

# Introduction

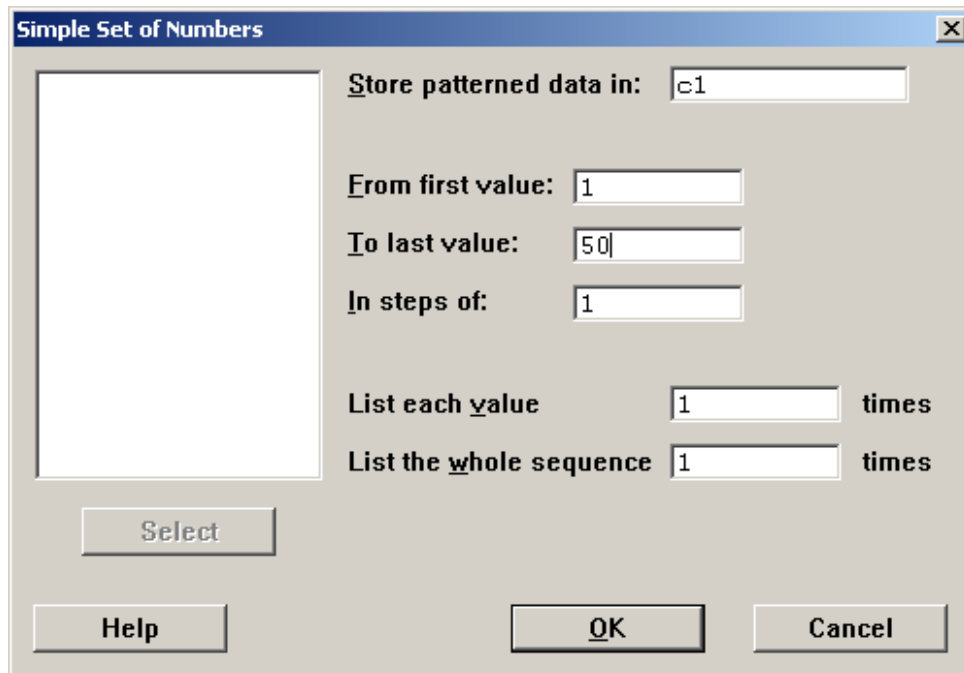
## Section 1.3

### Random Samples, pg. 6

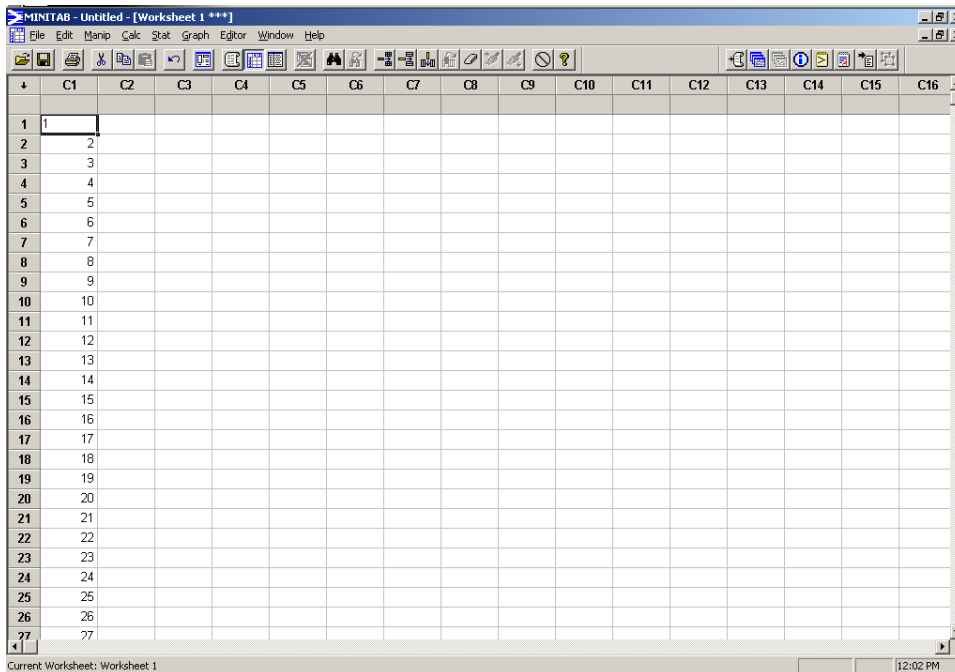
## Chapter

# 1

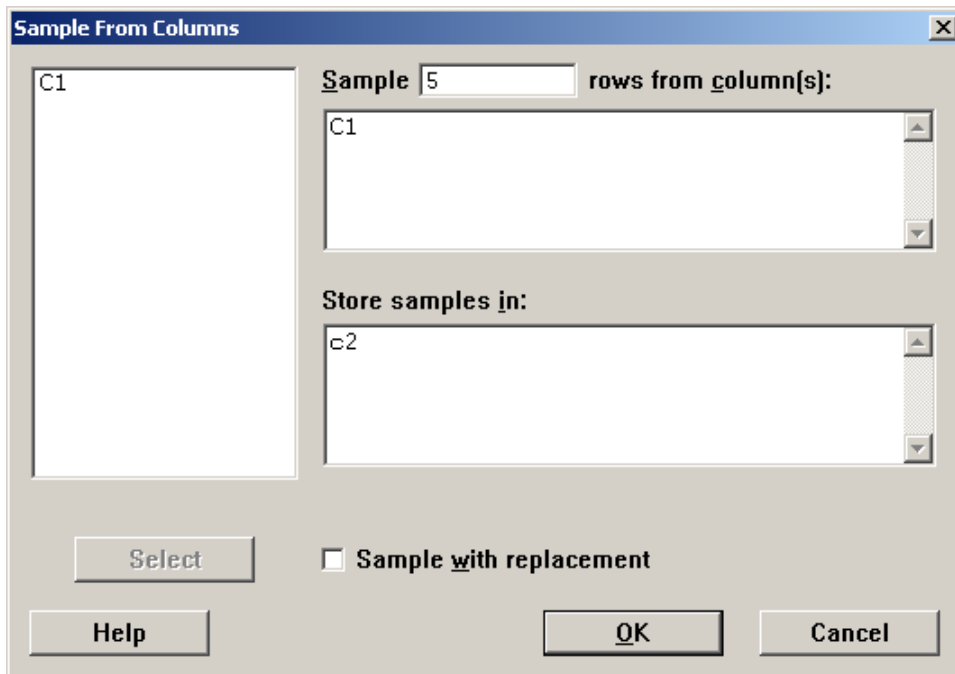
Suppose you would like to randomly select 5 students from a class of 50. Minitab can select a random sample from a list of data points for you. Begin by letting Minitab generate a large list of data for you. Let each of the 50 students be represented by the numbers 1 to 50 (instead of names). You could type the numbers 1, 2, 3, ... into C1 in the Minitab Worksheet, but it is quicker to let Minitab do this for you. Click on: **Calc** → **Make patterned data** → **Simple set of numbers**. You should **Store patterned data in C1**. The data should begin **From first value** 1 and go **To last value** of 50 **In steps of** 1.



Click on **OK** and the numbers 1 through 50 should now be in C1 in the Minitab Worksheet.

