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Exchanging Information

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Exchanging Information

Informed Filler allows you to easily transfer information between different Informed documents, different applications, and even different computers. You can export information to applications such as spreadsheets, accounting systems, or other databases. You can import information from other applications or computers to automatically complete forms without having to re-enter data.

Transferring information from one form or application to another is a two step process. It involves first storing the information in a file using a standard format that's understood by both the sending and receiving applications. This step is called *exporting the data*. Once the information has been exported, any application can then import it for further processing or storage.

In this chapter you'll learn about the standard file formats that Informed understands. You'll also learn how to use the Import and Export commands.

File Formats

Over time, various standard file formats have evolved to allow different applications to share the same information. Different standards exist for storing different types of information. For example, the Bitmap, PICT, EPS, and TIFF file formats are used to store graphical information, whereas the delimited text format is used to store textual information.

For purposes of exchanging information, Informed Filler supports three built-in file formats: delimited text, Informed Interchange, and Informed data.

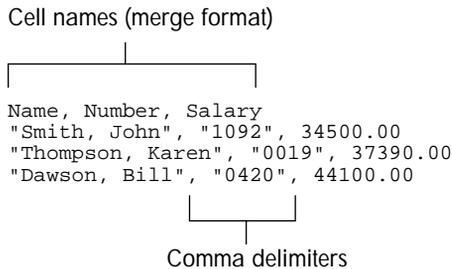
The delimited text file format is a standard format that's used primarily for transferring information between Informed Filler and other applications such as spreadsheets, word processors, or other databases. The Informed Interchange and Informed data formats are used for transferring information between different Informed data documents. Unlike delimited text files, Informed Interchange and Informed data files can store the style characteristics of textual values (that is, attributes such as bold, italic, and outline), annotation, graphics, and signatures.

Delimited Text Files

Delimited text files offer the most common data format standard. Most applications that allow you to import or export textual information support this data format. In fact, if you're exchanging information between Informed Filler and a different application, you must use a delimited text file.

A text file is divided into lines of information. Each line contains one or more values, each separated by a *delimiter* character. A single value corresponds to one cell or field of information (for example, the invoice number on an invoice form).

Suppose that a form contains employee information consisting of the employee name, number, and salary. The following figure shows what might be the contents of a text file that contains the data for three completed employee records.



Each cell value is separated from the next with a delimiter character. In the above example, comma delimiters are used. An application that imports a delimited text file uses the delimiter characters to separate a single line into individual values. Informed Filler supports the tab or comma delimiter characters.

Quote Characters

Often cell values are enclosed within quotation marks. This is particularly important if a delimiter character can occur within a cell's value. For example, in the previous figure, the comma character separates the first and last parts of each name value. Since the comma is also the delimiter character, it's important that each name value be enclosed within double quote characters. If quote characters were not used, the last and first names would instead be interpreted as the Name and Number cells, respectively.

When you export records, Informed Filler automatically surrounds a cell value with double-quotes if the value contains a delimiter character. When you import records, these characters are ignored. For more information, see "Exporting Records" and "Importing Records" later in this chapter.

Merge Format

In the text file shown in the previous figure, the first line contains the cell names of the information in the file. Many applications, including Informed Filler, require that this convention be followed. The cell names are used by an application that imports the text file to automatically identify the contents and organization of the file. This characteristic of a text file is often called the *merge format*.

Tables

Tables on a form contain rows and columns of information. On a form drawn with Informed Designer, each column represents one cell. Unlike field cells, a column cell can store multiple values, one for each row.

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When you export a record that contains a table, Informed Filler stores the contents of the table either column-wise or row-wise. This means that the information in the table is organized either column by column or row by row. You choose which method to use by clicking a control on the Export dialog box (see “Exporting Records” later in this chapter).

If you choose to export tables by column, the rows of a column cell occur grouped together, each separated by a special row delimiter character. The ASCII code of the row delimiter character is decimal 29. The following figure illustrates how a table is exported by column.

