

Query Maker

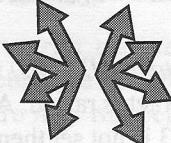
Features of Query Maker

Uses everyday language



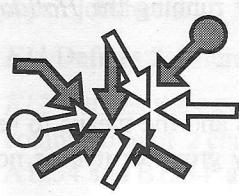
- Displays field names in plain English phrases
- Listing comparison options in plain English rather than in mathematical symbols
- Letting you focus on results rather than on programming logic

Offers a full range of analysis options



You can find data by picking up to 18 different comparison operators. Operators use English terminology like: *Begins with*, *Ends with*, *Exactly matches* and *Contains*. You can easily summarize the data you find. You can calculate totals, averages, counts or find the largest or smallest values.

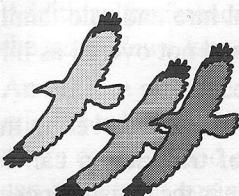
Lets you build complex query scenarios



Each query can contain up to 10 conditions (such as "invoice total is greater than £100"). Each condition can contain up to 12 comparison values (e.g. "Description contains grinder, drill or ladder") allowing for a total of 120 comparisons per query.

Furthermore, you can connect the conditions with AND/OR logic and specify parentheses to clarify the order of operations for your conditions. For example, "invoice total is greater than £100 and (transaction date is between 01/01/95 and 28/02/95)".

Eliminates tedious and repetitive work

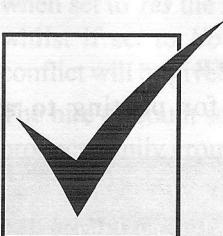


Query Maker automatically saves your settings so you won't have to re-specify them every time you run a query. You can give each query a descriptive title to make it easy to recognize every time you need it.

You can also copy and then modify existing queries instead of writing each new one from scratch.

When you want to view sets of information based on changing values, Query Maker lets you create fill-in queries. For example, suppose you want to run weekly turnover reports for totals over a certain threshold, but the minimum threshold changes. Every time you run this query, Query Maker will ask you to fill in the minimum threshold.

Delivers results in the most useful formats

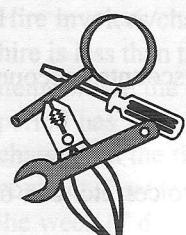


Query Maker can display results in the form of:

- On-screen tabular views (a browse window)
- Reports
- Text files
- Mailing labels
- Databases
- Lotus or Excel spreadsheets

When you output the query to reports or labels, Query Maker helps you modify the page layout and preview the results on screen before printing. The modified report or label form is saved as part of the query for future use.

Flexibility in shaping how your queries work



You have the power to set up each query to work exactly the way you want:

- Select which fields should appear in the query results.
- Arrange the fields in any order.
- Pick up to nine fields to sort on, with ascending or descending order for each field.
- Select up to three fields for grouping results.
- Specify summaries: averages, totals, counts, maximum or minimum values.
- Eliminate or include duplicate records at your option.
- Browse through the results in a tabular view before outputting to a report or file.

Getting Started

FEW IMPORTANT DEFINITIONS

- Database** A database is a collection of one or more tables that are interrelated.
- Table** A table is a collection of records stored in the same file. Each horizontal row of a table contains a single record and each vertical column contains a single field.
- Record** A record is a collection of fields related to a particular case, such as an event, part, person or action.
- Field** A field is a column or category that holds information in your table. For example, in a table that holds customer information, a field could hold customer names, companies or phone numbers.
- Filter** A filter is a set of criteria or conditions that lets you indicate which records to include in your results (e.g., "Only customers from Birmingham who spent more than £100").
- Query** A query is a specialized view of information in your database. It may contain all fields and records or a filtered subset. The records in a query may be sorted, grouped and summarized in different ways.
- Report** A report is the output of a query. The report can be a printed document, a set of mailing labels or a disk file such as a spreadsheet or text file.

USING BUTTONS

Query Maker operations are initiated by pressing on-screen buttons".

For example, when we say, press Edit, click an Edit button, you select the button by:

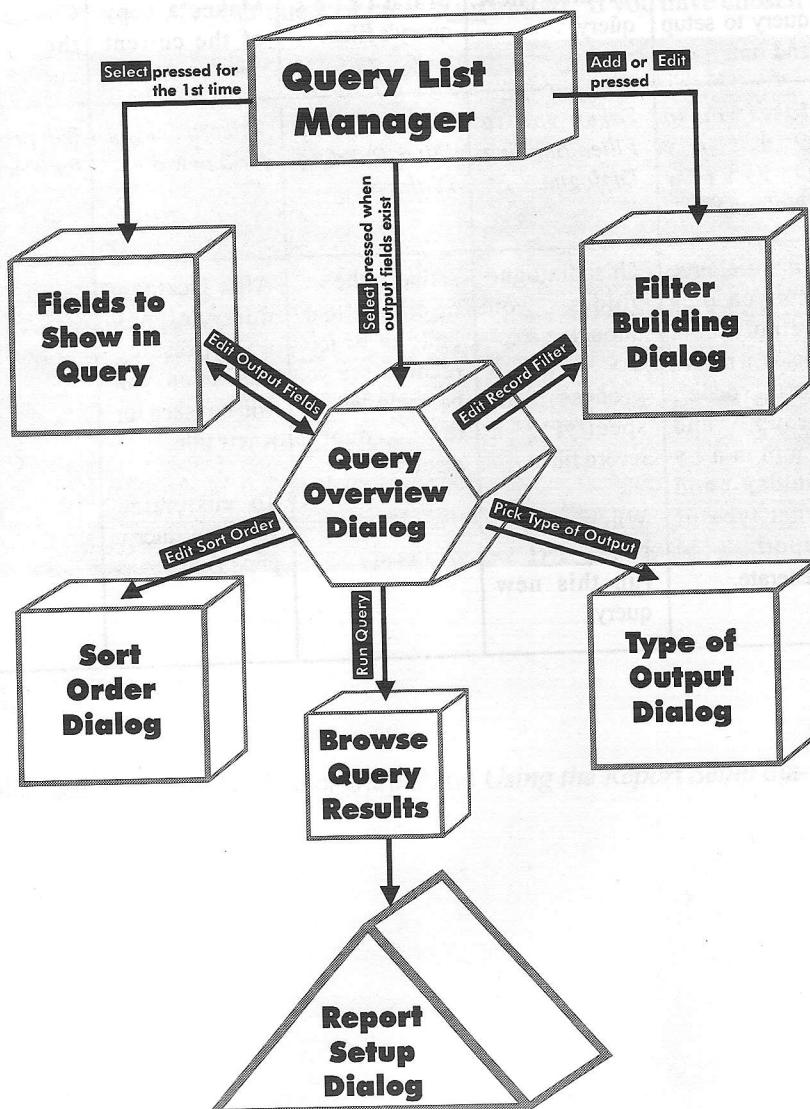
Using the mouse:

