

FileMaker Pro Databases

Databases with FileMaker Pro

Overview

A database is a structured set of stored information (data) that can be readily organized, updated, searched through, sorted and analyzed. A database can consist of one table, such as a mailing list that contains the names and addresses of several individuals, or many tables that, together, contain a range of information about a given topic. For example, a database system storing information about college students might include several related tables, each pertaining to a particular type of information such as student identification, contact information, academic standing, or program of study.

Records, Fields, and Values

A database file is composed of **Records**, or sets of information about a particular subject. Typically a record is one entry within the database. Each entry or each record is comprised of **Fields**. A field is the place where each piece of information – first name, last name, and street address – is stored. A field remains blank until a **Value**, the actual data, is entered into it.

Creating and Opening Files

Once FileMaker Pro opens, the New Database box appears. From this box choose to create a new database file using a template, create a new empty file, or open an existing file. Once an option has been chosen, click OK.

Defining the Database

If a new empty file was selected for creating a new database, the Define Database window appears. Use this window to create fields, tables, and relationships.

Defining Fields

To create a new field:

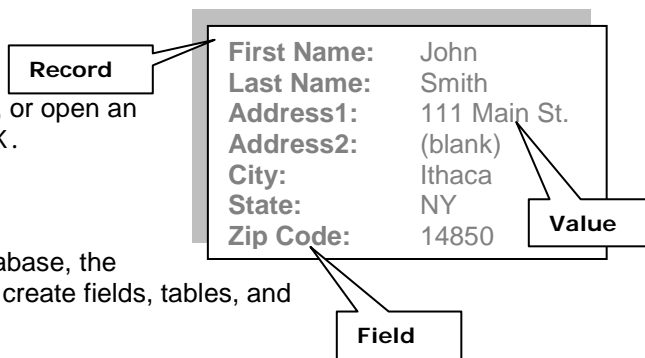
- Select the Fields tab.
- In the Field Name field, type a field name.
- Select a Type.
- Click Create.

When defining fields, there are eight types of fields to choose from. The field type should correspond to the type of information that will be entered into the field. The table below describes which field type to use for which type of data.

Field names should not contain the following symbols or words: ,(comma), +, -, *, /, ^, &, =, >, <, (,), ", ;, ::, AND, OR, XOR, NOT, or a FileMaker Pro function name (ex., SUM, WORDCOUNT, AVERAGE). Also, do not begin a field name to be used in a calculation formula with a period (.) or a number.

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Quick Guide

Field Type	Purpose
Text	Letters, symbols, and numbers used as text. FileMaker Pro allows up to 65,000 characters in a text field.
Number	Numbers or other characters, of which only the numbers will be treated as numeric. You may enter up to 255 characters in a number field.
Date	Dates only. A date field must include at least the day and month portion of a date. If no year is entered (and a separator character for a year has not been typed), FileMaker Pro enters the current year for you.
Time	Times only. A time field can contain the hours, minutes, and/or seconds' portion of a time.
Container	A graphic, sound, QuickTime movie, or OLE (Object Linking and Embedding) object.
Calculation	The result of a formula that uses field values from the current record or related records.
Summary	A value that's produced by summarizing field values from more than one record in the same file.
Global	One value to be used in all records of the file.

Automating Data Entry

To improve the speed and accuracy of data entry, you can set field options to automatically enter data in a given field. For example, if the majority of records for a mailing list file contain entries for people who reside in New York State, FileMaker Pro can automatically enter "NY" in the appropriate field.

In the Define Fields tab, click the field to set options, and click the Options... button. Select the check box that corresponds with the data to automatically be entered in the field. For the example above, check the box labeled Data, and type "NY" in the box that follows.

To change Auto-Entered data in a record, highlight the data and type its replacement value. To prohibit Auto-Entered data from being changed, select Prohibit modification of value when specifying field options.

Creating Tables

Tables contain different sets of fields and records. Create a new table if the database is designed to house different kinds of information about the same person or object. For example, if creating a database about students, one table may contain the students' contact information, while another table may contain information about their major and advisor.

To create a new table:

- Select the Tables tab.
- In the Table Name field, type a name for the table.
- Click Create.

