JMP Manual
for

Moore, McCabe, and Craig's
Introduction to the Practice of Statistics

Seventh Edition

Carl James Schwarz
Simon Fraser University

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Contents

Preface

This manual accompanies Moore et al.'s *Introduction to the Practice of Statistics, Seventh Edition,* (abbreviated *IPS* throughout this manual). It is intended to guide students in the use of *JMP* software to automate the statistical graphics and analyses in the textbook.

JMP's design goals are for a user to discover more, interact more, and understand more. The correct graphs are integrated with the right analyses. Because *JMP* is task-oriented, not method-oriented, you don't need to be a professional statistician to use it. You only need to know what questions you wish answered. *JMP* runs under the Windows, Macintosh, and Linux operating systems. Academic researchers and industry use *JMP* extensively

The American Statistical Association, a 175-plus-year-old organization of professional statisticians, strongly states: "Efficient computing tools are essential for statistical research, consulting, and teaching. Generic packages such as *Excel* are not sufficient for teaching of statistics, …". Spreadsheet software was designed to manage lists and tables of values and to perform bookkeeping-like calculations—not statistical computations and graphics. Spreadsheet software is not nearly as easy to use as *JMP*; it can't manipulate data nearly as well as *JMP,* and the underlying statistical and mathematical algorithms in spreadsheets are not as well tested and reliable as those in *JMP*.

The *IPS* CD-Rom contains *JMP* data tables and text files with data from most of the examples, exercises, and tables from the textbook. They are also available at the Web site http://www.whfreeman.com/ips7e/. We have adopted the following filename convention throughout this manual.

Textbook Source	**File Name**
Example 1.6	eg01-06.jmp
Exercise 1.38	ex01-38.jmp
Table 1.1	ta01-01.jmp
Figure 1.1	fg01-01.jmp

This manual makes reference to additional datasets to illustrate how to use *JMP*. Some of these are bundled with the JMP software and are clearly indicted. Datasets used in this manual as examples are also available from http://www.whfreeman.com/ips7e/. These have filenames **jm-xxxxx.jmp**, where *xxxx* is replaced as needed.

Chapter 0: Introduction to *JMP* Statistical Software

Statistics is best learned by practicing with real data. The purpose of this manual is to provide instructions on how to use *JMP* statistical software to automate the statistical calculations and graphics presented in the *Introduction to the Practice of Statistics*, *Seventh Edition*, (*IPS*) by Moore et al.

This manual parallels *IPS*. Chapters 1 and following of this manual correspond to separate chapters in the textbooks. These chapters guide you in the use of *JMP* for the calculations and graphics of the corresponding textbook chapters. This chapter, Chapter 0, serves as an introduction to *JMP* statistical software and discusses:

- getting acquainted with *JMP* and the *JMP* data table.
- entering and saving data.
- working with variables and individuals.
- customizing your *JMP* environment.

If you read this chapter carefully, using *JMP* will quickly become second nature. You will be able to produce appropriate graphs and calculations at the click of a mouse and the touch of a button.

Getting Acquainted with *JMP* and the *JMP* Data Table

Getting Started and Quitting

JMP is started like any other application on your operating system. Either:

- double-click a *JMP* data table or script, or
- double-click the *JMP* icon.

To quit *JMP*:

- select **File** ⇨ **Exit** or press **ctrl-Q** in Windows, or
- select ***JMP*** ⇨ **Quit** or press **command-Q** on the Macintosh.

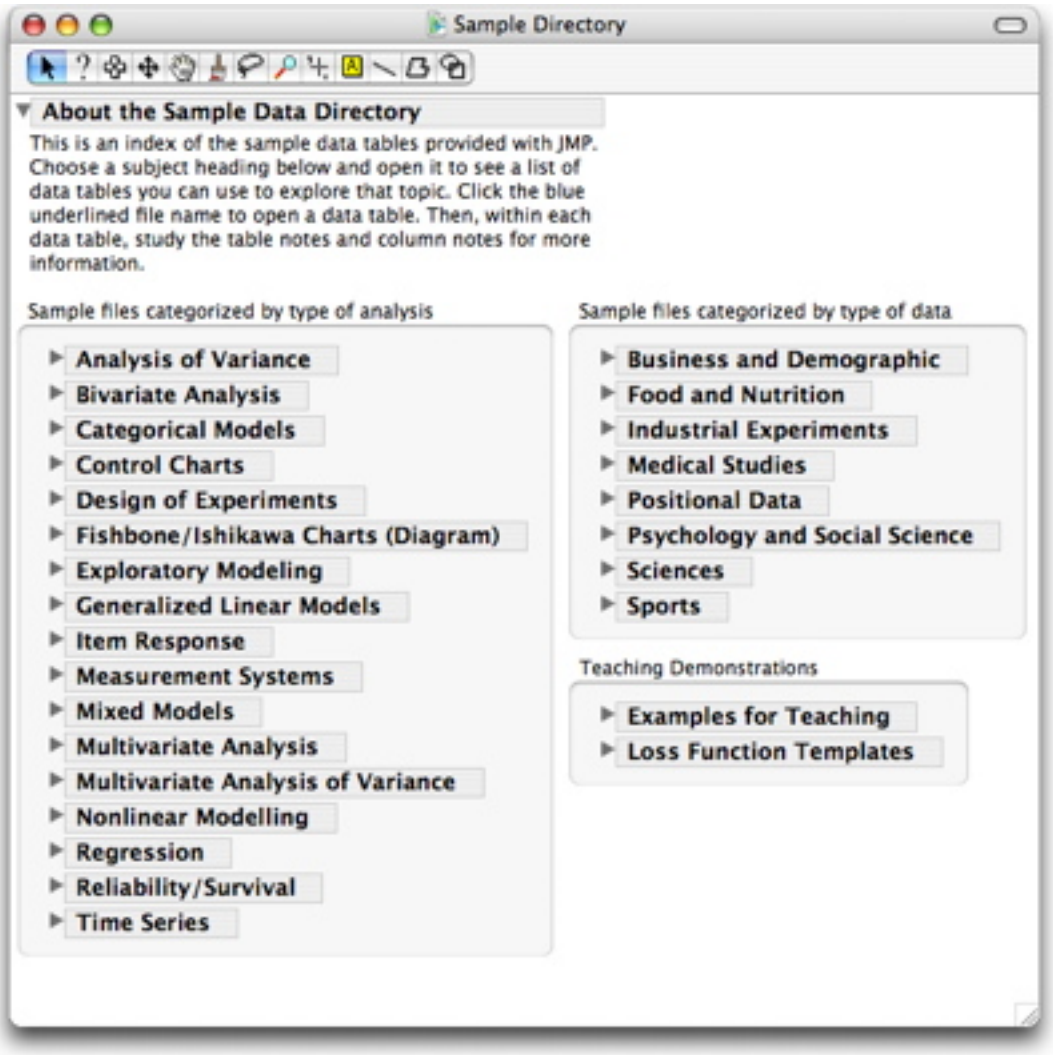
The *JMP* Data Table

Data to be processed in *JMP* must be in a *JMP data table*. A *data table* is similar to a spreadsheet but the rows and columns have a special purpose..

Example: Opening a JMP data table

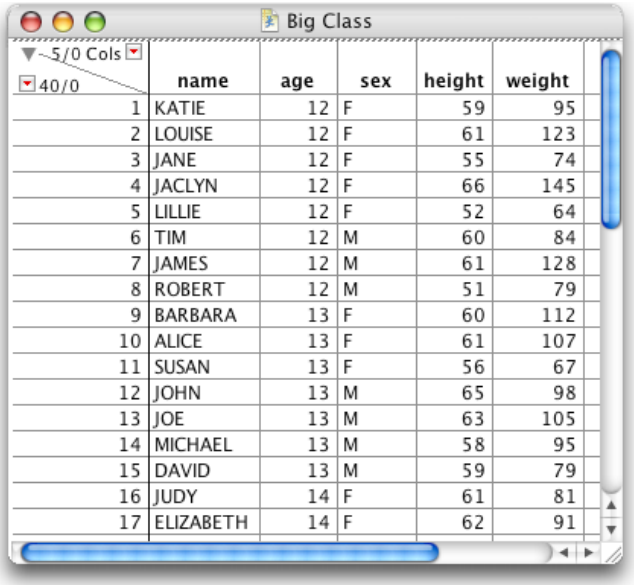
Start *JMP* and open the *JMP* data table **Big Class** in the Sample Data Directory installed with the *JMP* application on your computer

1. Select **Help** ⇨ **Sample Data Directory** from the menu bar.



2. Press the gray triangle next to **Examples for Teaching**.
3. Select the first file **Big Class.jmp**.

Inspect the data table.