Click on Edit with the primary mouse button (the left mouse button on most computer systems)

Using the keyboard:

Move to Edit by pressing Tab or the cursor arrow until the button is highlighted. Then press the Enter key.

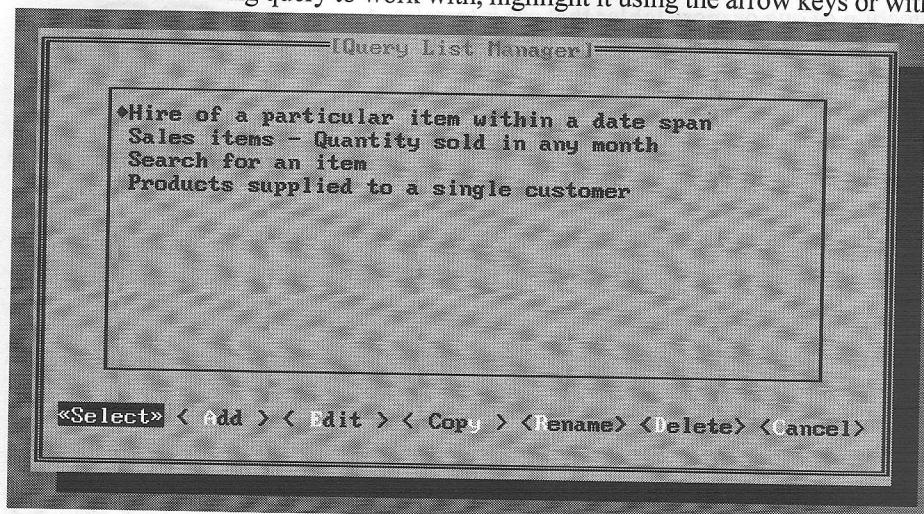
THE RELATIONSHIPS BETWEEN QUERY MAKER'S DIALOGUE SCREENS



The Query List Manager

The Query List Manager is Query Maker's "control panel". It is a screen showing titles of previously saved queries. These queries may have been created by you, or by your colleagues, or by a programmer.

To choose an existing query to work with, highlight it using the arrow keys or with a mouse.



You can then perform an action on this highlighted query by pressing one of the buttons listed horizontally across the bottom of the screen.

If you are using the keyboard you can switch between the list of queries and the buttons with a press of either the left or right arrow key.

<u>Select</u>	<u>Add</u>	<u>Edit</u>	<u>Copy</u>	<u>Rename</u>	<u>Delete</u>	<u>Cancel</u>
Selects current query to setup and run.	Creates new query.	Modifies query's filter.	Makes a copy of the current query.	Changes title of the current query.	Permanently removes the current query.	Returns you to the Query Maker menu.
Takes you to Query Overview Dialogue.	Takes you to Filter Building Dialogue.	Takes you to Filter Building Dialogue.	Will prompt you for a new title.	Will prompt you for a new title.	Will ask you to confirm your intention	Will save any changes you have made.
This dialogue lets you pick output table fields, a record sort order, group and summary fields, and what type of report to generate.	This dialogue guides you through a step-by-step process of specifying a record filter. When done, press <u>Select</u> to run this new query.	A filter is the set of criteria that indicate which records are to be included in the query results.	After picking a query to copy and pressing this button, you will be asked for a new title. To customize your new query, press <u>Edit</u> .		When you delete a query, any associated reports or labels are also permanently removed.	

Run an Existing Query

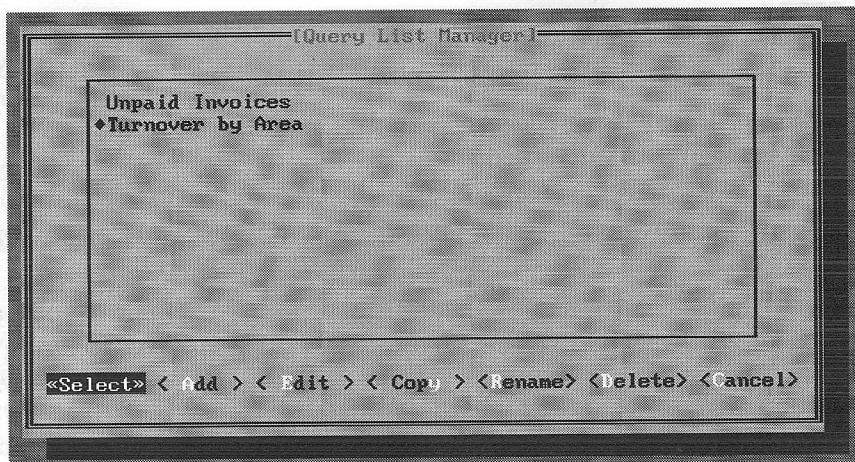
If you have at least one query displayed in the Query List Manager, you can run a query to analyse your data.

query:

In the Query List Manager, highlight the query you want to run.

