

Features

- Generates reports from data in INFINITY/32 files
- Designed for interactive use by nontechnical users
- Allows concurrent access to database files by multiple users
- Allows file linking for reports using data from several files
- Provides optional data security on a user by user or field by field basis
- Easy command input and procedure editing by user
- Formats reports automatically or allows user to determine format
- Selects report data by user specified criteria
- Allows data manipulation before printing
- Allows data modification in file only if optioned by system manager
- Prints totals, averages, maximums, minimums, number of records found
- Gives on-line help
- Adaptable to spoken languages other than English
- Compatible with MODCOMP Tri-Dimensional⁺ under MAX 32 Operating System

QUERY/32

Interactive Inquiry & Report Writer

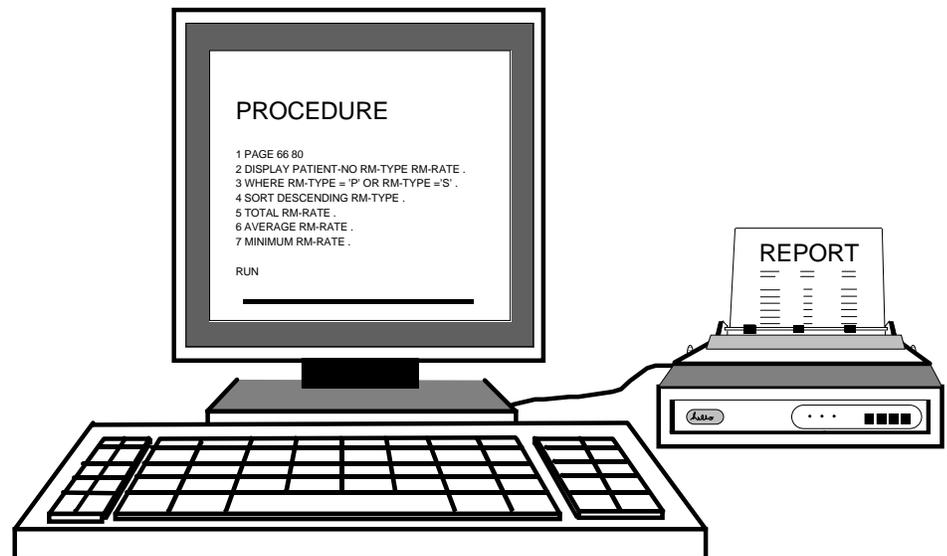


Figure 1: Report Generation via User-Written Procedure

QUERY/32 Interactive Inquiry and Report Writer is a computer program designed to provide controlled access to information stored in INFINITY/32 files. QUERY/32 is devised to allow maximum flexibility, so it can be tailored to meet exactly the changing needs of a wide variety of software and hardware configurations. The only prerequisites for QUERY/32 are a MODCOMP Tri-Dimensional computer system operating under MAX 32, at least one CRT terminal, one printing device (optional), and the INFINITY/32 Database Management System software. QUERY/32 may be operated simultaneously by multiple

users to provide concurrent data access.

QUERY/32 is specifically intended for interactive use by nontechnical personnel. After QUERY/32 has been installed and configured, the nontechnical user is able to enter a series of commands or command sentences specifying to QUERY/32 the data desired for a report and the format for printing the report. These command sentences may be saved as password protected procedures for efficient reuse or modification. Security features assure that sensitive procedures and data are available only to authorized personnel.

FUNCTIONAL DESCRIPTION

System Requirements

- **MODCOMP Tri-Dimensional computer with 1025K or more memory and the MAX 32 Operating System**
- **One or more video terminals**
- **One or more printers (optional)**
- **INFINITY/32 Database Management System software**

System Design

Seven support files are provided with QUERY/32. The first four will be installed with data already entered. QUERY CONSTANTS contains the spelling of each QUERY/32 command (commands shown on pages 3 and 4 plus typical Job Control commands). QUERY ERROR CODES and SORT ERROR CODES contain error numbers and messages for problems that may be encountered when using QUERY/32. QUERY HELP consists of a list of all commands, a description of how each works, and an explanation of each command parameter.

