



Hands-On Condor

A Self-Instructional
Guide to Condor
Data Management
Software



HANDS-ON CONDOR

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Hands-On Condor was developed by the Education Division of Condor Computer Corporation to help both business and home users of Condor learn to use the database management system quickly and easily.

INTRODUCTION

This twelve-part self-instructional manual gives you the know-how you need **right away** to implement the Condor system. Here are a few notes concerning the use of Hands-On Condor:

- 1) Lessons 1 through 8 cover all the commands in the Condor 1 program: **DBMS, DATE, SYSTEM, DEFINE, ENTER, LIST, SORT, UPDATE, TITLE, PRINT, SELECT, SAVE, COMPUTE, STAX, TABULATE, REORG, COMPARE, COPY, EMPTY, APPEND, POST, FORMAT, HELP, RUN, WRITE, READ, RENAME, DESTROY, and LOG.**

Lesson 9 is designed for review. It gives you an opportunity to practice the commands you have learned and to apply your knowledge of Condor to different situations.

Lessons 10 through 12 cover the commands in the Condor 3 program: **INDEX, DELETE, CHANGE, COMBINE, DISPLAY, PROJECT, JOIN, and REPORT.**

- 2) Each lesson begins with a list of the commands used during the lesson and a set of clearly defined objectives, which serve as an outline to the lesson content.
- 3) A set of review questions appears at the end of each lesson of Hands-On Condor, designed to provide you with a means of self-evaluation. The answers to all of the questions based on terminology and commands can be found by reading the text. Other questions have been included to stimulate you to think about other applications of Condor.
- 4) Because every home or office may be equipped with a different microcomputer, specific instructions regarding such things as loading the disk drives, function keys, etc., are left up to the individual user manuals.
- 5) Condor runs on these operating systems: **CP/M, MP/M, CDOS, TURBODOS, MSDOS, CP/M-86, and PCDOS.**

6) Versions of Condor released after 2.10 (2.11, etc.) and manufactured for 8086/8088 processors offer an additional feature: users can create a two-screen data entry form during the DEFINE process and manipulate both screens with the commands ENTER, LIST, UPDATE, REORG, FORMAT, and DISPLAY. Notes concerning the use of this screen are included throughout Hands-On Condor. If you have any questions regarding the various versions of Condor, you may obtain release notes by calling or writing Condor Computer Corporation at 2051 South State Street, Ann Arbor, Michigan 48104; (313)769-3999 or (313)769-3994.

GLOSSARY OF TERMS

BASIC: Beginners' All-Purpose Symbolic Instruction Code, a widely used programming language.

BIT: A binary digit (0 or 1); used in electronic systems to encode data.

BUG: An error made in the development of either hardware or software.

BYTE: The basic unit (one character made up of 8 bits) that a computer can process at one time.

COMMAND PROCEDURE FILE: A file of commands, built with a text editor or wordprocessing program, that can be run by choosing a single option on a HELP screen.

CP/M: Control Program for Microcomputers, a popular operating system for microcomputers.

CPU (Central Processing Unit): The controlling component of the computer system; where the calculating and processing takes place.

CURSOR: An indicator on the terminal screen that tells you where to begin typing.

DATABASE: A collection of records about a specific subject.

DATA ENTRY: Keying information into the database.

DATA ITEM: See FIELD.

DATA REPORTING: Displaying the information stored in a database.

DBMS (DATABASE MANAGEMENT SYSTEM): A program for entering information into a database; updating, manipulating, storing, and retrieving the information.

DATA CORRECTION: Changing the value in any field of a record or group of records to a new value.

DATA DICTIONARY: A "card catalog" of the titles of your datasets.

DATA ORGANIZATION: Changing the sequence of the records within the data file, or changing the fields that make up the records.

DATA RETRIEVAL: Gaining access to the information stored in the database.

DATASET: A group of records with the same fields.

DEFAULT VALUE: The value that is given to a field by Condor when no other value is specifically entered by the user.

DESKTOP COMPUTER: See **MICROCOMPUTER**.

DISK DRIVES: A computer component that reads and writes information on your disks.

FIELD (DATA ITEM): The smallest unit of information you store about a subject in a record.

FILE: A storage location on a disk.

FLOPPY DISK: A flexible, removable disk capable of storing thousands of bytes.

