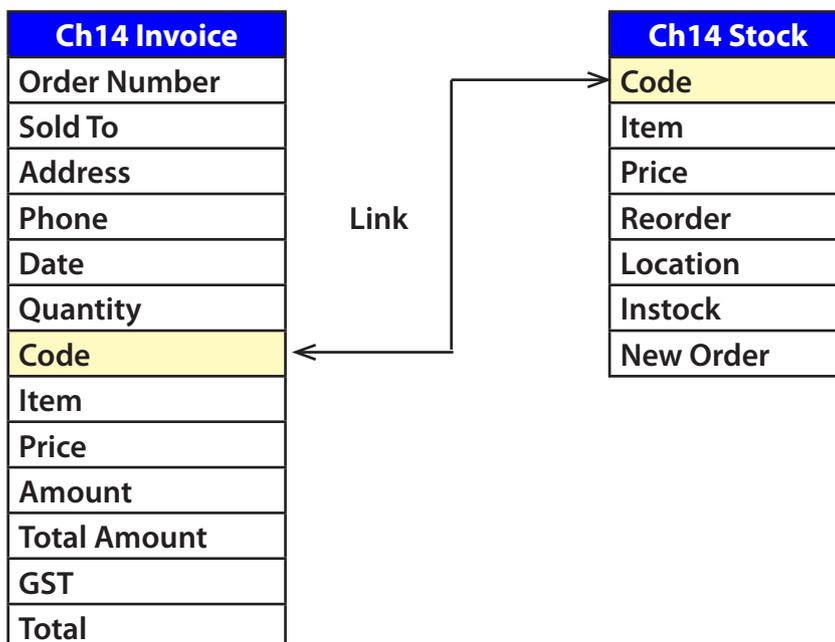


Relational Databases

In the last 2 chapters you imported data from one file to another. However, once the data was imported it could not be automatically updated. This needed to be done manually or by using the RELOOKUP command. This process is fine for placing items in an invoice, but there are times when you need to be able to link files more fully.

As database systems become more involved it is advantageous to split the system up into smaller files and to have these files 'hot linked' which means that when data is updated in a MASTER file, the data in any RELATED files is also updated. This applies to both INTERNAL and EXTERNAL files.

A RELATIONAL DATABASE such as FileMaker Pro allows you to set up a relational database system so that when records are added or deleted from a MASTER file, those records are also added or deleted from any RELATED files. You can also use fields from RELATED files in the layouts of the MASTER file. This can reduce the need to have the same fields in different files. For example, the Chapter 14 file structure was:



Notice that the fields CODE, ITEM and PRICE are present in both database files. This means that the same data is being stored more than once. It would be much more efficient if the CH14 INVOICE file simply used those fields from the CH14 STOCK file.

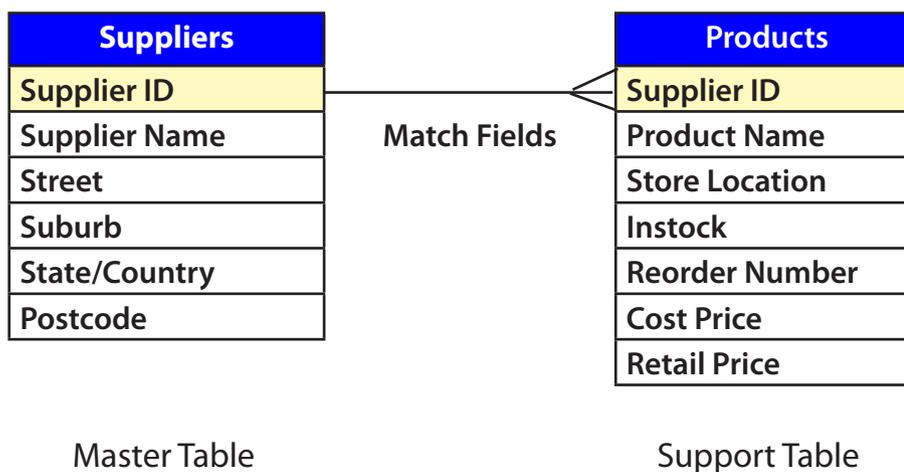
The CODE field would need to be present in both files as it is the link between the two files. One field from each file always has to be used to create a relationship. These fields are called MATCH fields.

Creating a Relational Database System

To demonstrate the creation of a relational database system we will create a simple system for a company that sells computer products. It obtains its products from a variety of suppliers. We will use two files (tables) to manage the information about its suppliers:

- 1 SUPPLIERS which lists the names and addresses of the suppliers of the computer products. This will be the MASTER table.
- 2 PRODUCT DETAILS which lists the product name, the cost and retail price, the store location of the product, how many items are in stock and the minimum number of items there should be before a reorder is made. This will be the SUPPORT table.

