Creating a Query Document

A query document is a file of type 'qery' that contains a 'qrsc' resource and one or more 'wstr' resources, and may contain a 'qdef' resource plus other resources. Query documents make it possible for you to write applications that can communicate with data servers without requiring familiarity with the command language used by the data server. Because a query document is most useful if it can be used by many different applications, no query document should depend on the presence of a particular application in order to function.

An application can call the **DBGetNewQuery** function to convert a 'qrsc' resource into a **QueryRecord** in memory. The **QueryRecord** points to a 'wstr' resource that contains either a complete query or a template for a query. If the 'wstr' resource is a template, it contains the commands and data necessary to create a query, without any information that the user must add just before the query is sent. The 'qdef' resource contains a query definition function, which can modify the **QueryRecord** and, if necessary, fill in the query template to create a complete query. The **DBStartQuery** function sends the query pointed to by a **QueryRecord** to a data server. The following sections describe the contents of a query document, describe **QueryRecord**, and define the 'qrsc', 'wstr', and 'qdef' resources.

User Interface Guidelines for Query Documents

All query documents should behave in fundamentally the same way. They should be self-explanatory and should never execute a query without an explicit command from the user. When your application opens a query document, the query document should display a dialog box with enough information about the query so that the user can decide if it's the right query. The dialog box should describe the purpose of the query, what kind of data it transfers and in which direction, the type of data source it accesses, and any warnings or instructions. The dialog box can describe how the user interprets the data, such as the name of each field in a record. The Figure below shows an example of a query document dialog box.

This dialog box should allow the user to cancel the request for data. In addition, it may be useful to allow the user to set parameters with text boxes, check boxes, or radio buttons. For example, a query to a database of financial information could provide a list of these options: a trial balance, profit-and-loss statements, or net worth reports. Save the last set of user-specified parameters with the query document. This way the user can review the parameters used to generate the data or use the same parameters the next time.

Once a query starts running, it must be able to complete its task without user intervention. If a query must run modally (that is, it must run to completion before returning control to the user), display a dialog box that shows the query's progress and be sure to return control to the user as soon as possible. The philosophy of this process is similar to that of receiving electronic mail-that is, inform the user when the information arrives, but let the user decide when to read it.

Whenever possible, query documents should check data before it is transmitted to a data source to be sure it's compatible. Establish a connection

with a data source only after you have checked the data.

Contents of a Query Document

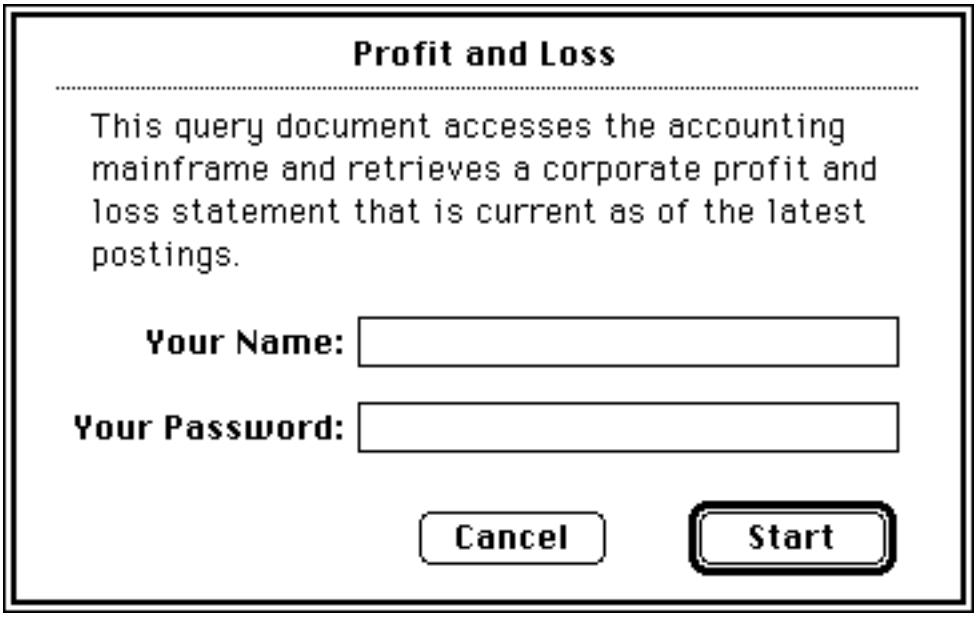
The query document must contain

- one 'qrsc' resource, see, **Query Records and Query Resources**
- an 'STR#' resource that contains the name of the database extension to be used, plus any host, user name, password, and connection string needed for the **DBInit** function
- one or more 'wstr' resources containing queries-that is, strings of commands and data that the **DBSend** function sends to the data server and that the **DBExec** function executes