Big Class

5/0 Cols
40/0

	name	age	sex	height	weight
1	KATIE	12	F	59	95
2	LOUISE	12	F	61	123
3	JANE	12	F	55	74
4	JACLYN	12	F	66	145
5	LILLIE	12	F	52	64
6	TIM	12	M	60	84
7	JAMES	12	M	61	128
8	ROBERT	12	M	51	79
9	BARBARA	13	F	60	112
10	ALICE	13	F	61	107
11	SUSAN	13	F	56	67
12	JOHN	13	M	65	98
13	JOE	13	M	63	105
14	MICHAEL	13	M	58	95
15	DAVID	13	M	59	79
16	JUDY	14	F	61	81
17	ELIZABETH	14	F	62	91

The *data table* looks like a spreadsheet with some enhancements. In the upper-left-hand corner, you can see that the data table has 40 rows and 5 columns. Look more closely and notice that each of the columns—**name, age, sex, height,** and **weight**—contains the values of a *variable* and each of the rows is an *individual*. Therefore, **Big Class** contains 5 variables and 40 individuals. In general, the columns of a data table contain *variables* and the rows contain *individuals*.

Menu Headings

JMP provides a menu bar and an icon bar of commands. The two pull-down menus at either end of the menu bar should look familiar. Let's examine the items on the menu bar.

File performs most routine file functions, such as opening, closing, printing, and saving.

Edit performs most editing functions, such as cutting and pasting.

Tables performs table functions, such as sorting, subsetting, and merging.

Rows performs row operations (i.e., operations on individuals).

Cols performs column operations (i.e., operations on variables).

DOE performs tasks associated with designing statistical experiments.

Analyze performs most statistical analyses.

Graph generates a variety of graphs.

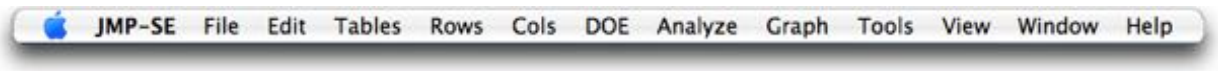
Tools displays a special palette of tools that determine the effect of a mouse action.

View manages the tool bars and displays the Status Bar (Windows only).

Window selects among, organizes, and performs routine window operations on opened windows.

Help accesses the main help feature in *JMP*.

The menu bar in Mac OS X is the same as above with the addition of a *JMP* menu. The *JMP* menu contains the standard items in an application menu. You can change preferences and quit *JMP* from it.



Remarks

- Instructions in this manual will focus on accessing commands through the menus. As you become more familiar with *JMP*, you may wish to explore the icon alternatives.

Column Attributes

Inspect the data table **Big Class**. Notice that each column/variable has a *name*. Also, note that some of the columns are left-aligned and some are right-aligned. Alignment is determined by *data type*. The *data type* of a column, or variable, determines how its values are formatted in the data table, how they are stored internally, and whether they can be used in calculations. The two *data types* of interest to us are:

Numeric for columns/variables with numeric values that can be used in calculations. These data are right-aligned. **Age, height,** and **weight** are *numeric* variables.

Character for columns/variables with numeric and/or character values that can be used to describe different levels of the variable. These data are left-aligned. **Name** and **sex** are *character* variables.

Name and *data type* are two attributes of a column/variable. To see other attributes, use the **Column Info** command found in the **Cols** menu.

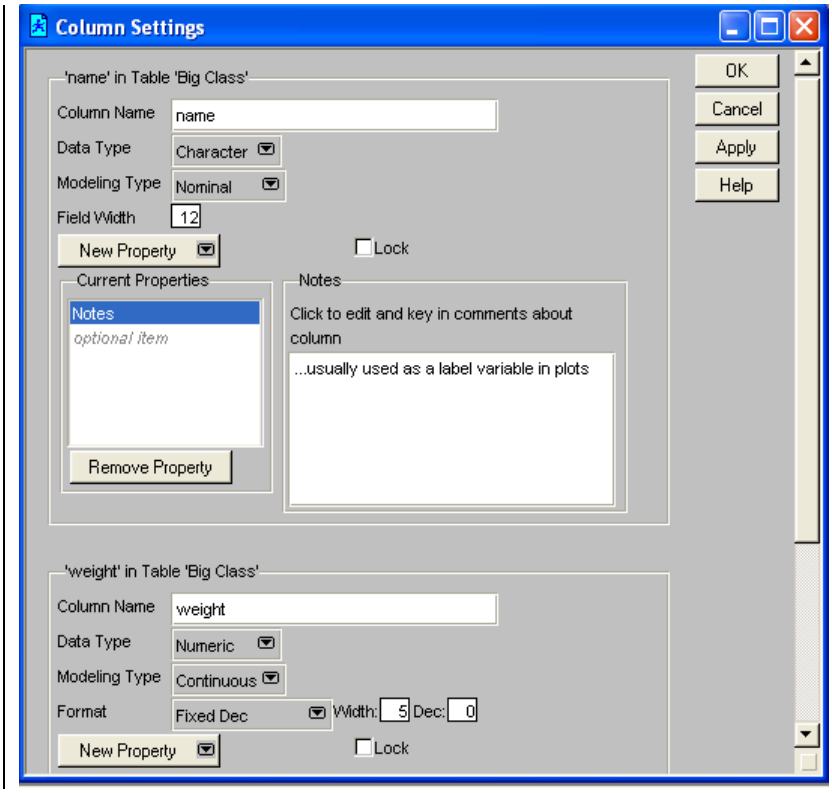
Example: Obtaining information about a column

Obtain column information on the variables **name** and **weight**.

1. Highlight the columns **name** and **weight** by clicking first on the top of the column **name** and then ctrl-clicking (command-clicking on a Macintosh) on the top of the column **weight**.

2. Select **Cols** ⇨ **Column Info**.

Inspect the dialog.



Notice that:
- the variable **name** has *data type* character and **weight** has *data type* numeric.
- the *format* for **weight** is *Fixed Dec* with a width of 5 and no decimal places.
- both variables have *notes* attached to them.

The *modeling type* of a variable is very important. It is not just a descriptive tag but rather it tells *JMP* how to analyze and graph the data. For example, the **Distribution** command displays histograms and boxplots for "Continuous" variables and stacked bar charts for "Nominal" variables.

Note: The default *modeling type* of numeric data is "Continuous" and the default *modeling type* of character data is "Nominal."

Entering and Saving Data

To process data in *JMP,* it must be in a *JMP* data table. You build a *JMP* data table either by:

- **Creating a new table** with the **New** command in the **File** menu and filling it with values by typing or pasting values into the data grid, constructing a formula, or using an external measuring instrument, or

- **Importing data** from a text file or from another application with the **Open** or the **Database** command in the **File** menu.

Creating a New *JMP* Data Table

The **New** command in the **File** menu displays an empty data table with no rows and one column, named **Column 1**.

To add variables:

- use the **New Column** or **Add Multiple Columns** command in the **Cols** menu.

To add individuals:

- use the **Add Rows** command from the **Rows** menu, or
- simply type in a cell anywhere beyond the last row of the table.

You can use the usual editing commands, such as cut and paste, to enter data values. You can also use drag and drop to copy or rearrange columns.

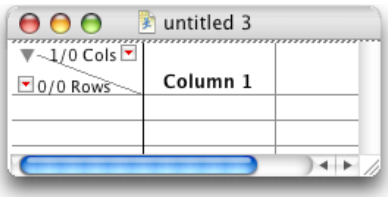
Example: Binge drinking and gender

A survey of 17,096 students in U.S. four-year colleges collected information on drinking behavior. One question of interest was the relationship between binge drinking and gender. Here are the data summarized by gender and frequent binge drinking.

Frequent Binge Drinker	Gender	Count
Yes	Female	1684
	Male	1630
No	Female	8232
	Male	5550

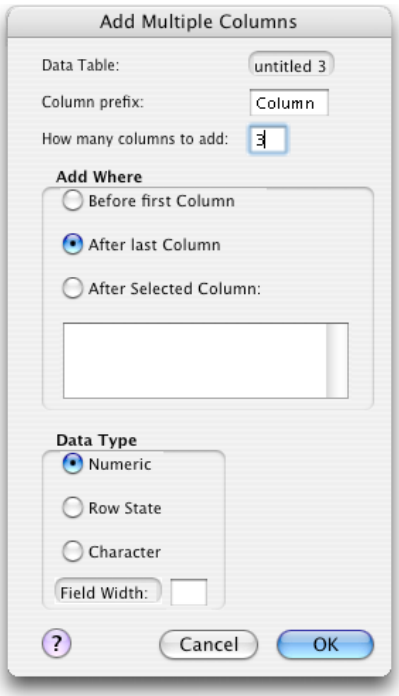
Let's create a *JMP* data table for the data.

