QuickFile

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Contents

Chapter 1

QuickFile

1.1 Contents

1.2 author

The current author (v3.20 through v3.25) of QuickFile is:

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The author would appreciate any comments or suggestions. Replies by snail mail will not be considered unless enough money to cover the return postage is enclosed. International Reply Coupons are suggested.

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1.3 notices

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QuickFile is not Public Domain, however it can be freely distributed provided all documentation and sample files are included unchanged.

The author accepts no liability for any loss or damage resulting from the use of this program. Users must evaluate the program and decide its usefulness for their own purposes.

This version of the program can be used without time limit or cost on the condition that the user writes and lets the author know that he/she is using it -- a postcard is fine.

1.4 description

QuickFile is a flexible, random access, flat file database program. It was originally written by Alan Wigginton. As Alan discontinued development in 1996, Roland Florac asked for and recieved permission from Alan to recommence development in 1999. Fundamentally, QuickFile is the same program. However, there have been some significant enhancements made. QuickFile is localized now; it now uses 'gtlayout.library' (by Olaf 'Olsen' Barthel; available from Aminet in dev/gui) for requesters, though not for the main database window; there are several new macro commands available, and others have been improved; the function keys can now be configured to launch macros; and other miscellaneous improvments and bug fixes. See the program history for details.

QuickFile uses indexes for fast access to records. Databases can be larger than available ram, but as much of the file as possible (configurable by the user) is kept in RAM to reduce disk usage. Features include:

* Multiple indexes with unique or non-unique keys

* 8 Field types include CHARACTER, DATE, TIME, INTEGER, FLOATING, CYCLE,

IMAGE and EXTERNAL

* Character and numerical fields can also be calculated from the other

fields

* Up to 250 characters per field and 250 fields per record.

* Up to 16777215 records per database

* FORM and LIST style displays and reports

* Flexible, unlimited views for each database

* Sort by any number of fields, ascending and descending order

* Query operators include LIKE, EQUAL, BETWEEN, SOUNDS LIKE, NOT LIKE

and NOT EQUAL

* Fields can be added, modified or deleted at any time

* Flexible import and export

* Flexible multi-column label printing

* Multi-level report groups, including totals, averages and counts

* Any number of files open in re-sizable intuition windows

* Online context-sensitive help

* ARexx port supporting macros and commands from external programs

* Function keys may be configured to launch macros

* Easy to use Intuition interface with font sensitivity

System Requirements

Any Amiga computer with Workbench/Kickstart 2.04 or higher

1 MB or more RAM recommended

Required Libraries

asl.library For file requesters.

mathieeedoubbas.library

mathieeedoubtrans.library

gtlayout.library For requesters other than file requesters.

By Olaf 'Olsen' Barthel, available from Aminet

in dev/gui.

Optional libraries

iffparse.library To display IMAGE fields.

rexxsyslib.library To use ARexx macros.

amigaguide.library To use online help.

QuickFile will work with XFH-handler (an automated file compression program) but XFH-handler requires that the decompressed file fit completely in RAM. To work with QuickFile such programs must support update of an existing file.

QuickFile is written using SAS/C.

1.5 Getting Started

WARNING: QuickFile is a random access data base that buffers records in memory. Failure to exit the program properly after updates are made will result in lost updates.

ALWAYS exit the program before a reboot or power off.

DO backup your files regularly. When backing up a database make sure you backup all of the files -- definition, data, indexes and views.

To install QuickFile to a harddrive or floppy disk, simply copy the QuickFile directory to the directory of choice. To have the online AmigaGuide help system available, be sure to copy the QuickFile and QuickFileMacro guide files to the same directory. If AmigaGuide is not yet installed, it can be by double-clicking the InstallAmigaGuide icon.

QuickFile opens a window on the default public screen when started. The default window size is 640x256. For existing databases, the size and position of the window can be different for each defined view .

Starting from Workbench

QuickFile can be started from Workbench using the QuickFile icon or a project icon for a database. If started from a project icon, the file is opened and the first record is displayed. If started from the program icon, an empty window is opened, and the menu or a macro must be used to load an existing database, or the menu to define a new one.

Project icons are not generated by the program.

Starting from the Shell

To start QuickFile from the Shell, type the program name, optionally followed by the file path/name of an existing database as a parameter. For example:

QuickFile data:addressbook/addressbook

If a database is provided, it is opened and the first record is displayed, otherwise an empty database window is opened.

Saving each database to a separate directory is recommended, as a number of index and view files for different databases can be confusing. This also makes it easy to backup the database by simply copying the directory to a backup disk.

The current view determines format of the display, reports, and exported or imported files. Views can be added, deleted and edited, and are saved to separate files that can be loaded from disk (except for the default view) or freed from memory (unless there's only one left loaded) at any time.

The current index determines the sequence that records are displayed in. Indexes can also be added, deleted and edited and are saved to separate files, which are all loaded when the database is opened.

Database records can be re-sorted into sequences other than those defined by the indexes at any time, and can have queries performed upon them to select and display only those records matching certain criteria. The selection status of individual records can also be toggled manually. Sorts, queries and toggle-selecting create temporary indexes, which may be freed from memory at any time.

New users should browse through this document to get a feel for the program. Example databases are provided in the Examples drawer. Click on one of these icons to start Quickfile and load the database. There are also several ARexx macros provided, and the included Demo.quickfile macro shows off many of the ARexx capabilities of QuickFile. Before running it, open or load the AddressBook database.

1.6 Main Window

If a database has been loaded into a window, the title bar of the window displays a status line containing the names of the current view and index, the current record number and the total number of records. Status and information messages are also displayed here, and may temporarily replace the above information. A row of buttons is displayed across the top of the window to allow quick access to frequently used functions:

GoTo Going to a record by index field value(s)

Modify Modifying an existing record

Insert Inserting a new record

Delete Deleting an existing record

Form/List Toggling between LIST and FORM view formats

All/Sel Toggling between ALL and SELECTED records

Images Toggling image display on and off

The vertical scroll bar controls movement through the current index and works in the usual way. Click the arrows to scroll one record at a time. Click in the empty portion of the scroll box to scroll one windowful at a time in LIST views and one record at a time in FORM views. Drag the bar to move as far as desired.

Scrolling may also be done using the up and down arrow keys by themselves and in combination with certain qualifier keys. See Keyboard Usage for more details.

If there are more fields than will fit in the current window, the horizontal scroll bar can be used to view the additional fields. There are no arrows, and no keyboard shortcuts available.

Windows can be positioned and resized using the standard title bar, size and zoom gadgets, and can be shrunk to a small title bar height by selecting Iconify from the Project menu.

The remaining functions are accessed via the Menus .

1.7 Going to a Record by Index Key Value(s)

Selecting the GOTO button displays a requester with string gadgets for each field that is used in the current index , into which index key values the user wishes to jump to may be entered. This enables fast access to any record, even in large databases.

Selecting the OK button after entering the desired value(s) closes the requester and displays the first matching record in the database window, or the closest matching record if an exact match is not found. Selecting CANCEL closes the requester and returns to the previously displayed record.

Only enough of the key value(s) to identify the desired record need be entered, but entry must begin with the first field that is not blank in the desired record. If the first field is left blank, the first record in the current index is displayed, unless there exists one or more records in which the first index field is blank. Likewise, if any other key fields are skipped in the requester, but values are entered in subsequent key fields, the subsequent values are ignored, unless records exist in which the skipped fields are blank.

If the key value entered does not exist in the corresponding field in any record, the record which would follow it is displayed. For example, entering "SM" in a last name field may cause the first record for SMITH to be displayed, which may be followed by SMITHERS, SMITHFIELD, etc. (assuming the field in question is set to ascending order in the current index). If no last names starting with "SM" exist in any records, the next existing alphabetical sequence is displayed.

1.8 Inserting or Modifying Records

Selecting the MODIFY or INSERT button at the top of the main database window while in VIEW mode switches the display to EDIT mode.

Only those fields used in the current view are displayed in the EDIT mode window, and they are laid out as in a FORM view, even if a LIST view was in use when the button was selected.

If the SHIFT key is held down when INSERT is selected, all field values, except for CYCLE fields, are copied from the current record to the new record to be inserted and are displayed for editing. Each CYCLE field displays its first available value. If INSERT is selected without SHIFT, all displayed field string gadgets are empty.

If MODIFY is selected, the current record is displayed for editing.

CALCULATED fields are displayed, with any labels given them, in the EDIT mode window if they are included in the current view definition, but they cannot be modified directly. CALCULATED field values may only be modified by editing the contents of the fields from which they are calculated, or by editing the CALCULATION EXPRESSION for the corresponding field in the FIELD requester.

CYCLE fields are displayed in the EDIT mode window as cycle gadgets, which must be repeatedly selected with the mouse until the desired string appears. The available strings may only be edited by modifying the CYCLE EXPRESSION for the corresponding field in the FIELD requester.

All other field types are displayed as string gadgets. For IMAGE and EXTERNAL fields, an arrow button is displayed to the right of each field. A string may be entered directly in the string gadget, or the arrow button may be selected to display a file requester, with which the desired file may be selected. Note that there is no notification of invalid file path/names until the database window is returned to VIEW mode and QuickFile attempts to access them.

If RETURN, TAB, or the UP or DOWN ARROW key is pressed while the cursor is in an empty string gadget for a field that is set to MANDATORY in the field definition, the cursor remains in the gadget and QuickFile displays the message "Value must be entered" in the title bar. To deactivate the gadget and ignore the error message (in order to press ESC to exit EDIT mode, for example), press SHIFT ESC on the keyboard, or click elsewhere with the mouse.

If there are more fields in the current view than will fit in the window, the horizontal scroll bar may be used to access the additional fields.

At the top of the EDIT mode window are OK and CANCEL buttons. When INSERTing a new record, there is also a COPY button. Selecting COPY causes the values of all fields in the current record (the record displayed before INSERT was selected) to be copied to the new record in progress for editing. This is useful when inserting new records with identical or similar values in some of the fields. WARNING: Selecting COPY will replace any values already typed.

Selecting OK, or pressing RETURN on the keyboard when no string gadget is active, inserts the new record or updates the revised record, unless the record has become a duplicate index entry in an index that has been defined as unique , in which case QuickFile displays the message "Error - duplicate key" in the title bar. If a new record is being inserted and it is not a duplicate index entry in a unique index, all string gadgets are cleared of values so that another new record can be entered. Note that a record that is completely empty cannot be inserted.

Holding a SHIFT key down while OK is selected, or RETURN is pressed, has the same effect as selecting OK, and then selecting COPY for the next record to be inserted.

Selecting OK after an existing record has been modified commits the modified record and returns the database window to record VIEW mode, unless the record has become a duplicate index entry, in which case the error message is displayed as above. The record displayed may not be the one just modified, if changes made to any INDEX fields cause the record to be re-positioned in the current index , in which case either the next record that was before it or after it is displayed.

Selecting CANCEL, or pressing ESC on the keyboard, discards the current new record in progress, or existing record modifications, and resumes displaying the current record in VIEW mode. WARNING: Selecting CANCEL will result in any values already entered or modified to be lost. Select OK to insert a record in progress if it is to be kept, then CANCEL to stop inserting more records.

1.9 Deleting Records

Selecting the DELETE button displays a requester asking for confirmation to delete the current record. Selecting OK deletes the record and closes the requester. Warning: Once a record has been deleted it cannot be restored.

1.10 Toggling Between FORM and LIST View Formats

Selecting the FORM/LIST button toggles display of the the current view between FORM and LIST display formats and is the same as selecting ALTER from the VIEW menu and changing the View type.

Note that changes made to a view in one mode also affect the other mode, but this button provides a quick way to switch modes on the fly, and keeps field labels, length and order the same.

1.11 Toggling between ALL and SELECTED records

Selecting the ALL/SEL button toggles between displaying all records in the file using the current permnent index and displaying only selected records (usually the result of a query or of toggling the selection status of individual records). If no records have been selected, a blank record is displayed. The same thing may also be accomplished by choosing the SELECTED index from the INDEX requester, or by selecting Show Selected from the SELECTION menu.

1.12 Toggling Image Display On and Off

The IMAGES checkbox allows the user to toggle display of images (via IMAGE fields) ON or OFF for faster processing. Images can only be displayed while in FORM views. For LIST views and databases which have no IMAGE fields defined, this checkbox has no effect.

Only file path/names for images are actually stored in image fields. The images themselves are loaded from the named files for display with each record. When image display is toggled off, only the filenames are displayed.

Note that to display images, "iffparse.library" is required to be present in LIBS:.