Name John Smith	
Telephone (408) 555-1290	
Date	Amount
1/23/90	55.00
2/11/90	120.50
2/15/90	279.90

```
Name, Telephone, Date, Amount
John Smith, (408) 555-1290, 1/23/90|2/11/90|2/15/90, 55|120.5|279.9
```

|-----|-----|-----|
Row delimiter characters

For each column, Informed Filler automatically combines the values of each row and separates them with the row delimiter character (as shown above). When you import data, the row delimiter characters are used to divide a column into individual row values.

Note

When you export records that contain tables, if you intend to later import the information using Informed Filler, you must export tables by column and not by row. Informed Filler can't import a text file that contains table information organized by row.

When you export tables by row, Informed Filler stores the information from a table one row at a time. Each row is stored on a new line in the text file. If you include a field cell when you export a table, Informed Filler will repeat the field's single value for each row of the table exported. For example, suppose that when you export the record shown in the previous figure, you choose to export tables by row instead of by column. The example below shows the text file that Informed Filler would create.

```
Name, Telephone, Date, Amount
John Smith, (408) 555-1290, 1/23/90, 55
John Smith, (408) 555-1290, 2/11/90, 120.5
John Smith, (408) 555-1290, 2/15/90, 279.9
```

Notice that the text file contains three lines of data, one for each row in the table. The Name and Telephone cell values are repeated on each line.

If you export a record that contains more than one table, the table with the most rows filled out determines how many rows are exported. The following example shows how a record with two tables would be exported.

Name <u>John Smith</u>		
Telephone <u>(408) 555-1290</u>		
Date	Amount	Interests
1/23/90	55.00	Golf
2/11/90	120.50	Music
2/15/90	279.90	Art
		Antiques
		Fishing

```
Name,Telephone,Date,Amount,Interests
John Smith,(408) 555-1290,1/23/90,55,Golf
John Smith,(408) 555-1290,2/11/90,120.5,Music
John Smith,(408) 555-1290,2/15/90,279.9,Art
John Smith,(408) 555-1290,,Antiques
John Smith,(408) 555-1290,,Fishing
```

In this example, the table of interests contains more rows than the table of transactions. The text file, therefore, contains five lines of data and not three. The values of the Date and Amount column cells are left blank on the fourth and fifth lines. As always, the field cell values are repeated on each line.

The option to export tables by row is most useful when you're exporting information to a relational database application or a spreadsheet. With relational databases, the information on many forms is often represented using more than one *related* file. If you were to store the form shown in the previous example in a relational database, you might use three files—or tables—to store the client, transaction, and interest information.

When you transfer information from a form with tables to a relational database, it might be more appropriate to export and import each table separately. As you'll learn in "Exporting Records" later in this chapter, you can choose which cells to export and their order. With this ability, and with the option to export tables by column or by row, you can more easily exchange information between Informed Filler and other standard applications.

Multi-line Cell Values

As explained in Chapter 3, "Filling Out Forms," you can type more than one line into a text cell by pressing Enter or Return at the end of each line. Since the end of a line has a special meaning in a delimited text file (it separates records or rows of tables), an exported cell value cannot contain end-

of-line or carriage return characters. Therefore, when you import and export records, Informed Filler automatically converts carriage return characters to vertical tabs (ASCII code 11). Most applications, such as word processors, will interpret each vertical tab character as the end of a line.

Limitations of the Delimited Text File Format

As its name implies, a delimited text file stores textual information only. When you export records from forms with pictures or signatures, Informed Filler automatically converts picture and signature values to text. Note, however, that only Informed Filler understands the format of pictures and signatures stored in this manner. A delimited text file containing pictures or signatures, therefore, can be imported only using Informed Filler.

A stylized text value is a value that combines different fonts, sizes, and styles (bold, underline, italic, etc.). When the form is created, the form designer decides which text cells can allow style changes. As you fill out a form, style changes are made by choosing different settings from the Style submenus (see “Entering Text” in Chapter 3 for more information).

In text format, a value such as:

‘This is a *stylized* text value,’

is stored as:

‘This is a stylized text value.’

If it’s important to preserve pictures or the style information of text, use the Informed Interchange format instead.