Defining Relationships

If multiple tables are used, relationships should also be defined. Relationships allow fields to be linked together from one table to another. A name or identification number are common fields that would be defined in a relationship. Relationships allow related information to be shared between different, discrete

tables. Common fields in each table allow FileMaker Pro to interpret this information and display it in a portal. See the Portals section below, for more information.

To create a new relationship:

- Select the Relationships tab.
- Highlight the field name to be linked from the first table.
- Drag the highlighted field to the fieldname in the second table.

Once the database has been defined, click OK to close the Define Database window.

If the database needs more fields, relationships, or tables at a later time, the Define Database window can be accessed by going to File → Define → Database.

Modes

There are four different ways of working with data in FileMaker Pro, which allow specific tasks to be performed. To switch between modes in FileMaker Pro, go to the View menu and select the appropriate mode for the desired task.

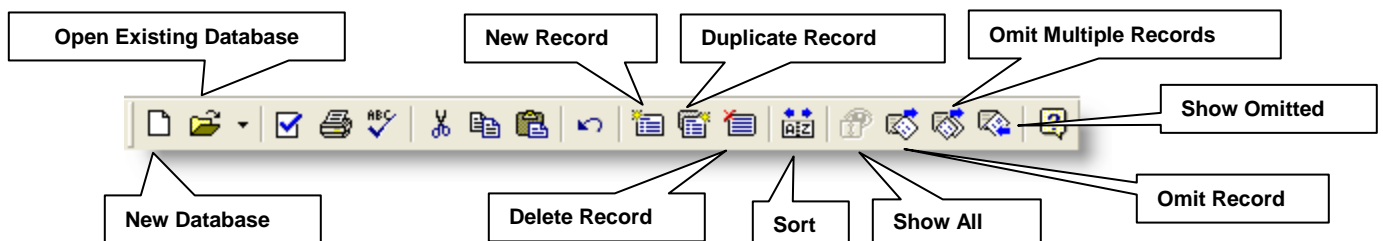
The table below shows which mode to use for which kind of task.

Use this mode	To
Find	Search for a record or a group of records that match the criteria you specify.
Layout	Determine how information is displayed on the screen or printed in reports, labels, and forms.
Preview	See how the information will look before printing.

The Toolbars

By default, FileMaker Pro displays the Standard toolbar. There are a total of four toolbars within FileMaker Pro (Standard, Text Formatting, Arrange, and Tools). Depending on the mode, there are different toolbars available to use. To view the available toolbars, go to View → Toolbars and select the toolbar to use. The Arrange and Tools toolbars contain shortcuts to all options contained in the Insert and Arrange menus and are only available in the Layout mode.

The Standard Toolbar contains shortcuts for creating and opening databases, along with data entry and manipulation.



The Text Formatting Toolbar can be used to change the font and the size of the text within the database. Similar to Microsoft Word, this toolbar allows the font, size, weight, and justification of text to be selected.

The Status Area

The Status Area is the gray column to the left side of the FileMaker Pro window. This column changes according to the mode. In Browse mode the Status Area allows switching between modes, layouts, and records.

To move to the next or previous record, click the book in the status area while in Browse mode. Move to a specific record by typing the record number in the Record field and press Enter.

Working with Records

Entering Data

After defining the fields for your database file, FileMaker Pro enters the Browse mode and creates a layout for entering data. Type the data into corresponding fields, using the Tab key or the mouse to move through fields.

To enter new records, click the New Record button from the Standard Toolbar.

To delete records, irretrievably discarding the data contained within, click the Delete Record button from the Standard Toolbar.

Sorting Records

FileMaker Pro stores records in the order that they were added to the database. When working with records it is often useful to sort or rearrange records in a different order.

Sorting can occur in the Browse or Preview modes. To perform a sort, go to **Records** → **Sort...**. In the Sort Records dialog box, click the field to sort by, select the order (ascending, descending or custom), and click the Move button. Repeat these steps to add additional fields to the sort order.

The sort will be performed according to the sort order of the fields, from the top of the list to the bottom. To change the sort order, click on the double-headed arrow to the left of the field name and drag the field to its new location. Remove a field from the sort order by highlighting the field and choosing **Clear**. After fields are in the chosen order, click the **Sort** button to sort the records. Unsort a group of records by choosing **Sort...** from the **Records** menu and clicking on the **Unsort** button.