1. Select **File** ⇨ **New** from the menu bar.



Adding Columns

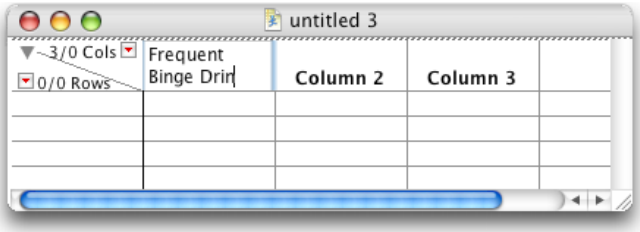
2. Select **Cols** ⇨ **Add Multiple Columns** to accommodate the three variables **Frequent Binge Drinker, Gender,** and **Count**.



3. Enter **3** after **How many columns to add** and press **OK**.

Now let's change the name of the first column to **Frequent Binge Drinker**.

4. Select the first column of the data grid to highlight that column.
   a. Click on the name **Column 1** to highlight the column name.
   b. Type **`Frequent Binge Drinker`**.

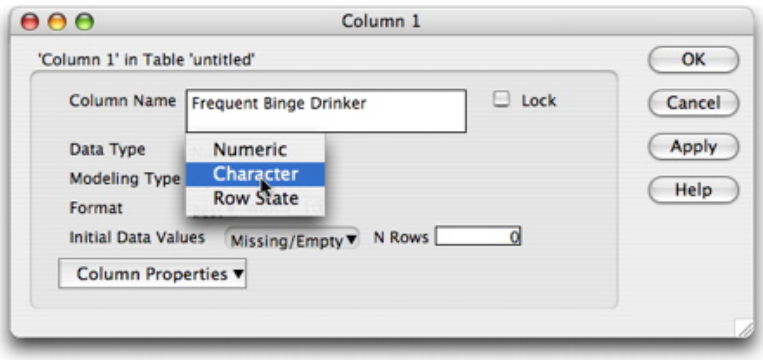


5. Repeat Step 4 on the other columns to change the names to **Gender** and **Count**.

Setting the Data Type of a Column

By default, columns contain numeric data. However, **Frequent Binge Drinker** and **Gender** have character values. Use the **Column Info** command to change the data type of the variable **Frequent Binge Drinker**.

6. Select the first column, **Frequent Binge Drinker**.
   a. Select **Cols** ⇨ **Column Info**.
   b. Select **Character** from the pop-up menu for **`Data Type`**.
   c. Press **OK**.



7. Repeat Step 6 for the second column, **Gender**, to change its data type to character.

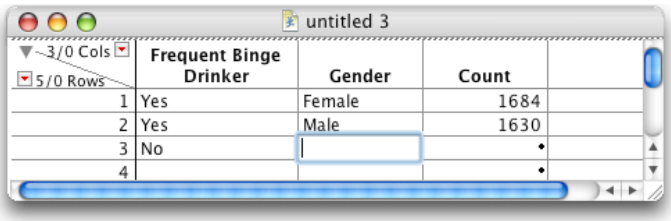
Adding Rows

Adding rows is easy.

8. Select **Rows** ⇨ **Add Rows** from the menu bar and enter **4** and press **OK**.

Entering Data

Entering data into the data table is similar to entering data into a spreadsheet.



9. Select the first cell in the first row and enter **Yes**.
   a. Press the **Tab** key, enter **Female**, press **Tab** again, and enter **1684**.
   b. Press **Return** and enter **Yes**.
   c. Press the **Tab** key, enter **Male**, press **Tab** again, and enter **1630**.
   d. Continue until you have finished entering the data.

In the next section, you will learn how to save the data table for later use.

Saving and Naming a Data Table

The **Save** command in the **File** menu writes the current *JMP* data table to a file.

Note: *JMP* analysis windows are not saved with the data table. However, you can use *JMP* tools to copy reports to other applications or you can save the JSL script that produced the analysis.

Example: Binge drinking and gender (continued)

To save the data table for further analysis:

1. Select **File** ⇨ **Save**.

2. Type **`Binge Drinking.jmp`** in the **`Name`** field and press **Save**.

Importing Data

The **Open** command in the **File** menu directly reads existing *JMP* data tables, text files with any column delimiter, *Excel* files, *JMP* journal and script files, and SAS data sets into *JMP* data tables. Also, under Windows, the **Database** command can access any database on your system that has an ODBC driver. We illustrate importing *text* files for Windows and Macintosh OS X computers here.

Windows Text Import

JMP offers two choices for importing text files under MS Windows. From the **File of type** drop-down list, you may choose:

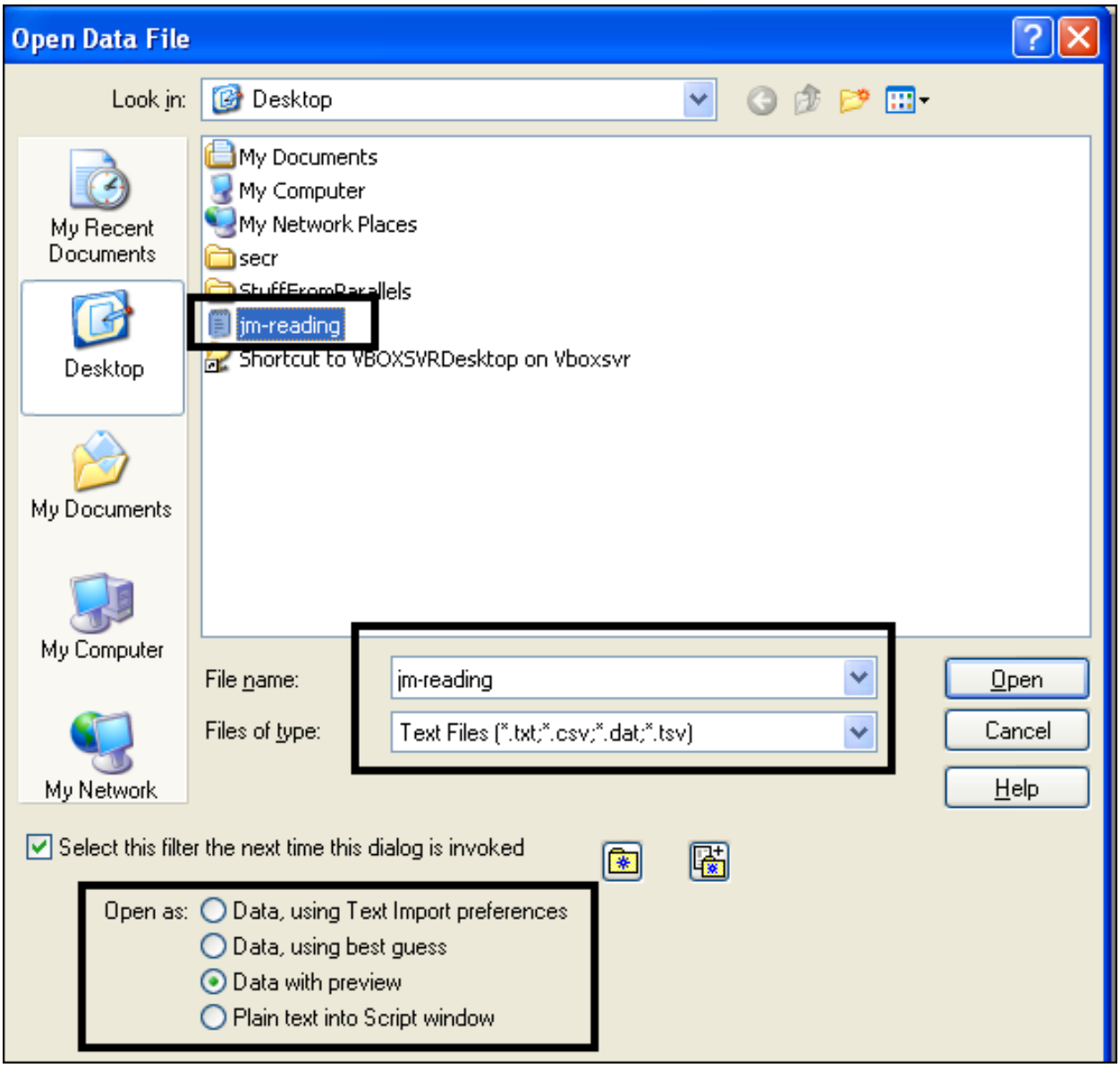
- **Text Import Files**, which opens the file and creates a *JMP* data table using either the default rules (set in the preferences panel) to interpret end-of-field and end-of-line delimiters, or the best guess heuristics of *JMP*. These are sufficient for a rectangular text file with no missing fields, a consistent delimiter between fields or fixed width fields, and an end-of-line delimiter.