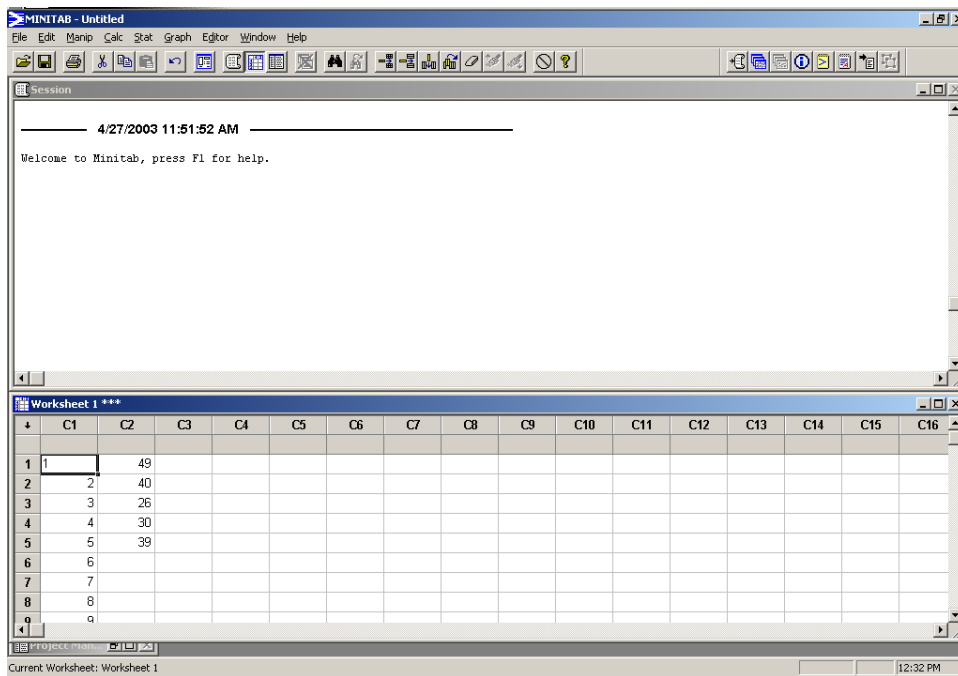


Now that you have a list of the 50 students in the class, you will take a random sample of 5 students. Since you do not want repeats, you will be sampling without replacement. This is the default type of sampling in MINITAB, so you won't have to do anything special for this sample. Click on **Calc** → **Random Data** → **Sample from columns**. You need to **Sample 5 rows from column C1** and **Store the sample in C2**.



Click on **OK** and there should be a random sample of 5 numbers (students) in C2.

## 8 Introduction



Students numbered 49, 40, 26, 30, and 39 were randomly selected.

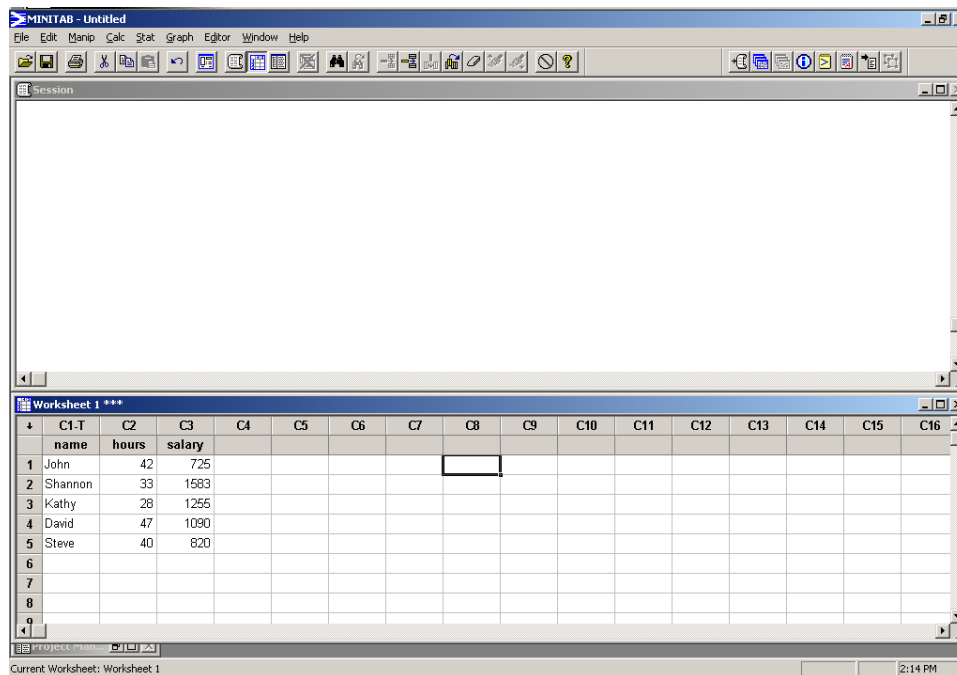
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## **Technology Assignment 1.1, pg. 25**

