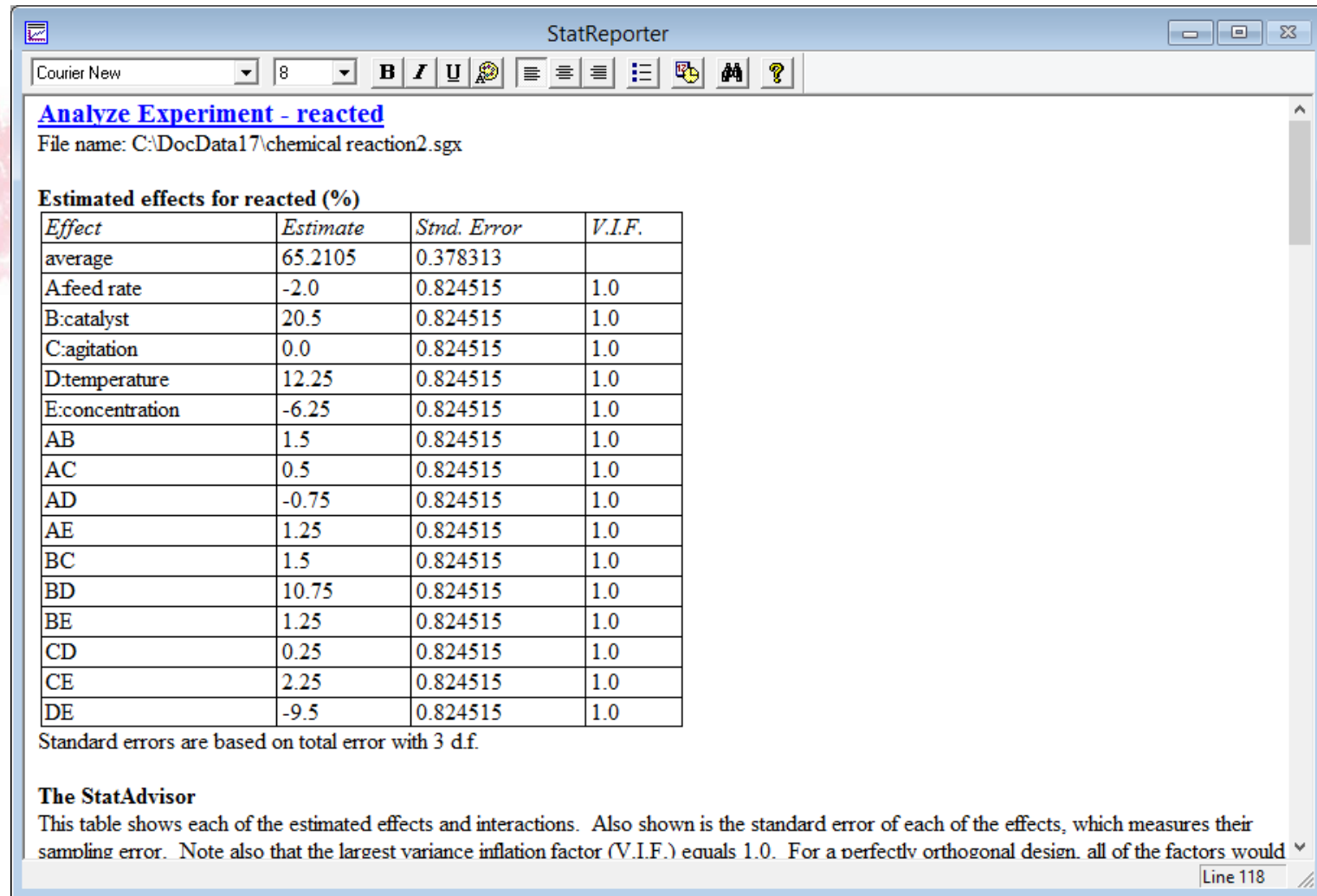
The screenshot shows an Excel spreadsheet with the following data:

