MARK® iV

FILE MANAGEMENT SYSTEM

The general purpose software product line for business data processing

informatics inc

"We conservatively estimate that the benefits derived from the MARK IV System have completely returned the cost of our investment in a period of less than 3 months."

IF COST SAVINGS ARE OF VITAL INTEREST TO YOU, THE MARK IV FILE MANAGEMENT SYSTEM WILL BE OF EQUAL INTEREST AS A PROVEN COST CUTTING TOOL FOR DATA PROCESSING DEPARTMENTS, MARK IV OFFERS COST SAVING BENEFITS BY IMPROVING PROGRAMMER PRODUCTIVITY, DECREASING OVERALL PROGRAMMING EFFORTS AND PERMITTING FASTER RESPONSE ON NEW APPLICATIONS.

INTRODUCTION

Developed by Informatics Inc., the MARK IV File Management System is an advanced general purpose software system for use with IBM System/360 and /370 and RCA Spectra 70 equipment. Reflecting experience gained in the development of similar systems since 1960, MARK IV has been in operation since early 1968 in a wide range of data processing applications.

Large and small users throughout the world are using MARK IV in a complete spectrum of applications. 350 MARK IV installations in operation at the present time make MARK IV one of the most successful software products ever developed.

MARK IV operates on IBM System/360 under either the standard Disk Operating System (DOS) or Operating System (OS), on RCA Spectra 70 under Tape-Disc Operating System (TDOS), and it is compatible with IBM System/370. All levels of users can take advantage of the powerful and comprehensive capabilities offered by the system. Non—data processing management, clerks and secretaries find MARK IV easy to learn and use; analysts and programmers find MARK IV 6 to 10 times faster to use than COBOL, PL/I, or any other programming language.

Installation of MARK IV includes a complete service and support program. Documentation of the system includes Reference Manuals, Operations Guides, User's Guides, and other volumes, plus periodic publications to keep the user up-to-date in his use of the system. User education is provided by a complete curriculum of courses. Specially trained Informatics System Engineers support each MARK IV installation. And all services and support are backed by a permanent headquarters maintenance staff.

Twice a year, the MARK IV Users' Group (IV League) meets for three days to communicate and share MARK IV experiences, special techniques and other technical information. The Proceedings of the IV League are published for the membership.

On the following pages, the major facts about the MARK IV File Management System are summarized. Along the way, a sprinkling of quotations suggests the kind of response you too could expect to share as a MARK IV user.

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"Our initial feelings were to use MARK IV only on the one-time ad-hoc reports. However, it now appears that the ad-hoc reports account for only 40% of the MARK IV use, while 60% is for repeated requirements entailing file maintenance, computations and report generation."
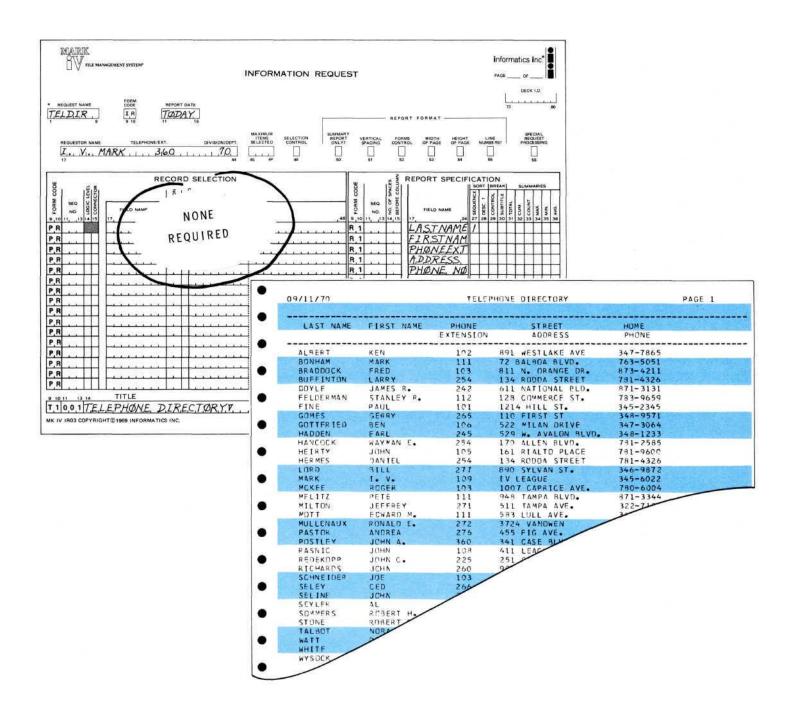
SAMPLE MARK IV REQUEST