- **Text Import Preview**, which allows you to modify the default field and column specifications and displays default variable names, variable data types, and data values for the first two individuals.

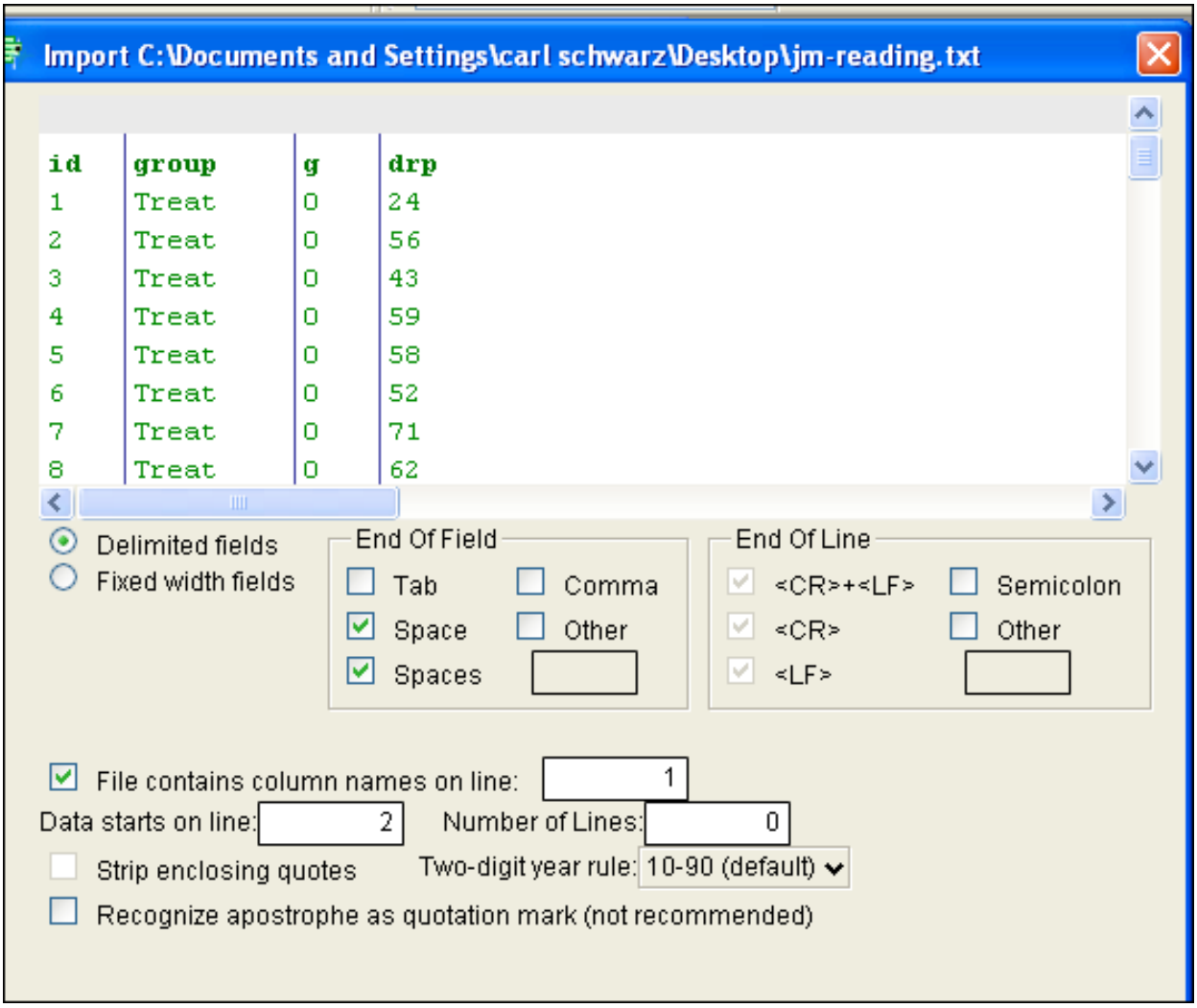
Example: Is a new teaching method effective?

An educator believes that new directed reading activities will help elementary school pupils improve some aspects of their reading ability. A class of 21 third-grade students took part in the new directed reading activities and another third-grade class of 23 followed the same curriculum without these activities. Suppose that the Degree of Reading (DRP) test scores for the 44 students are found in the text file **jm-reading.txt** from the Web site. We will import the information in that file into a *JMP* data table.

1. Download the files from the Web site. Select **File** ⇨ **Open** from the menu bar and locate the file **jm-reading.txt** using the usual file open dialogues.



2. Identify the text file in the panel that opens.
   a. Select **Text Import Preview** from the **Files of type** menu.
   b. Select the folder that holds the file.
   c. Select the file **jm-reading.txt**.
   d. Click **Open**.



3. a. Change the four column names to **`Student`**, **`Group`**, **`DRP`**, and **`Score`**, respectively.
   b. Notice that *JMP* has chosen data types for these columns. You may change those choices.
   c. Click **OK**.

The following *JMP* data table is created.

jm-reading

jm-reading
Source

Columns (4/0)
id
group
g
drp

	id	group	g	drp
1	1	Treat	0	24
2	2	Treat	0	56
3	3	Treat	0	43
4	4	Treat	0	59
5	5	Treat	0	58
6	6	Treat	0	52
7	7	Treat	0	71
8	8	Treat	0	62
9	9	Treat	0	43
10	10	Treat	0	54
11	11	Treat	0	49
12	12	Treat	0	57
13	13	Treat	0	61
14	14	Treat	0	33
15	15	Treat	0	44
16	16	Treat	0	46

Notice that the data for the second group of subjects is placed directly below the data for the first group rather than adjacent to it as one often sees in textbooks. Recall that, in a *JMP* data table, the rows are the *individuals* and the columns are the *variables*.

Macintosh Text Import

To import text data on the Macintosh, first select **All Text Documents** from the **Enable** field. The **Open As** menu then appears and gives four choices:

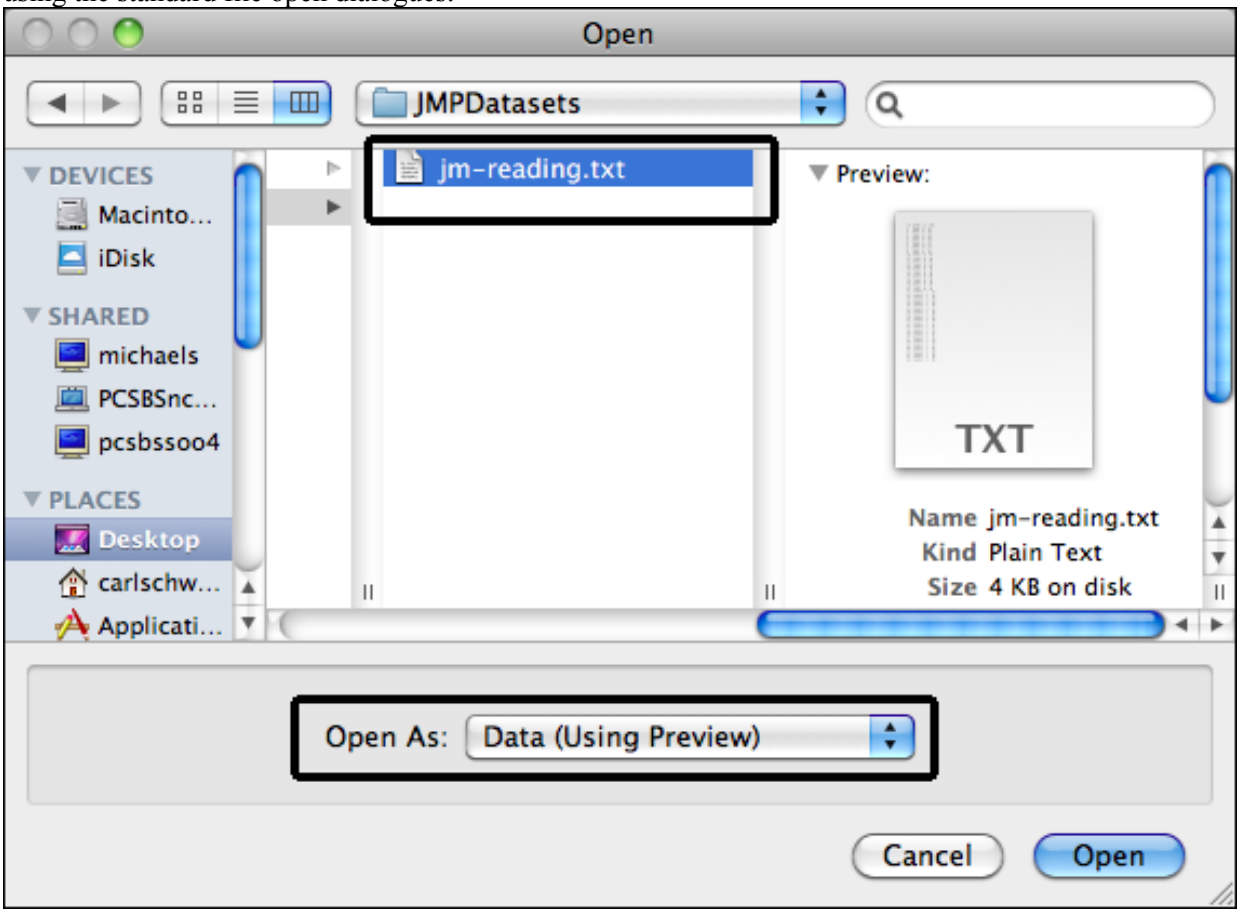
- **Text** opens the file in a text editing window without creating a *JMP* data table.
- **Data (Best Guess)** opens the file and creates a *JMP* data table using the best guess heuristics of *JMP* to arrange the data.
- **Data (Using Preferences)** opens the file and creates a *JMP* data table using the default rules (set in the preferences panel) to interpret end-of-field and end-of-line delimiters.
- **Data (Using Preview)** opens the file, creates a *JMP* data table using delimiters that you designate, and displays default variable names and data types and the data values of the first two individuals.

