# Spreadsheet: The Magic Matrix

The spreadsheet, which is simply a grid for entering rows and columns of data, has been a common business tool for centuries. Before computers, the luger (a book of spreadsheets) was the accountant's primary tool for keeping records of financial transactions. Instructors' grade books are also in spreadsheet format, with student names labeling the rows and quiz scores labeling the columns.

Spreadsheet software is an electronic alternative to thousands of traditionally manual tasks. We are no longer confined to using pencils, erasers, and hand calculators to deal with rows and columns of data. Think of anything that has rows and columns of data and you have identified an application for spreadsheet software: income (profit-and-loss) statements, personnel profiles, demographic data, home inventories, and budget summaries, just to mention a few.

## Organization: Rows and Columns

Spreadsheets are organized in a tabular structure with rows and columns.

The intersection of a particular row and column designates a **cell**. The rows are numbered, and the columns are lettered.

Data are entered and stored in a cell. During operations, data are referred to by their **cell address**, which identifies the location of a cell in the spreadsheet by its column and row, with the column designator first.

In the spreadsheet work area (the rows and columns), a movable highlighted area 'points' to the current cell. The current cell is highlighted

with either a different background color or a dark border. This highlighted area, called the **pointer**, can be moved around the spreadsheet with the arrow keys or the mouse. The address and content of the current cell are displayed in the cell content portion of the spreadsheet above the work area. The content or value resulting from a formula of each cell is shown in the spreadsheet work area.

## Ranges: Groups of Cells

Many spreadsheet operations ask you to designate a **range** of cells. These are cell range (a single cell); column range (all or part of a column of adjacent cells), row range; and block range (a rectangular group of cells). A particular range is indicated by the addresses of the endpoint cells separated by a colon, such as the row range C14:E14.

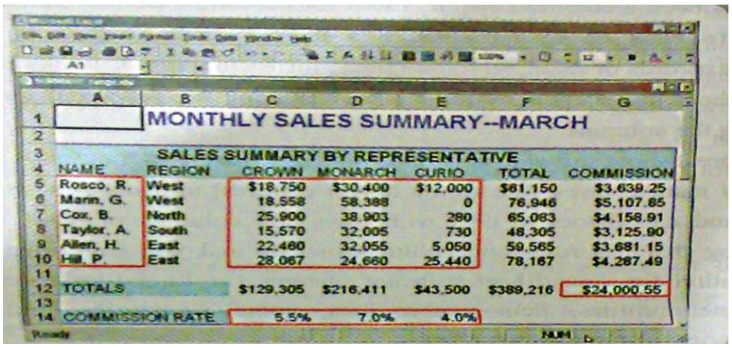


**Figure 3-1. Spreadsheet Ranges**. The highlighted cells in this spreadsheet illustrate the four types of ranges: cell (G12), column (A5:A10), row (C14:E14), and block (C5:E10).

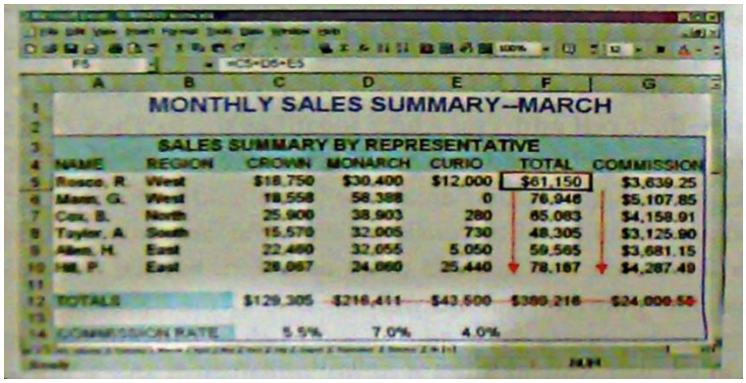

**Figure 3-2. Copying Formulas**. The actual content of F5 is the formula in the cell contents box (-C5+D5+E5). The result of the formula (61150) appears in the spreadsheet at F5, formatted as currency ($61,150). In creating the spreadsheet template for the monthly sales summary, the national sales manager for BrassCo entered only three formulas (see cell contents summary below).

- The formula in F5 to sum the product sales for each salesperson was copied to the range F6:F10.
- The formula in G5: =$C$I4*C5+$D$14*D5+$E$14*E5 to compute the commission for each salesperson was copied to the range G6:G10.
- The formula in C12: =SUM (C5:C10) to sum the sales for each product was copied to the range D12:G12.

# Viewing a Spreadsheet

In Windows 9x/NT/2000, one or more applications run in **windows**-rectangular areas displayed on the screen. Depending on the size of a window, the entire document may not be visible. Spreadsheets can be large, sometimes thousands of rows and dozens of columns (for example, an employee database). When document content is more than can be displayed in a window, the window is outfitted with **vertical** and/or **horizontal scroll bars**. Each bar contains a **scroll box** and **scroll arrows**. Use the mouse or keyboard to move a box up/down or left/right on a scroll bar to display other parts of the application. This movement is known as **scrolling**. Scrolling through a spreadsheet is much like looking through a magnifying glass as you move it around a newspaper page.