The simplicity of the MARK IV forms, the default operation and some automatic system functions are illustrated by the following example.

PROBLEM:

Produce a TELEPHONE DIRECTORY from the contents of a personnel file showing NAME, PHONE EXTENSION, HOME ADDRESS and HOME PHONE. An alphabetical listing is desired.

SOLUTION:

Complete a MARK IV Information Request form, with just the information shown in the example.

MARK IV FILE MANAGEMENT SYSTEM

INFORMATION REQUEST

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PAGE ____ OF ____

DECK I.D.

REQUEST NAME: TELDIR
FORM CODE: IR
REPORT DATE: TODAY

REPORT FORMAT

REQUESTOR NAME: I. V. MARK
TELEPHONE/EXT.: 360
DIVISION/DEPT.: 70

MAXIMUM ITEMS SELECTED / SELECTION CONTROL / SUMMARY REPORT ONLY? / VERTICAL SPACING / FORMS CONTROL / WIDTH OF PAGE / HEIGHT OF PAGE / LINE NUMBERS? / SPECIAL REQUEST PROCESSING

RECORD SELECTION

NONE REQUIRED

REPORT SPECIFICATION

FORM CODE	SEQ NO.		FIELD NAME	SORT	BREAK	SUMMARIES
R,1			LASTNAME	1		
R,1			FIRSTNAM			
R,1			PHONE,EXT			
R,1			ADDRESS,			
R,1			PHONE, NO			

TITLE: T,1,0,0,1 TELEPHONE, DIRECTORYY,

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09/11/70   TELEPHONE DIRECTORY   PAGE 1

LAST NAME	FIRST NAME	PHONE EXTENSION	STREET ADDRESS	HOME PHONE
ALBERT	KEN	102	891 WESTLAKE AVE	347-7865
BONHAM	MARK	111	72 BALBOA BLVD.	763-5051
BRADDOCK	FRED	103	811 N. ORANGE DR.	873-4211
BUFFINTON	LARRY	254	134 RODDA STREET	781-4326
DOYLE	JAMES R.	242	611 NATIONAL BLD.	871-3131
FELDERMAN	STANLEY R.	112	128 COMMERCE ST.	783-9659
FINE	PAUL	101	1214 HILL ST.	345-2345
GOMES	GERRY	265	110 FIRST ST	348-9571
GOTTFRIED	BEN	106	522 MILAN DRIVE	347-3064
HADDEN	EARL	245	529 W. AVALON BLVD.	348-1233
HANCOCK	WAYMAN E.	254	170 ALLEN BLVD.	781-2585
HEIRTY	JOHN	105	161 RIALTO PLACE	781-9600
HERMES	DANIEL	254	134 RODDA STREET	781-4326
LORD	BILL	277	890 SYLVAN ST.	346-9872
MARK	I. V.	109	IV LEAGUE	345-6022
MCKEE	ROGER	103	1007 CAPRICE AVE.	780-6004
MELITZ	PETE	111	948 TAMPA BLVD.	871-3344
MILTON	JEFFREY	271	511 TAMPA AVE.	322-71
MOTT	EDWARD M.	111	583 LULL AVE.	
MULLENAUX	RONALD E.	272	3724 VANOWEN	
PASTOR	ANDREA	276	455 FIG AVE.	
POSTLEY	JOHN A.	360	341 CASE BL	
RASNIC	JOHN	108	411 LEA	
REDEKOPP	JOHN C.	225	251	
RICHARDS	JOHN	260	9	
SCHNEIDER	JOE	103		
SELEY	CED	266		
SELINE	JOHN			
SEYLER	AL			
SOMMERS	ROBERT H.			
STONE	ROBERT			
TALBOT	NORA			
WATT				
WHITE				
WYSOCK				

IS THE MARK IV SYSTEM EASY TO LEARN AND USE?