Press **Select** to pick the highlighted query. If you are selecting this query for the first time, you will be taken first to the *Select Fields to Show In Query* dialogue. Otherwise, you will be taken to the *Query Overview* dialogue.

If using a mouse, you can select a query by double clicking on it. If using a keyboard, you can select a query by first highlighting it and then pressing the left or right arrow key to go to the **Select** button and pressing *Enter*.



In the *Query Overview* dialogue you can either modify your query or press **Run** to start. If you have chosen to

end the output to a report, you will be taken to the *Report Setup* dialogue (explained later). The type of modifications you can make include:

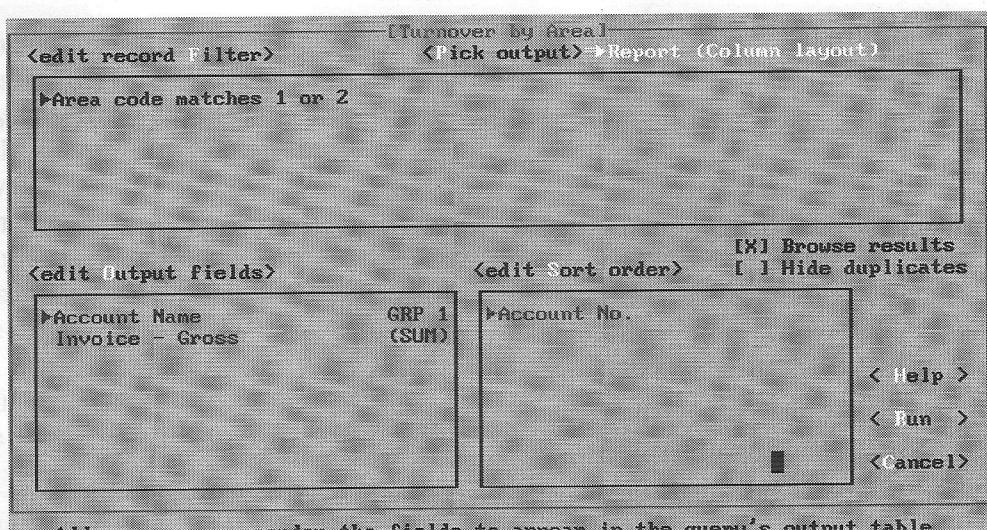
Review or change your record filter.

Change which fields include in the query output.

Select what type of report or output to generate.

Click a record sorting order.

Choose fields to group and summarize.



For more information on these topics, see *Selecting the Type of Output* and *Using the Report Setup dialogue*.

To Create a New Query

When in the *Query List Manager*, you can create new queries. When creating a query, you can either add it from scratch or you can copy an existing query and then modify it.

To CREATE A QUERY FROM SCRATCH

STEP 1:

Go to the Query List Manager and press **Add..**

Type in a title for this new query. When done, you will be taken to the *Filter Building* dialogue.

STEP 2:

Input from one to ten filter conditions to indicate which records should appear in the query results.

When done, press **OK** to return back to the Query List Manager.

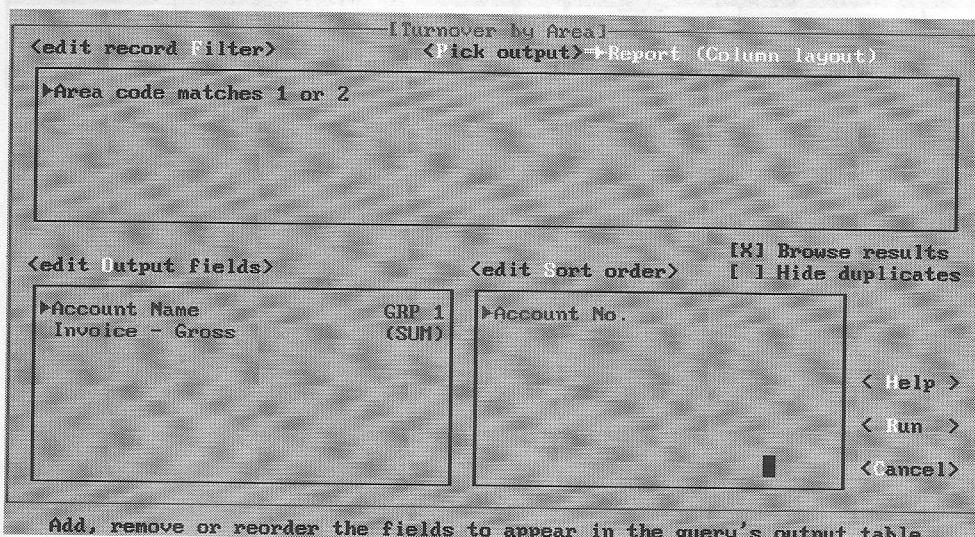
STEP 3:

Press **Select** to pick fields to appear in the output table. When done, you will be taken to the *Query Overview* dialogue in which you can run the query.

To Modify a Query

The *Query Overview* dialogue is the place where you may:

- Review or change your record filter.
- Select which fields to show in the query output.
- Select what type of report or output to generate.
- Pick a record sorting order.
- Run your query and generate your query output.



To access this dialogue, highlight a query in the *Query List Manager* and press **Select**

To CREATE A QUERY BY COPYING

STEP 1:

Go to the Query List Manager and highlight the query you want to copy.