The other three files are the QUERY DICTIONARY, QUERY DIRECTORY, and QUERY RELATIONSHIP files. In order to tailor QUERY/32 for your specific needs and system configuration, data must be entered to these files on site. This can be done by your own personnel following step by step instructions in the QUERY/32 Technical Manual or by LDC personnel for an additional fee.

Entries in the QUERY DICTIONARY determine which INFINITY/32 files and which fields within each file will be available to users of QUERY/32. It also contains instructions for displaying the data and default headings to be used when a request is received for that data on an automatically formatted report.

The QUERY DIRECTORY contains information necessary

for locating the requested data in the INFINITY/32 file, for determining file usage sequence, and for establishing security restrictions.

Entries in the QUERY RELATIONSHIP file are optional. They are only necessary if file linking is desired or if the RANGE command is to be enabled for one or more key data items.

Security

Several levels of security are available when establishing a QUERY/32 system.

Access to each QUERY/32 database is password restricted to keep unauthorized users from accessing data. Cataloged procedures may also be password protected to keep one user from modifying or deleting the procedures of another user. Passwords are blanked out while being typed.

In addition, each data field in each database can be restricted to the view and use of one user, a group of users, or may be made available to all users of a database.

Site Controlled Options

QUERY/32 gives the system manager the ability to control options for the system including print options, sort options, the ability of users to change data in a file, the validity of certain commands (INITIALIZE, etc.), and chaining options when QUERY/32 is exited.

USER INTERFACE

Command Input and Procedure Editing

The QUERY/32 user communicates his inquiries and report requests via entering one or more QUERY/32 command sentences at a terminal keyboard. As the commands are typed, QUERY/32 continuously accumulates the relevant commands into a procedure, which is activated when the RUN command is given. Commands that request information or editing functions are acted upon immediately and are automatically excluded from the accumulation process. Entire procedures may be permanently saved on disk storage by name for later recall and use.

Data Selection and Manipulation

Data categories desired on a report are selected by assigned data item names. The user may then use the IF or WHERE command to exclude data in the categories where specified criteria are not met. The SORT command arranges the data selected into the order specified by the user. For keyed files where the desired data is in the first field of the key and the data item has been entered into the QUERY RELATIONSHIP file, the RANGE command can be used to include only data in those records falling within the specified starting and stopping points in the file.

Various statistics such as averages, maximum and mini-

mum values encountered for selected data items, a count of the number of records selected, and totals on data selected for numeric data items may be requested.

Computations using the LET or COMPUTE commands may be performed on the data selected before it is printed on a report. These computations do not affect data stored in the INFINITY/32 file. However, if the CHANGE or MODIFY commands have been enabled by the system manager, they can be used to execute computations and assignment of new values that will be stored in the INFINITY/32 file.

Report Formats

QUERY/32 provides both automatic and manual report writer capabilities. The DISPLAY, PRINT, or WRITE commands signal the desire for an automatically formatted report. QUERY/32 will use default headings and data formatting instructions from the QUERY DICTIONARY for each item-name requested on the report. The report will be centered according to the page width specified or offset to the right the number of columns specified. For manually formatted reports, the user may use DETAIL, HEADING, BREAK, and NEW PAGE.

On-Line Help

The HELP command may be used at any time for an explanation of an error message or a command's use and format.

Specifications

- **QUERY/32 Task - 56K (sharable) plus 42K for each additional user**
- **Sort Task - 30K**
- **Delivered Support Files - 850K**
- **Site Specific Support Files - 160K (average)**
- **Sort Work Files - 4800K (average)**

ADDENDUM

The following provisions have been established for Software Licensing, Installation, and Maintenance for the QUERY/32 Interactive Inquiry and Report Writer software.

Documentation

Each QUERY/32 license includes two reference and two technical manuals. Additional copies can be purchased.

