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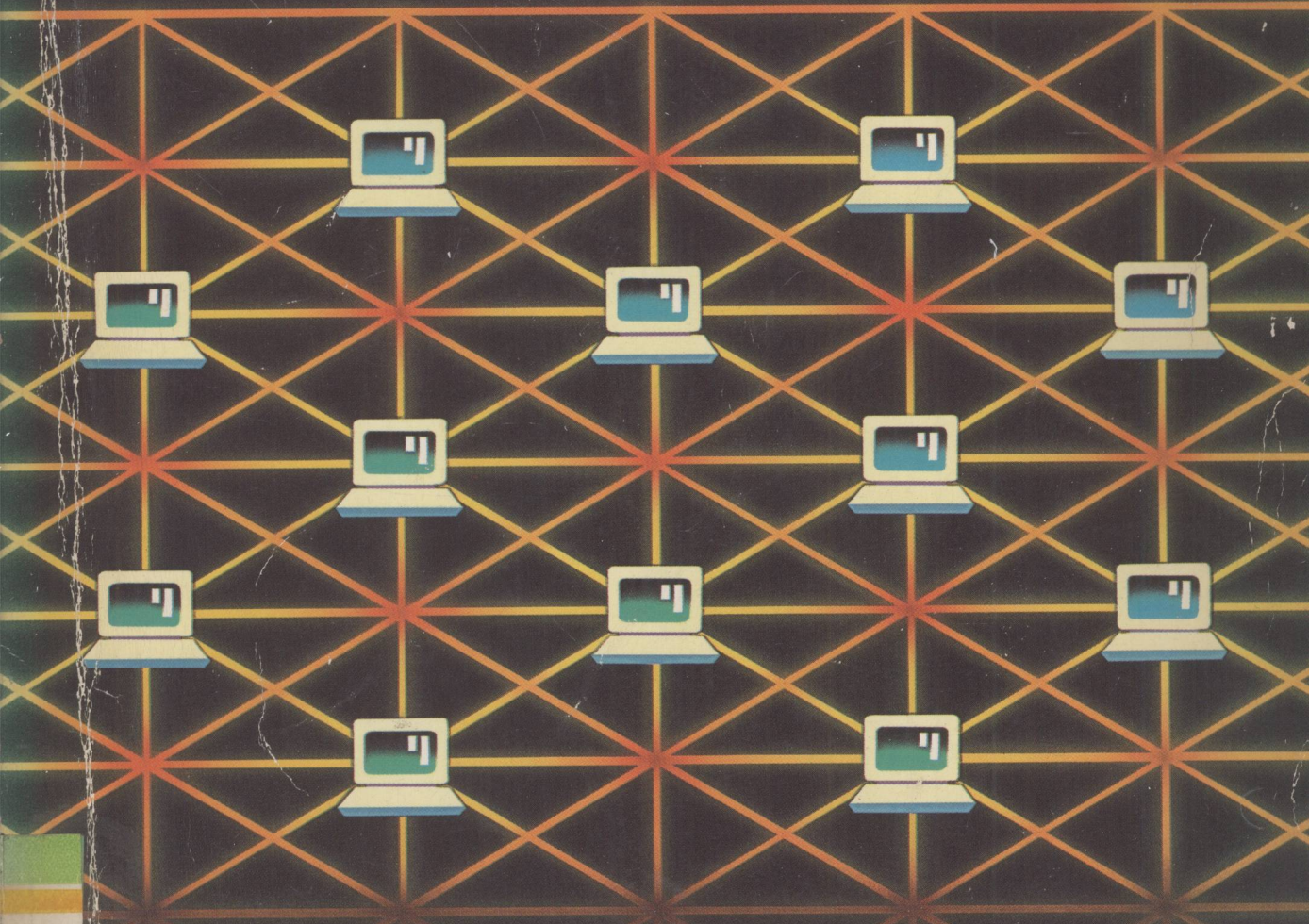
ANSWERS ONLINE

Your Guide to Informational Data Bases



Barbara Newlin

Answers Online: Your Guide to Informational Databases

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Preface

Online searching is a discipline, a skill, and an art. It involves learning, an encyclopedic memory for facts both basic and arcane, discovery, practice, and the pleasure that comes from getting better and better at a complex task.