Press **Copy** to bring up a title dialogue box. Type in a title for this new query. When done, you will be returned to the *Query List Manager*.

You will now have an exact copy of the query you selected including its filter, output fields, sort fields and report form, if any.

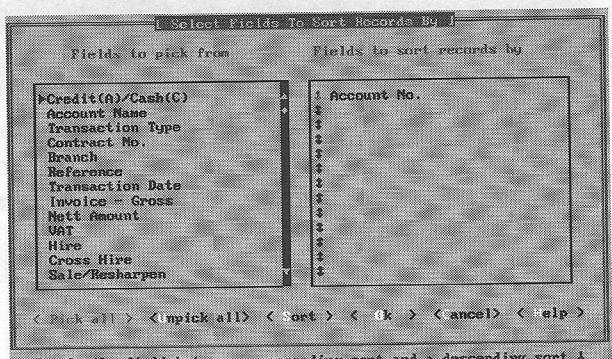
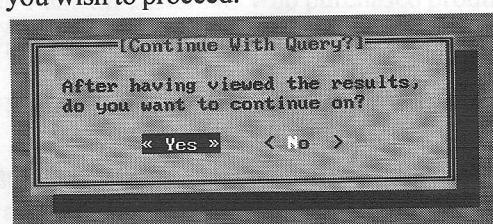
STEP 2:

Press **Edit** to go to the *Filter Building* dialogue to modify the query's filter conditions if necessary.

When done, press **OK** to return to the Query List Manager.

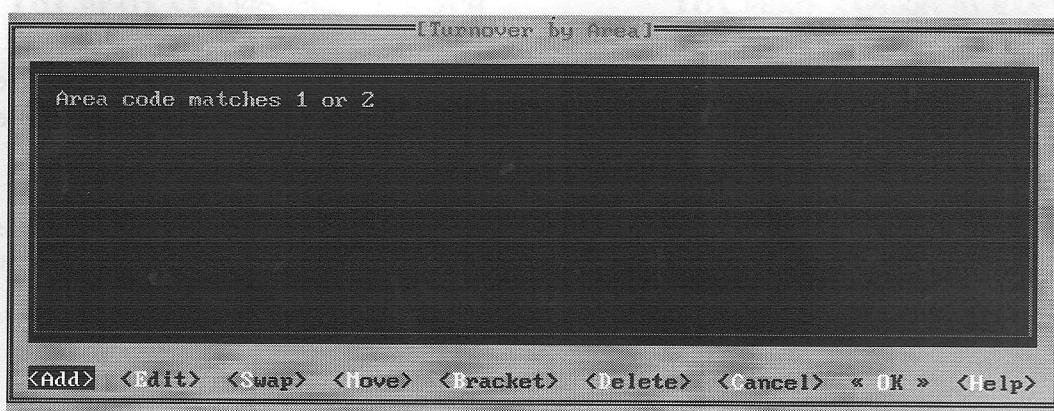
STEP 3:

Press **Select** to go to the *Query Overview* dialogue and run the query.

ON	ACTION	DESCRIPTION
<u>Record Filter</u>	Displays the <i>Filter Building</i> dialogue.	Lets you set the conditions that the records must meet to be included in the query results (e.g. only those customers in York). (See <i>The Filter Building Dialogue</i> .)
<u>Type of output</u>	Displays the <i>Type of Output</i> dialogue.	Lets you select what format Query Maker should use for your query results (report, label, worksheet, etc.) (See <i>Selecting the Type of Output</i> .)
<u>Output Fields</u>	Displays the <i>Select Fields to Show in Query</i> dialogue.	Allows you to select which fields Query Maker will include in the query results (See <i>Selecting Fields to Show in Query</i> .)
<u>Sort Order</u>	Displays the sort order dialogue which lets you specify how Query Maker will sort the records that are included in the query. You can specify up to 9 fields to sort the results on. (See <i>Picking the Record Sort Order</i> .)	
<u>Browse query results</u>	If you check this option, then after pressing the Run button, you will see the query results in an on-screen table before Query Maker outputs to your chosen output type. When done browsing, you can continue by mouse clicking the window's close box or by pressing the <i>Esc</i> key.	After exiting the browse window, you will be asked if you wish to proceed. 
<u>Remove duplicate records</u>	Eliminates duplicate records from the result.	This allows you to check your work before you generate a report or output file.
<u>Display help text</u>	Displays descriptive help text.	A duplicate record is a record where every field matches every field in another record. When you check this box, Query Maker will create a result set with only one instance of such records.
<u>Prepare query</u>	Prepares and displays query results.	<ul style="list-style-type: none"> • This option makes for smaller result sets, but increases query processing time.
<u>Exit dialogue</u>	Exits from dialogue.	Selects the records that match the filter conditions you specified and either shows you these results in a browse window (if the above described <i>Browse query results</i> is checked) or directly generates the output type you requested (e.g. report, labels, spreadsheet).
<u>Save changes</u>	Exits from dialogue.	Saves all of your changes and returns you to the Query List Manager.

The Filter Building Dialogue

Every query is an attempt to extract a subset of information contained within your database system. The *Filter Building* dialogue is where you specify a set of *conditions* to determine the subset you are seeking. This set of conditions is your *filter*.



You can access this dialogue from the Query List Manager by pressing the Add or Edit button.

WHAT IS A CONDITION?

A condition is a “phrase” that defines the set of data you are seeking. For example, “Invoice total is greater than £1000”. A condition consists of:

1. a field name (e.g., “Invoice total”)
 2. a relational operator (e.g., “is greater than”)
 3. a comparison value (e.g., “£1000”).
- Each condition you *add* can *narrow* the results of the query. That is, fewer records may be included in the query results.
 - Each condition you *delete* can *expand* the results of the query. That is, more records may be included in the results.
 - Each query can contain up to 10 conditions.