We illustrate the last choice.

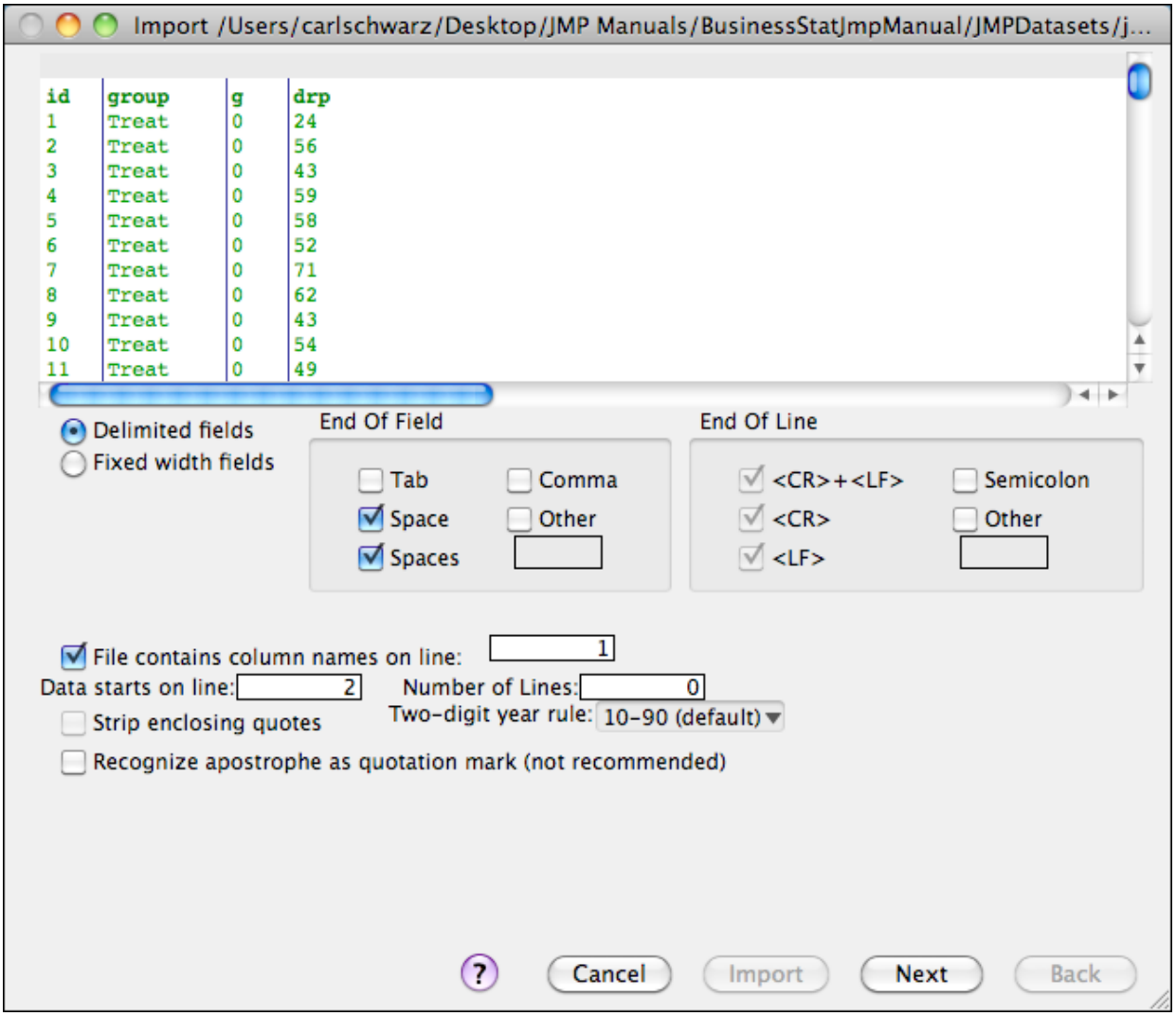
Example: Is a new teaching method effective?

An educator believes that new "directed reading activities" will help elementary school pupils improve some aspects of their reading ability. A class of 21 third-grade students took part in the new directed reading activities and another third-grade class of 23 followed the same curriculum without these activities. Suppose that data for the 44 students are found in a text file **jm-reading.txt** on the Web site. Let's import the information in that file into a *JMP* data table.

1. Download the file from the Web site. Select **File** ⇨ **Open** from the menu bar and navigate to the file using the standard file open dialogues.



2. Identify the text file in the panel that opens.
   a. Select **All Text documents** from the **Enable** menu.
   b. Select the folder that holds the file.
   c. Select the file **jm-reading.txt**.
   d. Select **Data (Using Preview)** from the **Open As** menu.
   e. Click **Next** and then **Import**.



3. a. Notice that *JMP* has used the character values in the first row as the *column names*. You may change these choices here.
   b. Notice that *JMP* has chosen *data types* for these columns. You may change those choices also.
   c. Click **Next**.

The *JMP* data table is created, part of which is shown below.

jm-reading

	id	group	g	drp
1	1	Treat	0	24
2	2	Treat	0	56
3	3	Treat	0	43
4	4	Treat	0	59
5	5	Treat	0	58
6	6	Treat	0	52
7	7	Treat	0	71
8	8	Treat	0	62
9	9	Treat	0	43
10	10	Treat	0	54
11	11	Treat	0	49
12	12	Treat	0	57
13	13	Treat	0	61
14	14	Treat	0	33
15	15	Treat	0	44
16	16	Treat	0	46
17	17	Treat	0	67
18	18	Treat	0	43
19	19	Treat	0	49

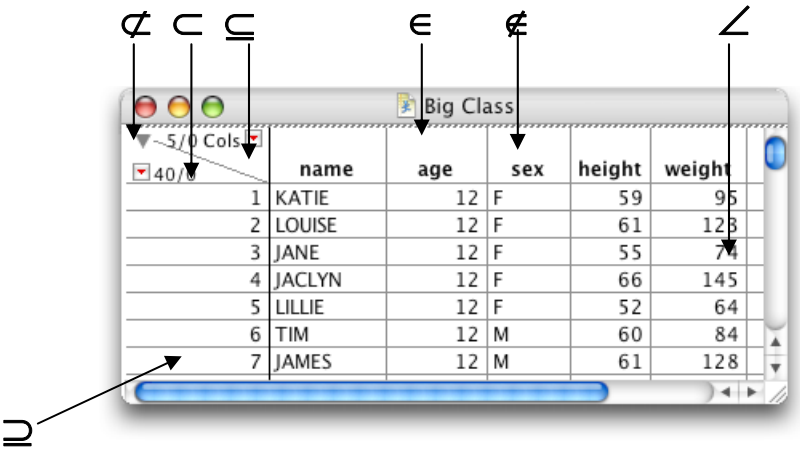
Notice that the data for the second group of subjects is placed directly below the data for the first group rather than adjacent to it as one often sees in a textbook. Recall that, in a *JMP* data table, the rows are the *individuals* and the columns are the *variables*.