FORTRAN: Formula Translation Language, a widely used programming language.

FUNCTION KEY: A key that causes a computer to perform a specific function, such as clearing the screen or executing a program.

HARD DISK: A disk built into the microcomputer that can store millions of bytes.

HARDWARE: The physical components of a computer system.

HELP SCREEN: A menu that you can build to simplify Condor's commands for other users.

INPUT DEVICE: A keyboard-like instrument that allows a user to communicate with the computer.

K: Used to signify one kilobit (1K) or one kilobyte (1K) of storage.

MAINFRAME: A powerful room-size computer usually used in large businesses and institutions.

MENU: A list of operations that shows you what you can do with the software program you're using. A software program may have more than one menu.

MENU-DRIVEN: A program that has the ability to be run through a menu.

MICROCOMPUTER (PERSONAL COMPUTER, DESKTOP COMPUTER): A complete set of computer parts packaged in a form small enough to be convenient for the home or office user; a microcomputer runs on a *microprocessor*.

MINICOMPUTER: Larger than a microcomputer, but smaller than a mainframe, it is usually found in businesses and institutions.

MS-DOS: Microsoft Disk Operating System, a 16-bit operating system.

OPERATING SYSTEM: A program responsible for directing the computer system by starting and stopping operations and by managing the computer's resources.

OUTPUT DEVICE: An instrument that displays information from the computer, such as a video screen or printer.

PROGRAMS: See **SOFTWARE**.

RAM: Random Access Memory, an internal, temporary storage place in the computer.

RECORD: A collection of fields describing a single subject.

RELATIONAL DBMS: A DBMS that can link one or more records from a dataset to one or more records from another dataset by matching a common field.

RESULT SET: A subset of records created when you use commands such as **SELECT**, **PROJECT**, and **COMBINE**.

ROM: Read-only Memory, and internal, permanent storage place in the computer.

SOFTWARE (PROGRAMS): The instructions that tell the computer what to do.

TOGGLE KEY: A control key that allows you to switch back and forth from one mode to another; in Condor, Control A is a toggle key from the Replace mode to the Insert mode.

UTILITY COMMANDS: Commands such as **COPY**, **EMPTY**, **WRITE**, **READ**, **RENAME**, **DESTROY**, and **LOG**, which help you maintain and manage your database.

VALUE: The specific information you enter in a field about a subject.

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LESSON 1

COMMANDS

DBMS

DATE

SYSTEM

OBJECTIVES

After completing LESSON 1, you should be able to:

- A) Describe a microcomputer and its components, distinguishing between the functions of hardware and software.
- B) Give the definition of a database and describe its components.
- C) Identify the functions of a database management system (DBMS).
- D) Recognize the need for and purpose of a relational database management system like Condor.
- E) Load the Condor database management system by typing the DBMS command at the keyboard.
- F) Exit from Condor by typing the SYSTEM command at the keyboard.

In LESSON 1, we'll talk about some basic microcomputer terms. You'll be introduced to the concept of the database management system (DBMS), and to the Condor DBMS in particular. You'll learn how to load the Condor DBMS and how to exit from the program.

INTRODUCTION

Computers have recently moved into our homes and offices. Like visitors from a foreign land, they have brought with them their own language. But computers are not just temporary guests—they are here to stay like the automobile and the television set. If we learn to communicate with the computer, we'll be able to understand and use it.

COMPUTERS

A) Microcomputers and their components; hardware and software

Let's first look at the different types of computers:

A **microcomputer** (also known as a personal computer or desktop computer) is simply a complete set of computer parts packaged in a form small enough to be convenient for the home or office user.

Larger computers, such as **minicomputers** and **mainframes**, store more information than a microcomputer and are typically found in large businesses or institutions.

A computer system is made up of **hardware** and **software**. Let's start by talking about hardware. By hardware we mean the physical components of the computer system.

Computer hardware usually consists of these components:

HARDWARE

An **input device**, which allows a user to communicate with the computer. It is normally a keyboard designed much like that of a typewriter.

An **output device**, such as a video screen or printer, which displays information from the computer.

A **cpu**—central processing unit—which is the computer's brain or the controlling component of the computer system. It is here that the calculating and processing actually takes place.