A 'wstr' resource consists of a 2-byte length field followed by a character string. (The *w* in 'wstr' refers to the length word as opposed to the length byte used in an 'STR ' resource.) Each 'wstr' resource contains one query (or one query template, to be modified by the query definition function before it is sent to the data server). The 'qrsc' resource includes an array that lists the resource ID numbers of all of the 'wstr' resources in the query document and an index into the array that specifies which one of the 'wstr' resources should be sent to the data server.

In addition, the query document may contain

- a 'qdef' resource that contains a query definition function
- any resources needed by the query definition function, such as 'DLOG' and 'DITL' resources (which support dialog boxes)

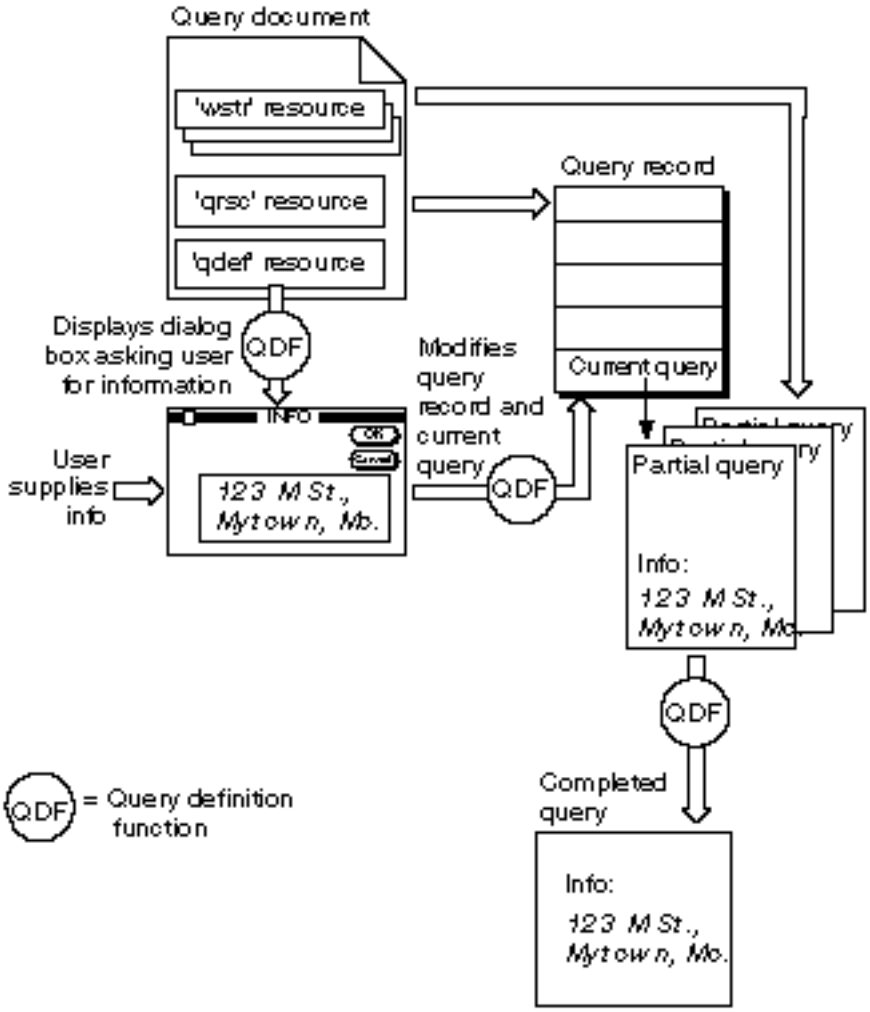


A query document dialog box

- resources to support a customized icon (to replace the default icon

that the Finder uses for files of type 'qery'); see the section entitled **Finder Interface** for more information on icon resources and the **User Interface Guidelines** for guidelines for customized icons.

The Figure below illustrates the relationship between a query document, the **QueryRecord**, and the query definition function. The following sections describe 'qrsc' resources, **QueryRecord**, and 'qdef' resources in detail.



Function of a query document