These are the actions you can perform in the *Filter Building* dialogue:

<u>Add</u>	Add a new condition.	You will be prompted to select a field, pick a relational operator and type in a comparison value.
<u>Edit</u>	Edit an existing condition.	Change a condition’s field, operator, comparison value (or any combination of these). These terms are explained below.
<u>Switch</u>	Switch a condition’s connector between an AND and an OR.	If two conditions are connected by an “AND”, both must be true (e.g., car colour is blue and car make is Ford). If, however, two conditions are connected by an “OR”, either can be true (e.g., car is either blue or a Ford).
<u>Move</u>	Move the position of a condition within the list of conditions.	If you are mixing both “AND” and “OR” connectors or are using parentheses, the order of the conditions can determine which records are included in the query results.
<u>Bracket</u>	Place or remove parentheses around two or more conditions.	Complex queries may have several AND and OR connectors. The placement and organization of these connectors can make a difference in the results. <i>(See Making the Right Connections. in this section)</i>

- Delete a condition from the list.
 - Exit this dialogue without saving.
 - Save and exit.
 - Display help.
- Deleting a condition will generally *widen* the results of the query.
- This will undo any changes you made while you were in this Filter Building Dialogue.
- This will save your work and return you to the Query List Manager.
- This will display information you may find helpful.

D/ OR CONNECTORS

A query consists of one or more *conditions*. Conditions can be strung together with **AND** and **OR** connectors. How you connect the various conditions makes a big difference in the results:

Area code exactly equals “1”
AND
 Stock number exactly equals “AX50”

Every record included in the query results must meet *both* conditions. The customer area code must be 1 and the product purchased must be AX50.

RULE: The conditions on *both sides* of the AND connector must be true.

Area code exactly equals “1”
OR
 Stock number exactly equals “AX50”

Records included in the query results must meet *either* condition. The results will show *all* customers in area code 1 and *all* customers who purchased product number AX50.

RULE: *Only one side* of the OR condition must be true.

Query Maker makes one pass across your data, examining each record for all conditions and then either accepts or rejects the record for inclusion in your output.

USING THE RIGHT CONNECTIONS

If you create queries with many **AND** and **OR** conditions, be sure to use brackets (parentheses) to ensure you get the results you are expecting. Parentheses dictate how the query is interpreted. The query is evaluated first in the innermost parentheses. Without parentheses, the query conditions are evaluated from left to right.

Get This Information

Customers for stock number AX50 as well as customers in area code 1 who ordered in quantities of 10 or more

for stock number AX50 as well as customers in area code 1 who ordered any product in quantities of 10 or more

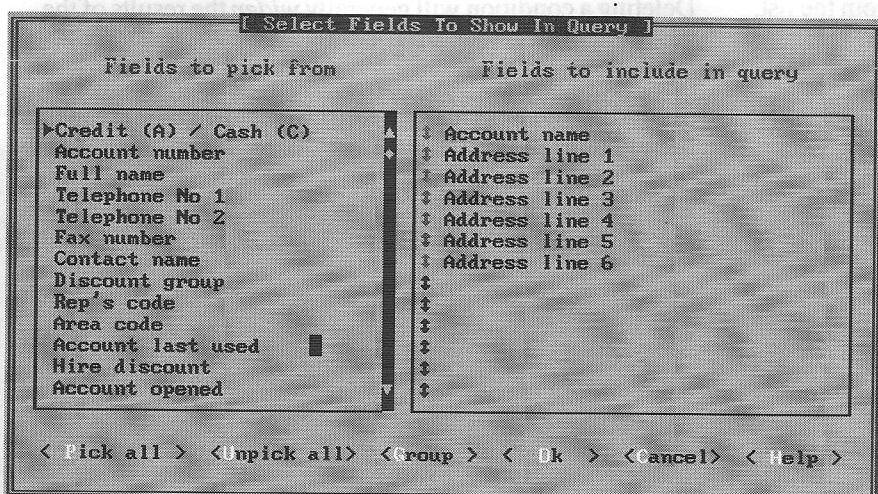
In cases we want to show only those records where the quantity ordered is at least 10. So the Quantity is greater than 10 condition appears as a separate factor on the other side of the AND connector.

Use This Query

Stock number exactly matches “AX50”
OR
 (Area code exactly matches “1”
 AND quantity is greater than or equal to 10)

(Stock number exactly matches “AX50”
OR
 Area code exactly matches “1”)
 AND quantity is greater than or equal to 10

Selecting Fields to Show in Query



the first time you press **Select** on a query you have highlighted in the *Query List Manager*.

If you select a query that has already been assigned fields, you will be taken directly to the *Query Overview Dialogue*.

By pressing these buttons, you can select fields to appear in your query results:

Pick All Selects all fields to display in the query results.

To select a single field, you can either:

- Double mouse click on it.
 - Use the arrow keys navigate to it and then press the **Enter** key.
- To unselect a field, just repeat this action on the selected field.

Unpick All Unselects any fields in the set of fields to include in the query results.

Group Displays the *Select Group Field Type* dialogue which gives you two organizing functions:

- To break up your query result into subgroups.
- To calculate and show summary information on selected fields.

(For more information, see the next section, *Picking Group And Summary Fields*.)

OK Saves your selected fields and takes you to the *Query Overview Dialogue*.

Cancel Exits this dialogue without saving any changes that you made.

Help Displays descriptive help text. Changing the Order of Output Fields

In the course of selecting output fields, you may wish to change their order or position. In a report, the order of the vertical columns displaying your query's data is determined by the order of fields that you have selected. You can change the order in the following ways.