1.13 features

Database Files

Fields

Indexes/Custom Sorting

Views

Queries/Record Selection

Printing

Report Groups

Image Display

Import/Export

Keyboard Usage

Mouse Usage

Macros

1.14 databases

The structure of QuickFile databases is determined via the DEFINE FILE requester, in which the fields and indexes are specified. The DEFINE VIEW requester is used to define views .

A single QuickFile database is always made up of at least three separate files:

Definition The database structure; has no filename extension unless

given one by the user.

Data The actual records data; has the same name as the definition

file, with the extension ".Data".

Index One for each defined index, of which there must be at least

one per database; has the same name as the definition file,

with the extension ".<name>X", where <name> is the name given

the index when defined.

There may be additional files associated with a QuickFile database, which include:

View One for each defined and saved view, of which there may be

any number or none; by default is given the filename

"<name>.View", where <name> is the name given the view when

defined. The filename extension is not required, however. If

no view has been defined, a default layout is used for the

display.

Query One for each defined and saved query, which describes

criteria to match when searching the database, and has the

filename extension ".qry".

1.15 fields

QuickFile allows up to 250 fields to be defined for any database, and fields may be up to 250 characters in length, however, not all fields may use the maximum length as the maximum record length is 32767.

QuickFile features eight field types , including CHARACTER, DATE, TIME, INTEGER, FLOATING, CYCLE, IMAGE and EXTERNAL. In addition, fields may be set to be mandatory and/or right justified, and numerical and character fields may be automatically calculated from data in other fields.

Fields are defined via the FIELDS panel on the left side of the DEFINE FILE requester.

1.16 Indexes and Custom Sorting

QuickFile uses indexes to sequence the records and to provide rapid access by key field value. Each database must have at least one index, but can have any number more. Indexes are automatically maintained as records are inserted , modified and deleted .

Indexes are defined via the INDEXES panel on the right side of the Define File requester, and are based on one or more fields, each one in ascending or descending order. If an index is set to be unique, QuickFile will reject the creation of records with duplicate index field values. Each defined index is saved to a separate file on disk, and all available index files are loaded automatically when a database is opened.

The current index name is displayed in the title bar of the database window. If other indexes are available, they can be chosen from by selecting INDEXES from the ORDER menu.

In addition to using any previously defined indexes for a database, records can be custom sorted according to any criteria at any time, which creates a temporary index named SORTED that is not saved to disk.

Indexing does have some overheads in RAM usage. Each index requires a contiguous area of RAM that is 4*(<number of records> + 200) bytes in size. Custom sorting requires space in RAM for all sort fields, plus 8 bytes per record in one contiguous area.

1.17 views

Using views, a single QuickFile database can be displayed and printed in many different ways. Views are typically used to print labels and reports , export or import selected fields , or print lists containing only selected fields.

Each view is either a FORM or LIST view by default, but may also be toggled between the two types at any time during sessions. Each view may also have its own field order, titles, positions and lengths (which do not affect the actual field definitions or existing record data), window size and position, and print configuration. Each may display all or only a subset of available database fields, selected by the user. The DEFINE VIEW requester is used to set the view type and determine which fields are displayed and how for the purpose of a view.

Some aspects of view layouts can only be modifed with the mouse , including window size and position, and having several fields on the same line in FORM views.

Once a view is satisfactory, it may be saved for future use. Each saved view is stored as a separate file on disk. Note that views are only saved if the user explicitly saves them, otherwise any changes are lost when the database window is closed.

When a database is opened, QuickFile looks for a view file named "<databasename>.View" in the same directory. If this is not found, a default FORM view, displaying all defined fields (one per line) is used. To have a desired view used automatically, it should be saved with this name in the same directory as the database. Any existing views other than the default must be loaded from disk, by selecting LOAD from the VIEW menu, to be made available after a database is opened. Any previously loaded view may be chosen for use by selecting VIEWS from the VIEW menu. Alternatively, a STARTUP MACRO may be used to load several views and select the desired one for use.

If simplicity is desired and the default layout is satisfactory, a view need not be defined at all.

1.18 queries

Queries allow the user to search all records for designated fields which match certain values or criteria. The fields and criteria to be searched for can mixed and matched within the query in almost unlimited ways, and custom sorting sequences can be specified for the records returned, which are placed in a temporary index named SELECTED that is not saved to disk. A query can also be performed on only those records matched by a previous query.

The selection status of individual records can also be toggled manually.

Queries are specified and performed via the Query requester, and query specifications can be saved to disk for future use.

1.19 printing

QuickFile can print individual records, or all records in the current index . The format of what is printed is controlled by the current view and by the settings defined in the PRINT requester. This requester allows the user to set a print title, select the output device (database window, file, or PRT:), set margins and temporarily override Workbench printer preference settings (only applicable if printing to PRT:). Additionally, a panel for configuration of label printing is available for FORM views, and a panel for defining REPORT GROUPS and summaries is available for LIST views.

Print settings, including label configuration and REPORT GROUP definitions, are saved and loaded with each view, so that if several methods and formats of printing a particular database are desired, one need only define and save several different views with the appropriate configurations set for each one.

1.20 Report Groups

REPORT GROUPS give the user more precise control over how all records in an index are printed , and are available only when the current view type is LIST . GROUP FIELDS are printed only when their values change in the index. SUMMARY FIELDS may be summarized by count, total or average. Optionally, the user may specify that only summaries are to be printed.

Groups are defined via the GROUPS panel on the right side of the PRINT requester.

1.21 Image Display

By using IMAGE fields, standard Amiga IFF ILBM images can be displayed in the database window, but only in FORM views. Also, no scaling or palette remapping is performed, and images are clipped to fit inside the field box established for the view. The display of images can be toggled on and off.

Images of any format(s) can be displayed using an EXTERNAL field with an appropriate picture viewer, also only in FORM views.

1.22 Import and Export

QuickFile can import data from text files, and export data to text files, as well as to several Amiga word processor file formats. With both import and export, the user can choose from a variety of combinations of field start, end and separator, and record separator characters.

1.23 Keyboard Control

The following abbreviations apply for the corresponding keys:

BS Backspace

DEL Delete

LEFT Left Arrow

RIGHT Right Arrow

UP Up Arrow

DOWN Down Arrow

CTRL Control

RAMIGA Right Amiga

General

In the database window and requesters, keyboard shortcuts for most gadgets are identified by an underlined character, which work as long as no string gadget is already active. For requester cycle gadgets, pressing the key cycles forward, pressing the SHIFTed key cycles backward.

The following key may be used in record VIEW and INSERT/EDIT modes, and in QuickFile requesters, if no string gadget is active:

HELP Displays context-sensitive help text using AmigaGuide

or MultiView if available. QuickFile can continue to

be used while the help window is open.

The following key may be used in record VIEW mode:

RETURN Enter EDIT mode for current record. Note that in LIST

views, a record must have already been selected with

the mouse prior to pressing RET for this to work.

The following keys may be used in record INSERT/EDIT mode, and in requesters, if no string gadget is active:

RETURN Same as OK button

ESC Same as CANCEL button

TAB Activates first string gadget

The following key may be used in record INSERT mode if no string gadget is active:

SHIFT-RETURN Same as selecting OK button to insert the record, then

selecting COPY button to copy values from the current

record to the next record to be inserted.

The following key may be used in record INSERT/EDIT mode with a string gadget active:

SHIFT-ESC De-activate gadget, ignore errors

Record/Requester Navigation

The following keys may be used in record VIEW mode, and requester lists, if no string gadget is active:

UP Previous item or record

DOWN Next item or record

SHIFT-UP Previous page of items/records (LIST views, lists);

Previous 10th record (FORM views)

SHIFT-DOWN Next page (LIST/lists) or next 10th record (FORM)

ALT-UP Top of list (LIST/lists) or first record (FORM)

ALT-DOWN Bottom of list (LIST/lists) or last record (FORM)

String Editing/Navigation

The following keys may be used in string gadgets:

Key Alternate Function

=========== ========= ==

SHIFT-TAB UP Previous string gadget

TAB DOWN Next string gadget

RAMIGA-X CTRL-X Erase all text in the gadget

RAMIGA-Q Restore previous text

SHIFT-LEFT CTRL-A Move to beginning of string

SHIFT-RIGHT CTRL-Z Move to end of string

SHIFT-DEL CTRL-K Erase all characters from cursor to end of gadget

SHIFT-BS CTRL-U Erase all characters to the left of the cursor

RETURN De-activate gadget and accept value, if valid

1.24 Using the Mouse to Fine-Tune Views

The default view for any database is a FORM view displaying all fields , with one field per line, in a 640x256 window. If this is not satisfactory, views may be customized and saved to disk. Views are primarily defined and customized via the DEFINE VIEW requester; however, certain aspects of view layout can be modified only with the mouse.

Window position and size may be set for each view as usual, by dragging the window title bar and/or sizing gadget.

If the current view is a FORM view and the LOCKED checkbox is not checked in the DEFINE VIEW requester for it, each field may be selected for manipulation by clicking on it with the mouse. The field will then be outlined with a box, and can be dragged to a different position in the window. This method allows the placement of several fields on the same line in the view, while the DEFINE VIEW requester does not.

In the lower right hand corner of the outline box is a sizing gadget for the field, which, if the mouse is clicked and held over, causes the mouse pointer to become a set of connected arrows. The length and height of the field can be changed by dragging the gadget around. Note that although the height of any field type can be increased, only IMAGE fields can actually utilize more than a single line.

The window and field positions and sizes are part of the view definition, and are saved with it if the view is saved. It is best to use the DEFINE VIEW requester first to set the order of fields, then adjust the view with the mouse.

1.25 macros

Macros allow the user to automate repetetive tasks. For instance, a user could easily create a macro which performs a query on all records in a database, then sets a certain field in all matching records returned by the query to a designated value, then generates a screen report. Macros can be significantly more sophisticated, however.

QuickFile allows the running of macros by several means. The AREXX MACRO requester is used to run ARexx file and inline macros. File macros and individual QuickFile commands may be run from either the DIRECT MACRO requester, or from function keys, which may be configured by the user. A file macro stored in the same directory as a database with the same name as the database definition file plus the extension ".startup" is run automatically when the database is loaded into QuickFile. A typical use of a startup macro might be to load several view files.

QuickFile features 37 macro commands.

1.26 Menu Functions

Project Menu

Open Open a database in a new window

Load Open a database in the current window

Save Save changes to the database

Close Close the database and window

SaveAs Save the current database with a new name

New Define a new database

Alter Edit the current database definition

Import Import records from a file

Export Export records to a file

Reorganise Optimise the database

Iconify Iconify the window

View Menu

Views Display list of loaded views

New Define a new view

Load Load a view from disk

Save Save changes to a view

SaveAs Save the current view with a new name

Alter Edit the current view definition

Reset Form Set view back to default layout

Order Menu

Indexes Display list of indexes

Sort Sort file into a new sequence

Show Sorted Display file in sorted sequence

Rebuild Index Rebuild current index

Selection Menu

Query Create a subset of records

Sel/UnSel Record Select/Unselect single record

Show Selected Records Display selected records

Show All Records Display all records

Print Menu

Print Displayed Records

Print Current Index

Options Menu

About

Buffers Edit number of buffers to use

ARexx macro Run a macro or inline script

Direct macro Invoke single QuickFile commands

Configuration Specify fonts to use, online help, etc.

Function keys Configure function keys for macros

1.27 Open or Load a Database

Selecting OPEN or LOAD from the PROJECT menu displays a file requester, with which a database definition file may be selected to OPEN in a new database window, or LOAD into the current window, replacing any database currently open in it. By default, the file requester hides index , view , data and ".info" files. If it also hides the desired database definition file, the pattern string should be cleared.

If ARexx is available and a file macro with the name "<databasename>.startup" exists in the same directory as the definition file, it is run automatically.

1.28 Save Changes to a Database

Selecting SAVE from the PROJECT menu writes all updated blocks and indexes to disk. This should be done periodically during long update sessions. Nothing is written if no changes have been made since the database was opened or since the last save.

1.29 Close the Current Database and Window

Selecting CLOSE from the PROJECT menu displays a requester asking for confirmation that the current database (if one is open) and window should be closed, unless the current database is the last one open, in which case the requester asks for confirmation that QuickFile should be exited.

Selecting OK from the requester saves all updated blocks and indexes to disk and closes the current database and window.

If any views have altered, a requester is also displayed for each one asking whether the changes should be saved or not, prior to the requester displayed for closing the database window.

