This is INGRES from Relational Technology Inc. INGRES is the revolutionary, fully integrated “relational database management” and “application development” system. INGRES is so natural to use, it makes you productive the same day it’s installed. Whether you are an end user or data processing professional, you don’t have to program to create multiuser applications.

INGRES replaces conventional programming with a set of powerful “Visual Programming”™ application tools. Tools that let you share and manipulate data in new ways to solve business, industrial, scientific, and engineering problems. With INGRES you easily combine concurrent database access with transaction processing, “ad hoc” query-update, graphics, report generation, and networking.

INGRES offers you this unprecedented productivity with superior performance. INGRES proves it by consistently winning competitive benchmarks. And, INGRES is successfully used for numerous production applications at hundreds of corporate, educational, and government installations.
A Strong Foundation
Relational Technology Inc. (RTI) was founded in mid-1980 by an experienced team of executives from the software industry and computer scientists from the University of California at Berkeley. Initial financing came from Sutter Hill Ventures and Welsh, Carson, Anderson, and Stowe (WCAS), two premier venture capital firms. Sutter Hill has helped launch such companies as Diablo, Apollo Computer, and ActVision to name a few. WCAS has helped fund such successful companies as VisiCorp.

Long Product Evolution
The concept of relational databases was pioneered by IBM. The goal was to find a simple way to manage and manipulate large amounts of complex interrelated data.

Founders of RTI began research at the University of California in the early 1970s on the intricate task of implementing a prototype relational system. Their work has been extensively published in computer science literature.

Using experience gained from the university prototype, RTI developed a fully commercialized version of INGRES with substantially expanded functionality and dramatically enhanced performance. Today, INGRES from RTI is recognized as the industry leader among relational database systems.

Commitment to Customer Support
RTI believes that its growth and success depend not only on the excellence of its products but also on the satisfaction of its customers. Therefore, RTI is committed to outstanding customer support. RTI provides comprehensive, up-to-date, and highly readable documentation. Training is available and can be tailored specifically to customer needs. Free and unlimited telephone consulting is there when you want help. A 24-hour, 7 day-a-week "hotline" service is also provided. Regular enhancements keep INGRES customers at the forefront of relational systems. In addition, each customer is a member of the INGRES User Association, which actively provides input to help shape INGRES's future.

Successful Marketing History
Because of RTI's outstanding product offering and emphasis on customer support, RTI has enjoyed one of the fastest growth rates in the software industry. To date, Relational Technology Inc. has installed more than 250 systems on VAX computers and, in addition, several distributors and OEMs now offer MicroINGRES™ for systems based on MC68000 computers.

INGRES—The Relational Database Management System

Easy to Learn
INGRES is easy to learn and use. INGRES presents data in a familiar and natural way—by "Tables." You use a single, high-level language to define, control, and process stored data. With INGRES, you don't need programming skills to build databases and begin using your data immediately.

Tables—The Natural View of Data
Any database can be organized as a set of related tables. The uniform structure of tables—rows and columns of data values—simplifies the use and understanding of INGRES relational databases for both end users and programmers. Furthermore, INGRES lets you store and display data the way you want: characters, dates, time, money, and text. Integer and floating point data types are also available for fast computing.

QUEL—The Powerful Database Language
INGRES gives you QUEL, the English-like QUEry Language designed specifically to make it easy for you to manipulate tables. QUEL is a "nonprocedural" language because you simply tell INGRES what you want done, not how to do it. INGRES does the hard work for you. It automatically finds the optimal way to process your requests.

QUEL provides a complete set of data manipulation services. QUEL lets you retrieve, update, insert, and delete an entire subset of data from one or more tables in a single operation. Tables can be combined to form new tables so that you can view data the way you want. At the same time, you have total flexibility to select and sort arbitrary rows and columns as part of any request. QUEL also includes a comprehensive set of arithmetic and aggregation operators for statistical computation, report generation, and graphics.