If you own or use a microcomputer, you are standing at the threshold of unimagined capabilities. With the addition of a few simple pieces of hardware and software, your computer can become a gateway to thousands of electronic "libraries," known as databases, that are filled with information of every sort. This book will escort you across the threshold into the world of electronic information retrieval.

You don't need any technical background or experience to read and understand *Answers Online.* It has been written for the intelligent, curious reader who wants to use a personal computer to gather information. If you are a business or marketing professional, you'll find out about databases that contain overseas trade leads, U.S. trademarks, the combined Yellow Pages for the entire country, domestic and international news on products, markets, and companies, and general information to support business decision making.

If you are a scientist, you will discover databases that describe current research in progress, government-funded research and development projects, U.S. and foreign patents, papers presented at thousands of conferences and meetings, and the contents of key journals published around the world.

If you are a medical professional, you'll learn about databases that index and abstract the world's literature in biomedicine, pharmacology, and mental and public health. If you're an attorney, you'll learn about databases that cover legal literature and case law, as well as many sources of multidisciplinary information for legal support.

In addition to these specialized databases, you'll discover electronic newspapers, encyclopedias, and mail services that you can access with your computer.

The process of connecting your computer to the databases stored on other computers is known as telecomputing, or going online. *Answers Online* will prepare you for telecomputing by describing the hardware and software you need. It will introduce you to the major types of database, the major online services through which you can access them, the criteria you need to evaluate and select databases and services for your own needs, and the techniques that will enable you to search them successfully.

If you are now using a computer but have never connected to an online database, you are missing out on one of the most useful, exciting applications for your machine. If you are already searching databases, but not enough of them and not very well, this book will make you aware of more options. Either way, your computer is a ticket to ride and *Answers Online* is your roadmap. Happy travels.

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To this fortuitous confluence of individuals and opportunities I owe the existence of this book.

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Part I

Introduction

How do rats respond to ultrasonic frequencies? Is chymopapain the best treatment for a ruptured disk? What software packages are available for medical-office management? What is the latest research on touch-activated computer screens? What are the economic considerations of tree farming? Have any patents been issued for automotive navigation systems? Questions like these —and the databases that provide the answers —inspired this book.

Answers Online is about telecomputing: connecting your computer via telephone lines to databases —large collections of machine-readable information that are stored on other computers. Communicating with a remote computer to retrieve information stored in its databases is called *online searching*, or just *searching*.

The number of available databases is growing by about 35% a year, according to Carlos Cuadra, president of Cuadra Associates and a consultant to the online information industry. The latest edition of his company's *Directory of Online Databases* lists 2200 separate databases produced by approximately 1000 companies and marketed by more than 300 online services.

If the thought of 2200 databases, or even of your microcomputer itself, overwhelms you a little, reading this book should ease your mind. It will tell you in simple language what hardware and software are necessary for your computer to communicate with a remote computer. It will introduce you to the major online information services (companies that market collections of databases) and will tell you how to choose and evaluate both the services and their databases. It will guide you through a selection of the most interesting and useful databases. It will even give you a head start on using the more sophisticated services by teaching you some basic principles of online searching.

Databases will not help you unless you know when, why, and how to use them. By the time you finish this book, your basic questions will be answered, and databases will seem like familiar friends.