Using the mouse:

1. Select a field by clicking on the button to its left.
2. Drag the field to its new position and release the button.



Using the keyboard:

1. Use the tab or arrow key to highlight the field you want to move.
2. Hold down the control key while pressing an up or down arrow key until the field is in its new position, then release.

Selecting Output Fields When the Query has been Selected Previously

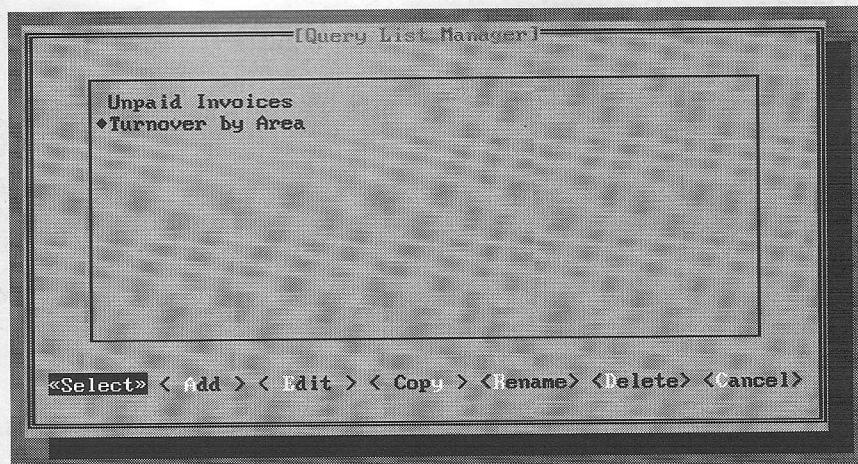
When you design your query, you need to think about what you'd like to appear in the results. In most cases you won't need to see every available field.

The *Select Fields to Show In Query* dialogue is where you specify which fields you want to see when the query is run.

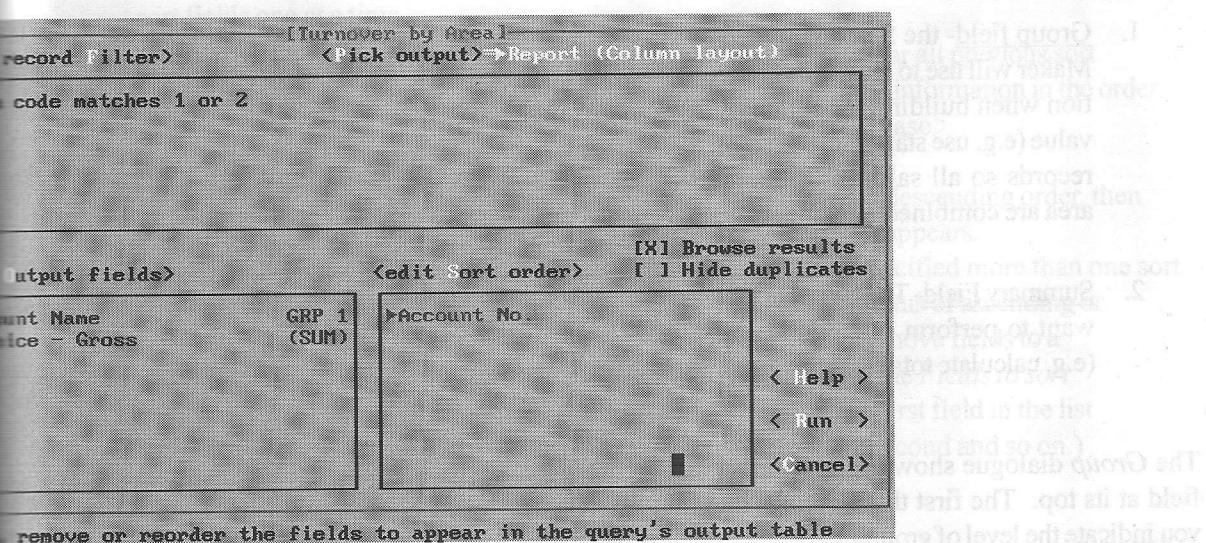
You will be shown this dialogue

every has already been created and you want to change the list of output fields:

to the *Query List Manager* and select the query you want to work with.

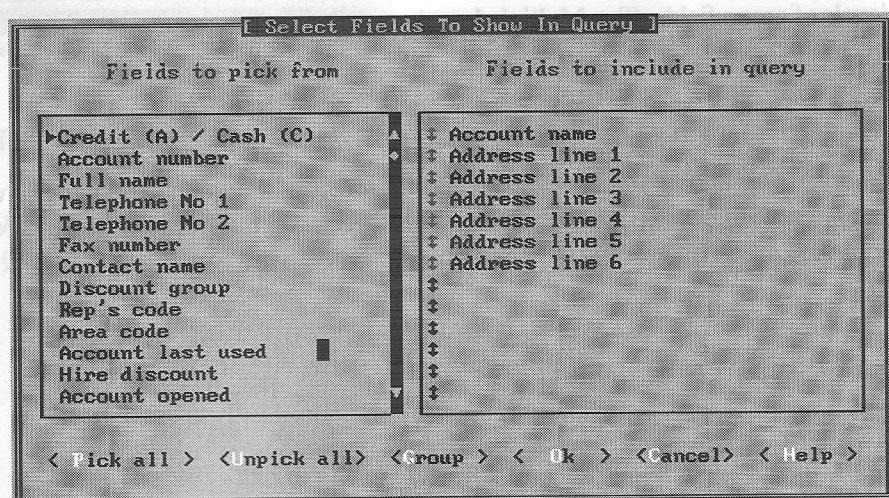


In the *Query Overview* dialogue, select **Edit Output Fields** to display the previously selected output fields and make them available for editing.



Maker will present the *Fields To Show In Query*

can now be added or removed as described on the previous page.