Licensing

QUERY/32 is a licensed software product and requires receipt of a completed, written LOGICAL DATA CORPORATION PROGRAM LICENSE AGREEMENT prior to shipment. This Agreement provides in part that the software and any part thereof may be used on only the single CPU on which the software is first licensed (provision is made for a backup system), and it may be copied in whole or in part (with the inclusion of the Logical Data Corporation copyright notice and proprietary notice(s) on the software) only for use on such CPU.

Code Availability

QUERY/32 software is provided to customers in object code format.

Software Release Media

The standard release of QUERY/32 is provided on either 9 track 800 or 1600 BPI magnetic tape. Software can be provided on alternate media subject to additional media and labor charges.

Installation

Software may be installed by the customer or by Logical Data Corporation. Installation is configuration dependent. Logical Data Corporation provides telephone support without additional charge to assist customers during installation. On-site installation assistance can be provided by Logical Data Corporation at additional charge. Specific information and fees regarding on-site installation may be

obtained by consulting the LOGICAL DATA CORPORATION SOFTWARE PRODUCT CATALOG or by contacting Logical Data Corporation.

Maintenance

Each QUERY/32 license includes one year of software maintenance, consisting of telephone support for on-site product problems, software corrections, and all enhancements. After the first year the customer may continue maintenance under the LOGICAL DATA CORPORATION SOFTWARE MAINTENANCE AGREEMENT.

Customer Services

Logical Data Corporation supplies a complete range of services including consulting, configuration design, site planning, installation, training, and support.

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LOGICAL DATA CORPORATION

P.O. Box 501528 Malabar, Florida 32950-1528 (321) 723-7000 FAX (321) 725-4086 <http://www.logicaldata.com>

QUERY/32 COMMANDS

COMMAND	FUNCTION	COMMAND	FUNCTION
A [line-#]	Add source line(s) to procedure at current position or after line number specified.	D [line-#] [line-#]	Delete from procedure the current line, the line specified in first parameter, or all lines from first to second line number.
AVE [RAGE] item-name [...] .	Compute average(s) for data found for specified item-name(s).	DAT [E] date-on-off page-on-off	Allow or suppress printing of date and page number on automatically formatted reports.
AVG item-name [...] .	Compute average(s) for data found for specified item-name(s).	DEF [AULT] item-name = {<'literal'> <constant>}	Set up default value and identify an item-name that can be replaced by a VARIABLE command.
B [count]	Move pointer back in procedure one line or number of lines indicated by positive integer (count).	DEL [ETE] proc-name [password]	Delete specified procedure name from QUE file on disk (password optional only if specified procedure-name has no password).
BOT [TOM]	Go to and display the last source line in the current procedure.	DET [AIL] {<'lit' COL pos> <item COL p PIC 'x'>} [SKI[P] count] [...] [LINE page-line-num] [CHANNEL count] [SYSD[ATE] COL pos] [SYSP[AGE] COL pos] SKI[P] count [...] .	Specify the literals, item-name data, form control information, location for printing system date and system page number, and skipped lines for the printout of a manually formatted report.
BRE [AK] ON {<item> <END>} [SKI[P] count] [...] ['lit' COL pos [...]] [item COL pos PIC[TURE] 'x' [...]] [TOT item [...]] [MIN item [...]] [MAX item [...]] [COU item [...]] [AVG item [...]] [LINE page-line-num] [CHANNEL count] SKI[P] count [...] .	Perform break control when contents of an item-name changes or at End-of-File and print specified literals, item-name data, totals, averages, counts, minimum, maximum, and skipped lines at specified locations. Used for manually formatted reports.	DIS [PLAY] [MARGIN count] item [item ...] .	Automatically format a report with data specified and optional left margin off-set.
CAT [ALOG] proc-name [password]	Save specified QUERY procedure to the QUE file on disk.	DUP [LICATE] [line-#] [line-#]	Duplicate current line or specified line(s) at pointer position.
CHA [NGE] item-name = {<'lit'> <item> <expression>} . Example: CHA DEDUCT = (7.5 * PAY) .	Replace the contents of the first item-name with the contents of the second item-name, or with the literal, or with the computed value of the expression after the = sign.	EDI [T] proc-name [password]	Retrieve specified procedure from QUE disk file for editing.
CLO [SE]	Close the currently opened database files.	END	Terminate QUERY processor and close opened database files.
COM [PUTE] item-name format = expression . Example: COM PAY 7.2 = (PAY * 1.05) .	Assign computed or assigned value of the expression to the specified item-name using the specified format.	EXI [T]	Same as END command.
COU [NT] item-name [...] .	Count number of records found for each of item-names specified.	F [count]	Move current pointer forward in procedure one line or "count" number of lines.
		G line-#	Move current pointer forward in procedure to line specified.
		HEL [P] [option [parameter]]	Display on LO device requested information to help the user understand QUERY commands, command formats, and error messages.