A **storage unit**, of which there are two types: internal memory and disk storage. One example of the computer's internal memory is called Random Access Memory (RAM). RAM can be compared to the temporary way you use your own memory. For example, when you look up the number of the nearest pizza parlor in the telephone book, you remember it only long enough to call the pizza parlor and order your pizza. Once you hang up the telephone, you forget

the number. The same thing happens with RAM. You utilize this 'memory' temporarily, and access any part of it at random.

For a more permanent storage space, you use disks. Storing memory on a disk is comparable to writing down the number of the pizza parlor and keeping it for future reference. Disk storage can either be hard disks, which are built into the computer, or floppy disks, which can be removed from the computer. A disk stores information much like a phonograph record stores sound. The storage location on the disk is called a **file**. Files contain programs, data, text, etc.

SOFTWARE

Computer **software**, or programs, are the instructions that tell the computer what to do. There are many different kinds of software, including operating systems, development tools, and applications software.

The **operating system** is like the traffic cop of the computer. It is a program responsible for directing the computer system itself by starting and stopping operations and by managing the computer's resources.

Development tools include such software as programming languages and database management systems (DBMS). Programming languages are languages the computer can understand, like BASIC and FORTRAN. A DBMS is a development tool written in a language understood by *both* computers and people without programming experience. Both these tools can be used to build and maintain an application, such as inventory control, for example.

Applications software generally refers to programs *already* written, or developed, to perform very specific functions, such as property management or accounting.

DATABASE

B) The database and its components

In this course we will be using a development tool, the **database management system**, to develop a **database**. Let's begin by looking at the components of a database. (Fig. 1.1)