1.30 Saving the Current Database or Index with a Different Name

Selecting SAVE AS from the PROJECT menu displays a file requester asking for a new name to save the current index as. If the current index is SELECTED , only the selected records are saved to the new database. It is recommended that any new databases be saved in separate directories.

The new database is reorganized as it is written. Indexes are not created for it at this time, but are built when it is first opened. After the new database has been created, a requester is displayed asking if it should be opened, or if the session with the current database should be continued.

1.31 Defining a New Database or Altering an Existing One

Selecting NEW or ALTER from the PROJECT menu displays the DEFINE FILE requester, in which fields and indexes are defined, and several values are set for database input/output. If NEW is selected, the requester displays only default input/output values.

If ALTER is selected with an existing database open, all changes to the data are saved to disk immediately. The current database definition is then displayed in the DEFINE FILE requester for editing.

If any SORTED or SELECTED indexes exist, they are discarded when the DEFINE FILE requester is opened.

The requester is divided into four sections:

Fields Define fields

Indexes Define indexes

IO Settings Set block size, buffers and free space

External Path Set a default path for use with IMAGE and EXTERNAL fields

Everything except BLOCK SIZE may be altered in a database definition at any time, even after records have been added to the database. Fields and indexes may be added or deleted; field names, types and lengths may be changed; index names, fields, field lengths and orders may be modified. Note that changing the TYPE or LENGTH of a field that already contains data may result in some data loss if existing field values are incompatible with the new type, or if they exceed the new length.

In the bottom right corner of the requester are OK and CANCEL buttons. Selecting OK displays a requester asking for confirmation that the altered database definition should be saved.

1.32 Defining Fields

The FIELDS panel, at the left of the DEFINE FILE requester, is where fields are defined. A listview shows all existing fields, their types , maximum lengths, and whether or not they are calculated. A bar indicates which field is currently selected in the list.

Below the listview are buttons labeled ADD, MODIFY and DELETE. Selecting ADD or MODIFY displays the FIELD requester. If ADD was selected, all settings and definitions in the requester are empty, so that a new field may be defined. If an existing field is highlighted in the field listview, the new field is inserted above it. QuickFile has a limit of 250 fields per database.

If MODIFY was selected and an existing field was highlighted in the listview, the definition of that field is displayed for editing.

Selecting DELETE displays a requester asking for confirmation that the selected field should be deleted. If OK is selected, the field is deleted immediately, and cannot be salvaged. Note that deleting a field makes its data inaccessible, even if the same field definition is re-added. If a field is accidentally deleted, the CANCEL button in the lower right corner of the DEFINE FILE requester should be selected. However, doing so will also discard any other changes that have been made, and they will have to be re-done if desired.

Note also that modifying or deleting any fields that are used in field calcualtions, indexes or saved views may result in errors and/or additional requesters informing the user of such problems.

1.33 Field Requester

The FIELD requester is displayed when the ADD or MODIFY button is selected from the FIELDS panel of the DEFINE FILE requester, to either define a new field or modify the definition of an existing one. Its components are:

Name

The name of the field, up to 12 characters. Note that while spaces can be used in field names, it is not advisable and precludes use of the GETREC command in macros .

Type

This listview displays the available field types . A bar indicates the current type selected for this field. A different type may be selected with the mouse, or by using the UP and DOWN arrow keys to scroll through the list.

Length

The maximum allowable length for the field, must be a whole number between 1 and 250 inclusive. DATE and TIME fields require certain minimum lengths. DATE, TIME, FLOAT , INTEGER and CYCLE fields each have maximum useable data lengths that are significantly less than 250, although the field length may be set to a higher number if desired. Note that for FORM views, the number of characters that can be displayed on a line in record VIEW mode is limited by the font used, and by the width of the database window, which is limited by the screenmode and overscan settings used, typically to about 60 to 70 characters for NTSC/PAL screens. Longer field values may be entered and data is retained when inserting and modifying records, but the additional data is not visible in VIEW mode.

Space is only used for the actual data entered in fields, not for the maximum field length. If a field is empty, no space is used.

Decimals

The number of decimals places to be stored and displayed, only enabled for FLOAT fields. Must be a whole number between 0 and 9 inclusive. Values entered into the field are rounded to this number of decimals as necessary whenever a record is inserted or modified .

Right Justified

If checked, values entered into the field are displayed right justified, otherwise left justified. By default, this box is checked for INTEGER and FLOAT fields, and unchecked for all other field types.

Mandatory

If checked, the field requires some value other than NULL in all records, and QuickFile positions the cursor in the field and displays the message "Value must be entered" if the user attempts to insert or update a record in which the field was left blank, but only if the field is part of the current view .

Calculated

If checked, values for this field are calculated from other field values in the same record according to a formula entered into the EXPRESSION string gadget below. All field types except DATE and CYCLE can be calculated, and certain restrictions apply to each type.

Expression

This string gadget is available only for the following two field types and corresponding uses:

Cycle Fields A list of possible values to choose from, separated by commas

Calculated Fields An expression to calculate from other field values

Command

For EXTERNAL fields only, the desired command or program path/name to operate on field values, which are typically file path/names. Unless the command or program resides somewhere in the user's command path (usually established with the AmigaDOS "PATH" command in the Startup-Sequence), or in the current directory, the full path to it must be specified here.

Any other arguments, in addition to the field values, that the user wishes to pass to the command for all records may also be included here. Include "%s" in the string to designate where the field value should be filled in. For example, if the COMMAND string is specified as:

SYS:Utilities/MultiView %s SCREEN

And the EXTERNAL field value in the current record is:

Work:Pictures/Fractals/Mandelbrot.ilbm

The actual command string is executed as:

SYS:Utilities/MultiView Work:Pictures/Fractals/Mandelbrot.ilbm SCREEN

All settings defined in this requester, except TYPE, can be changed for any field at any time. If the length of a field is decreased, however, existing field data in excess of the new allowable length is only discarded from records if and when they are updated. Increasing the field length again will restore the old data, except for any in records that have been updated since the length was changed. Note that reorganizing a database updates ALL records, and all excess data is lost.

Field TYPE can also be changed, but existing field values may be lost when changing to a type that the values are not compatible with. Existing values will ALWAYS be lost when changing field types to or from CYCLE. Also, QuickFile may display error requesters for any calculated fields in which the field types are incompatible with the calculation expression.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK when a new field has been defined causes the newly defined field to be accepted, assuming the new field has been defined fully. If it has not, a message is displayed in the title bar of the requester informing the user of what is required.

After a new field has been accepted, the requester remains open and the contents cleared from the NAME string gadget, so that another new field may be defined. To stop defining additional fields, CANCEL should be selected after the last new field definition was OK'd. The requester is then closed, and all new fields are displayed in the FIELDS listview in the DEFINE FILE requester.

If OK is selected when an existing field definition has been modified, the requester is closed and modified field definition accepted. Display of the modified field in the FIELDS listview is updated as necessary.

1.34 Field Types

The TYPE of a field affects how it is displayed, how it is used in indexes and sorting , and how it is considered during queries . QuickFile features the following field types:

Character Character strings; may be calculated from other field types

Float Real numbers; displayed with up to 9 decimal places

Integer Whole numbers only; may be calculated from FLOAT fields

Date Date values, in the form "dd-Mmm-yyyy (e.g. "24-Feb-2000")

Time Time values, in the form "hh:mm:ss (e.g. "16:41:11")

Cycle A choice of up to 32 pre-defined strings in a cycle button

Image File path/names of IFF-ILBMs to be displayed

External Strings (usually file path/names) to be passed to an external

command or program configured for the field

All field types except DATE and CYCLE fields may be calculated . Certain restrictions apply to each type.

1.35 Float Fields

FLOAT fields store real numbers in the range -999999999999999 to 999999999999999 with up to 9 decimal places, and may be calculated from other FLOAT fields, as well as from INTEGER and TIME fields. Up to 15 digits may be entered before the decimal point (if the field length is sufficient). If more than 15 are entered, the cursor remains in the field when the user attempts to exit and QuickFile displays the message "Too may digits in number (15 max)" in the title bar of the EDIT window.

Any number of decimal place digits may be entered (up to the allowed field length), however, they are truncated to the number of decimals specified for the field in the FIELD requester when records are inserted or updated.

Note that there are several limitations of the Amiga math libraries which can affect FLOAT values:

1) Only the first 15 digits entered (non-decimal and decimal combined) are retained when records are committed. Any digits entered in excess of 15 become zeros. For example:

Entered as... Stored as...

============================== =============================

1234567890.123456789 1234567890.123450000

12345678901234567890.123456789 12345678901234500000.000000000

2) Numbers entered with more than 8 digits are usually stored and displayed incorrectly, unless the last digit is a zero, in which case they are correct unless they exceed 9 digits. For example:

Entered as... Stored as...

============================== =============================

555555555 555555554.999999000

100000000 100000000.000000000

1000000000 999999999.999999000

3) Numbers entered with more than 9 digits are usually calculated incorrectly. For example:

Field1 Field2 (calculated as Field1*2)

============================= =============================

1111111110.999990000 2222222221.999960000

123456789012345.000000000 246913578024688.000000000

1.36 Integer Fields

INTEGER fields store whole numbers in the range -2147483648 to 2147483648, and may be calculated from other INTEGER fields, as well as from FLOAT and TIME fields. The display flashes if the user attempts to enter a number outside the specified range. Note however that it is possible to set the value of an INTEGER field to -2147483649 or 2147483649 using the macro command PUTFIELD.

1.37 Date Fields

DATE fields store date values, require a minimum length of 11, and must be entered as DAY NUMBER, MONTH and YEAR, separated by spaces, slashes, dashes or periods.

MONTH may be entered as a one or two digit number, or as a three character name.

YEAR may be entered as two or four digits; if two digits are entered, any number greater than or equal to 50 is assumed to be 19xx, and any number less than 50 is assumed to be 20xx. Years less than 1950 and greater than 2049 must be entered using four digits, and must also be in the range 0100 to 9999.

Examples:

03/08/93

3-8-93

3.aug.93

03 aug 1993

All are re-formatted and displayed as "03-Aug-1993". DATE fields may not be calculated , but may be used in calculated CHARACTER fields.

1.38 Time Fields

TIME fields store time values, require a minimum length of 8, and are entered as HOURS, MINUTES and SECONDS, separated by colons, spaces or periods. HOURS may exceed 24, and may be entered in the range 0 to 2147483647. Trailing (lower order) zeros may be omitted. For example:

3:10:2

3 10 2

3.10.2

>>> 03:10:02

1.0.0

1 0

1

>>> 01:00:00

2147483647:15:0

2147483647 15

>>> 2147483647:15:00

Note that TIME fields can be set to out-of-range HOUR values using the macro command PUTFIELD, but the resulting stored values will be in the range -2147483647 to 2147483647. For example:

Value used

with PUTFIELD Stored Value

============ ================

2147483648 -2147483648:00:00

4294967296 [blank]

5000000000 705032704:00:00

TIME fields may be calculated from INTEGER and FLOAT fields, as well as other TIME fields, and are treated as the total number of seconds when used in numerical calculations.

1.39 Cycle Fields

CYCLE fields allow the user to establish a list of up to 32 pre-defined strings, from which the desired string may be selected, via a cycle button, for each record. The strings are stored in the EXPRESSION string gadget in the FIELD requester, separated by commas. EXPRESSION accepts up to 250 characters; however, none of the strings may be longer than 30 characters. Any spaces entered in the gadget are included in the corresponding string. For example:

Expression = "Blue, Green, Light Blue, Red"

Cycle strings = "Blue", " Green", " Light Blue", " Red"

Expression = "Blue,Green,Light Blue,Red"

Cycle strings = "Blue", "Green", "Light Blue", "Red"

If any string longer than 30 characters is entered, the message "Cycle item > 30 chars" is displayed in the title bar of the requester. If more than 32 strings are entered, the message "Too many values in cycle field" is displayed. If two or more identical strings are entered, the message "Duplicate cycle value" is displayed.

CYCLE fields may not be calculated , but may be used in calculated CHARACTER fields.

1.40 Image Fields

IMAGE fields store character strings, which are usually file path/names of standard Amiga IFF-ILBM images. Image files specified in the field are displayed in the database window in FORM view, if "iffparse.library" is available in LIBS:, and if the IMAGES checkbox at the top of the database window is checked. If not checked, the character strings are displayed.

In record edit mode, IMAGE fields are displayed as string gadgets with arrow buttons to the right of them. Selecting the button displays a file requester with which the user may choose the desired file and path. The EXTERNAL PATH specified in the DEFINE FILE requester is used as a default path for IMAGE fields, unless a full path is specified in the field.