Picking Group and Summary Fields

When you are in the previously described *Select Fields to Show in Query* dialogue, you can also designate fields to summarize your numeric data. Your summary options include:

Option	Description	Example
Totals	Sum of a field across a range or group of records	Total sales for each day.
Counts	Number of records in a group	Count for each product in your inventory.
Averages	Average value of a field in a group	Average sale made by each salesperson.
Minimum	Highest value of a field in a group	Single largest order received in each region.
Maximum	Lowest value of a field in a group	Single smallest order received in each region.

HOW TO GROUP AND SUMMARIZE

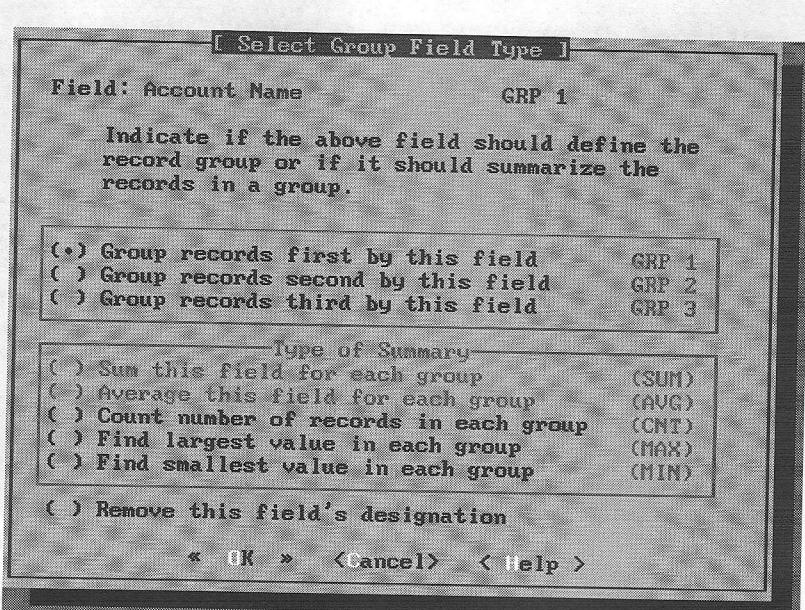
To summarize on a numeric field, you need to designate at least two fields. One field needs to be designated as a group field and one as a summary field.

A group and summary field are defined as follows:

1. **Group field**- the field that Query Maker will use to cluster information when building the summary value (e.g. use state to group sales records so all sales in the same area are combined into one set).
2. **Summary Field**- The field that you want to perform calculations on (e.g. calculate total sales by area).

The *Group* dialogue shows your selected field at its top. The first three options let you indicate the level of grouping.

Query Maker permits up to three different levels of group fields. (See Multiple Levels of Grouping)



MULTIPLE LEVELS OF GROUPING

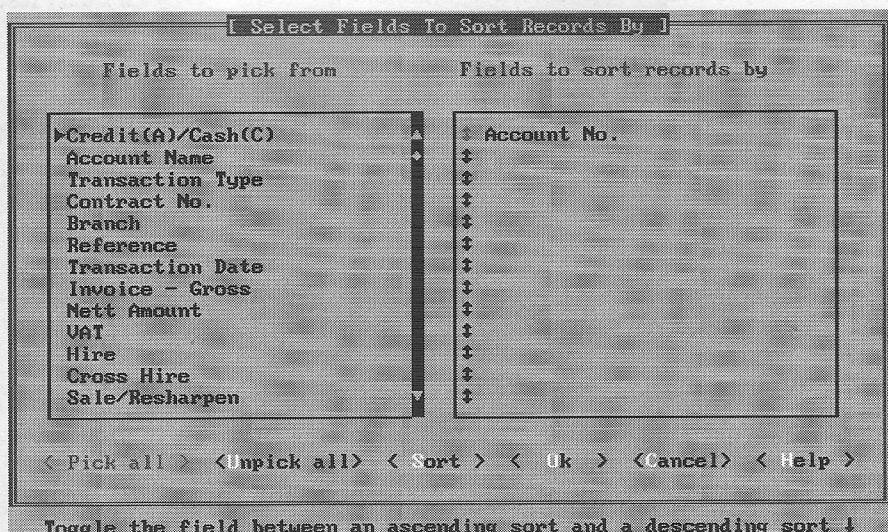
Query Maker allows you to create up to three levels of grouping, summaries are then displayed for each group. So, for example, records could be sorted first by area, then by county within an area, then by town within a county. A summary group total would then be displayed for each town.

Using the Output Records

Dialogue lets you determine how your results will be sorted.

Select a sort field by mouse, double-click on it. To select by key, highlight it and press *Enter*.

You can specify up to nine different sort fields.



N/A

This button is disabled because you specify sort fields one at a time.

All

Removes all fields from the *Fields to sort records by* list.

This allows you to clear all previous sort selections and display information in the order it appears in the database.

Toggle
Alternates a selected sort field between an ascending sort order and a descending sort order.

(Sort is ascending unless you specify otherwise.)

1. Highlight a field in the *Fields to sort records by* list.
2. Press **Sort** to toggle between ascending and descending order.

If you have specified descending order, then the *DOWN* indicator appears.

Note: If you have specified more than one sort field, changing the status of ascending or descending does not move fields to a different position in the *Fields to sort records by* list. (The first field in the list is sorted before the second and so on.)

Save
Saves your sort specifications and exits this dialogue.

You return to the Query Overview Dialogue.

Cancel
Exits without saving changes.