Chapter 7, “Annotation,” explains how you can attach notes to any record. A note can be a comment or special instructions for a particular record. When you export records to a text file, all notes are ignored. You can include notes only if you use the Informed Interchange format.

Informed Interchange Files

Informed Interchange files contain the data for one or more records and are used primarily for transferring information between different versions of Informed, or between Informed Filler and other custom applications that understand this format.

The Informed Interchange file format stores all types of information, including stylized text values, pictures, signatures, and annotation. It does not, however, store any files that have been attached to a record using Informed Filler’s attachments feature.

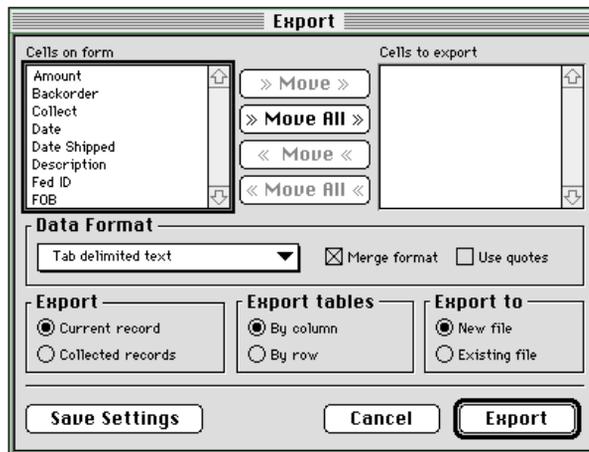
Informed Data Files

Informed data files are Informed's own proprietary format. Each Informed data file is a database that contains all the data for one or more records.

The Informed data file is not a standard format. Only Informed applications can understand and store information in this format. Although you can import files of this format, you cannot export records as Informed data files. If you're transferring information to a different (non-Informed) application, use the delimited text format instead.

Exporting Records

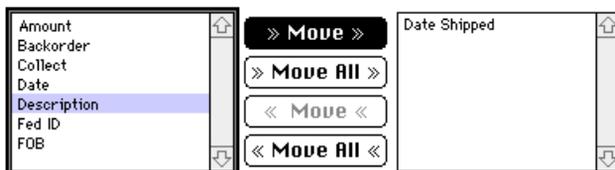
With Informed Filler, you export records by choosing **Export...** from the File menu. The Export dialog box appears.



With the Export dialog box you can choose which cells are exported and in what order. You can also select a variety of export options.

Cell Selection

The Export dialog box contains two scrolling lists. The list on the left initially contains all cells on your form. The list on the right contains the cells that will be included (and their order) when records are exported. This list is initially empty. You move cells from one list to the other by clicking the buttons located between the two lists.



To move a single cell from one list to the other, select the cell's name in the list then click the 'Move' button that points in the appropriate direction. You can also double-click the cell's name. The cell is removed from the list in which it's currently contained and added to the other list. Cells in the left list are sorted alphabetically. Cells in the right list appear in the order that you move them to that list. Clicking a 'Move All' button moves all cells from one list to the other.

Choosing the Data Format

When records are exported, Informed Filler stores the information in a particular data format. You choose the format by selecting 'Tab delimited text,' 'Comma delimited text,' or 'Informed Interchange' from the 'Data Format' drop-down list.



When you select either of 'Tab delimited text' or 'Comma delimited text,' you can further choose whether or not to use the merge format or quotes options. If you check the 'Merge format' checkbox, Informed Filler will list each cell name on the first line of a new text file. In order to import a text file of information, some applications require that the merge format option be used.

Note

If you intend to later import the exported data back into an Informed data document (using Informed Filler), you must use the merge format option when you export the records.

When you export records, cell values that contain delimiter characters are automatically surrounded with double quotes (as in "*value*"). Delimiter characters include either of the comma or tab characters, depending on which data format you've chosen. If you select the 'Use quotes' option, all cell values with the exception of numbers will be surrounded with double quotes. If a quoted cell value itself contains a double quote, that character will be replaced with a single quote before the value is exported.

When using a delimited text format, any date, time, number, name, picture, and signature values export according to the formats listed in the following table.