Find Mode

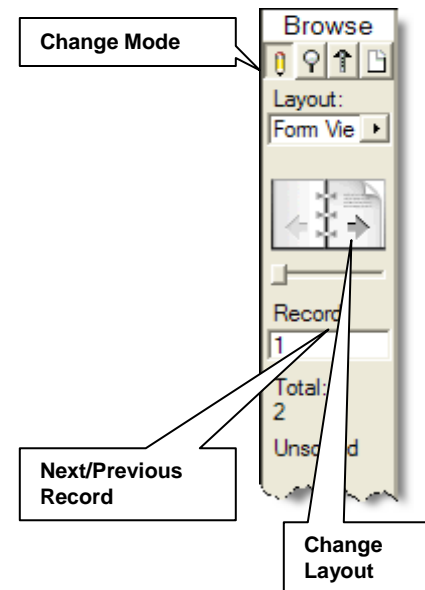
To search for records matching specific criteria, switch to the Find Mode from the View Menu. Once a search has been performed, FileMaker Pro returns to Browse mode and displays the found set, or records that match the specified search criteria. All other records are temporarily hidden.

To perform a search, enter the value(s) in the appropriate field(s).

Note: Search criteria cannot be entered in container fields, summary fields or global fields.

Values entered into a find request can be combined with operators from the Symbols menu found in the Status Area. Once search criteria has been entered, click Find in the status area.

To display all of the records in a file, choose **Show All Records** from the **Records** menu.



To find records that match either of two criteria for the same field: enter the first criterion as described above, and then go to Requests → Add New Request, enter the second criterion, and click Find.

To delete the request go to Requests → Delete Request.

To repeat or edit the most recent search request, go to Requests → Modify Last Find.

To repeat the request, select this option and then click Find.

To edit the request, make the necessary changes before clicking Find.

Layout Mode

In FileMaker Pro, a layout determines how information is displayed and printed. While a layout controls the appearance of data, a layout does not store data. For one file, separate layouts can be designed for different tasks. For example, there can be one layout for entering data, another for searching for information, and another for organizing reports.

Changing a layout's design does not affect the actual data. Changes made to data in one layout will be reflected in all layouts that display the data. To change between different layouts in FileMaker Pro, go to the Layouts drop-down menu located in the Status area and select the desired layout.

Creating Layouts

To create a layout, switch to the Layout Mode and:

1. Go to Layouts → New Layout/Report...
2. In the New Layout/Report dialog box, type a name and choose a type of layout to create. To have the layout listed in the Layout menu when using other modes, check the box marked Include in layouts menu.
3. Click OK.

FileMaker Pro includes predefined layouts that can be used for such purposes as displaying data in a columnar report or printing mailing labels. Predefined layouts can be used as they are, or modified to suit other needs.

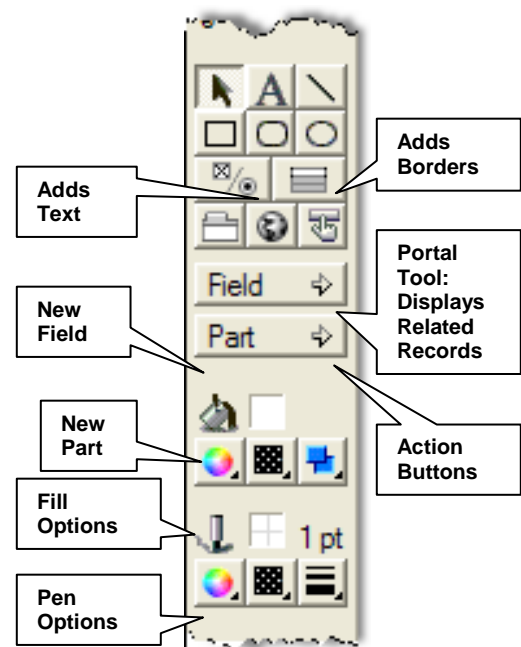
Layout Parts

FileMaker Pro layouts are divided into parts, which are areas in a layout that help determine how information is displayed and printed. Layout parts include headers and footers, summaries, and the body. To add a part to the layout, go to Insert → Part.