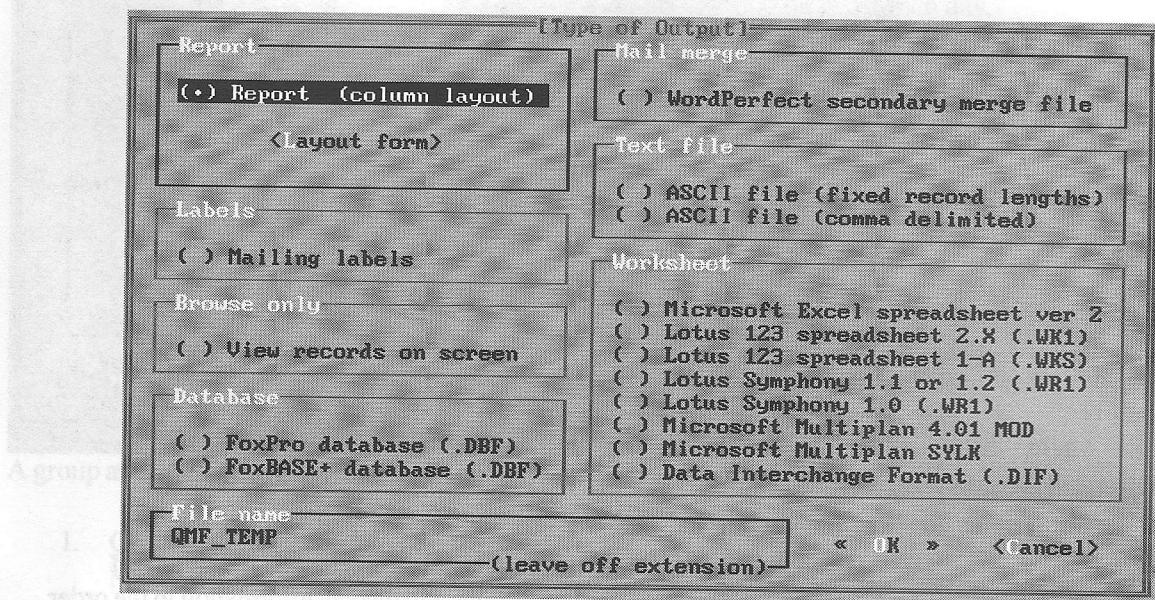
You return to the Query Overview Dialogue.

Help
Displays descriptive help text.

You can change the order of fields in the sort list in the same way that you reorder output table fields (See *Selecting Fields to Show in Query*.)

Selecting the Type of Output

Query Maker lets you send the results of a query to a variety of formats including reports, mailing labels, worksheets, databases and text files. Alternately, you can view your query results on screen without writing the results to another format. To select any of these output options, follow the steps below.



1. Display the *Query Overview* dialogue by selecting the query in the *Query List Manager*.
2. In the *Query Overview* dialogue, press Pick type of output.
3. Query Maker will display the *Type of Output* dialogue shown at left.
4. Select the type of output you prefer by clicking on the associated button, or pressing the space bar.
5. If you have specified one of the options shown to the right, fill in a filename that Query Maker can use to save the output:

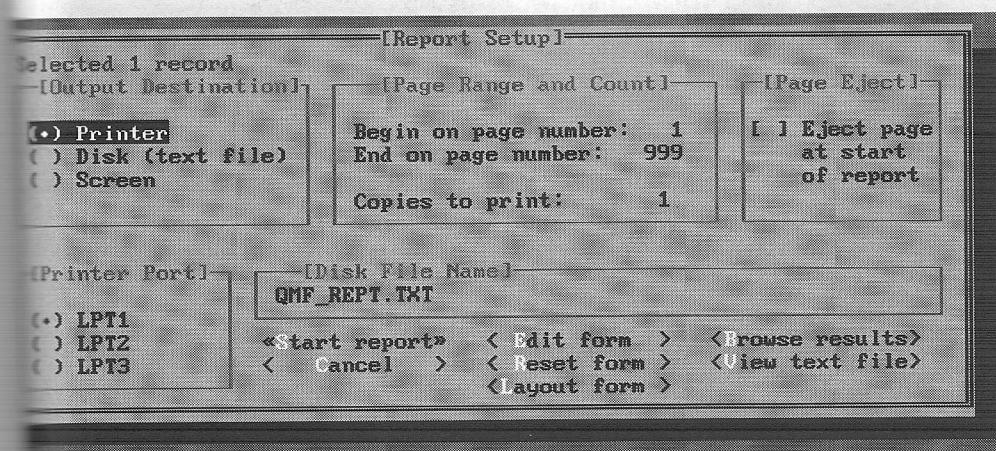
The type of output options that require a file name include the Database, Mail-merge, Text file and Worksheet options.

File name: QMF_TEMP

Note that your file name must always begin with the letters "QMF". This is required to prevent you from accidentally overwriting a data or program file being used by this application.

6. Press OK to save your choices and exit this dialogue.

Using the Report Setup Dialogue



options available in the *Report Setup* are as follows:

<u>Option</u>	<u>Action</u>	<u>Description</u>
<u>Destination</u>	Specifies where to send the report or mailing labels.	Printer - sends hard copy output to your printer Disk file - writes the report contents to a print file. Screen - displays a screen preview of the report
<u>Port</u>	Sends the printed output to the designated port.	LPT1 is the most common printer output port.
<u>Report</u>	Activates report preparation.	Generates the report and sends it to the printer, disk file or screen file, as selected.
<u>Form</u>	Displays a report form so you can edit it.	Requires some knowledge of Foxpro Report writer.
<u>Edit form</u>	Change the layout of the report	
<u>Reset form</u>	Resets the form to the standard.	
<u>View results</u>	Displays an on-screen table view of the query results.	
<u>Cancel</u>	Returns you to the previous screen.	
<u>Text file</u>	Displays the contents of any text file. Used to read reports written to disk file.	