Export Formats

Data type	Export format
Date	M/D/YY
Time	H:MM:SS AM
Number	General
Name	All parts in full form
Picture	Informed-specific ASCII format
Signature	Informed-specific ASCII format

Exporting Notes

As explained in Chapter 7, “Annotation,” you can attach a note or comment to any form that you fill out. When you export records using the ‘Informed Interchange’ data format, Informed Filler lets you choose whether or not notes are to be included with the data of each record.

The image shows a dialog box titled "Data Format". Inside the dialog, there is a dropdown menu currently displaying "Informed Interchange". To the right of the dropdown is a checkbox with the text "Include Notes", which is checked.

If you check the ‘Include notes’ checkbox, any notes that are attached to the records being exported will also be included. When you later import the records, all notes will automatically appear on the same pages and at the same positions as they were on the original records.

Record Selection

Informed Filler lets you export a single record or a group of records. Depending on which window is in front (the form window or the Record List window), different options will be available.

The image shows two separate dialog boxes, both titled "Export".
 The left dialog box has two radio buttons: "Current record" (which is selected) and "Collected records".
 The right dialog box has two radio buttons: "Entire Record List" (which is selected) and "Selected records only".

If the form window is in front, you can export either the current record—that is, the one that’s visible—or all records in the collection. If the Record List window is in front, you can export all records on the Record List, or only those that are selected. Make your choice by clicking either radio button under the ‘Export’ heading.

New or Existing File

When you export records, you can append the information to the end of an existing file, or you can write the information to a new file. To choose an option, click either of the radio buttons below ‘Export to’ on the Export dialog box.

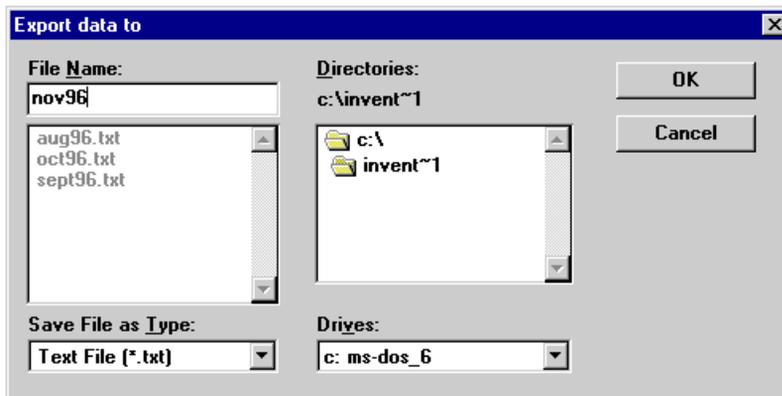
If you choose ‘New file,’ Informed Filler will create a new file to hold the exported information when you start the export process. You’ll be asked to name the new file and specify where to store it (see “Starting the Export Process”). If you choose ‘Existing file,’ you’ll be asked to select an existing file instead.

Saving the Export Settings

Informed Filler allows you to save the export options so that you don’t have to choose them each time you export records. This is useful if you export records from the same form template using the same options on a regular basis. If you click the ‘Save Settings’ button, Informed Filler will remember the current settings on the Export dialog box. The next time you choose the Export command, the options will automatically configure according to the last saved settings.

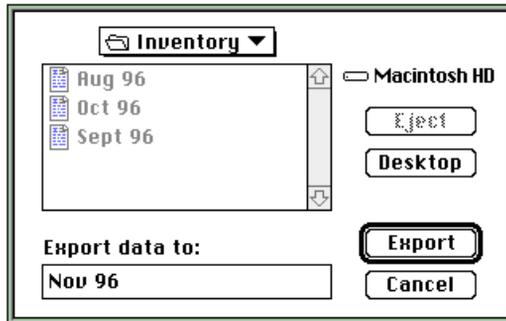
Starting the Export Process

After you’ve selected the cells to include and the desired export options, clicking ‘Export’ will begin the export process. If you’re exporting to a new file, you’ll be asked to name the file and specify where to store it. If you’re using a Windows compatible computer, you’ll see a dialog box similar to the one shown in the following figure.