1		Observed	Fitted	Lower 95.0%	Upper 95.0%	Lower 95.0%	Upper 95.0% CL			
2	Row	Value	Value	for Forecast	for Forecast	for Mean	for Mean			
3	1	65	65.2105	59.8262	70.5948	64.0066	66.4145			
4	2	56	55.9605	48.5571	63.3639	50.7385	61.1825			
5	3	53	52.9605	45.5571	60.3639	47.7385	58.1825			
6	4	63	62.9605	55.5571	70.3639	57.7385	68.1825			
7	5	65	64.9605	57.5571	72.3639	59.7385	70.1825			
8	6	53	52.9605	45.5571	60.3639	47.7385	58.1825			
9	7	55	54.9605	47.5571	62.3639	49.7385	60.1825			
10	8	67	66.9605	59.5571	74.3639	61.7385	72.1825			
11	9	61	60.9605	53.5571	68.3639	55.7385	66.1825			
12	10	67	65.2105	59.8262	70.5948	64.0066	66.4145			
13	11	69	68.9605	61.5571	76.3639	63.7385	74.1825			
14	12	45	44.9605	37.5571	52.3639	39.7385	50.1825			
15	13	78	77.9605	70.5571	85.3639	72.7385	83.1825			
16	14	93	92.9605	85.5571	100.364	87.7385	98.1825			
17	15	49	48.9605	41.5571	56.3639	43.7385	54.1825			
18	16	60	59.9605	52.5571	67.3639	54.7385	65.1825			
19	17	95	94.9605	87.5571	102.364	89.7385	100.183			
20	18	82	81.9605	74.5571	89.3639	76.7385	87.1825			

Image Files



Using the StatReporter



The screenshot shows the StatReporter application window. The title bar reads "StatReporter". The menu bar includes "Courier New", "8", and various formatting icons (bold, italic, underline, bullet, list, link, unlink, help). The main content area displays the following information:

Analyze Experiment - reacted
File name: C:\DocData17\chemical reaction2.sgx

Estimated effects for reacted (%)

<i>Effect</i>	<i>Estimate</i>	<i>Std. Error</i>	<i>V.I.F.</i>
average	65.2105	0.378313	
A:feed rate	-2.0	0.824515	1.0
B:catalyst	20.5	0.824515	1.0
C:agitation	0.0	0.824515	1.0
D:temperature	12.25	0.824515	1.0
E:concentration	-6.25	0.824515	1.0
AB	1.5	0.824515	1.0
AC	0.5	0.824515	1.0
AD	-0.75	0.824515	1.0
AE	1.25	0.824515	1.0
BC	1.5	0.824515	1.0
BD	10.75	0.824515	1.0
BE	1.25	0.824515	1.0
CD	0.25	0.824515	1.0
CE	2.25	0.824515	1.0
DE	-9.5	0.824515	1.0

Standard errors are based on total error with 3 d.f.