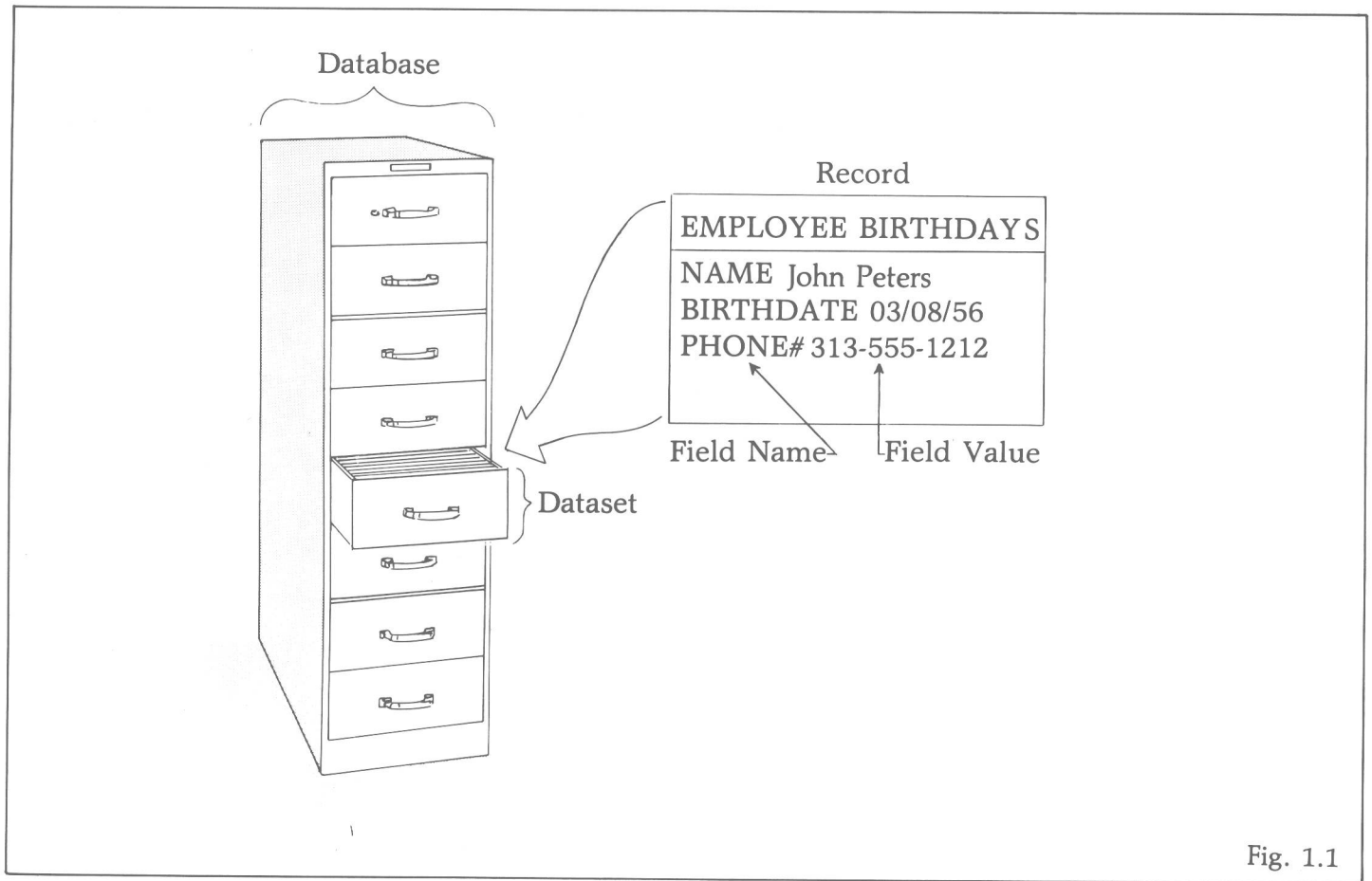


Fig. 1.1

field (data item): The smallest unit of information you want to record about a subject. For example, NAME, BIRTHDATE, and PHONE are all fields of information.

value: The specific information you enter in a field about a subject. For example, 03/08/56 could be a value for the field BIRTHDATE.

record: A collection of fields describing a specific subject.

dataset: A group of records with the same fields.

database: A dataset or datasets which make up all of the related information on a general subject—a PERSONNEL database, for example. (Fig. 1.2)

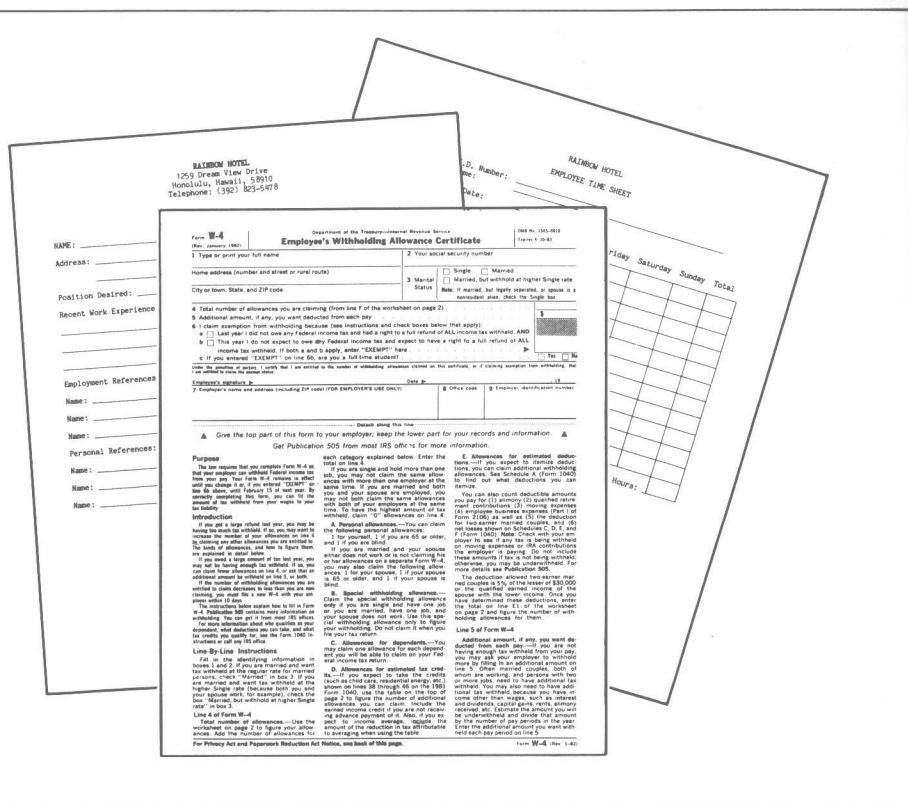


Fig. 1.2

DATABASE MANAGEMENT SYSTEM

C) The functions of a database management system

The *database management system* is a system for entering information into a database; updating, manipulating, storing, and retrieving the information.