Understanding Databases

Chapter 1

You will soon discover that your microcomputer is a great deal more than a word processor, a financial analyzer, a reading teacher for your four-year-old child, an expensive toy, or even a tax write-off. It is also an information conduit. It can connect you to huge amounts of data you can browse through, interrogate, manipulate, and use to make strategic business decisions, gather statistics and marketing intelligence, research a doctoral dissertation, keep up with the news, plan your securities portfolio, read about that drug your doctor just prescribed, or satisfy your curiosity about almost anything you can name. This data is collected into *databases* that you can search through with your microcomputer.

What Is a Database?

A database is any assemblage of information stored in electronic (that is, computer-readable) form. It can be an electronic directory like Dun & Bradstreet's MILLION DOLLAR DIRECTORY. It can be the contents of a single newspaper or many newspapers. It can be tables of numbers or statistics. It can be every word in the *Encyclopedia Britannica.* It can be a bibliography of literature in medicine, engineering, biology, law, education, history, or psychology. It can be an index of patents issued by the U.S. government since 1950 or data from the 1980 census.

There is a great variation among databases. A database can be

- Extraordinarily large. *Example:* CA SEARCH, produced by Chemical Abstracts Service, contains over 6 million records.
- Comparatively small. *Example:* ARTHUR D. LITTLE/ONLINE indexes fewer than 500 of the information sources produced by the Arthur D. Little Company.
- Devoted to one subject. *Example:* COFFEELINE contains references to the worldwide literature on one subject: coffee.
- Interdisciplinary. *Example:* MAGAZINE INDEX indexes the contents of 400 general-interest magazines, such as *Time, Reader's Digest,* and *The New Yorker.*
- Exotic. *Example:* COLD REGIONS covers literature concerning the Arctic, Antarctic, snow, ice, and other chilly topics.
- A general reference. *Example:* CALIFORNIA UNION LIST OF PERIODICALS is a directory of periodicals held by California libraries.

The Structure of The Database Industry

A database is created or manufactured by a company or some other type of organization, such as a professional society or a government agency. Sometimes a database is produced by a publisher that has created another market for its product with the database. Now that books and journals are typeset by computer, it is just another step to convert them into databases. For example, the ENCYCLOPEDIA OF ASSOCIATIONS, FIND/SVP REPORTS AND STUDIES INDEX, and MARQUIS WHO'S WHO are all electronic versions of printed products. Although these databases are essentially the same publications as their printed counterparts, they can be searched in ways that the printed versions cannot. For example, the ENCYCLOPEDIA OF ASSOCIATIONS database can be searched by the number of members in the associations, and MARQUIS WHO'S WHO can be searched by the dates of birth of the individuals listed in the volume.

A database producer can also be a company whose sole business is creating databases. Its staff assembles, reads, indexes, and often abstracts thousands of publications, and then converts them into machine-readable form. A producer can also be a professional association (the American Society for Metals produces

METADEX), a library (the National Library of Medicine produces MEDLINE), a government agency (the U.S. Department of Commerce produces U.S. EXPORTS), or a news organization (United Press International produces UPI NEWS).

When you search a database, however, you rarely interact directly with the producer. Instead, you gain access to the database through an *online vendor,* also known as an *online service.*

Online vendors can be categorized by the kinds of databases they offer. They include

- *Information utilities* (Chapter 6). Vendors like The Source and CompuServe, which offer a variety of consumer-oriented services (electronic shopping, games, airline reservations, special-interest-group forums, electronic mail) as well as informational databases.
- *Bibliographic or "supermarket" vendors* (Chapter 8). Vendors like DIALOG and BRS offer large numbers of databases that index publications on a wide range of subjects. These sophisticated services are designed primarily for librarians and other information professionals.
- *After-hours services* (Chapter 9). Simplified bibliographic services, such as KNOWLEDGE INDEX and BRS/AFTER DARK, designed for home users. Available on evenings and weekends.
- *Full text vendors* (Chapter 10). Services like NewsNet and NEXIS, which provide the complete text of each publication referenced in their databases.
- *Numeric vendors* (Chapter 11). Services like DRI (Data Resources, Inc.) and I.P. Sharp, which provide numerical data—statistics, economic forecasts, and historical time series (data plotted over time for a given variable).