Remarks

- *JMP* automatically detected that **Group** should be given a data type of character.
- Default choices for **End Of Field** and **End Of Line** *delimiters* and other import settings can be changed in the preferences panel. See Section 0.4.2 for details.

Working with Variables and Individuals

Selecting Individuals and Columns



Select the area marked:

- ⊇ to select a row/individual
- ⊄ to open the left side panels
- ⊂ to deselect all rows/individuals
- ⊆ to deselect all columns/variables
- ∈ to select a column/variable
- ∉ to change the column/variable name
- ∠ to edit a cell

After selecting an individual (or a variable), press the:

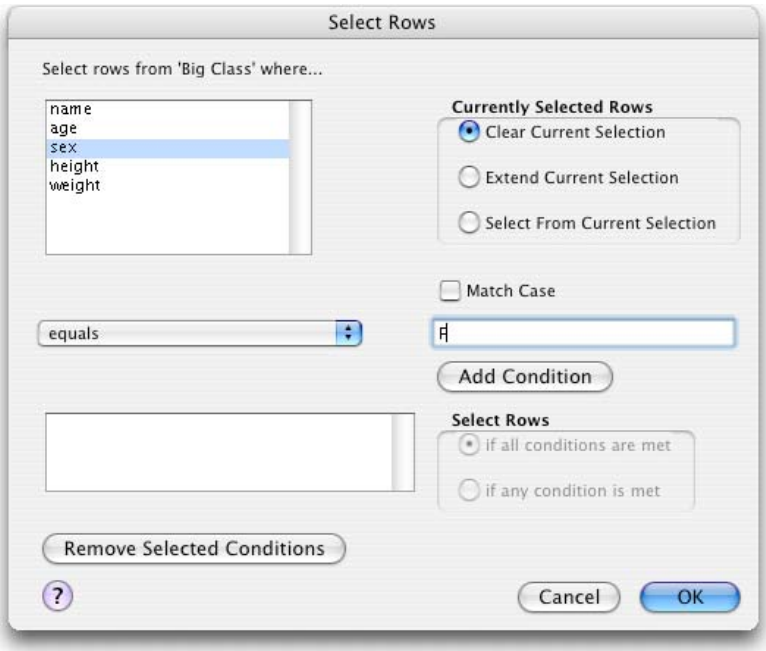
- **Shift** key to select a block of adjacent individuals (or variables).
- **Ctrl** (command on the Macintosh) key to select nonadjacent individuals (or variables).

You can also use the **Row Selection** command in the **Rows** menu and the **Select Where…** option to select rows/individuals that meet a criterion. Suppose that you wish to select the female students in the *JMP* data table **Big Class** that is stored in the Sample Data folder located within the *JMP* application.

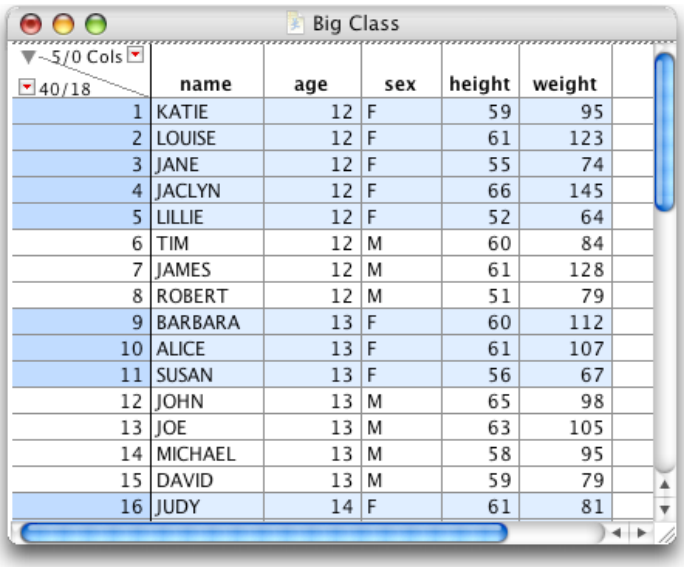
Example: Selecting female students

1. Select **File** ⇨ **Open** ⇨ **Big Class**.

2. Select **Rows** ⇨ **Row Selection** ⇨ **Select Where…**



a. Select **sex** in the list of columns.
b. Select **equals** (the default) in the comparison menu.
c. Type **F** as the value.
d. Select **OK**.



	name	age	sex	height	weight
1	KATIE	12	F	59	95
2	LOUISE	12	F	61	123
3	JANE	12	F	55	74
4	JACLYN	12	F	66	145
5	LILLIE	12	F	52	64
6	TIM	12	M	60	84
7	JAMES	12	M	61	128
8	ROBERT	12	M	51	79
9	BARBARA	13	F	60	112
10	ALICE	13	F	61	107
11	SUSAN	13	F	56	67
12	JOHN	13	M	65	98
13	JOE	13	M	63	105
14	MICHAEL	13	M	58	95
15	DAVID	13	M	59	79
16	JUDY	14	F	61	81

Changing the State of an Individual

There are times when we wish to:

- *exclude* one or more individuals from analysis.
- *hide* one or more individuals in a plot.
- *color* points representing one or more individuals in a plot.

These tasks are easily accomplished in *JMP* by changing the *state* of an individual. The operations involve individuals so commands to perform them are found on the **Rows** menu.

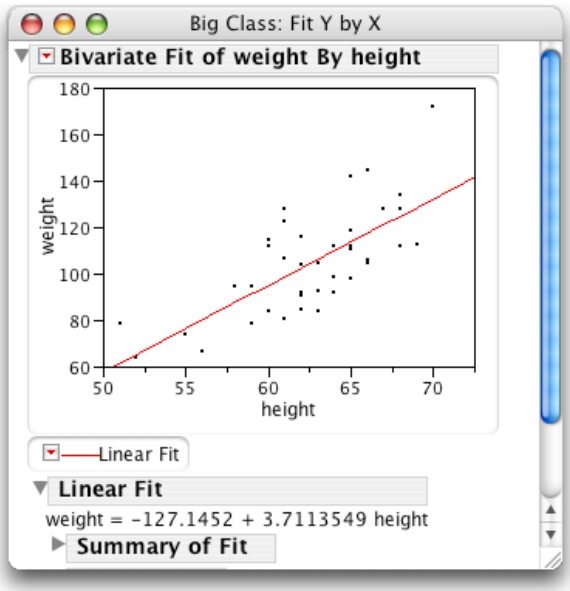
To illustrate these features, we will first produce an analysis with all individuals in their default states.

Example: Changing the state of individuals

1. Deselect all individuals in **Big Class** by selecting **Rows** ⇨ **Clear Row States**.

2. Select **Analyze** ⇨ **Fit Y by X**.
   a. Select the column **weight** and click **Y, Response**.
   b. Select the column **height** and click **X, Factor**.
   c. Press **OK**.

3. Click on the red triangle next to **Bivariate Fit of …** and select **Fit Line** from the menu that opens.



Now change the state of some individuals. Let's color the female students red and change their plotting symbol.

4. a. Use the **Rows Selection** command in the **Rows** menu to select the female students as we did above in Step 2.
   b. Select **Rows** ⇨ **Colors** ⇨ **Red**; then select **Rows** ⇨ **Markers** ⇨ **x**.

Let's hide all 12-year-olds in the scatterplot.

5. Select rows where the age is 12 by using the **Rows Selection** command again.
   a. Select **Rows** ⇨ **Row Selection** ⇨ **Select Where…**
   b. Select **age** in the list of columns.
   c. Type **12** as the value and press **OK**.

6. Select **Rows** ⇨ **Hide/Unhide**.

Finally, we will set individual 40, Lawrence, to be excluded from future analyses. Lawrence is the tallest and heaviest student.

7. Select row **40** and then **Rows** ⇨ **Exclude/Unexclude**.

The data grid updates to indicate all of the new row states.