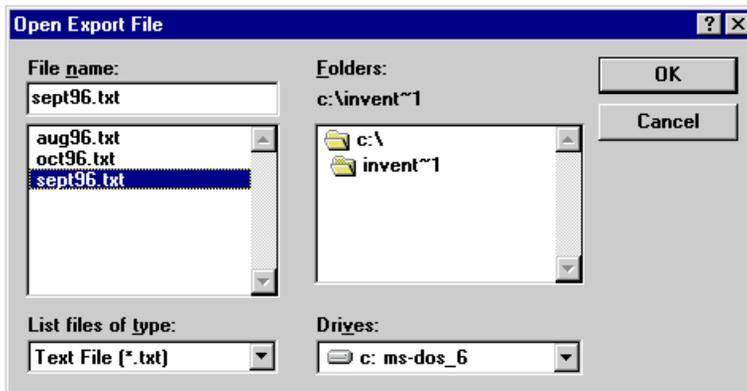
Type the name of the file in the text box provided, then click ‘OK.’

If you’re running Informed Filler on a Mac OS compatible computer, you’ll see a dialog box similar to the one shown below.



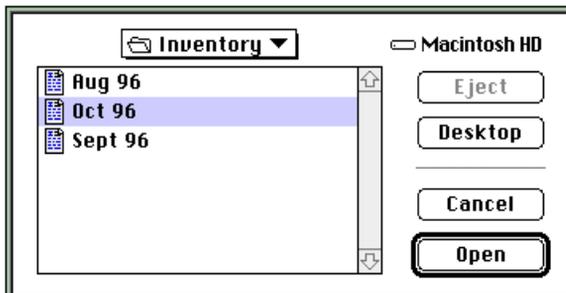
Type the name of the file in the text box provided, then click 'Export.'

If you're exporting to an existing file, you'll be asked to select the file to append the information to. If you're running Informed Filler on a Windows compatible computer, you'll see the following dialog box.



Select the file in the scrolling list, then click 'OK.'

If you're using a Mac OS compatible computer, you'll see this dialog box:



Only text files or Informed Interchange files will appear in the scrolling list (depending on the selected data format). Select the correct file, then click 'Open' to continue.

Note

When you export records to an existing file, Informed Filler doesn't check to make sure that the information you're exporting matches the information that already exists in the selected file. Therefore you could, for example, accidentally export invoice data to an existing file that contains information for purchase order forms. Please use caution when selecting the existing file.

After you create a new file or select an existing file, Informed Filler will begin exporting the records. Progress information is displayed as exporting occurs.

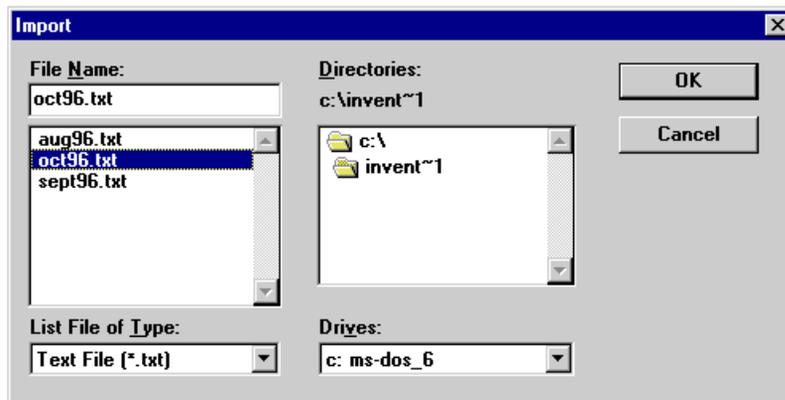


Importing Records

You use the Import command to import data from a file into a data document. This command offers options that make it easy to import a single file or a collection of files.

To import information into a data document, choose **Import...** from the File menu. A dialog box appears, allowing you to select which files to import.