The following diagram summarises the file structure of the database system:



The first step in creating a relational database system is to decide what files are required and how they will be linked.

- Notice that the line indicating the MATCH FIELDS (SUPPLIER ID) which will be used to link to two files has three lines at one end.
- In this case the one supplier can provide MANY products, but each product comes from ONE supplier. This ONE TO MANY relationship is the most common setup for a relational database system.
- The MASTER file can be the one side or the many side. In this case the SUPPLIERS table will be the MASTER file (the ONE side) and the PRODUCTS table the RELATED file (the MANY side).

Loading the Prepared Database

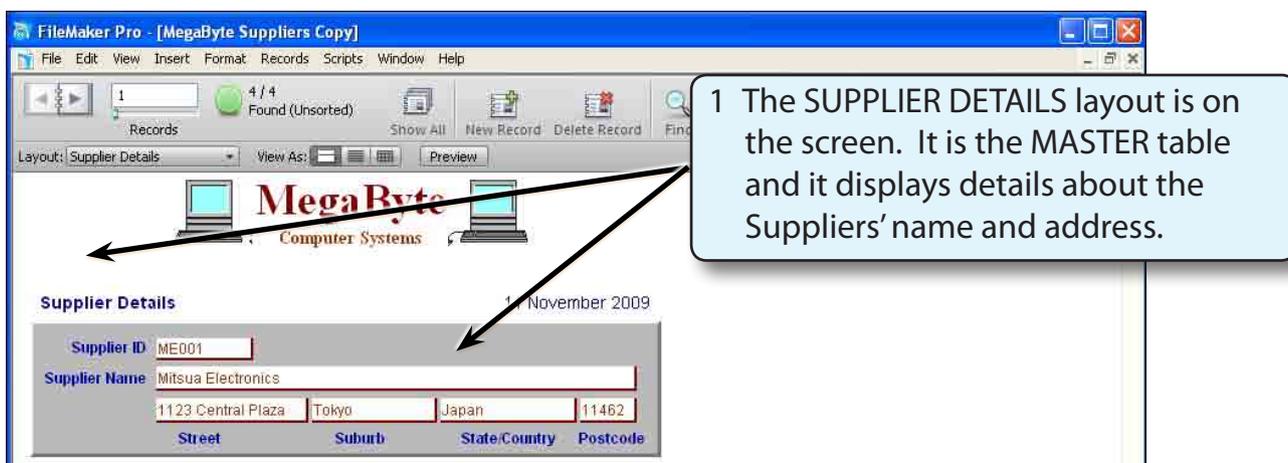
The database has been prepared for you. It has two tables, SUPPLIERS and PRODUCT DETAILS. Your task will be to link the two tables together so that they operate with one another.

- 1 Load FileMaker Pro 10, click on OPEN DATABASE and select BROWSE FILES. Or close the current file and select OPEN from the FILE menu.
- 2 Access the FMP10 SUPPORT FILES and open the CHAPTER 16 folder
- 3 Load the file: MEGABYTE SUPPLIERS
- 4 The file must now be saved in your STORAGE folder. Display the FILE menu and select SAVE A COPY AS.
- 5 Access your FMP10 FILES folder and save the file under the name:

MEGABYTE SUPPLIERS COPY
- 6 Close the MEGABYTE PRODUCTS file and open the MEGABYTE SUPPLIERS COPY file from your FMP10 FILES folder.