The functions of a database management system such as Condor include:

- * **data entry** - keying information into the database.
- * **data retrieval** - accessing the information stored in the database.
- * **data correction** - changing the value in a record or group of records to a new value.
- * **data organization** - changing the sequence of the records within a dataset, or changing the fields that make up the records.
- * **data reporting** - displaying the information stored in a database in either a pre-formatted report or in a report form that you design.

The records in a database are much like the records in the filing cabinet you may have in your home or office. You might want to use a database management system on a microcomputer for a variety of reasons:

- * It is faster to look up a piece of information stored in a computer dataset than it is to thumb through a file in a filing cabinet.
- * It is more convenient to relate information from several datasets for reporting purposes than to collect information from several file folders.
- * You can reshuffle or rearrange the records in your datasets in a matter of seconds so that they are in logical order by any field. This is very useful for compiling information for reports.
- * Computers can compute (add, subtract, multiply, and divide) faster and more accurately than you could possibly do manually.
- * You can make changes to all the records stored in the dataset at once instead of changing each record individually.

D) The relational database management system

RELATIONAL DBMS

While there are several types of database management systems available, a **relational DBMS** like Condor offers more efficient management of your database. (Fig. 1.3). When data is stored in a relational design, you can link the records from one dataset to the records from another dataset by matching a common field.

| SCHEDULE | |
|----------------|------------|
| [I.D.] | ____ (4) |
| [DATE] | _____ (8) |
| [TIME.IN] | ____ (7) |
| [TIME.OUT] | ____ (7) |
| [ROOM] | _____ (20) |
| [EMP.ACTIVITY] | _____ (12) |
| [TYPE.EVENT] | _____ (20) |

| STAFF | |
|--------------|------------|
| [I.D.] | ____ (4) |
| [SSN] | _____ (11) |
| [FIRST.NAME] | _____ (12) |
| [LAST.NAME] | _____ (12) |
| [ADDRESS] | _____ (20) |
| [CITY] | _____ (12) |
| [STATE] | __ (2) |
| [ZIP] | ____ (5) |
| [PHONE] | _____ (12) |
| [BIRTHDATE] | _____ (8) |
| [DATE.HIRED] | ____ (8) |
| [POSITION] | _____ (12) |
| [SALARY] | _____ (8) |

Fig.1.3

LOADING CONDOR

E) Loading the Condor DBMS

Now that you are familiar with the basic DBMS vocabulary, you are ready to begin using Condor. The first thing you have to do is load the Condor DBMS, a set of Condor files that allows you to perform all the functions of a database management system.

Turn on the computer.

Place your disks into the appropriate disk drives—normally, the Condor disk into A and a blank storage disk into B.

The computer will display some messages and probably ask you for the date and time. After you respond to these questions, a **prompt** will appear. The prompt is a letter representing the disk drive you're working on, usually followed by > (greater than symbol) or a : (colon). This prompt indicates that you are working within the operating system and that you can issue any operating system command. One of those commands allows you to "load" the Condor DBMS program.

Next to the prompt you will see a position marker, or **cursor**, as it is usually called. The cursor indicates where you will begin typing on the screen.

Before we begin typing commands on the keyboard, though, let's just look at it more closely. Most microcomputers have these standard keyboard elements:

alphanumeric keypad (letters, numbers, and special characters)

return key

control key

backspace key

arrow keys

numeric keypad

shift keys

special function keys (these may vary)

Now let's try playing with these keys. Bang on the keyboard and experiment. You'll see that the computer only understands what it has been programmed to understand, and that *you* really control the results of each communication with the computer.

Now go ahead and load or "boot up" the Condor DBMS by typing DBMS and pressing the return key. A copyright message will appear on the screen.

The prompt **Enter License Number:** will appear. Enter your six digit license number and press the return key.

The system will now ask you to **Enter Today's Date:**. Enter the date in the month/day/year format and then press the return key. (Example: 5/4/83).

The appearance of the double >> indicates that you are working within the Condor DBMS.

F) Exiting from Condor

EXITING FROM CONDOR

The first Condor function you'll learn is how to unload or exit from the Condor program and return to the operating system.

At the A>> prompt, simply type SYS and press the return key. SYS is an abbreviation for the command SYSTEM, which allows you to return to the operating system.

A>> SYS (return)

You should now recognize the operating system prompt on the screen:

A >