The following table gives the names, hours worked, and salary for the past week for 5 workers.

| Name    | Hours Worked | Salary  |
|---------|--------------|---------|
| John    | 42           | \$725   |
| Shannon | 33           | \$1,583 |
| Kathy   | 28           | \$1,255 |
| David   | 47           | \$1,090 |
| Steve   | 40           | \$820   |

Enter the data into columns 1 – 3 in the Minitab Worksheet. Give the columns an appropriate name by typing the names into the gray cells beneath the column numbers. **Do NOT type in the dollar signs or the commas for the salaries because Minitab will then assume that the data is not numeric.**



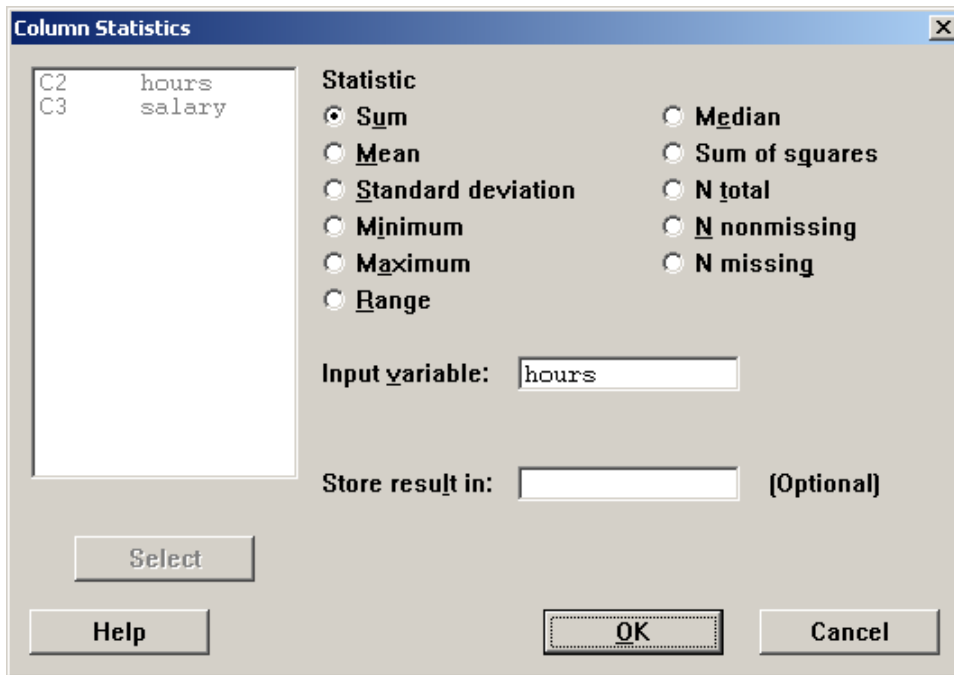
The following instructions are to teach you how to do some simple data manipulations.

