



# INT EXCEL

*Intermediate Excel extends the users knowledge of functions, formulas, using multiple worksheets, and using the spreadsheet as a simple database.*

## **Formulas and Functions**

A **formula** is a combination of numeric constants, cell references, arithmetic operators, and/or functions that displays the result of a calculation. Every cell contains either a formula or a constant.

A **constant** is an entry that does not change. It may be a number or descriptive text.

A **function** is a predefined computational task.

## **Functions vs formulas**

Many worksheet calculations, such as an average or a sum, can be performed in one of two ways. You can either enter a formula, or you can use the equivalent function. Functions are preferable in that they will adjust automatically for the deletion of existing worksheets or the insertion of new worksheets within the existing range.

## **IF Function**

The IF function enables decision making to be implemented within a worksheet. The IF function has three arguments: a condition that is evaluated as true or false, the value to be returned if the condition is true, and the value to be returned if the condition is false.

The IF function is written:  
=IF(condition, value if true, value if false)

The IF function returns either the second or third argument, depending on the result of the condition: that is, if the condition is true, the function returns the second argument, whereas if the condition is false, the function returns the third argument.

The condition uses one of six relational operators: +, <>, <, >, <=, >=, to perform logical tests.

## **Multiple Worksheets...**

The presence of multiple worksheets in a workbook creates an additional requirement for cell references. You continue to use the same row and column convention when you reference a cell on the current worksheet. However, to reference a cell, or cell range, in a worksheet other than the current worksheet, you need to preface the cell address with a worksheet reference. A worksheet reference may also be used in conjunction with a cell range. Omission of the worksheet reference defaults to the cell reference in the active worksheet.

An exclamation point separates the worksheet reference from the cell reference. The worksheet reference remains constant as it is an absolute reference. The cell reference can be either relative or absolute.

The combination of relative cell references and constant worksheet references enables you to enter the formula once, then copy it to the remaining cells in the worksheet.

## **3-D Reference**

A 3-D reference is a range that spans two or more worksheets in a workbook. The sheet range is specified with a colon between the beginning and ending sheets. An exclamation point follows the ending sheet, followed by the cell reference. The worksheet references are constant and will not change if the formula is copied.

### **Grouping Worksheets**

The worksheets in a workbook are often similar to one another in terms of content and/or formatting. You can format the worksheets individually or more easily through grouping.

Excel provides the capability for grouping worksheets in order to enter or format data in multiple worksheets at the same time. Once the worksheets are grouped, anything you do in one of the worksheets is automatically done to the other sheets in the group. You must, however, ungroup the worksheets when you enter data in a specific worksheet. Use Data, Group and Outline.

### **Excel as a Database**

Creating a list is easy because there is little to do other than enter the data. You choose the area in the worksheet that will contain the list, then you enter the field names in the first row of the designated area. Each field name should be a unique text entry. The data for the individual records should be entered in the rows immediately below the row of field names. Once a list has been created, you can edit any field, in any record, just you would change the entries in an ordinary worksheet.

A data form provides an easy way to add, edit, and delete records in a list. The **Form** command in the Data menu displays a dialog box based on the fields in the list and contains the command buttons New, Delete, Restore, Find Prev, Find Next, Criteria, and Close.

The **Sort** command arranges the records in a list according to the value of one of more fields within that list. You can sort the list in ascending or descending sequence. You can also sort on more than one field at a time. The field(s) on which you sort the list is (are) known as the key(s).

### **Suggestions**

Data and information are not synonymous. Data refers to a fact or facts about a specific record. Information is data that has been rearranged into a form perceived as useful.

**Emphasize the column labels (field names)...** Use a different font, alignment, style, pattern, or border to distinguish the first row containing the field names from the remaining rows (records) in a list. This ensures that Excel will recognize the first row as a header row, enabling you to sort the list simply by selecting a cell in the list, then clicking the Ascending or Descending sort buttons on the Standard toolbar.

**Press Tab, not Enter...** Press the Tab key to move to the next field within a data form. Press Shift+Tab to move to the previous field. Press the enter key only after the last field has been entered to move to the first field in the next record.

**Freeze Panes...** The Freeze Panes command is useful with large lists as it prevents the field names from scrolling off the screen. Click in the first field of the first record. Pull down the Window menu, then click the Freeze Panes command. A horizontal line will appear under the field names to indicate that the command is in effect.

**AutoFilter...** A filtered list displays a subset of records that meet a specific criterion or set of criteria. It is created by the AutoFilter command (or the Advanced Filter command). Both commands temporarily hide those records that do not meet the criteria. The hidden records are not deleted; they are simply not displayed.

Execution of the AutoFilter command places drop-down arrows next to each field name. Clicking a drop-down arrow produces a list of the unique values for that field, enabling you to establish the criteria for the filtered list.

**Advanced Filter...** This command extends the capabilities of the AutoFilter command by enabling you to develop more complex criteria, and allowing you to copy the selected records to a separate area in the worksheet.

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