Displayed images are cropped to the size of the field box defined in the FORM, with no scaling or palette remapping. To display images with the correct palette and resolution, or images in formats other than IFF-ILBM, an EXTERNAL field should be configured for use with an appropriate display program.

Queries , indexes and sorting , and printing operate only on the character strings stored in the field.

1.41 External Fields

EXTERNAL fields store character strings (usually file path/names) to be passed to the external command or program, defined in the COMMAND string gadget in the FIELD requester, for processing. This allows the user to display images, text files or animations, play sounds, run programs, extract archives, launch ARexx scripts, or anything else that can be accomplished from a Shell prompt.

Any arguments to be passed to the defined COMMAND for some records but not others may also be specified in the field.

EXTERNAL fields are displayed with an R button to the left of them in record VIEW mode if the current view type is FORM . Selecting the button runs the external command and passes the arguments stored in the field to it. In LIST views, the R button is not available.

In record EDIT mode, EXTERNAL fields are displayed as string gadgets with arrow buttons to the right of them. Selecting the button displays a file requester with which the user may select the desired file and path. The EXTERNAL PATH specified in the DEFINE FILE requester is used as a default path for EXTERNAL field filenames, unless a full path is specified in the field.

If any file path/names used in this field contain spaces, a double-quote mark should be added to the end of the filename in each record in which the field is used, and one should also be placed at the beginning of the external path specification. If the field contains the full path to the file, the first double-quote mark should be placed at the beginning of the path in the field itself.

1.42 External Fields: R button

Selecting this button runs the command specified in the FIELD requester for the corresponding EXTERNAL field.

1.43 Calculated Fields

If the CALCULATED box is checked in the FIELD , a calculation expression must be specified in the EXPRESSION string gadget. All field types except DATE and CYCLE may be calculated from other field values, with certain restrictions.

The expression may be up to 250 characters in length, and may contain field names, constants and operators. Field names containing spaces must be enclosed in double-quote marks ("). Fields referenced must have already been defined, or QuickFile will report an error. Other calculated fields may be used.

Constants are preceded by a ’c’, enclosed in double-quote marks and may be no longer than 7 characters.

For numeric field types (FLOAT, INTEGER and TIME) the following mathematical operators may be used:

+ Add

- Subtract

* Multiply

/ Divide

Normal precedence rules apply, and parentheses may be used to modify the evaluation order. For example:

((Price+(Price*TaxRate))*Copies)+Shipping

TIME field values are treated as the total number of seconds in numerical calculations. For example:

TIME value Treated as

---------- ----------

00:00:35 35

00:04:35 275

01:20:35 4835

For string field types (CHAR, IMAGE and EXTERNAL) the following concatenate operators may be used:

+ Join strings, leaving a space between

| Join strings without any space between

Any field types (numerical, string, DATE and CYCLE) may be used in string field calculations.

Examples:

c"Dear"+Title+LastName

Volume|c":"|Path|FileName

Movie+c"("|Year|c")"+Length

1.44 Defining Indexes

The INDEXES panel, at the right side of the DEFINE FILE requester, is where indexes are defined. A listview displays all previously defined indexes. At least one index is required for each database. A bar indicates the currently selected index in the listview. A different index may be selected with the mouse or keyboard.

Below the listview are NEW, MODIFY and DELETE buttons. Selecting NEW or MODIFY displays the INDEX requester. If the NEW button is selected, a new index may be defined. If an existing index is highlighted in the listview when NEW is selected, the new index is inserted above it. To add a new index to the bottom of the list, "== End ==" should first be highlighted. There is no limit to the number of indexes per database.

If an existing index is highlighted in the listview and the MODIFY button is selected, the definition of that index is displayed for editing.

If an existing index is highlighted in the listview and the DELETE button is selected, a requester is displayed, asking for confirmation that the highlighted index should be deleted. If the OK button is selected, the index is deleted immediately, and cannot be salvaged.

1.45 Index and Sort Requesters

The INDEX requester is displayed when the NEW or MODIFY button is selected from the INDEXES panel at the right side of the DEFINE FILE requester. If NEW is selected, a new index may be defined. If MODIFY is selected and an existing index is highlighted in the INDEXES panel listview, its definition is displayed for editing, to either define a new index or edit the definition of an existing one.

The SORT requester is displayed when SORT is selected from the ORDER menu, and when the ORDER button is selected from within the QUERY requester. The SORT requester is nearly identical to the INDEX requester, except that the name for the resulting index is either SORTED (if SORT was selected from the menu) or SELECTED (if specifying the order for a query) and cannot be edited, and the UNIQUE checkbox is unavailable.

The requester components are:

Name

The name of this index, up to 14 characters. The index is saved to disk with the name "<databasename>.<indexname>X". Note that QuickFile allows index names with spaces, double-quote marks, and various other characters that are illegal in AmigaDOS filenames, and will happily save them to disk that way. Note also that when using the SORT requester, the name of the index is displayed as SELECTED (if for a query) or SORTED and cannot be edited, and the index in either case is not saved to disk.

Unique

If checked, duplicate index entries are rejected by QuickFile when inserting or modifying records, but only if . A duplicate index entry exists if there are two or more records in which the corresponding index fields, for the current index, have the same value. If an attempt is made to insert a record that contains a duplicate entry, or to modify and update an existing record so that it becomes a duplicate, QuickFile displays the message "Error - duplicate key" in the title bar of the database window, and the record is not inserted or updated. Note that this checkbox is not available when using the SORT requester.

Available Fields

This untitled listview, on the left side of the requester, lists all fields defined for the current database.

Index Fields

This untitled listview, on the right side of the requester, lists all fields used in this index. Fields are added to this list by clicking on their names in the AVAILABLE FIELDS listview on the left with the mouse. If an INDEX field is highlighted in the list when a new field is added, the new field is inserted above it. To add a new field to the bottom of the list, "== End ==" should first be highlighted.

Each index can be based on any combination of available fields, in any order. The order of fields in the list determines their priority in the index. Database records are sorted by the top field first, and by subsequent fields only when several records exist in which values in corresponding higher fields are identical.

Length

The index field length, or maximum portion of the field that index sorting is based on, of the highlighted index field, which can be less than the actual field length. For example:

Field value = "A Connecticut Yankee in King Arthur's Court"

Field value length = 43

Index field length = 20

Sort based only on... "A Connecticut Yankee"

Using a smaller index length for index fields can reduce processor and RAM requirements when sorting and rebuilding indexes. Note that either TAB or RETURN must be pressed after entering a field index length or the value is ignored.

Order

Which of these buttons is selected determines whether the currently highlighted index field is sorted in ASCENDING order (NORMAL) or DESCENDING order (REVERSE). Each index field may be set differently. When ne index fields are added, they are set to NORMAL by default.

Delete

Selecting this button deletes the highlighted index field from the list. No confirmation is asked.

Clear

Selecting this button clears ALL index fields from the list. No confirmation is asked.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK causes the new or modified index definition to be accepted and closes the requester, updating the INDEXES listview display in the DEFINE FILE requester as necessary. If an existing index is modified, it is rebuilt when the DEFINE FILE requester is closed.

1.46 Database Input/Output Settings

The database input/output details are displayed at the upper right side of the DEFINE FILE requester. The settings are described below:

Block Size

QuickFile does not read and write single records at a time, but builds them into blocks first. Each block contains a number of records, the number depending on the block size and the size of each record. This reduces the number of disk reads and writes required. Block size must be larger than the maximum record size (in bytes or characters) plus free space, and some space for control fields (2 bytes per field plus 2 bytes for the record length).

Once a database has been defined for the first time, the block size cannot be modified, except by reorganizing the database with a new size. This may be required in order to add fields to an existing database whose block size is insufficient to accommodate the additional fields.

Free Space

The number of bytes to be reserved in each block to allow for records to expand. As QuickFile only stores the actual data entered (not trailing blanks), additional space is required if modifications to a record results in a longer record. Records are moved to another block if necessary, so this is not critical.

The amount of free space used for a database can be changed permanently at any time by entering a new value in this requester.

Buffers

The maximum number of buffers QuickFile will use for holding blocks of records in memory. A buffer is a chunk of ram used to hold a block of records. QuickFile will try to keep as many blocks in ram as possible to reduce disk accesses. Performance is much better, particularly with floppies, if records can be held in ram rather than having to be read from disk.

Except for very large databases or limited RAM, using a large number of buffers, such as 100, is recommended. The more of the file in memory, the faster QuickFile works. The memory used is approximately (<number of buffers> * <buffer size>). QuickFile will never use more buffers than are required for the whole file. Note that when using a compression program like XFH-handler with QuickFile, the number of buffers should be a small number, such as 3. XFH will already have the decompressed copy of the file in RAM.

The number of buffers used for a database can be changed permanently at any time by entering a new value in this requester, or temporarily (for the current session only) by selecting BUFFERS from the OPTIONS menu.

1.47 Default External Path

At the lower right of the DEFINE FILE requester, this is used to specify an optional default path to be used for IMAGE and EXTERNAL fields, which can reduce the necessity of having to store long pathnames in the given field for each record in which it is used. A trailing slash ("/") may be included if applicable, but is not required.

If a relative path (i.e. without a device or volume name and colon) is specified with a filename in an IMAGE or EXTERNAL field, that path is assumed to be relative to the path entered here. If an absolute path is specified, then EXTERNAL PATH is ignored. For example:

EXTERNAL PATH = "Examples/Images/ImageData/"

IMAGE field value = "Fractals/Mandelbrot.ilbm"

Accessed as "Examples/Images/ImageData/Fractals/Mandelbrot.ilbm"

IMAGE field value = "///ImageData/Fractals/Mandelbrot.ilbm"

Accessed as "ImageData/Fractals/Mandelbrot.ilbm"

IMAGE field value = "Work:Graphics/Pictures/Fractals/Mandelbrot.ilbm"

Accessed as "Work:Graphics/Pictures/Fractals/Mandelbrot.ilbm"

Note that if a relative path is specified in EXTERNAL PATH, it is assumed to be relative to the current directory. If EXTERNAL PATH is left empty, all fields are assumed to be relative to the current database's home directory. For example:

QuickFile current directory = "Work:QuickFile/"

Database current directory = "Work:QuickFile/Images"

IMAGE field value = "Mandelbrot.ilbm"

EXTERNAL PATH = "Images/ImageData/"

Actual path to file is "Work:QuickFile/Images/ImageData/Mandelbrot.ilbm"

EXTERNAL PATH = [empty]

Actual path to file is "Work:QuickFile/Images/Mandelbrot.ilbm"

1.48 Importing Records from a File

Selecting IMPORT from the PROJECT menu displays a requester which allows specification of the record and field separator characters used in an ASCII file so that records may be read from the file and inserted into an existing database.

Not all fields which have been defined for the database need be present in the input file; however, the sequence and type of fields in the file should correspond to those in the current view . It may be necessary to define , load or select an appropriate view prior to selecting IMPORT. Any fields not present or empty in the file are left empty in the imported records. Note that QuickFile will not report an error if any mandatory fields are left empty while importing.

The length of fields in the file should be less than or equal to the maximum length defined for each respective field, otherwise any field value exceeding its allowable length is truncated.

Note that a database should be backed up prior to importing records. If the import format is wrong, it is easier to restore the database from the backup than to fix or delete all incorrect records. Note also that a large number of buffers should be used when importing many records.

1.49 Record and Field Separators for Import/Export

Record and field separators must be specified for records or partial records to be imported from, or exported to, an ASCII file. When IMPORTING , they inform QuickFile how to distinguish between separate records and fields in the file. When EXPORTING , they determine how the records and fields are separated in the file to be written to.

A choice is provided between PRESET and CUSTOM separator formats. The only PRESET format available for IMPORTING is displayed in the FORMAT listview as ["...",]. This format is for records in which all fields begin and end with double-quote marks, and are separated by commas, as in:

"John Q.","Public","123 South Main Street","South Pole","Antarctica"

This format is also available for EXPORTING, along with preset mailmerge formats for several Amiga word processing programs (most of which, admittedly, are now rather dated), including:

FinalCopy

Interword

KindWords 3

ProWrite

WordWorth

Only the KindWords 3 format has been tested by the (original) author. If there are problems with any of the formats, please send a copy of the specification for the format and, if possible, a sample file in the correct format, to the author , who may also be contacted if additional preset formats are desired.