Vendors perform certain behind-the-scenes functions that make online searching possible. The vendor stores producers' databases on its mainframe computers and develops the *language* (the sequence of commands and responses) enabling you and the computers to converse. A vendor makes it possible for you to search many databases with a single language. Although it is unfortunately true that each vendor's language is unique, searching would be even more complex if you needed a separate language to search every database.

The vendor also publishes the user manuals and the descriptive and instructional literature that support its system and its databases and may offer training seminars on both basic and advanced search techniques.

A database may be available through more than one vendor. ABI/INFORM, an index to nearly 600 business journals, is currently available through six different

online services. Once you have identified a database you want to search, a second decision awaits you: if the database is available from more than one vendor, which will you choose? Even if you have only a single option, do you want to sign up with the service that offers the database? Services vary considerably in cost, ease of use, and selection of databases. Chapters 6, 8, 9, 10, and 11 give you the basic facts on the major online services.

The Different Kinds of Databases

All databases can be organized into a few distinct categories according to the subjects and kinds of sources they cover, and whether the information they contain is partial or complete. Once you are aware of how databases can be sorted by type, you can consider them in groups, rather than confronting them all at once.

Subject

Some databases cover a narrow range of subjects. COFFEELINE contains references to all aspects of coffee production from thousands of journals, books, patents, and reports. ADTRACK indexes advertisements in major U.S. consumer magazines like *Time*, *Playboy*, and *Popular Photography*. FINE CHEMICALS DIRECTORY identifies the manufacturers of particular chemicals. Other databases cover broad but functional categories, such as science and technology (SCISEARCH) or business (MANAGEMENT CONTENTS).

The subject of a database can also be restricted to a particular type of information —for example, patents (CLAIMS/U.S. PATENT ABSTRACTS), dissertations (DISSERTATION ABSTRACTS ONLINE), and newspapers (NATIONAL NEWSPAPER INDEX).

Chapters 3, 4, and 5 acquaint you with subject families of databases and compare groups of subject-related databases. Databases, however, can be categorized in other ways than by subject. Perhaps as important as the database's subject is its completeness: is the information in the database complete, or does it refer you to another source for additional details?

Reference Versus Source

All of the nearly 2300 databases available this year, as well as the hundreds more that will no doubt come along next year, can be neatly divided into two types: *reference* and *source.*

Reference databases are indexes of information that exists in a more complete form outside the database. They are often called *bibliographic databases,* because they are in fact electronic bibliographies —compilations of references to publications or unpublished reports. The ultimate information, however, lies beyond the database, which simply acts as a pointer to it.

In contrast, a source database contains information that is complete in itself and does not require you to refer to another publication. A source database that indexes newspaper or magazine articles includes the full text of each article. It is self-contained.

Reference or Bibliographic

Bibliographic databases function like the printed indexes that you may have used in the library. *The Reader's Guide to Periodical Literature* is an index familiar to most people who have tried to answer the question, "Where has an article on this subject been published?" You can look up your subject (or a close approximation) in the *Reader's Guide* to find a list of articles published in certain magazines. A bibliographic database will answer the same question for you. In addition to magazine articles, however, a database may tell you about conference papers, technical reports, patents, letters to the editor, government publications, books, regulations, or news releases. And like a printed index, the database "points" to the original source.

The *database record* (the basic unit of information in the database, usually a reference to a single publication) gives you all the information you need in order to identify the source publication (author, title of publication, date, page numbers, and so on). It usually lists the subject indexing terms —the words under which the item has been indexed. And, in many cases, the record includes an abstract, a short paragraph that summarizes the contents of the publication. Abstracts are not included in every bibliographic database, even though they are an undeniably useful feature. Compare these two records for the same article in *Business Week.* The first is from MAGAZINE INDEX, which contains abstracts for only a small fraction of its records.