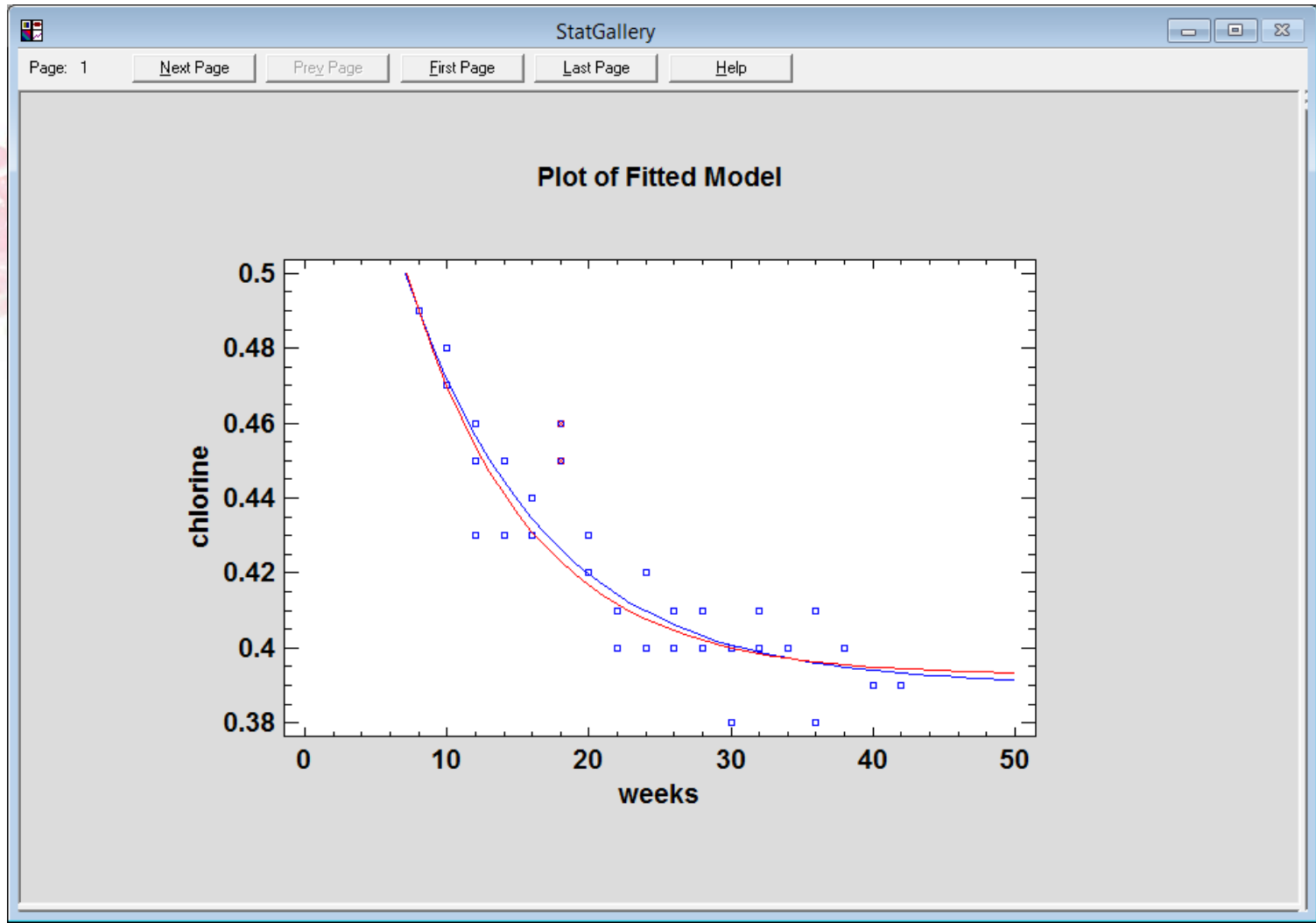
The StatAdvisor
This table shows each of the estimated effects and interactions. Also shown is the standard error of each of the effects, which measures their sampling error. Note also that the largest variance inflation factor (V.I.F.) equals 1.0. For a perfectly orthogonal design, all of the factors would