To specify a custom format for record and field separators, CUSTOM must first be selected in the FORMAT listview. The cycle gadgets on the right side of the requester may then be used to select the desired combination of separator characters. The available characters are (though not all are available for each type of separator):

, Comma

; Semi-colon

: Colon

' Single-quote mark

" Double-quote mark

None No character used

Tab A tab character (ASCII 009)

LF Line Feed (ASCII 010, the standard Amiga end-of-line character)

CRLF Carriage Return (ASCII 013), followed by Line Feed (the standard

MS-DOS end-of-line characters)

The separator types, controlled by the cycle gadgets, are:

FIELD START Designates the start of a field (usually NONE unless

fields are enclosed in quotes). Any of:

' Single-quote mark

" Double-quote mark

None No character

FIELD END Designates the end of a field (usually NONE unless fields

are enclosed in quotes). Any of:

' Single-quote mark

" Double-quote mark

None No character

Tab Tab character

CRLF Carriage Return-Line Feed

FIELD SEP Separates fields in each record; does not appear after the last field in a record (usually TAB or COMMA). Any of:

, Comma

; Semi-colon

: Colon

None No character

Tab Tab character

LF Line Feed

CRLF Carriage Return-Line Feed

RECORD END Designates the end of a record (usually LF). Any of:

None No character

LF Line Feed

CRLF Carriage Return-Line Feed

If FIELD START is specified (set to other than NONE), FIELD END must also be specified. If neither FIELD END nor FIELD SEPARATOR is specified, the imported records are of fixed length with each field padded to its maximum length with spaces.

Examples:

"field1","field2","field3","field4"[LF]

FIELD START = "

FIELD END = "

FIELD SEP = ,

RECORD END = LF

field1[TAB]field2[TAB]field3[TAB]field4[TAB][LF]

FIELD START = NONE

FIELD END = NONE

FIELD SEP = TAB

RECORD END = LF

Note that the same character should NOT be used for both FIELD SEP and RECORD SEP when IMPORTING.

1.50 Exporting Records to a File

Selecting EXPORT from the PROJECT menu displays a requester which allows specification of record and field separator characters to use in order to write all records in the current index to an ASCII file, which is typically done to exchange data with other applications such as word processing programs, text editors, other databases, etc.

Which fields are exported, and their sequence and lengths in the export file, are determined by the current view . It may be necessary to define , load or select an appropriate view to provide the desired record and field layout for the file prior to selecting EXPORT.

A HEADERS checkbox appears at the upper right of the requester. If checked, field labels used in the current view are also exported at the top of the resulting file.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK displays a file requester, with which a path/name may be specified for the export file.

1.51 Reorganizing a Database

Selecting REORGANIZE from the PROJECT menu allows reorganization of a database by creating a new, optimized version, and then copying it over the original database file. Reorganizing is not necessarily essential, but if many additions and deletions have been made to a database, it can reduce file size and improve performance. During reorganization, free space is adjusted to the value specified in the database definition and records are physically stored in the sequence of the index in use. Selecting the most used index prior to reorganization can drastically improve performance with floppies.

If the current index is SORTED or SELECTED , a requester is displayed informing the user that reorganization cannot take place. Otherwise, a file requester is displayed, in which a filename (and path, if desired) must be specified for the work file that is created during reorganization. By default, a name consisting of the existing database definition filename with the added extension ".Wrk" appears in the requester. The work file is not automatically deleted upon completion of the reorganization, and may be kept as a backup if desired. Note that care should be taken to ensure that other wanted files are not overwritten by the specified name.

After the work filename is specified, another requester displays the current block size for the database, which may be changed if desired. This is the only way to modify the block size of an existing database after it has been initially defined.

1.52 iconify

Selecting ICONIFY from the PROJECT menu iconifies the current database window to just a short title bar. The window can be restored by selecting ICONIFY again (it acts as a toggle) or by selecting the window zoom gadget.

QuickFile remains active while it is iconified, and most of the menu functions and keyboard shortcuts can still be used.

1.53 Selecting Views

Selecting VIEWS from the VIEW menu displays a requester with a listview of all views that have been loaded . With the exception of the default view, all views must be explicitly loaded from disk in order to be available for selection. If no views have been loaded, a single default view named "[databasename].View" is listed. If a view has already been defined and saved to disk with that name, it is loaded automatically when the database is opened.

The view currently in use is highlighted. A different view may be selected with the mouse, or by scrolling through the list with the UP and DOWN arrow keys.

At the bottom of the requester are OK, FREE, ALTER and CANCEL buttons. Selecting OK causes the highlighted view to be used and closes the requester, updating the database window display as necessary. A view may also be selected and used in one step by double-clicking on it in the list, which also closes the requester.

Selecting FREE closes the requester and unloads the highlighted view from memory, which may be useful in low RAM situations. At least one view, which need not be the default view, must remain loaded. QuickFile displays the message "Cannot delete last view" in the title bar of the requester if an attempt is made to free the only available view.

Selecting ALTER closes the requester and displays the definition of the highlighted view in the DEFINE VIEW requester for editing.

1.54 Defining and Editing Views

The DEFINE VIEW requester is displayed when NEW or ALTER is selected from the VIEW menu, or when the ALTER button is selected in the SELECT VIEW requester, and is used to create new views or modify existing views. If ALTER is selected from the menu, the current view is displayed for editing; if the ALTER button in the SELECT VIEW requester, the view highlighted in the requester is displayed.

Although views are primarily created using this requester, there are certain aspects of view layout which can only be accomplished with the mouse . For instance, each field added in the requester is placed on a separate line, while fields may be rearranged using the mouse so that several occupy a line. Also, the size and position of the database window for the current view can only be changed with the mouse.

The requester components are:

View Name

The name of the view, up to 30 characters. When defining new views, the name is "Unnamed" by default, and may be changed as desired. For previously defined and saved views, the name is for display only in this requester and cannot be edited, in which case it may be changed only by selecting SAVE AS from the VIEW menu, or by renaming the view definition file from Workbench or Shell. Note that QuickFile accepts views with illegal filename characters in them (’"’, ’:’, ’/’, ’?’, etc.), and will happily save them to disk that way.

Type

The type of the view, one of:

Form Displays one record at a time

List Displays as many records as can fit in the window,

one record per line

Each type enables certain options and settings when printing . Note that the view type may also be changed on the fly while viewing records with the FORM/LIST button at the top of the database window.

Headings

If checked, field names are displayed; otherwise not. Having a view without field names displayed may be desired for certain printing operations, such as mailing labels.

Lock

If checked, field positions are locked in this view to prevent the user from accidentally dragging them with the mouse. This should only be unchecked if and when rearrangement of fields with the mouse is desired.

Available Fields

This listview displays all fields that have been defined for the database, their types , maximum lengths, and whether or not they are calculated .

View Fields

This listview displays all fields used in this view. Fields are added to the list by clicking on their names in the AVAILABLE FIELDS listview on the left with the mouse. If a field is highlighted in the list when a new field is added, the new field is inserted above it. To add a new field to the bottom of the list, "== End ==" should first be highlighted. Note that modifying an existing field’s name or length, or deleting it from the database definition, will not automatically adjust the definition of any views that use the field. If a view which uses a particular field that has been renamed or no longer exists is loaded, QuickFile displays a requester notifying the user that the field could not be located.

Name

The displayed name for the highlighted field for this view only. By default, this is the same as the actual field name when the field is added to the VIEW FIELDS list, but may be different, or even blank. Note that TAB or RETURN must be pressed on the keyboard after a view field name has been modified, otherwise the modifications are ignored.

Length

The displayed length for the highlighted field for this view only. By default, this is the same as the actual field length when the field is added to the VIEW FIELDS list, and may be different, but must be at least 1. Note that TAB or RETURN must be pressed on the keyboard after a view field length has been modified, otherwise the modifications are ignored.

Delete

If selected, the highlighted field (if any) is deleted from the VIEW FIELDS list. No confirmation is asked. The DELETE button is ghosted if no view fields is highlighted in the list.

Clear

If selected, all fields are deleted from the VIEW FIELDS list. No confirmation is asked.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK causes the new or modified view to be used and closes the requester. Note that the view is not automatically saved to disk.

1.55 Form Views

The FORM view format displays a single record in the database window in the format specified by the current view definition . If there are more fields in the view than will fit in the window, the horizontal scroll bar can be used to access the additional fields.

By default, one field is displayed per single line, with no blank lines in between, with the exception of IMAGE fields, which occupy two lines by default. View field sequence, positions and lengths can be modifed within the window by dragging the fields or their sizing gadgets with the mouse . Note that although view field heights can be changed, only IMAGE fields can actually use more than a single line. If present, image display may be toggled on and off with the IMAGES checkbox at the top of window. When image display is off, the path/names for the image files are displayed.

EXTERNAL fields are displayed with an R button to the left of them. Selecting the button runs the command defined for the field.

The FORM/LIST button at the top of the window may be used to quickly toggle between FORM and LIST view formats, without altering the actual view definition.

1.56 List Views

The LIST view format displays as many records as will fit in the database window, one line per record. If the view record length, which is the sum of all view field lengths, is wider than the window, the horizontal scroll bar may be used to scroll left or right. View field sequence and lengths can only be modified via the DEFINE VIEW requester.

IMAGE fields only display the path/names for the image files in LIST views, regardless of the status of the IMAGES checkbox at the top of the window. EXTERNAL fields are displayed without the R button that enables running the command defined for the field.

When records are inserted or modified while in LIST view, the display switches to a FORM view in edit mode. A record may be modified by selecting the MODIFY button when the desired record is displayed at the top of the window, clicking once on the record with the mouse and then selecting MODIFY, or by simply double-clicking on the record. To delete a record, it must be clicked on once with the mouse prior to selecting the DELETE button.

The FORM/LIST button at the top of the database window may be used to quickly toggle between LIST and FORM view formats, without altering the actual view definition.

1.57 Loading Views

Selecting LOAD from the VIEW menu displays a file requester, with which view files may be selected and loaded from disk. Multi-select is not available in the requester; only one view may be loaded at a time.

By default, the requester displays only files with the default filename extension for QuickFile views, which is ".View". However, view files may have any name; if views exist with non-standard names, simply clear the pattern string to make them visible in the requester.

When a view is loaded, it becomes the current view and the database window display changes accordingly. If fields existing in the view definition cannot be located in the database definition, a requester is displayed to notify the user that fields are missing. This can be expected if fields have been deleted, or field names have been modified. The view definition is not automatically modified to reflect the missing views.

Fields in the view and database definitions are associated by name. If a view file for a database other than the current one is loaded, only those fields which have the same name in both databases are displayed.

1.58 Saving Views

Selecting SAVE from the VIEW menu saves the current view to disk, whether any modifications have been made or not. If the current view does not yet exist as a disk file, a file requester is displayed to confirm the name, which by default appears in the requester as the name given the view when it was defined , with the extension ".View" (if not already specified in the definition, and if the name is 23 characters or less).

Selecting SAVE AS from the VIEW menu displays a file requester with which to specify a new filename to save the current view as. By default, the name of the current view appears in the requester, with the extension ".View" if it was not already specified when the view was defined.

Note that view files are not required to have the ".View" filename extension. They may have any legal filename.

The size and position of view fields and database display windows are saved with the views.

1.59 Resetting Field Positions in Form Views

Selecting RESET FORM from the VIEW menu resets all field positions for the current view to the default positions, and affects FORM views only. Each field in the view is displayed on a separate line, with no blank lines between them. Field sequence is maintained and the LIST display is not affected. This may be useful if fields have been added or deleted from a view, which may result in large gaps or overlapping fields in the display.

1.60 Selecting an Index

Selecting INDEXES from the ORDER menu displays a requester listing all available indexes for the current database. The list includes the temporary index SELECTED , regardless of whether any records are currently selected, and may also include the temporary index SORTED if the database has been custom-sorted during the current session.

The index currently in use is highlighted. A different index may be selected with the mouse, or by scrolling through the list with the UP and DOWN arrow keys.

At the bottom of the requester are OK, FREE and CANCEL buttons. Selecting OK causes the highlighted index to be used and closes the requester. An index may also be selected and used in one step by double-clicking on it in the list, which also closes the requester.

Either of the temporary indexes SORTED (if listed) and/or SELECTED may be purged from memory by selecting it in the list, and then selecting the FREE button. Note that freeing the SELECTED index de-selects all records that were selected, but does not remove the index name from the list. If SELECTED is made the current index when no records are selected, a blank record is displayed.

The permanent indexes, of which there must remain at least one, may only be modified or deleted via the INDEXES panel on the right side of the DEFINE FILE requester.

1.61 SORTED Index

SORTED is the name of a temporary index created when a database is custom-sorted . If the database is re-sorted again in the same session, the previous SORTED index is replaced by a new one. The index can be purged from memory from within the SELECT INDEX requester.