QUEL is the only language you need. It merges data definition, manipulation, and control into one concise language. QUEL gives you powerful commands to create tables, load and unload data, define validation checks, protect your database, and more.

In addition, RTI is developing a version of QUEL compatible with IBM's SQL relational query language. This gives you the benefits of QUEL, performance of INGRES, and compatibility with SQL/DS and Database 2.
INGRES—
The Relational
Database
Management
System

QUEL is easily learned by users of all levels of experience. Therefore, QUEL actually becomes a common language between users and programmers for conveying requirements and rapidly developing and explaining solutions. By bridging the gap between users and computers, your organization will become more productive. Applications will evolve naturally through prototyping and early usage. Thus, final production systems will more accurately reflect your organization's needs.

Integrated Data Dictionary
All information about your tables and applications, including storage structures, formats for graphs and reports, and protection information, is stored in the INGRES Integrated Data Dictionary. The Dictionary is itself a relational database. You can use all the facilities of INGRES to access it. And, the Dictionary is active and dynamic because it is kept up-to-date automatically whenever changes are made.

Maximum Flexibility
INGRES helps you develop batch, interactive, and transaction applications. You can execute QUEL interactively from a terminal or transparently through INGRES Visual Programming tools. You can also embed QUEL within most conventional programming languages to simplify data manipulation tasks without sacrificing flexibility. A preprocessor called EQUEL (for Embedded QUEL) allows you to use QUEL in its natural form within programs written in BASIC, C, COBOL, FORTRAN, and PASCAL. When you use EQUEL, you are not required to learn complex sequences of procedure or subroutine calls as in other systems. For added flexibility, EQUEL gives you access to "forms" definition and control commands so that you can control screens within programs.

Superior Performance
INGRES consistently wins benchmarks. INGRES speeds access to data by employing sophisticated data indexing strategies and proprietary automatic query optimization techniques. The details of processing any request are automatically handled by INGRES. Thus, data access is system-optimized rather than programmer-optimized. This results in better total system performance and lets you change storage structures or indexes without requiring you to modify your application.

The INGRES optimizer is constantly improving. Changes incorporated into new releases are transparent to you or your applications. Except they will run faster.

Protects Your Data
You can share your database with other simultaneous users while INGRES automatically protects its consistency during concurrent updates. Transaction logging, back-out, and roll-forward are provided for application or hardware failures. INGRES lets you define comprehensive integrity constraints that automatically insure the accuracy of your database by validating any changes made to your data. And, INGRES provides the most complete and sophisticated set of security controls available. Security controls, based on the content of the database, let you guard against unauthorized access to private data.

INGRES/NET—Distributed Access
INGRES/NET, a unique new product, lets you distribute and share data over many computers in a local or remote network. You interface locally with an INGRES Visual Programming tool or your own application, which can then access an INGRES database system on any other computer. This is called distributed access.

INGRES/NET's distributed access gives you several advantages. For large applications, it improves performance, gives access to increased capacity, and preserves your hardware investment by distributing your processing over two or more machines. Moreover, it both reduces data communication costs and improves response times for interactive applications. INGRES retrieves and sends only the qualified data to your local system. Your interactive program executes on your local computer to give faster response to information display, cursor control, data entry, or command execution. All details of network access are transparent to you.

Versions
INGRES is available on DEC VAX computers using VMS or UNIX operating systems. MicroINGRES is available for many MC68000 computers using the UNIX operating system.
Applications Without Coding

One of the most pressing problems in data processing is applications backlog. To reduce development time, INGRES gives you a comprehensive set of generic application tools for terminal control, report generation, graphics, interactive query-update, and application development.

Each application tool can be used alone or combined into customized, integrated production applications. Each tool incorporates an INGRES "Visual Programming" interface. You learn to use your first tool in minutes. Then you learn additional tools even faster. And, we are adding more tools all the time.