### **Printing the data:**

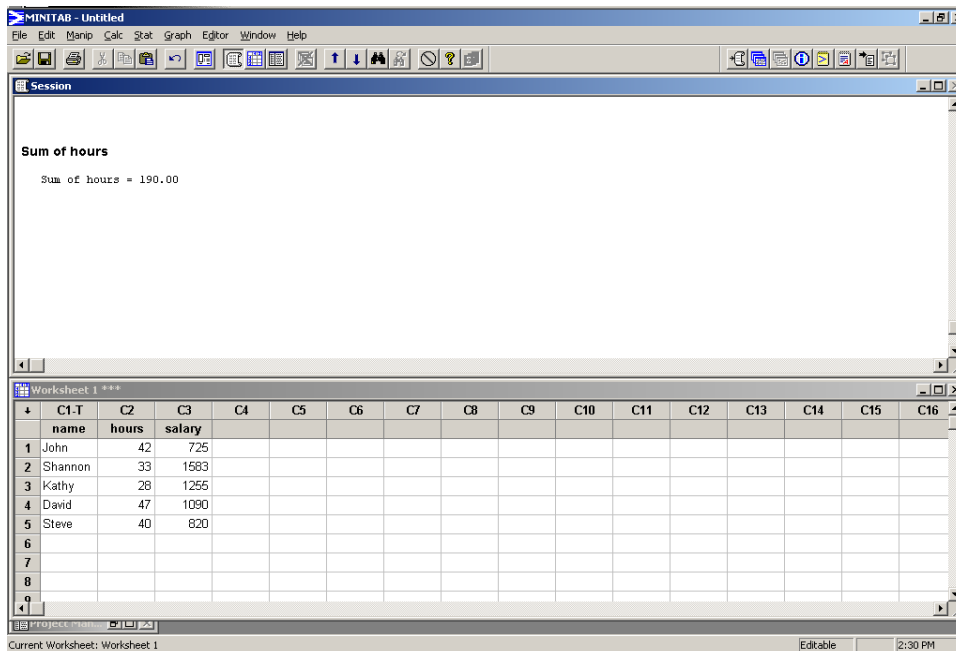
The easiest way to print out the columns of data is to print the Minitab Worksheet. To do this, click anywhere in the Worksheet to be sure that it is the active portion of the screen. Click on **File → Print worksheet**. You can also print the Session Window by clicking in the Session Window to be sure that it is the active portion of the screen. Then, simply click on **File → Print Session Window**.

**Summing the columns:**

To find the total hours worked by the 5 people, click on **Calc → Column statistics**. The following screen will appear.



First, click on the circle beside **Sum**. Next, click the cursor in the field to the right of **Input variable**. You can type C2 directly into the field. Another way to do this is to notice that the numeric variables are listed in the box on the left side of the screen. To select C2 as the input variable, simply double-click it in the box at the left. It will automatically be filled in as the **Input variable**. You can either store the sum in a column or just let the sum be printed out in the Session Window. To store the sum, just type an empty column number, say C4, in the field beside **Store result in**. If you leave the field blank, the sum will be printed in the Session Window.



**Session**

Sum of hours

Sum of hours = 190.00

**Worksheet 1 \*\*\***

|   | C1-T    | C2    | C3     | C4 | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|---|---------|-------|--------|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
|   | name    | hours | salary |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 1 | John    | 42    | 725    |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 2 | Shannon | 33    | 1583   |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 3 | Kathy   | 28    | 1255   |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 4 | David   | 47    | 1090   |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 5 | Steve   | 40    | 820    |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 6 |         |       |        |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 7 |         |       |        |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 8 |         |       |        |    |    |    |    |    |    |     |     |     |     |     |     |     |
| 9 |         |       |        |    |    |    |    |    |    |     |     |     |     |     |     |     |