If your computer uses Windows, you'll see the standard Open dialog box:

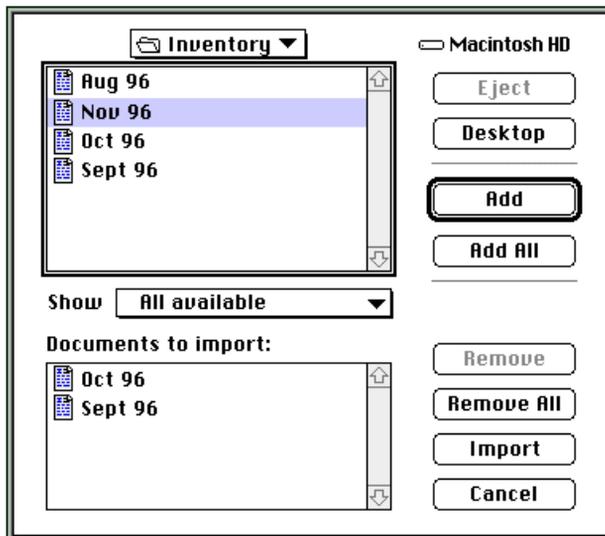


Select the file format that you want to import from the ‘List File of Type’ drop-down list. This list contains the Informed data, Text File, and Informed Interchange formats.

The scrolling list of files will show only those files that match the selected data format. For a description of the built-in data formats, see “File Formats” earlier in this chapter.

Select the file in the scrolling list and click ‘OK’ to import the data.

If you’re using the Mac OS, you’ll see one of two dialog boxes when you choose the Import command. If your computer has System 7.0 or later, you’ll see a dialog box that allows you to select more than one file to import.



Select the file format that you want to import from the ‘Show’ drop-down list. This list contains the Informed data, Delimited Text, and Informed Interchange formats. Once you specify a file format, you’ll only be able to select files that match that format.

To select a file to import, click it in the upper scrolling list, then click ‘Add,’ or simply double-click the file. The name of the selected file appears in the lower scrolling list. To add all files in the current folder, click ‘Add All.’ To remove an item from the list of those to import, click the file in the lower scrolling list, then click ‘Remove,’ or simply double-click the file. To remove all the files that you’ve selected, click ‘Remove All.’ Once you’ve made your selection, click ‘Import’ to import the files, or click ‘Cancel’ to cancel the Import command and dismiss the dialog box.

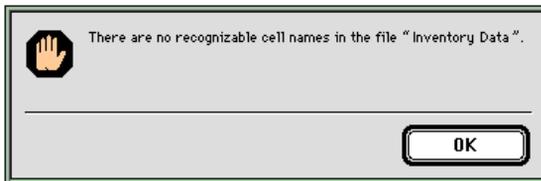
If your Mac OS computer has system software earlier than version 7.0, the dialog box that you’ll see only allows you to select and import one file at a time.

Note

If you're using a Mac OS computer compatible computer, Informed Filler offers a shortcut to the Import command. To import a data document, simply drag its icon onto the form window that corresponds to the data document that you want to import into.

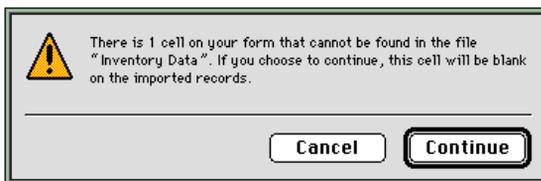
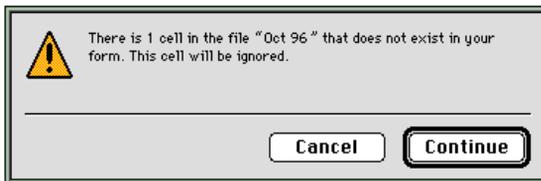
The Import Process

When Informed Filler imports a file, it starts by comparing the contents of the file with the form template used by the data document into which the data is being imported. By reading header information in the selected file, Informed Filler can identify and match the cells found in the file with those on the form template. If no cells match, the Import command is cancelled and the following message is displayed.



If the above error occurs, it's likely that you've selected the wrong file to import. For example, you may have attempted to import a file containing inventory data into your purchase order form.

If at least one cell matches but there are extra or missing cells in the file being imported, you'll see either or both of the following messages.