Ease of use is a primary attribute of MARK IV; it provides simple solutions to user problems.

Selection of a group of records from a file and the production of a report from the selected data is a typical data processing task. The entire task is completely defined in a matter of minutes by filling in the MARK IV forms. Contrast this with the days or weeks normally required to program, debug, system test, and document the same problem using COBOL or another computer programming language.

Solutions to more complex problems involving:

- reading of multiple related input files,
- master file updating,
- computations with data fields and constants,
- printing of many different reports, and
- producing multiple subfiles.

normally require only a few days of effort with MARK IV. Again, contrast this small MARK IV effort with the months required to complete the same tasks using common data processing techniques.

The "ease of use" philosophy is enhanced by the rapidity with which the user learns to use MARK IV. A few hours is all that is needed to learn most of MARK IV's capabilities. This is true even when the user is not familiar with computers or data processing. Managers, administrative assistants, clerks, and presidents can all learn productive use of MARK IV. A few days of instruction provides an experienced data processing individual with the proficiency to utilize all the power and flexibility of the MARK IV System.

"The MARK IV System Engineer had just completed making the installation when a VP came in asking for a special report. The MARK IV S.E. defined existing files to MARK IV, keypunched the request, and had the report 10 minutes after it had been requested."

"We contracted with a programming firm to have a Fixed Assets System implemented in COBOL. After 4 months and $16,000 the system was not completed. Two of our own analysts, after attending a 2-1/2 day MARK IV class, wrote the system in 3 days."

"We assigned a programmer, one of our sharpest, to a job which looked like a job best done in COBOL. The programmer was told to do the job in COBOL and was given six months for completion. On his own, the programmer secretly did the job using MARK IV and completed the job in 3 weeks."

WHY IS MARK IV SO EASY TO LEARN AND USE?

Three major features make MARK IV extremely simple to learn and use:

- Automatic System Functions;
- Default System Operation;
- Simple Specification Forms.

AUTOMATIC SYSTEM FUNCTIONS

Perhaps the most important reason for MARK IV's simplicity of use is its ability to perform many common data processing tasks automatically. When required, these common functions, pre-coded and stored on the MARK IV library, are called from the library automatically and included in the object program.

One example of MARK IV's automatic capabilities is the maintaining and updating of a master file. The master file, and the transactions which update it, are defined only once. Definitions are stored in the MARK IV dictionary and called in automatically when required. To perform the file updating functions the user merely gives the name of the file and specifies that a new master file is to be written. Updating in accordance with the cataloged transactions, is completely automatic and absolutely no programming by the user is required.

With this single specification, MARK IV will:

- read the master file;
- read the transactions;
- match the transactions with the proper master file records;
- perform appropriate updating processes using data from the transactions;
- produce audit files of
  - unacceptable transactions and
  - deleted master file records;
- write out the updated master file.

DEFAULT SYSTEM OPERATION

Contributing significantly to its ease of use is MARK IV's unique "default system," a preselected mode of operation which is invoked automatically whenever the user does not specify alternatives on the various forms. By leaving a particular specification blank, the default system function for that specification is performed. For example, to produce a report of all of the records in the master file the user simply omits filling in any selection criteria. This is shown in the example on the next page.

SIMPLE SPECIFICATION FORMS

The simplicity of MARK IV's forms facilitates user communication with the System. The specific forms used depend upon the complexity of the request and the data processing knowledge of the user. No programming is required.

WHAT IS MARK IV?

MARK IV is a general purpose data base management system that provides a data processing installation with the means for efficient day-to-day operation in addition to quick responses for special reports and critical one-time requirements. It is a proprietary software product which effects a 60-90% cost and time reduction over other programming methods.