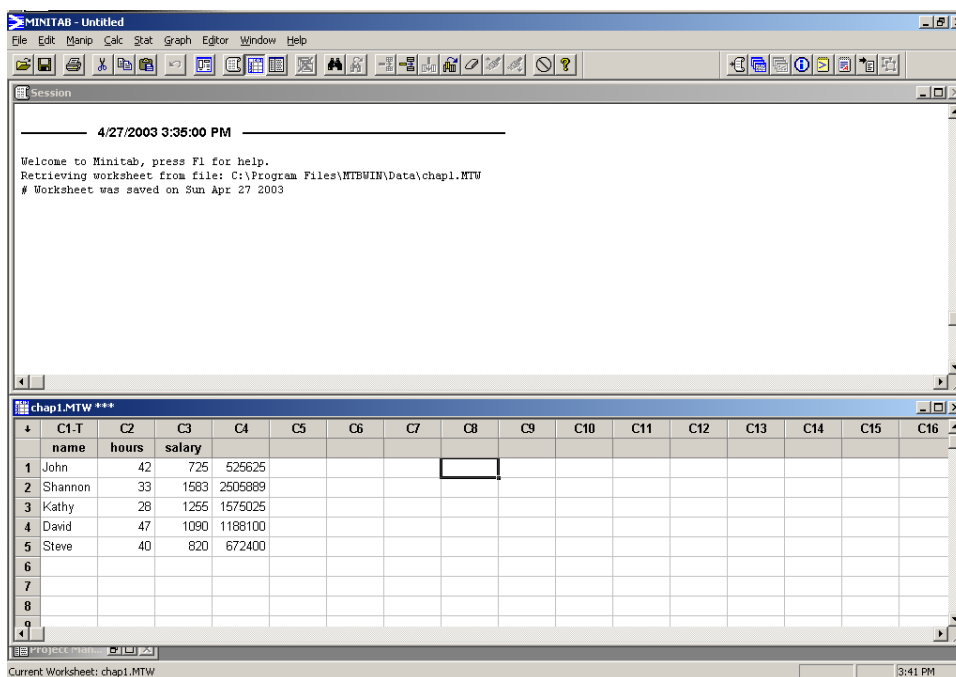
Current Worksheet: Worksheet 1

Notice the “Sum of hours = 190” is displayed in the Session Window.

### **Multiplying two columns:**

To multiply two columns, click on **Calc → Calculator**. For this example, you will multiply C3 by itself – the number in each cell of C3 will be squared and stored in C4.

**Store result in variable C4**, and then type in the **Expression**  $C3 * C3$ . Click on **OK**.



**Session**

4/27/2003 3:35:00 PM

Welcome to Minitab, press F1 for help.  
Retrieving worksheet from file: C:\Program Files\MTBWIN\Data\chap1.MTW  
# Worksheet was saved on Sun Apr 27 2003

**chap1.MTW \*\*\***

|   | C1-T    | C2    | C3     | C4      | C5 | C6 | C7 | C8 | C9 | C10 | C11 | C12 | C13 | C14 | C15 | C16 |
|---|---------|-------|--------|---------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|
|   | name    | hours | salary |         |    |    |    |    |    |     |     |     |     |     |     |     |
| 1 | John    | 42    | 725    | 525625  |    |    |    |    |    |     |     |     |     |     |     |     |
| 2 | Shannon | 33    | 1583   | 2505889 |    |    |    |    |    |     |     |     |     |     |     |     |
| 3 | Kathy   | 28    | 1255   | 1575025 |    |    |    |    |    |     |     |     |     |     |     |     |
| 4 | David   | 47    | 1090   | 1188100 |    |    |    |    |    |     |     |     |     |     |     |     |
| 5 | Steve   | 40    | 820    | 672400  |    |    |    |    |    |     |     |     |     |     |     |     |
| 6 |         |       |        |         |    |    |    |    |    |     |     |     |     |     |     |     |
| 7 |         |       |        |         |    |    |    |    |    |     |     |     |     |     |     |     |
| 8 |         |       |        |         |    |    |    |    |    |     |     |     |     |     |     |     |
| 9 |         |       |        |         |    |    |    |    |    |     |     |     |     |     |     |     |

Current Worksheet: chap1.MTW

Notice that C4 contains the square of the salaries.

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## **Suggested Exercises**

### **Technology Assignments**

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