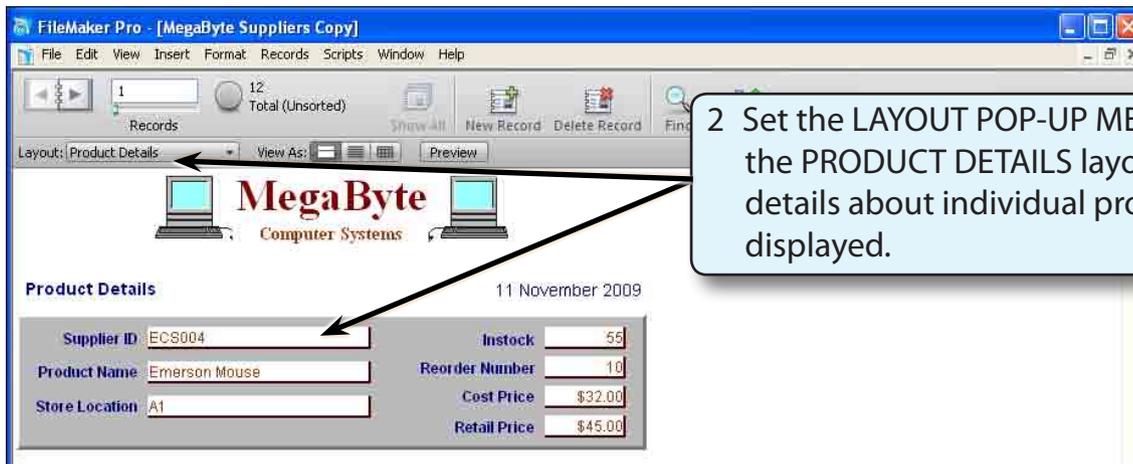
Looking at the Tables

Let's look at the two tables so that you can become familiar with the database



1 The SUPPLIER DETAILS layout is on the screen. It is the MASTER table and it displays details about the Suppliers' name and address.

NOTE: Shortly you will display data from the PRODUCTS table below the current data.

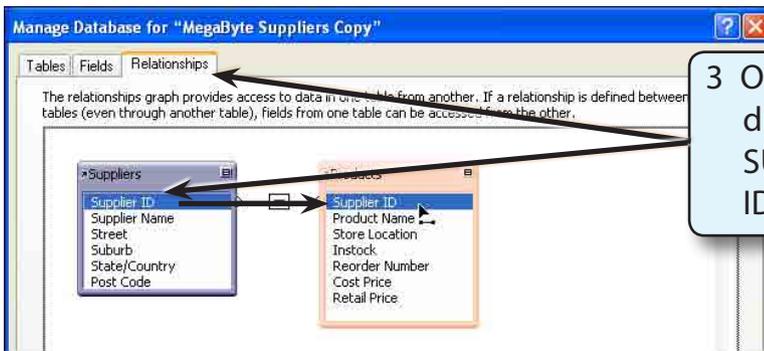


Defining the Relationship

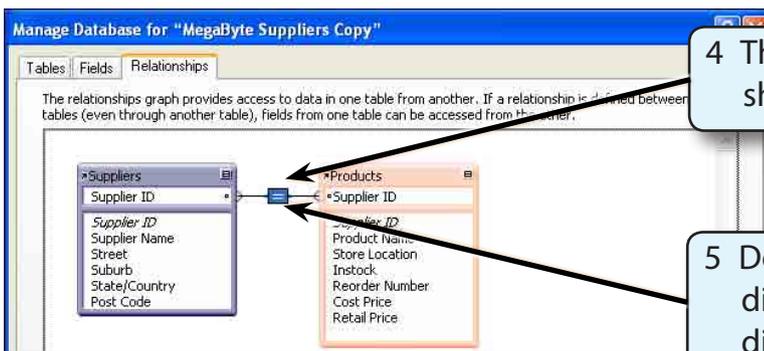
The MASTER table (SUPPLIER) will be linked to the RELATED table (PRODUCTS). to do this a relationship is required.



- 2 Display the FILE menu, highlight MANAGE and select DATABASE.

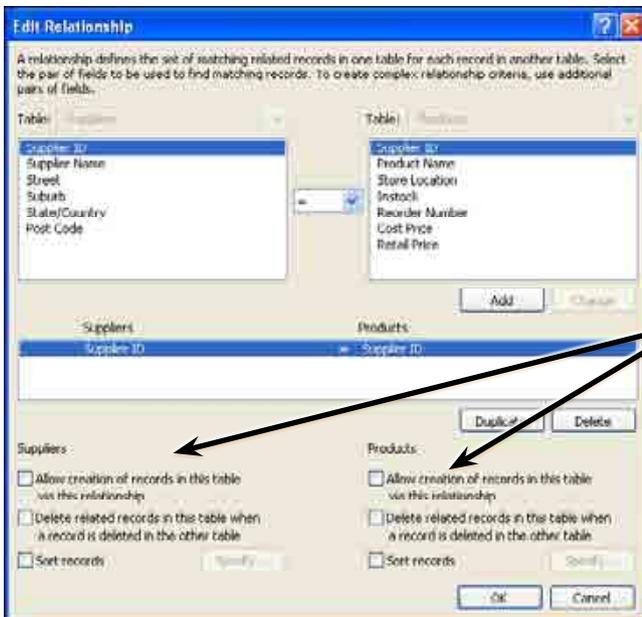


3 Open the RELATIONSHIPS tab and drag the SUPPLIER ID field from the SUPPLIERS table over the SUPPLIER ID field in the PRODUCTS table.



4 The link between the two tables should be created.

5 Double click on the link icon to display the EDIT RELATIONSHIPS dialogue box.



6 At the bottom of the EDIT RELATIONSHIP dialogue box there are two vitally important sets of check boxes. You need to understand when to turn these options on.