1.62 SELECTED Index

SELECTED is the name of a temporary index created when a database is opened. It consists of all database records that have been selected - usually the results of a query . Records may also be manually selected.

SELECTED becomes the current index automatically upon completion of a query, and may also be made the current index from within the SELECT INDEX requester, or by selecting SHOW SELECTED RECORDS from the SELECTION menu. In addition, users may toggle between all and SELECTED records with the ALL/SEL button at the top of the database window. If no records have been selected and SELECTED is made the current index, a blank record is displayed.

While SELECTED is the current index, it is automatically updated as records are modified or deleted . Note that if a record in the SELECTED index has been modified so that it no longer matches the criteria of the query that placed it there, it is not automatically de-selected, and therefore is continued to be displayed in the index, though its position in the index may change if any of the permanent index field values were modifed. Note also that any new records inserted are not automatically selected, and therefore are not displayed in the index.

When a database is first opened, the SELECTED index exists, but is empty, as no records have been selected and no queries performed yet. Records may be added to or removed from the index by manually selecting or de-selecting them, but every time a new query is performed, the records that were previously selected are replaced by the results of the new query, which may be none if no matching records were found.

The SELECTED index may be purged from memory from within the SELECT INDEX requester. The name still appears in the list after being purged, but it is empty until records are again selected or a query is performed.

1.63 Sort Requester

The SORT requester is displayed when SORT is selected from the ORDER menu, and when the ORDER button is selected from within the QUERY requester. It is nearly identical to the INDEX requester, except that the name of the index is SORTED and cannot be modified, and the index may not be made unique.

Sorting effectively creates a temporary index named SORTED and makes it the current index. The SORTED index is updated automatically as records are inserted, deleted and modified. The index is discarded when the database is closed, but until then it will not be necessary to re-sort to have new or modified records displayed in the desired sequence.

Any number of fields may be utilized for a single sort. If a sort is performed while SELECTED is the current index, only the selected records are sorted and displayed.

The technique used for sorting requires that all sort fields are resident in memory, so record buffers may be freed to increase the memory available to the sort. Disk activity will likely increase after a sort as buffers are reloaded. If RAM availability is a concern, it may help to sort using less than the full length of long fields.

1.64 Show Sorted

Selecting SHOW SORTED from the ORDER menu makes SORTED (if it exists) the current index , if it exists. SORTED is a temporary index created when a database is custom-sorted into a sequence other that those specified by the permanent indexes defined for it, and is made the current index at that time. Any index may be selected for use at any time. This menu item simply provides a shortcut to switch to and from the SORTED index quickly.

1.65 Rebuild Index

Selecting REBUILD INDEX from the ORDER menu item rebuilds the current index from the data file. This may become necessary if the index and data file are inconsistent for some reason (e.g. a system failure), and is recommended if the program is failing with a "Block not found" message, or any messages to the effect that QuickFile could not find a record it searched for.

1.66 Query Requester

Selecting QUERY from the SELECTION menu displays the QUERY requester. Using this requester, users may specify multiple criteria to search for in database records, and have the matching records displayed in a special, temporary index named SELECTED . The selected records may also optionally be custom-sorted into a sequence other than that of the default permanent index, which is the sequence that is used if no sort sequence is specified, even if a different permanent index is in use when the query is initiated. The query may be performed on all database records, or only on those matched by a previous query (if any). Commonly-performed queries may be saved to, and loaded from disk, if desired.

The requester components are:

Records

A cycle gadget which determines whether the query is performed on ALL records in the database, or only on previously SELECTED records, if any.

Order

Selecting this button displays the SORT requester, with which a custom sort sequence may be specified for the results of the query. Note that if no sequence is specified, the results of the query is sorted in the order determined by the default permanent index and not necessarily the index in use when the query is started.

Criteria

This is the unnamed listview which appears in the center of the requester, in which any search criteria specified are displays. A bar indicates the currently selected criteria set, if any.

New

Selecting this button displays the FIELD SELECTION DETAILS requester so that a new set of search criteria may be specified. If an existing criteria set is highlighted in the CRITERIA listview when the button is selected, the new criteria set is inserted above it.

Modify

Selecting this button with an existing criteria set highlighted in the CRITERIA listview displays the highlighted criteria set in the FIELD SELECTION DETAILS requester for editing.

Delete

Selecting this button deletes the highlighted criteria set, if any, from the criteria list. No confirmation is asked.

Load

Selecting this button displays a file requester, with which a previously defined and saved query may be selected to load from disk. By default, the pattern string for the requester is "#?.qry"; however, saved queries may have any filename. Note that the criteria sets specified in the loaded query replace any and all criteria sets currently in the criteria list.

Save

Selecting this button displays a file requester, with which a filename may be specified to save all criteria sets currently in the criteria list, and sort sequence (if specified), to disk. By default, the pattern string for the requester is "#?.qry"; however, queries to be saved may have any filename.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK begins the query. When completed, the matching records are placed in a temporary index named SELECTED , which then becomes the current index.

1.67 Field Selection Details Requester

This requester is displayed when the NEW or MODIFY button is selected from the QUERY requester. If NEW is selected, a new search criteria set may be specified. If MODIFY is selected while an existing criteria set is highlighted in the CRITERIA listview in the QUERY requester, the highlighted set is displayed for editing.

The requester components are:

Logic

The logic to be used when multiple criteria have been specified, only available for criteria listed after the first one in the QUERY requester. This dermines how the current the current criteria is to be considered in conjunction with the one listed above it. Two types of LOGIC are available:

AND Both criteria must be met for records to be matched

OR Either criteria must be met for records to be matched

If more than two criteria are specified and a combination of AND and OR is used, certain precedence rules apply. The list of criteria is separated into groups at OR criteria. For example:

Group 1 [Criteria 1] (first in list)

AND [Criteria 2]

AND [Criteria 3]

Group 2 OR [Criteria 4]

AND [Criteria 5]

Group 3 OR [Criteria 6]

Records are matched in this case if all criteria in group 1 OR group 2 OR group 3 are satisfied.

Each new criteria added to the list is OR by default. Note that if a new criteria is inserted at the top of the list, the criteria that was first before the new one was inserted will now have logic, which is OR unless modified by the user.

Available Fields

A listview displaying all fields defined for the current database. The highlighted field is searched for the search strings during the query. By default, the field at the top of the list is selected when the requester is opened for new criteria to be specified. A different field may be selected with the mouse, or by scrolling through the list using the UP and DOWN arrow keys.

Operator

The operator used, which determines how the search field is to be matched. The available operators and their corresponding matching methods are:

Operator Matches Field Values...

============ ==

Like ...containing either search value anywhere within it

Equal ...equal to either search value

Between ...equal to or between VALUE 1 and VALUE 2

Sounds Like ...whose first word sounds like either search value

Not Like ...NOT containing either search value anywhere within it

Not Equal ...NOT equal to either search value

Value 1

The primary value to search the selected field for. May be left empty to search for empty fields.

Case is always ignored. If case sensitivity is desired in searches, a macro must be used.

For FLOATING , DATE and TIME fields, search strings may be entered in any of the formats that are acceptable for entering data in the fields themselves. For instance, "17 3 2000" and "17/mar/2000" will both match "17-Mar-2000" in a DATE field, "1 20" and "1.20.0" will both match "01:20:00" in a TIME field, and "4" will match "4.000" in a FLOATING field.

Value 2

The secondary value to search the selected field for; required for BETWEEN searches and optional (ignored if left empty) for use with all other operators. The word AND or OR is displayed between VALUE 1 and VALUE 2 in the requester, depending on which operator is selected. AND is used with BETWEEN, NOT LIKE and NOT EQUAL; OR is used with all others.

Examples:

Occupation EQUAL "programmer"

AND City EQUAL "sydney"

OR Occupation EQUAL "programmer"

AND City EQUAL "paris"

These criteria will find all programmers who live in Sydney or in Paris. Note that OCCUPATION had to be repeated, due to the grouping by OR criteria; however, the same result could also be achieved by entering search strings in VALUE 1 and VALUE 2 as follows:

Occupation EQUAL "programmer"

AND City EQUAL "sydney" OR "paris"

The following will find all programmers who live in Sydney, and EVERBODY who lives in Paris:

Occupation EQUAL "programmer"

AND City EQUAL "sydney"

OR City EQUAL "paris"

The following will find all persons named John, except those name John Smith:

FirstName EQUAL "john"

AND LastName NOTEQUAL "smith"

1.68 Search Operators

The six search operators are explained with examples below. Note that case is ignored in searches. Note also that when searching in FLOAT , DATE or TIME fields with any of the operators except SOUNDS LIKE, search strings may be entered in any of the alternate formats that are acceptable for data entry in the fields.

Like

Matches fields that contain either search string anywhere within them.

Search String Field Type Matches

============= ========== ==

"bit" CHARACTER "The Hobbit", "Bitter", "two bits", etc.

"3 5 6" TIME "03:05:06"

Equal

Matches fields only if they equal either search value (except for case).

Search String Field Type Matches

============= ========== ==

"dog" CHARACTER "Dog", "dog", "DOG", "dOg", etc.

"17 3 00" DATE "17-Mar-2000"

Between

Matches fields whose values are equal to, or are between, the search values. Intended mainly for use with INTEGER, FLOAT, DATE and TIME fields , but may also be used with the other types, in which case string comparisons are performed.

Search String(s) Field Type Matches

================== ========== ==

"0", "6" INTEGER "0", "1", "2", "3", "4", "5", "6"

"a", "cf" CHARACTER "a", "A ", "book", "Center", etc.

"1 1 00", "1 2 00" DATE "01-Jan-2000", "02-Jan-2000"...

"01-Feb-2000"

Sounds Like

Matches fields in which the first word sounds like either search string. This is a bit of a gimmick and is far from perfected, but may be useful. A version of the old soundex technique is utilized, which requires that the first character is known, and has a number of other limitations. Note especially that only the first word of field values are considered.

Search String Field Type Matches

============= ========== ==

"character" CHARACTER "Chapter", "Chronicle", "Chicago", etc.

"the" CHARACTER "The", "This", "Thinking", "Two", etc.

"we" CHARACTER "we", "why", "who", etc.

"smith" CHARACTER "Smith", "Smyth", "Smythe", etc.

Not Like

Matches fields that DO NOT contain either search string anywhere within them (opposite of LIKE).

Not Equal

Matches fields that DO NOT equal either search value (opposite of EQUAL).

1.69 Select/UnSelect a single record

Selecting SEL/UNSEL RECORD from the SELECTION menu adds the current record to the SELECTED index, if the current index is one other than SELECTED. If SELECTED is the current index, the current record is removed from it. If the current record is already selected, but SELECTED is not the current index, nothing happens. A message reflecting which action was performed is displayed in the title bar of the database window.

In FORM views, the current record is the one displayed in the database window. In a LIST view, the current record is the one highlighted, or the first (topmost) record in the window if none are highlighted.

1.70 Show All or Selected Records

Selecting SHOW SELECTED RECORDS from the SELECTION menu displays the SELECTED index, consisting of all currently selected records -- either the results of a query , or records which were manually selected, or a combination of both. If there are no currently selected records, a blank record is displayed.

Selecting SHOW ALL RECORDS from the SELECTION menu displays all records using the current permanent index.

Note that the display can also be toggled between ALL and SELECTED records via the ALL/SEL button at the top of the database window.

1.71 Printing Records

Selecting PRINT DISPLAYED RECORDS or PRINT CURRENT INDEX from the PRINT menu displays the PRINT requester. DISPLAYED RECORDS allows printing of all records currently displayed in the database window, which is always only a single record if the current view type is FORM . CURRENT INDEX allows printing of all records in the current index .

Apart from the settings available in this requester, what is printed and how it is printed can also be affected by the current view. Only those fields included in the current view are printed; view field labels are only printed for the fields if the LABELS box is checked in the DEFINE VIEW requester. Additionally, certain settings are only available for FORM views, and certain other settings only for LIST views. It may be necessary to create and customize a view specifically to achieve the desired printing results. The settings used here are specific to the current view, and are saved with it if and when the view is saved.

The requester components are:

Title

An optional title for the printed report. If used, it is automatically centered between the left and right margins set below, and the current system date is also printed on the title line at the left margin, and page number at the right margin. This line is printed even if only a single space character is entered here. Note that if the distance between the left and right margins is not wide enough to accommodate the title, date and page number, the line may be garbled.