Line 118

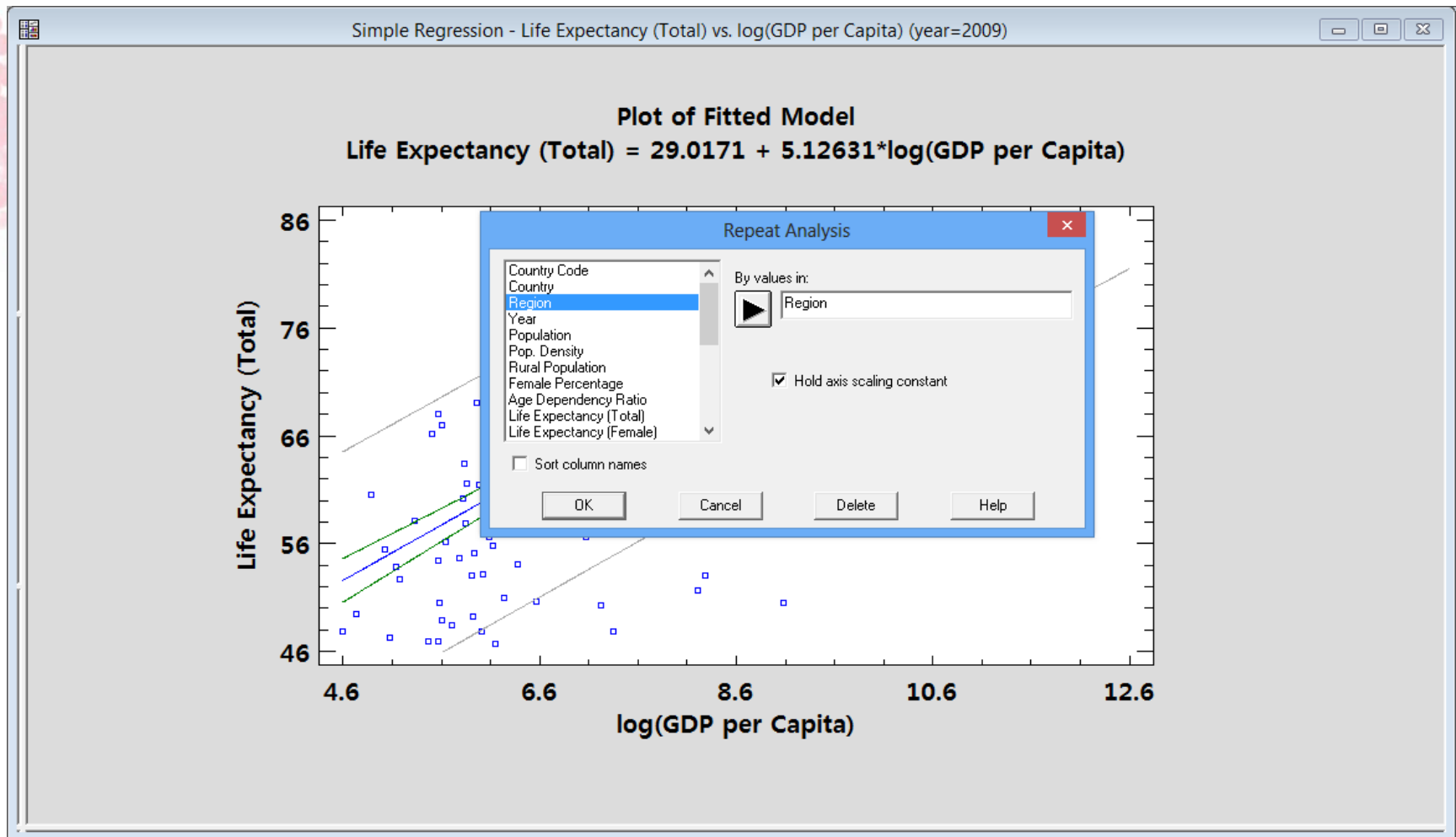
#5. The StatGallery

- Used to place more than one graph on a single printed page.
- Also used to overlay a graph on top of another.

Example – Nonlinear Regression



#6. Repeat Analysis By...



#7. Value Labels

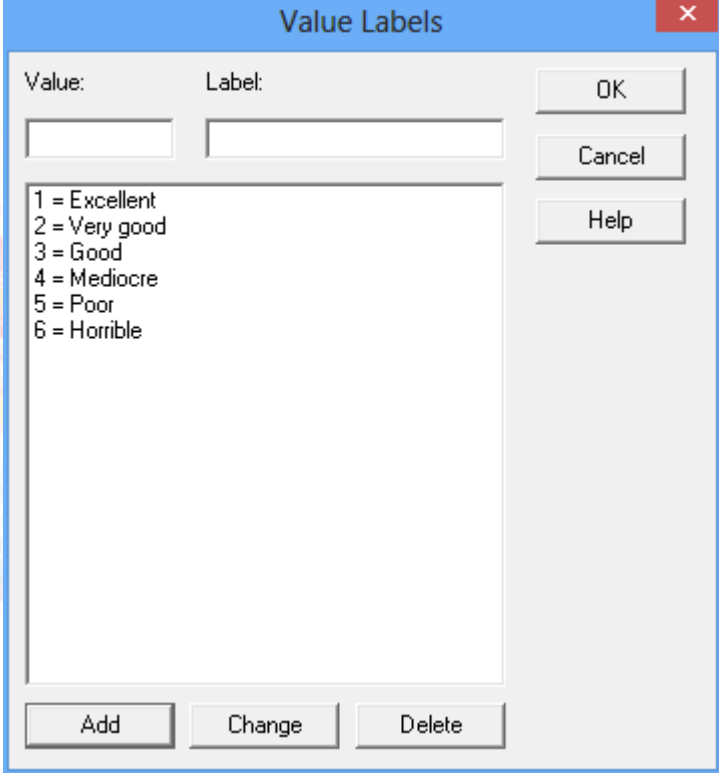
- *Value labels* are strings assigned to each value in a numeric data column.
- Allow entry of numeric values which are replaced by labels on output.
- Very helpful for entering survey data.