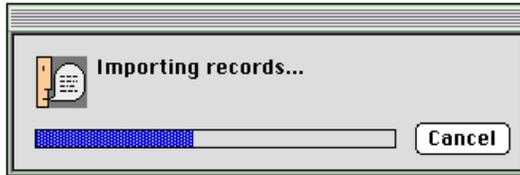
These messages are meant to warn you that the data in the file being imported doesn't exactly match the form template used by the data document that you're importing into. Either cells on your form cannot be found in the file, or cells in the file are found that don't exist on your form. Click the

appropriate button to continue or cancel. If you choose to continue, any unrecognizable cells in the file being imported will be ignored. Cells that appear on your form but are missing in the file will be blank for the imported records.

Note

If a cell on your form is not found in the file being imported, and that cell has a default value, the cell won't be blank for the imported records. Instead, the default value will be used.

As records are imported, Informed Filler displays progress information.



You can cancel the import process by clicking 'Cancel.'

As each record is imported, Informed Filler checks to make sure that the data read matches with what is actually expected. It checks for extra or missing values, and for values that are incorrect in type. As an example, consider the comma delimited text file shown below.

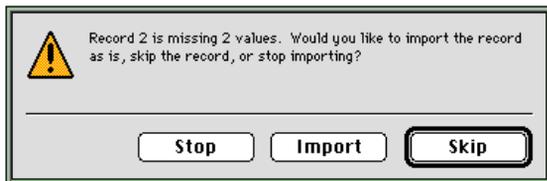
```
Name,Phone,Salary,Title,Start Date
"Smith, John", "498-0938", 35950, "Product Filler", "3/21/89"
"Robertson, Dale", "439-6628", 39200
"Jones, Tom", "482-7139", 31990, "Senior Editor", "9/17/89"
"Harrison, Karen", "42-1099", 42500, "Area Supervisor", "3/18/88"
"Dawson, Janice", "420-1029", 28770, "Sales Rep.", "abcdefg"
"Roy, Dan", "487-3092", 33290, "Analyst", "1/7/90", "An extra value"
```

Assume that the form into which the file is being imported contains the cells called 'Name,' 'Phone,' 'Salary,' 'Title,' and 'Start Date.' Also assume that these cells have the respective types name, character (with a format that accepts valid phone numbers only), number, date, and text. The following table lists the errors that Informed Filler would recognize while importing the previous text file.

Errors in Text File

Record	Is Correct?
1	yes
2	no missing values for Title and Start Date
3	yes
4	no invalid value for Phone
5	no invalid date value for Start Date
6	no too many values

This table lists three types of detectable errors: too many values, not enough values, and invalid values. In addition to these errors, Informed Filler will also warn you when the number of values for a column cell exceeds the number of rows in the corresponding column on your form. In any case, when an error is detected, you'll see a message that describes the error and offers three options.



If the file being imported is an Informed Interchange file, the name of the user who originally exported or stored the record might appear on the message dialog.

When an error is detected, you can choose to import the record anyway, skip the record and continue, or stop the import process. If you choose to import the record, any extra values are ignored. Missing or invalid values will be blank on the imported records.

If any errors were detected, Informed Filler will report the number of records imported and the number of errors detected after all forms have been imported, or after you cancel or stop the import process.

Importing Notes

Chapter 7, "Annotation," describes how you can attach a note or comment to any record that you fill out. As explained in "Exporting Notes" earlier in this chapter, Informed Filler can export notes along with the data of each record if you use the Informed Interchange data format.

When you import records from an Informed Interchange file or an Informed data file, any notes found with the records are imported as well. Informed Filler tries to position the notes on the form according to where they were originally located. However, realize that this position is relevant only if the data document you're importing the records into uses a form template that matches the one that the notes were originally attached to. If you're transferring information between two different types of forms, the original position of each note might not be meaningful.

If a note was originally positioned on a page that doesn't exist in the form template of the data document that you're importing into, instead of deleting the note, Informed Filler will automatically move it onto the work page. (For an explanation of the work page, please see "The Work Page" in Chapter 3.)