QUERY/32 COMMANDS

COMMAND	FUNCTION	COMMAND	FUNCTION
HEA[DING] {<'lit' COL pos> <item COL p PIC 'x'> [SKI[P] count] [...] [SYSD[ATE] COL p] [SYSP[AGE] COL p] [CHANNEL count] [LINE page-line-num] SKI[P] count [...].	Specify the headings for manually formatted reports using literals, item-names, system date, system page number, and skipped lines at specified locations.	PRI[NT]	Same as DISPLAY command.
IF {<'lit'> <expr> <item>} = {<'lit'> <expr> <item>} [AND] [...] [OR] [...].	Select only the records that meet the condition(s) established using relational operators and optional Boolean operators.	R [line-#] [line-#]	Replace procedure line(s) specified with one or more new lines.
INI[TIALIZATION]	Initialize catalog file (QUE).	RAN[GE] item-name [STA] {<con> <'lit'>} [STO] {<con> <'lit'>} [DIR[ECTION] dir]	Specify start and stop data for read (in file with item-name as a key) and specify forward or backward direction in file.
LDI[RECTORY] {< > <mask> <proc-name [password]>}	List all or part of QUE file directory to LO device.	REC[ATALOG] proc-name [password]	Remove the specified procedure and save the current QUERY procedure under that name.
LET	Same as COMPUTE command.	REN[AME] old-procedure-name new-procedure-name	Change name of the procedure specified first to the procedure-name specified second.
LIS[T]	Display current procedure.	RES[TORE]	Copy QUE files from save tape.
M [line-#]	Allow modification of current or specified procedure line.	RPT[NAME] report-name	Specify report name to be printed at top left of automatically formatted reports.
MAX[IMUM] item-name [...].	Print maximum value for selected item-names from data found.	RUN [proc-name [passwd]]	Specify procedure to execute; default is current procedure.
MIN[IMUM] item-name [...].	Print minimum value for selected item-names from data found.	SAV[E]	Back-up QUE files on SO.
MOD[IFY]	Same as CHANGE command.	SET	Same as CHANGE command.
NEW PAG[E] ON item-name	Activate form control when contents of item-name changes.	SHO[W] option [parameter]	Display directory, data storage formats, valid data items, etc.
ON device [count]	Output to named device/port.	SOR[T] [order] [BY] item-name [...].	Specify criteria to determine order of data on report.
OPE[N] data-base	Open named QUERY database.	SOU[RCE]	Save current procedure on SO.
OPT[ION] option [parameter]	Specify program options.	TES[T]	Read and validate save tape.
PAG[E] {< > <OFF [width]> <length [width]>}	Specify length and width of report or OFF for noninteractive scrolling on CRT screen.	TIM[E] on-off	Print/omit duration/runtime on automatically formatted report.
PAS[SWORD] user-password	Specify current user-password for data file and item access.	TIT[LE] 'literal'	Set title for automatically formatted report.
PAU[SE] [message]	Print message and enter hold.	TOP	Display procedure from line 1.
		TOT[AL] item-name [...].	Print total(s) from data found for item-name(s) specified.
		VAR[IABLE] item = {<'lit'> <constant>}	Temporarily set up local variable and data for default.
		WHE[RE]	Same as IF command.
		WRI[TE]	Same as DISPLAY command.