In the layout mode two more toolbars become available, the Tools and the Arrange toolbars. To view these toolbars go to View → Toolbars and select Tools and Arrange. The Tools toolbar contains shortcuts to options that are found under the Insert Menu. The Arrange toolbar contains shortcuts to options that are found under the Arrange Menu.

Working with Objects in a Layout

In the status area, the Tool Panel is displayed. This panel allows the formatting of objects in the layout. The tool panel can be used to move and resize objects, adjust fill and pen settings, and add fields, text and borders. To add objects to a layout using the tool panel, click the tool to select it. Then, on the layout, click and drag the object to the desired size and position. Double-click on a tool to keep the tool selected until you click on



another tool.

Duplicating, Deleting & Renaming Layouts

To duplicate a layout, choose the desired Layout, and go to Layouts → Duplicate Layout.

To delete a chosen layout, go to Layouts → Delete Layout and click Delete in the confirmation box.

Note: Deleting a layout cannot be undone.

To rename a chosen layout, go to Layouts → Layout Setup.

Type a new name in the Name field, and click OK.

Arranging Layout Elements

Within the Arrange menu, different options can be chosen to change the layout of fields. In order to arrange the fields first select the desired fields.

To select multiple fields, press Shift and click the desired fields.

Portals

Portals are specialized layouts that allow information to be displayed from multiple tables. In order to create a portal, a relationship must be defined first.

To create a portal:

1. Go to Layouts → New Layout/Report.
2. Title the layout and select “Standard Form” as the type and click Next.
3. Select the appropriate display options and click Next.
4. Highlight the desired fields and click Move to add them to the report. Click Move All to add all the available fields to the report.

In the drop-down menu, change the table and select the related information to be added to the layout.

Generating Reports

Reports are customized lists of data from the database. Reports can be used to summarize or print and archive relevant information contained within the FileMaker Pro database.

To create a report:

1. Go to Layouts → New Layout/Report.
2. Title the layout and select “Columnar list/report” as the type and click Next.
3. Select the appropriate display options and click Next.
4. Highlight the desired fields and click Move to add them to the report. Click Move All to add all the available fields to the report.
5. Change the desired order of the fields by clicking the double-headed arrow and dragging the field to the appropriate location and click Next.
6. Set the sort options for the report and click Next.
7. If the report is to be printed, select the Default theme, otherwise, select a theme and click Next.
8. Choose what should appear in the header and footer of the report and click Next.

9. Select "Create a Script" and give the script a title. This will allow faster access to viewing and printing the report in the future. Once the script has a title, click Next.
10. Select "View the report in Preview Mode" and click Finish.

Once the wizard has finished, the report will appear on screen. To make modifications to the report, return to the Layout mode. This will allow the report to be modified and formatted according to need.

Sharing and Securing Databases

FileMaker Pro databases can be shared over the network in order for different users to work simultaneously with other users. By default there are two users predefined for each database, an Admin user and a Guest. The Admin is the first person to open the file and has full access to the database. The Guest account, by default, can only read the database and cannot make modifications to it. These accounts can be password protected for security.

To make changes to these accounts, go to File → Define → Accounts and Privileges... A window will appear, allowing accounts to be added, deleted, or modified.

To password protect the Admin account:

1. Go to File → Define → Accounts and Privileges...
2. Select the Admin account.
3. Click Edit.
4. Type a password for this account.
5. Click OK.

For More Information

A variety of support services are available from ITS if you would like additional help:

Computer training on a variety of topics is available to faculty, staff, and students at no charge through the Technology Learning Center (TLC). Check out the current TLC training schedule online at <https://www.ithaca.edu/its/workshops>

Online documentation and tutorials on IC-supported computing software and systems are available at <https://www.ithaca.edu/its/traindoc>

Frontline computing support is available through the ITS Helpdesk in 104 Job Hall; send e-mail to helpdesk@ithaca.edu or call 607-274-1000.

Backline consulting support is available in the Technology Learning Center, room 101 Friends Hall.

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