Example

- Suppose you ask 500 people to taste a new type of ice cream and rate it as:

- Excellent
- Very good
- Good
- Mediocre
- Poor
- Horrible

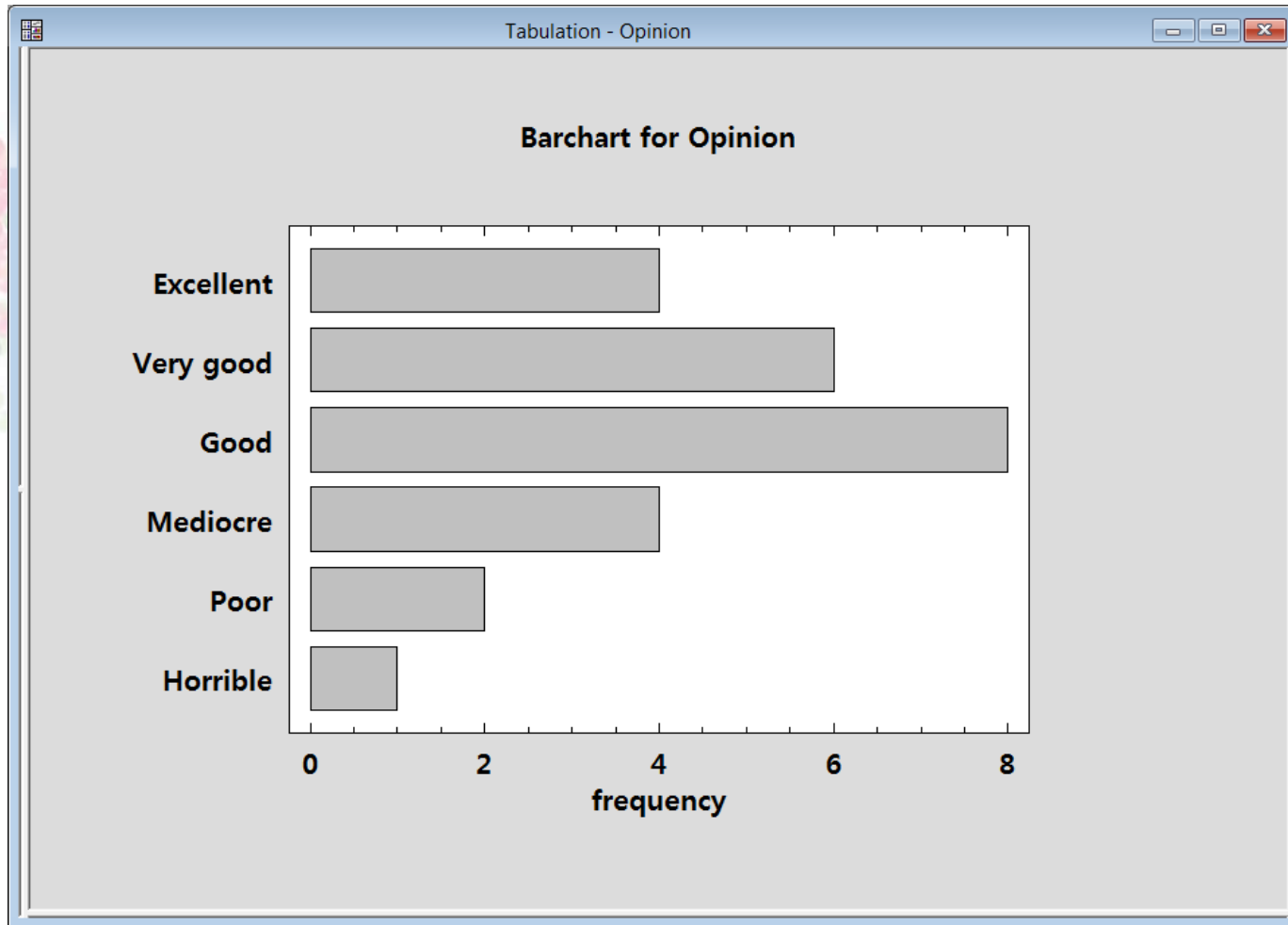
Column Definition



The image shows a 'Value Labels' dialog box with a blue title bar and a close button (X) in the top right corner. It features two input fields at the top: 'Value:' and 'Label:'. Below these is a list box containing six entries: '1 = Excellent', '2 = Very good', '3 = Good', '4 = Mediocre', '5 = Poor', and '6 = Horrible'. To the right of the list box are three buttons: 'OK', 'Cancel', and 'Help'. At the bottom of the dialog are three buttons: 'Add', 'Change', and 'Delete'.

Value:	Label:
1	Excellent
2	Very good
3	Good
4	Mediocre
5	Poor
6	Horrible

Output



More Information

- Go to www.statgraphics.com
- Click on “Watch a Video”.
- Complete the form and press “Go to Video”.
- Click on “Watch another video”.