Left Margin

By default, this value is the same as the Workbench printer preference setting for the left margin, and may be changed. Note that this value must be greater than 0, even though 0 is an acceptable value for Workbench. If 0 or less is entered here, the gadget remains active and the message "Value required for this field" is displayed in the title bar of the requester.

Right Margin

By default, this value is the same as the Workbench printer preference setting for the right margin, and may be changed. The value must be greater than that for the left margin.

Lines/Page

How many lines QuickFile should print on each page, which by default is equal to:

(<prefs page height> x <prefs line spacing>)-8

This allows for top and bottom margins of four lines each. QuickFile sends a Form Feed after each set of this many lines (unless the OUTPUT TO setting, below, is WINDOW or FILE), which may be a limitation with some printers. Please contact the author if any problems are encountered.

Entering a value of 0 here causes the title line and Form Feeds to be suppressed.

Spacing

By default, this is set to the same value as the Workbench printer preference setting for LINES PER INCH, and may be changed, but is ignored if OUTPUT TO, below, is set to WINDOW or FILE. Available values are 6 and 8 LPI.

Pitch

By default, this is set to the same value as the Workbench printer preference setting for PITCH, or character spacing in characters per inch, and may be changed, but is ignored if OUTPUT TO, below, is set to WINDOW or FILE. Available values are:

Pica 10 CPI

Elite 12 CPI

Fine 15-17 CPI

The numbers in parenthesis next to PICA and ELITE indicate how many characters fit on an eight inch line for the

corresponding pitch.

Output To

This determines where QuickFile sends the printed report to. Available settings are:

PRT: The preferences printer

File An ASCII file. A file requester is displayed to specify a

path and name when printing is started.

Window The database window. Print data will temporarily replace display

of database records in the window, with OK and CANCEL buttons

provided. Horizontal and vertical scrolling are not available.

Lines are truncated at the right edge of the window, if necessary.

If there is more data to be printed than fits in the window

vertically, selecting OK displays the next window; otherwise the

window resumes displaying records.

If WINDOW or FILE is selected for output, the printer settings for SPACING and PITCH are ignored.

View Line Length

This informational line displays the sum of all view field lengths, plus an additional space between fields, for LIST views only. If the value is greater than the print width (<RIGHT MARGIN> - <LEFT MARGIN>), and WRAP FIELDS is not checked in the GROUPS panel (described below), lines are truncated at the right margin.

View Type Settings

The panel displayed on the right side of the PRINT requester depends on whether the current view type is FORM or LIST, and contains settings that are only available for one type or the other. These are:

Setting View

Panel Type Controls printing of...

======= ===== ==

Labels FORM ...records in multiple rows and columns

Groups LIST ...advanced reports and field summaries

At the bottom of the requester are OK and CANCEL buttons. Selecting OK begins the printing process and closes the PRINT requester.

1.72 Label Settings Panel

The LABELS settings panel is displayed on the right side of the PRINT requester only if the current view type is FORM .

Ordinarily, LINES/PAGE should be set to 0 for label printing, to supress QuickFile from sending Form Feeds during printing.

It may be necessary to define a view specifically for label printing to obtain the desired result. Ordinarily, the HEADINGS checkbox should be left unchecked in the DEFINE VIEW requester for label printing, and fields should be arranged in the upper left corner of the view.

The panel components, all of which may be left at 0 to print a single column of labels, using the number of lines used in the current view as the LABEL HEIGHT, are:

Across

The number of columns of labels to fit on a page. Note that this value, WIDTH (explained below) and the print width (<RIGHT MARGIN> - <LEFT MARGIN>) are all mutually dependent upon each other, in that ((<ACROSS> x <WIDTH>) + (<ACROSS> - 1)) must be less than or equal to the print width. Otherwise, when the OK button in the PRINT requester is selected, this gadget is reactivated (the cursor is re-placed in it), and the message "Labels wider than print line" is displayed in the title bar of the requester.

Width

The width (in number of characters) of each column. One or more spaces is added between columns; increasing this value increases the number of spaces added. See note for LABELS ACROSS, above, regarding limitations of this value.

Down

The number of labels to print in one column before proceeding to the next column. For example:

Settings Printed Sequence

========== ================

ACROSS = 3 1 5 9

DOWN = 4 2 6 10

3 7 11

4 8 12

13 17 21

14 18 22

15 19 23

16 20 24

[etc.]

Settings Printed Sequence

========== ================

ACROSS = 3 1 2 3

DOWN = 1 4 5 6

7 8 9

10 11 12

[etc.]

Height

The height (in number of lines) of each label. An additional blank line is added between labels in a column. If set to 0, the number of lines in the current view is used. Note that if this is set to a value greater than 0 and less than the number of lines in the view, labels will overlap.

1.73 Groups Panel

The GROUPS panel is displayed on the right side of the PRINT requester only when the current view type is LIST . In it, fields may be organized into REPORT GROUPS (also known as CONTROL BREAKS), which enables advanced control over how records are printed. GROUP fields are only printed when their values change, allowing a hierarchical structure to be established for the resulting report. Each group may include several fields, but normally only one field is used per group.

Summary values may also be calculated and printed for multiple fields with each group.

Note that records must be sorted correctly in order to acheive the desired result with GROUP printing. Generally, sorting should be done by the fields that make up the groups, with those of the higher groups used first.

The panel components are:

Groups

This listview displays all groups defined, along with their types.

Below the listview are ADD, MODIFY and DELETE buttons. Selecting ADD or MODIFY displays the GROUP DETAILS requester. If ADD is selected, all values in the requester are blank so that a new group may be defined. New groups are inserted above the group that is highlighted in the listview. To add a new group to the bottom of the list, "===End===" should be highlighted before the ADD button is selected.

If MODIFY is selected, the definition of the highlighted group is displayed in the GROUP DETAILS requester for editing. Selecting DELETE removes the highlighted group from the listview. No confirmation is asked.

The available group types are REPORT, PAGE, SUBTITLE and NORMAL. Certain restrictions apply to how the different types may be used in combination with each other, and are explained in the GROUP DETAILS section.

Summary Only

If checked, only total and sub-total summary lines are printed for the selected group. The group field values are printed with the summary values for the group. Note that a group of type REPORT must be defined for this to function. See the AddressBook example database and Demo.quickfile macro . Note also that an extra 4 characters are added at the start of each summary line printed for the summary type as defined in the GROUP DETAILS requester.

Wrap Fields

If checked, lines that are longer than the print width (<RIGHT MARGIN> - <LEFT MARGIN>) are wrapped, at word boundaries if possible, to succeeding lines as necessary in the printed report.

1.74 Group Details Requester

The GROUP DETAILS requester is displayed when the ADD or MODIFY button is selected in the GROUPS panel at the right of the PRINT requester, and is used to define and modify report groups. Its components are:

Group

A name for the group, which is printed on summary lines.

Type

The group type. Available types and their corresponding uses are:

Report Allows SUMMARIES (see below) to be generated for the entire

report. No GROUP fields (see below) are defined for this type of

group. If used, must be the first group listed in the PRINT

requester.

Page A new page is started each time the GROUP fields values change.

GROUP fields are printed before column headings.

Subtitle GROUP fields are printed on a separate line each time their

values change. Reduces line length, and works best when the

same values are used in a large number of records.

Standard GROUP field values are printed only on the first line for each

change they change.

See the Report Group examples for a demonstration of usage of the various types.

Multiple levels of GROUPS of the same type may be defined, but they must be listed from highest level to lowest in the PRINT requester.

View Fields

A listview displaying all fields available in the current view. A bar highlights the current VIEW field.

Group Fields

A listview displaying all VIEW fields that are to be used in the current group. A bar highlights the current GROUP field. A new group begins in the resulting report when the value of any of these fields change.

No GROUP fields are required or allowed for a REPORT group.

Below the listview are INSERT and DELETE buttons. Selecting INSERT adds the highlighted VIEW field to the listview. If a GROUP field is highlighted when INSERT is selected, the new VIEW field is inserted above it. To add a new VIEW field to the bottom of the list, "== End ==" should first be highlighted.

Selecting the DELETE button removes the highlighted GROUP field from the list. No confirmation is asked.

Summaries

A listview displaying all SUMMARY fields (fields to be summarized in the printed report) for the current group. Below the listview are INSERT and DELETE buttons, which function the same as for GROUP FIELDS. Below the buttons are checkboxes for the available summary types. The status of the checkboxes determine which type(s) of summaries are to be printed for the highlighted SUMMARY field. The types are:

Tot (total) The sum of all values for the selected field for each

different GROUP field value, or for ALL records if the

group type is REPORT.

Cnt (count) The number of records for each different GROUP field value, or ALL records for REPORT groups.

Avg (average) The average of all values for the selected field for each

different GROUP field value, or ALL records for

REPORT groups.

More than one box may be checked for each SUMMARY field; however, TOT and AVG may only be used with FLOAT, INTEGER and TIME fields, while CNT may be used with any field type .

Each summary type checked is printed on a separate line. A label (Tot, Cnt or Avg) is printed at the beginning of the line. The name of the group the summary is defined for is printed after the type label, but only for the first summary printed for the group. Note that field order in the current view may need to be rearranged for summaries to be printed correctly. Summary fields should be arranged so that they are NOT printed first or near the beginning of lines, as there may not be room for their summary values to be printed in the summary lines. See the examples . Note also that it is inadvisable, though possible, to use GROUP fields as SUMMARY fields when the GROUP type is PAGE or SUB-TITLE, as the summary values will not be printed in positions corresponding to the field values in this case.

At the bottom of the requester are OK and CANCEL buttons. Selecting OK accepts the new or modified group, closes the GROUP DETAILS requester and reopens the PRINT requester, updating the information displayed in the GROUPS panel as necessary.

1.75 Report Group Examples

Database used

=====================

Field Name Type

---------- ---------

FirstName Character

LastName Character

Gender Cycle

Age Integer

City Character

Color Cycle

Amount Floating

Example 1: Report and Standard Groups

Index Fields

============

Gender

LastName

FirstName

Group 1 Group 2

======================== ========================

Group Type Report Group Type Standard

Group Field (none) Group Field Gender

Summary Fields Type Summary Fields Type

-------------- ---- -------------- ----

Gender Cnt Gender Cnt

Age Avg Age Avg

Amount Tot Amount Tot

Resulting report:

```
Sun Apr 30 2000. Report/Standard Page 1
FirstName LastName Gender Age City Color Amount
---------- ---------- ------ --- -------- ------- --------
Silvia Brooks Female 29 Sydney Blue 2261.88
Barbara Calhoun 30 Tokyo Yellow 158.13
Elizabeth Holden 19 Paris Green 1756.80
Linda James 29 Berlin Orange 741.69
Francine Meck 26 Sydney Red 4234.18
Valerie Moore 25 Berlin Green 2543.52
Ann Rickenson 31 Naples Orange 2971.05
Nancy Travers 20 Atlanta Blue 672.84
Tot Gender 15340.09
Cnt 8
Avg 26
Dick Crocker Male 19 Berlin Indigo 581.97
Dennis James 33 Paris Yellow 1600.50
Tom Jones 22 Paris Green 165.34
Harry Krimmer 26 Paris Red 142.93
Peter Lane 20 Berlin Blue 662.81
Kurt McDaniels 23 Atlanta Blue 1875.65
John Santiano 22 Sydney Indigo 357.15
Tot Gender 5386.35
Cnt 7
Avg 24
Tot Personnel 20726.44
Cnt 15
Avg 25
```

Example 2: Report and Standard Groups, Summary Only

All index fields and group settings are the same in this example as in example 1, however, the "Summary Only" checkbox was checked prior to printing this report:

```
Sun Apr 30 2000. Report/Standard Summary Only Page 1
FirstName LastName Gender Age City Color Amount
---------- ---------- ------ --- -------- ------- --------
Tot Female 15340.09
Cnt 8
```

```
Avg 26
Tot Male 5386.35
Cnt 7
Avg 24
Tot Personnel 20726.44
Cnt 15
Avg 25
```

Example 3: Page Group

```
Index Fields
============
City
Amount
Group
============================
Group Type Page
Group Field City
Summary Field Types
------------- -------------
Amount Tot, Cnt, Avg
```