Big Class

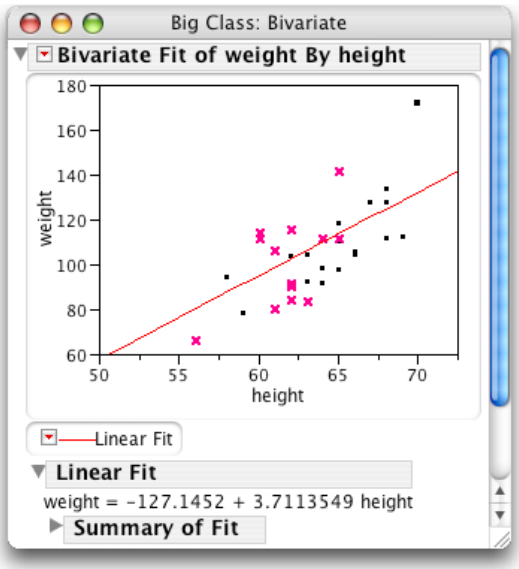
5/0 Cols
40/1

	name	age	sex	height	weight
6	TIM	12	M	60	84
7	JAMES	12	M	61	128
8	ROBERT	12	M	51	79
9	BARBARA	13	F	60	112
10	ALICE	13	F	61	107
11	SUSAN	13	F	56	67
12	JOHN	13	M	65	98
13	JOE	13	M	63	105
14	MICHAEL	13	M	58	95
15	DAVID	13	M	59	79
16	JUDY	14	F	61	81
17	ELIZABETH	14	F	62	91
18	LESLIE	14	F	65	142
19	CAROL	14	F	63	84
20	PATTY	14	F	62	85
21	FREDRICK	14	M	63	93
22	ALFRED	14	M	64	99
23	HENRY	14	M	65	119
24	LEWIS	14	M	64	92
25	EDWARD	14	M	68	112
26	CHRIS	14	M	64	99
27	JEFFERY	14	M	69	113
28	MARY	15	F	62	92
29	AMY	15	F	64	112
30	ROBERT	15	M	67	128
31	WILLIAM	15	M	65	111
32	CLAY	15	M	66	105
33	MARK	15	M	62	104
34	DANNY	15	M	66	106
35	MARTHA	16	F	65	112
36	MARIAN	16	F	60	115
37	PHILLIP	16	M	68	128
38	LINDA	17	F	62	116
39	KIRK	17	M	68	134
40	LAWRENCE	17	M	70	172

Move the **Fit Y by X** window to the front so that you can see the effect of these changes on the analyses.

8. Select **Window** ⇨ **Big Class: Fit Y by X**.

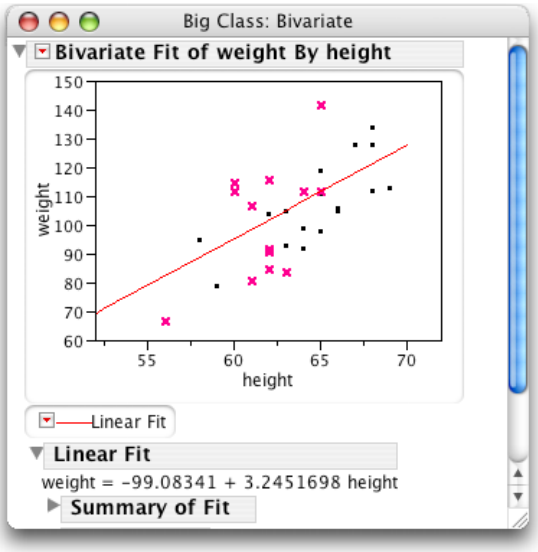
Notice that the female data is red, the 12-year-olds are invisible, and all 40 individuals (rows) are still used in the analyses.



Move the cursor to the point in the upper-right-hand corner. Notice that Lawrence is still there. To see the effects of changing the state of Lawrence to exclude, we must redo the analysis with Lawrence in that state. Let's use a shortcut to do that.

9. Click on the red triangle next to **Bivariate Fit of weight By height**
   a. Select **Script** ⇨ **Redo Analysis** on the menu that opens.

Notice that Lawrence is no longer in the scatterplot and the equation of the line is quite different.



Creating a New Variable Using a Formula

Sometimes we may wish to add or subtract the values of several variables for each individual. For example, we may want to look at the differences between before and after values in a study. Often, a statistician needs to re-express a variable. For example, the square root of the variable amount might follow a more recognizable pattern than the amounts themselves. Or the relationship of the logarithm of the dose of a new medication and the clinical response may be simpler to understand and describe than

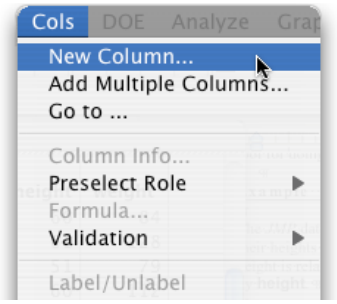
the dose-response relationship. At other times, we may wish to randomly generate data from a particular distribution. In each case, we need to construct a new variable from one or more existing variables or from a mathematical or statistical function. The *Formula Editor* in *JMP* is a powerful and easy-to-use tool for doing these tasks and more. We illustrate its use with a simple example.

Example: Finding the ratio of the weight to height of a child

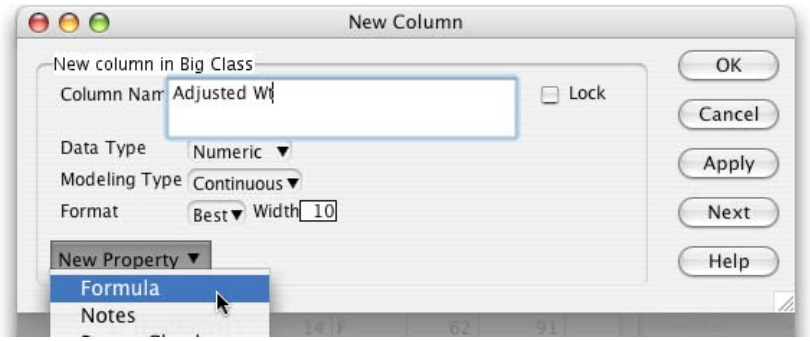
The *JMP* data table **Big Class** contains the heights and weights of 40 teens and preteens. It is likely that their heights and weights are related. We might wonder, then, if the ratio of a child's weight to his or her height is relatively constant. To investigate this, we decide to construct a new variable—**weight** divided by **height**.

1. Select **File** ⇨ **Open** and select **Big Class.jmp** from the Sample Data folder that comes with the *JMP* application.

2. Select **Cols** ⇨ **New Column**.



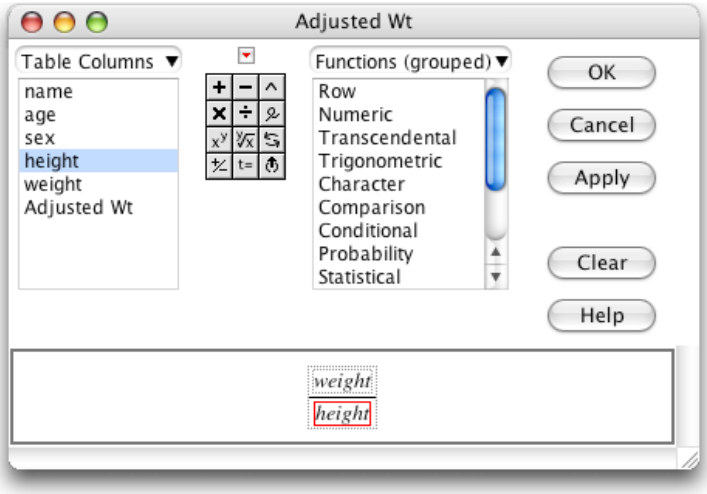
3. Name the column **Adjusted Wt** and select a format of **Fixed Dec** with **2** decimal places.



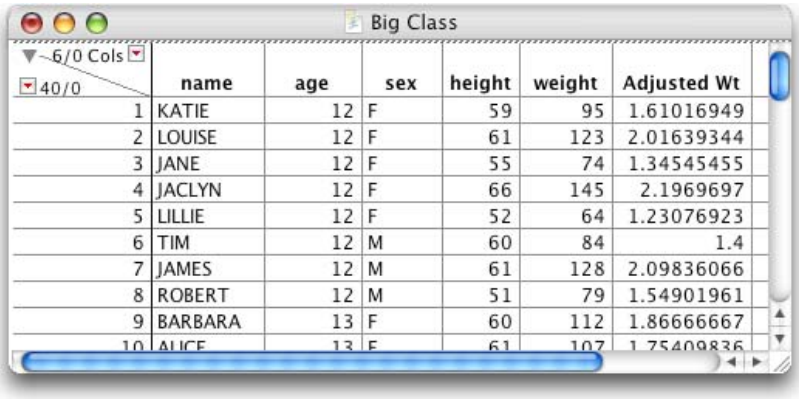
4. Select **Column Properties** ⇨ **Formula** to open the *Formula Editor* window.

We now build the formula to calculate the variable **Adjusted Wt**.

a. Press ÷ on the keypad and select **weight** from the list of columns.
b. Select the denominator of the ratio and then select **height** from the list of columns.
c. Press **Apply**. Look at the data table.