INGRES tools are ready the moment you define your database. For every table, INGRES automatically generates default formats from the Integrated Data Dictionary for data entry, query-update, reports, and graphics. You need only specify the tables, and INGRES generates these applications automatically.

Visual Programming

Visual Programming is based on the concept of a "forms application". A forms application uses a video display version of a printed business form as the sole interactive interface to your application. A form represents an executable program that can perform one or more tasks. Each form contains a set of related data fields for display or entry and a command menu for selecting a task. By simply entering data into the form and selecting one of the commands from the menu, you control the underlying actions of your application. Command menus also let you sequence between forms or invoke any of the INGRES tools.

With Visual Programming, you see the results of each interaction immediately. Your screen becomes a window into your database through which you can browse and modify data interactively. Formats of forms can be edited interactively by moving fields on the form. Graphs and reports can be specified through forms and displayed instantly. "What you see is what you get."

INGRES/FORMS tools provide a uniform, standardized interface that you need learn only once. Therefore, you readily adapt to all Visual Programming applications. And, INGRES Visual Programming tools are available for over 100 different terminals.

A Complete Set of Tools

INGRES/FORMS lets you interactively define, create, and edit forms to be used by applications. You visually "paint" the form on the screen by placing data fields and decorations wherever you desire. A full range of video attributes is also supported. And, INGRES lets you specify checks to validate the formats, ranges, and relative field values of data during entry.

INGRES/QUERY gives you a Visual Programming interface to QUEL's query-update services. It lets you express queries and perform transactions by simply filling in fields on a form. Values entered into selected fields act as search criteria for retrieval or as new data to

update your database. Many common applications can be implemented entirely using INGRES/QUERY.

INGRES/REPORTS lets you create production or "ad hoc" reports on INGRES databases. Through Visual Programming interfaces, you actually lay out the format of a report on the screen as you would see it on the printed page. Alternatively, INGRES gives you a report definition language for creating highly formatted reports. Data to be retrieved for a report, of course, can be specified using QUEL.

INGRES/GRAPHICS helps you display your data visually. Many graph types are available including bar charts, pie charts, multi-line plots, scatter plots with linear regression, and log plots. You use QUEL to retrieve data for graphs. INGRES/GRAPHICS supports most widely available graphics terminals, plotters, and hardcopy devices.

INGRES/APPLICATIONS-BY-FORMS—The Applications Development Environment

INGRES/APPLICATIONS-BY-FORMS (INGRES/ABF) lets you define applications by integrating the INGRES generic tools, your own forms and programs, and the INGRES relational database management system. You use INGRES/ABF to develop forms that perform the basic functions of an application: data entry, data manipulation, graphics, and report generation. In addition, it gives you a simple command language to manipulate and sequence the flow of forms and applications. For maximum flexibility you can include more complex routines written in traditional programming languages that can embed QUEL.

INGRES/ABF contrasts with conventional applications generators that require a rigid, predefined structure for your applications. With INGRES/ABF, you begin with the user's view of the application—forms—and evolve the application step-by-step, incorporating INGRES's Visual Programming tools where appropriate. With INGRES/ABF's rapid prototyping, you can instantly see the results at each step along the way.

With INGRES/ABF, entire production applications can be implemented in a fraction of the time it takes to write programs. Furthermore, your applications evolve easily and naturally, and your programmers become more productive because the time and effort needed to maintain applications are greatly reduced.

You Should Learn More

To see an INGRES demonstration or to learn more about how we can help you, please return the attached card or call RTI at (415) 845-1700. We will be glad to send you more information or have one of our marketing representatives contact you, whichever you prefer.
Send more information on INGRES to:

Name
Title
Company
Street Address
City
State Zip
Mailstop X
Telephone

☐ Send introductory information
☐ Put me on your mailing list
☐ Have a salesperson contact me
☐ I want to see a demonstration
My need is ☐ Immediate
☐ 6-12 Months
☐ Just looking

Computer type:
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