Resulting report:

```
Mon May 01 2000. Page Group Page 1
City : Atlanta
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Kurt McDaniels Male 23 Blue 1875.65
Nancy Travers Female 20 Blue 672.84
Tot City 2548.49
Cnt 2
Avg 1274.24
Mon May 01 2000. Page Group Page 2
City : Berlin
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Valerie Moore Female 25 Green 2543.52
Linda James Female 29 Orange 741.69
Peter Lane Male 20 Blue 662.81
Dick Crocker Male 19 Indigo 581.97
Tot City 4529.99
Cnt 4
```

```
Avg 1132.50
Mon May 01 2000. Page Group Page 3
City : Naples
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Ann Rickenson Female 31 Orange 2971.05
Tot City 2971.05
Cnt 1
Avg 2971.05
Mon May 01 2000. Page Group Page 4
City : Paris
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Elizabeth Holden Female 19 Green 1756.80
Dennis James Male 33 Yellow 1600.50
Tom Jones Male 22 Green 165.34
Harry Krimmer Male 26 Red 142.93
Tot City 3665.57
Cnt 4
Avg 916.39
Mon May 01 2000. Page Group Page 5
City : Sydney
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Francine Meck Female 26 Red 4234.18
Silvia Brooks Female 29 Blue 2261.88
John Santiano Male 22 Indigo 357.15
Tot City 6853.21
Cnt 3
Avg 2284.40
Mon May 01 2000. Page Group Page 6
City : Tokyo
FirstName LastName Gender Age Color Amount
---------- ---------- ------ --- ------- --------
Barbara Calhoun Female 30 Yellow 158.13
Tot City 158.13
Cnt 1
Avg 158.13
```

Example 4: Sub-Title Group

```
Index Fields
============
Color
LastName
FirstName
Group
========================
Group Type Sub-Title
Group Fields Color
Summary Field Types
------------- --------
Amount Tot, Cnt
```

Resulting report:

```
Sun Apr 30 2000 Sub-Title Page 1
FirstName LastName Gender Age City Amount
---------- ---------- ------ --- -------- --------
Color : Blue
Silvia Brooks Female 29 Sydney 2261.88
Peter Lane Male 20 Berlin 662.81
Kurt McDaniels Male 23 Atlanta 1875.65
Nancy Travers Female 20 Atlanta 672.84
Tot Color 5473.18
Cnt 4
Color : Green
Elizabeth Holden Female 19 Paris 1756.80
Tom Jones Male 22 Paris 165.34
Valerie Moore Female 25 Berlin 2543.52
Tot Color 4465.66
Cnt 3
Color : Indigo
Dick Crocker Male 19 Berlin 581.97
John Santiano Male 22 Sydney 357.15
Tot Color 939.12
Cnt 2
Color : Orange
Linda James Female 29 Berlin 741.69
Ann Rickenson Female 31 Naples 2971.05
Tot Color 3712.74
Cnt 2
```

Color : Red

Harry Krimmer Male 26 Paris 142.93

Francine Meck Female 26 Sydney 4234.18

Tot Color 4377.11

Cnt 2

Color : Yellow

Barbara Calhoun Female 30 Tokyo 158.13

Dennis James Male 33 Paris 1600.50

Tot Color 1758.63

Cnt 2

1.76 Buffer Control

Selecting BUFFERS from the OPTIONS menu displays a requester showing information regarding the usage of RAM buffers in the current database, and allowing the number of buffers to be temporarily changed. The information shown includes:

Blocks in File

The size of the current database expressed in blocks, which is also the number of buffers required to hold the entire database in memory.

Buffers in Use

The number of ram buffers currently allocated. This starts at 1 when a file is first opened.

Buffer Size

The amount of RAM required for each buffer allocated.

Maximum Buffers

The maximum number of buffers to be used. By default, this is the same as the number of buffers specified for use in the INPUT/OUTPUT settings panel of the DEFINE FILE requester, and may be changed for the current session only. The next time the file is opened, the maximum will revert to the value specified in the database definition, where it may be changed permanently at any time if desired.

1.77 Running ARexx Macros

Selecting AREXX MACRO from the OPTIONS menu displays the AREXX MACRO requester, which consists of a string gadget and buttons labeled OK, FILE and CANCEL. A file or inline macro may be run by entering it in the string gadget and selecting OK.

The path for a file macro need not be specified in the string if it resides within a directory named "ARexx" that is within the current directory (QuickFile's home directory, if started from Workbench). If a relative path is specified, it is assumed to be relative to the current directory, rather than to the "ARexx" directory.

The filename extension of a file macro need not be specified if it is ".quickfile".

If an inline macro is specified in the string, it must be enclosed in double-quote marks and begin with a comment (which can be blank). For example:

"/**/; options results; [commands, etc.]"

Selecting OK runs the specified macro and closes the requester. If the name of a file macro was specified and the the file could not be located, or it is not a valid macro, QuickFile displays a informational requester with the message "Macro not found".

Selecting the FILE button displays a file requester with which a file macro may be selected to run. By default, the path of the requester is the "Arexx" directory. The specified macro, if valid, is run as soon as OK is selected.

AREXX MACRO is disabled if "rexxsyslib.library" is not available in LIBS:. RexxMast must also have already been run prior to running a macro.

1.78 Running Direct Macros

Selecting DIRECT MACRO from the OPTIONS menu displays the DIRECT MACRO requester, which consists of a string gadget and buttons labeled OK and CANCEL . Any single QuickFile command may be run by entering it in the string gadget and selecting OK. A file macro may be run by using the CALL command, although it would make more sense to use the AREXX MACRO requester to do this.

1.79 Configuring QuickFile

Selecting CONFIGURE from the OPTIONS menu displays the CONFIGURATION requester, in which the following global settings and values used by QuickFile may be configured:

Memory Save

If checked, this forces QuickFile to reduce memory usage, but also causes sorting to take longer. By default, this is checked when a configuration file has not yet been saved. Unchecking it is recommended if RAM availability is not a concern.

Online Help

If checked, online, context-sensitive help is available from within Quickfile and any of the major requesters by pressing the HELP key. By default, this box is checked when a configuration file has not yet been saved. Unchecking it reduces memory usage. Note that AmigaGuide and/or MultiView must also be installed for online help to be available.

Fonts

A font can be specified for each of three general uses in QuickFile. These are:

Standard Used in FORM views and most gadgets; may be proportional.

List A fixed width font used for LIST views and listview gadgets

in various requesters.

Report A fixed width font used to display reports printed to the

window.

Each font field has an arrow button next to it. Selecting the arrow displays a font requester, with which a new font and/or size may be selected or specified. Note that some gadget imagery may be garbled if very wide fonts are used.

At the bottom of the requester are SAVE, USE and CANCEL buttons. Selecting SAVE closes the requester, uses the current settings and saves them to a file named "QuickFile.config" in QuickFile's home directory. Selecting USE closes the requester and uses the current settings for this session, but does not save them to disk. The next time QuickFile is run, the settings will revert to those previously saved, or the program defaults if none were saved.

1.80 Function Key Configuration

Selecting FUNCTION KEYS from the OPTIONS menu displays the FUNCTION KEY requester, in which the function keys, with and without qualifiers, may be configured to run individual QuickFile macro commands. Multiple configuration files may be saved and loaded. If it exists, a file named "QuickFile.keys" in QuickFile's home directory is used when QuickFile is started, and is loaded and displayed the first time this requester is opened.

The requester components are:

Qualifier

The qualifier key to use with function keys. The available choices are:

None No qualifier

Alt Either ALT key

Shift Either SHIFT key

Ctrl The CONTROL key

F1 through F10

String gadgets for configuring each of the ten function keys. Any single QuickFile command may be entered into each of these. To specify a file macro to be run by the key, the CALL command may be used. In combination with the four qualifier choices, up to 40 key combinations may be configured.

Load

Selecting this button displays a file requester, with which a previously saved function key configuration file other than "QuickFile.keys" may be selected and loaded. When a new configuration file is loaded into the requester, any existing key definitions in the new file replace those currently displayed for the corresponding keys. For any keys defined in the current file but not in the file being loaded, the current settings continue to be displayed. This allows the user to merge several files, if desired.

Clear

Selecting this button causes the contents of all string gadgets to be cleared, which should be done prior to loading another file if merging the two files is not desired.

Save

Selecting this button uses the current settings, saves them to a file named "QuickFile.keys" in QuickFile's home directory, and closes the requester. Note that SAVE AS (below) should be used instead of SAVE if a key definition file other than "QuickFile.keys" was loaded, and the user wishes to re-save to the same file.

Save As

Selecting this button uses the current settings, closes the FUNCTION KEY requester and displays a file requester, with which a file path/name other than "QuickFile.keys" may be specified or selected to save the current key definitions to. By default, the pattern string hides all files other than those ending in ".keys".

Use

Selecting this button uses the current settings and closes the requester without saving them.

1.81 troubleshooting

Problem: A new field is added to an existing database, but it is not displayed in the current view .

Solution: New fields are not automatically added to previously saved views. To add them, select ALTER from the VIEW menu.

Problem: Error message "GetRec: Rec not found" received.

Solution: This is usually due to a mismatch between the index and data files, and can be corrected by either rebuilding the index, or by deleting the index file (named "<filename>.<indexname>X"), in which case it is rebuilt automatically the next time the file is opened.

Problem: A duplicate record exists in an index.

Solution: Either reorganize the database, or rebuild the index.

Problem: A macro that was intended to modify one or more fields in all records in the current index has modified some records more than once and others not at all.

Solution: This is due to the macro modifying one or more fields that are used in the current index, which results in the sequence of records possibly changing each time a record is updated. An index which does not use any of the fields to be modified should be selected as the current index, or a custom sort performed, prior to running the macro.

Problem: Changes to a database could not be saved due to a program error, system or power failure.

Solution: Records that were modified or inserted since the database was last saved will more than likely have to be re-done. Otherwise, the indexes should be rebuilt. Note that due to the way buffering works, modifications to a database are not necessarily saved in the order that they occured.

Problem: Memory shortage.

Solutions include:

1) Enable MEMORY SAVE and/or disable ONLINE HELP in the CONFIGURATION requester.

2) Define only a single index.

3) Reduce the number of buffers, temporarily in the BUFFERS requester, or permanently in the input/output details section of the DEFINE FILE requester. Note that this may be unacceptably slow for floppy drive users, however.

4) When using QuickFile in conjunction with an automatic compression program such as XFH, reduce the number of buffers to 3. Otherwise, the database is held in RAM: by both QuickFile and XFH.

Known Bugs, Undesireable Behaviors and Other Limitations

Disk thrashing can occur on program startup if QuickFile is started with a database that contains images and ONLINE HELP is enabled, due to QuickFile trying to load an image while AmigaGuide is scanning the QuickFile.guide file.

Unless a custom sort sequence is specified when performing a query , the sequence of records returned is always determined by the default index (the index used when the database if first opened).

Sometimes when a field is dragged off the bottom of the database window, the drag box is not erased when the mouse button is released. The display is usually redrawn properly when the horizontal scroll bar is clicked on with the mouse, or if the window is cycled.

Fields are clipped at the right window border, but if they overlap the bottom border (or top), they won't be visible at all until scrolled into view with the horizontal scroll bar.

Images are not scaled, and palettes are not remapped for IMAGE fields.

Switching views from within a macro causes a series of window redraws to occur after the macro has completed, due to window resize messages sent by Intuition, which are not received by QuickFile until the macro is finished.

When the macro command QUERY is used to get the path used to open a database, the resulting path has a trailing slash (/) (when applicable) if the database was opened with the OpenFile command, but NOT if the database was opened by selecting OPEN or LOAD from the PROJECT menu.

It is possible to set numerical fields to out-of-range values using the macro command PUTFIELD. See INTEGER and TIME fields.

Consulting the Author

When writing to the author regarding a problem with QuickFile, it is highly recommended that a copy of the database with which the problem was experienced is also attached, as well as detailed information including which version of QuickFile was being used, the system it is used on, and instructions on how to duplicate the problem.

1.82 Program Limits

General Limits

Max...

============================

Name

Item Number Length Length

============== ======== ======== ========

Fields 250 250 12

Indexes - - 14

Views - - 30

Records 16777215 32767 -

Buffers 65535 - -

Records/Buffer 255 - -

Note that <MAX RECORD LENGTH> is less than <MAX NUMBER OF FIELDS> x <MAX FIELD LENGTH>.

Each index requires a contiguous area of RAM that is (4 * (<RECORDS> + 200)) bytes in size. Sorting requires a contiguous area of RAM that is (<ALL SORT KEYS> + (8 * <RECORDS>)) bytes in size.

Databases may be larger than available memory, though operation is much faster if the number of buffers is set large enough so that the whole file is contained in RAM.

Field Type Ranges

Field Type Range

========================== ==================================

FLOAT -999999999999999 to 999999999999999

INTEGER -2147483648 to 2147483648

TIME (hours) 0 to 2147483647

DATE (years) 0100 to 9999

CYCLE (number of values) 1 to 32

CYCLE (value length) 1 to 30