In brief, MARK IV:

- **Creates Files** - from data on punched cards, magnetic tapes, and direct access devices.*
- **Maintains Files** - by performing changes, additions, and other update actions.
- **Reads Files** _ A Master File and as many as four related files simultaneously for updating, processing, and output.
- **Selects Records** - from files that contain data which meet user specified qualifications.
- **Extracts Data Items** - from selected records.
- **Computes Results** - for use in printed output, subfiles, updating of master files, and in further record qualification and additional computation.
- **Arranges Output** - by sorting, sequencing, and grouping.
- **Formats Reports** - including such elements as Preface, Page Title, Page Number, Column Headings, Line Numbers, Detail Entries, Summaries, Averages, etc.
- **Summarizes Data** - up to 9 levels of totals and subtotals.
- **Prints Reports** - Total flexibility in format and content on:
    - Standard computer paper;
    - Special size output — labels, 3 x 5 cards, etc.;
    - Pre-printed forms — paychecks, invoices, journals, etc.
- **Produces Files** - New files, parts of files, combinations of files and audit files on magnetic tape, direct access devices, and cards.

HOW DOES MARK IV WORK?

MARK IV generates computer programs based upon specifications given to it by the user. The user employs a set of simple forms to enter the specifications which become the MARK IV source input.

MARK IV:

- reads the source input and
- edits and verifies the entries.

MARK IV then:

- selects the appropriate program modules and subroutines from its library;
- compiles a complete program to accomplish the specified functions;
- executes the program; and
- produces the desired results.

If results are required on a daily or weekly basis, the user may instruct MARK IV to save the edited instructions. When the repeat run is made, MARK IV retrieves the saved instructions from its catalog. New requirements may be incorporated at this time and an augmented program compiled and executed.

In a single run MARK IV can read 5 input files, generate 13 output files, and produce 255 reports.

* MARK IV files may be on magnetic tape, cards, and direct access devices. They may contain fixed or variable length records and can be processed either sequentially or indexed sequentially. An "Own Code" capability also allows the user to attach existing program routines to handle non-standard types of data files such as Randomly Organized Direct Access Files.

"We are running a Payroll—Personnel application done completely in MARK IV including income tax, FICA, etc. We estimate it would have been at least 80 separate programs in COBOL with about 2 man-weeks required for each (on the average). The MARK IV job was done in about one-tenth the time."

IN *CONCLUSION*

The MARK IV File Management System is a powerful, versatile tool that provides positive control over time requirements, budget limits, and personnel scheduling.

MARK IV enables the data processing organization to:

- Reduce programming time and costs by 6 to 10 times;

- Eliminate link-edit and reduce compile time;

- Reduce debug and test time;

- Reduce time and cost of program maintenance;

- Achieve data independence;

- Reduce documentation costs;

- Learn its use quickly and easily;

- Teach non-programmers its use;

- Facilitate overall standardization of files and file structures.

Installation and support of MARK IV by Informatics includes:

- Reference Manuals, Operations Guides, User's Guides, Special Features Manuals, and Pracniques Handbooks;

- Training in the use of the system;

- Follow-up program of monthly technical visits;

- Periodic technical newsletters;

- Membership in the IV League, a users' organization which provides for further interchange of MARK IV experience among the users.

With its program of full customer service and support, Informatics' MARK IV File Management System could be the powerful, dollar saving tool for your data processing installation that it already is in 350 other installations throughout the world.

"With MARK IV we can do the 100% workload of the programming team with 40% of this team. The available 60% is now devoted to development."

"Both Union and Management, in a labor dispute, needed information concerning the payroll after projected raises and benefits. The requirements were given to the MIS Group on Friday afternoon and the report was requested by Monday morning. When the MIS Group estimated two and one-half to three weeks in COBOL, the project was given to our MARK IV group who completed it in ten hours on Saturday. MARK IV had been installed for only three weeks."

"Half of our machine time is now dedicated to MARK IV runs. Those runs handle Accounts Receivable, Inventory, Sales Analyses, etc., on about 26 different factories."

"MARK IV is 10 times more versatile than the Manuals show."

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