The values of the ratio **Adjusted Wt** range from about 1.20 to 2.50 lbs/inch.



	name	age	sex	height	weight	Adjusted Wt
1	KATIE	12	F	59	95	1.61016949
2	LOUISE	12	F	61	123	2.01639344
3	JANE	12	F	55	74	1.34545455
4	JACLYN	12	F	66	145	2.1969697
5	LILLIE	12	F	52	64	1.23076923
6	TIM	12	M	60	84	1.4
7	JAMES	12	M	61	128	2.09836066
8	ROBERT	12	M	51	79	1.54901961
9	BARBARA	13	F	60	112	1.86666667
10	ALICE	13	F	61	107	1.75409836

Remarks

- Look at the rich list of functions by selecting **Transcendental** from the **Functions (grouped)** list or by selecting **Random** from the **Functions (grouped)** list.

Transcendental Functions

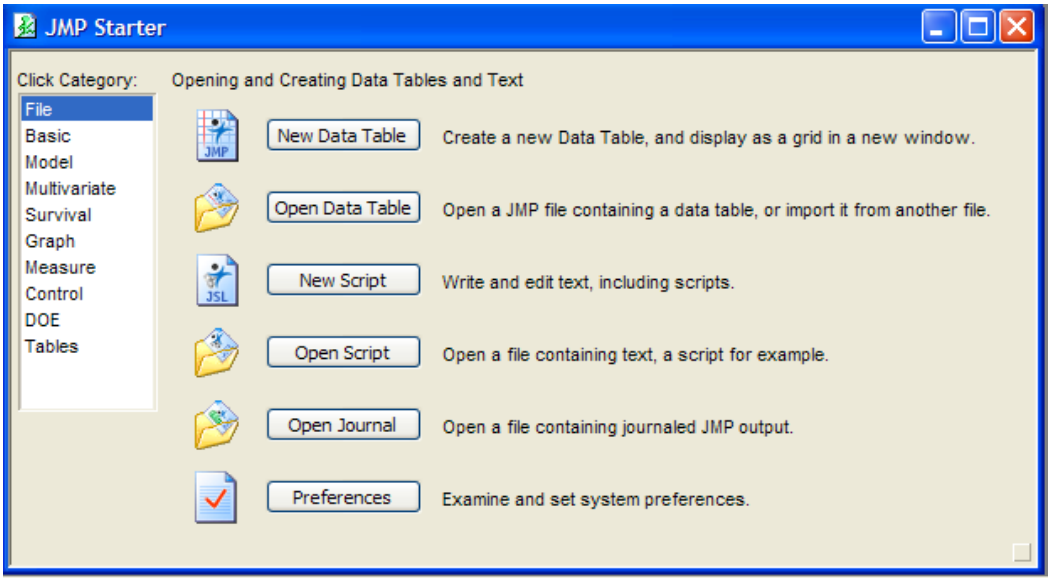
Random Functions

Customizing Your *JMP* Environment

This section discusses the *JMP* Starter Window, table information panels, and setting preferences. We make specific recommendations for and show you how to customize your session environment.

The *JMP* Starter Window

If a *JMP* data table is not selected before starting, *JMP* may begin by opening a special navigation window—the *JMP* Starter Window.



The *JMP* Starter Window presents an alternate way to access *JMP* commands that we will not use. All these commands are accessible through the menu bar. We recommend that the Starter Window be closed at start-up. See "Setting Preferences" below for details.

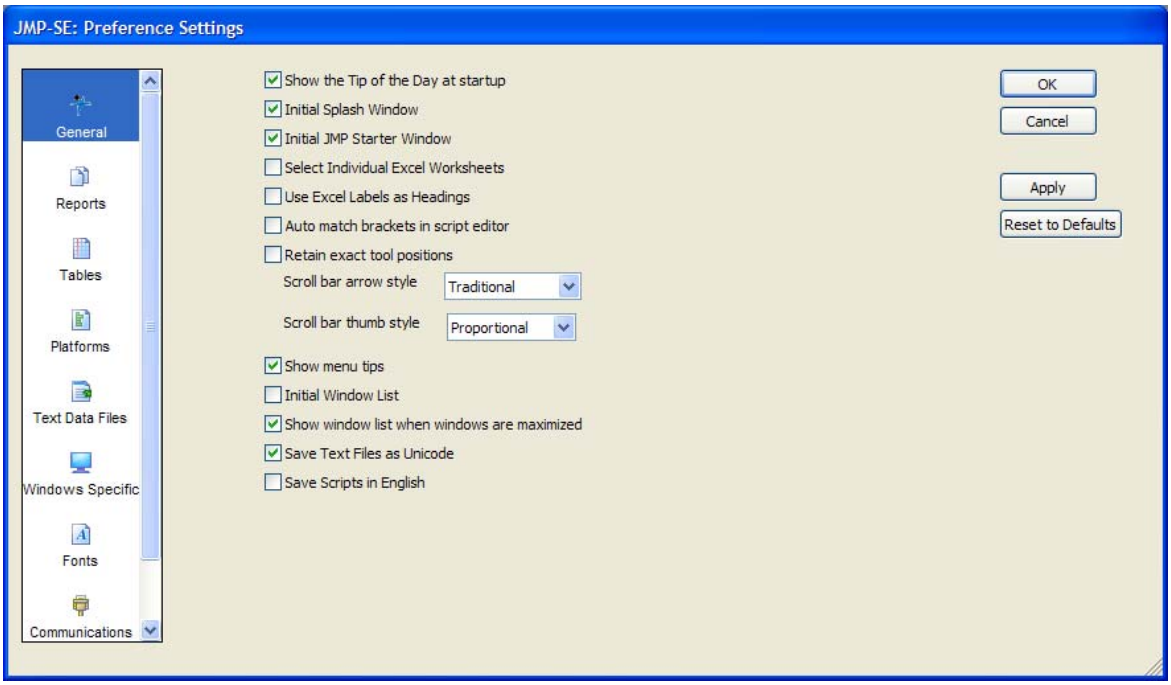
Setting Preferences

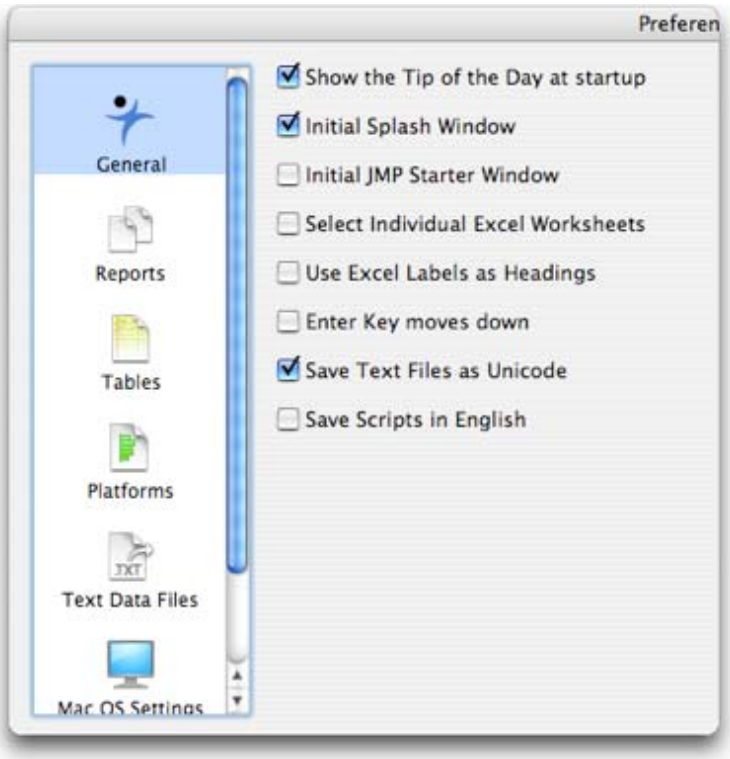
You may customize your session environment using the **Preferences** command. The **Preferences** command displays a panel with tab pages. The following displays the preferences panel for the Windows environment. Most preferences are also available on the Macintosh.

Example: Setting preferences

Let's set preferences to close the Starter Window and the table information panels at start-up.

1. To open the preferences window, select **File** ⇨ **Preferences** under Windows, or ***JMP*** ⇨ **Preferences** in Mac OS X.





2. Select the **General** icon.
   a. Deselect **Initial *JMP* Starter Window** and press **OK**.

Open the preferences panel again and look at the other icons. Most options are either off or on. Check the items that you want or select from a menu of items. You can press **Apply** to see the results without closing the **Preferences** window.