DATABASE SYSTEM CONCEPTS

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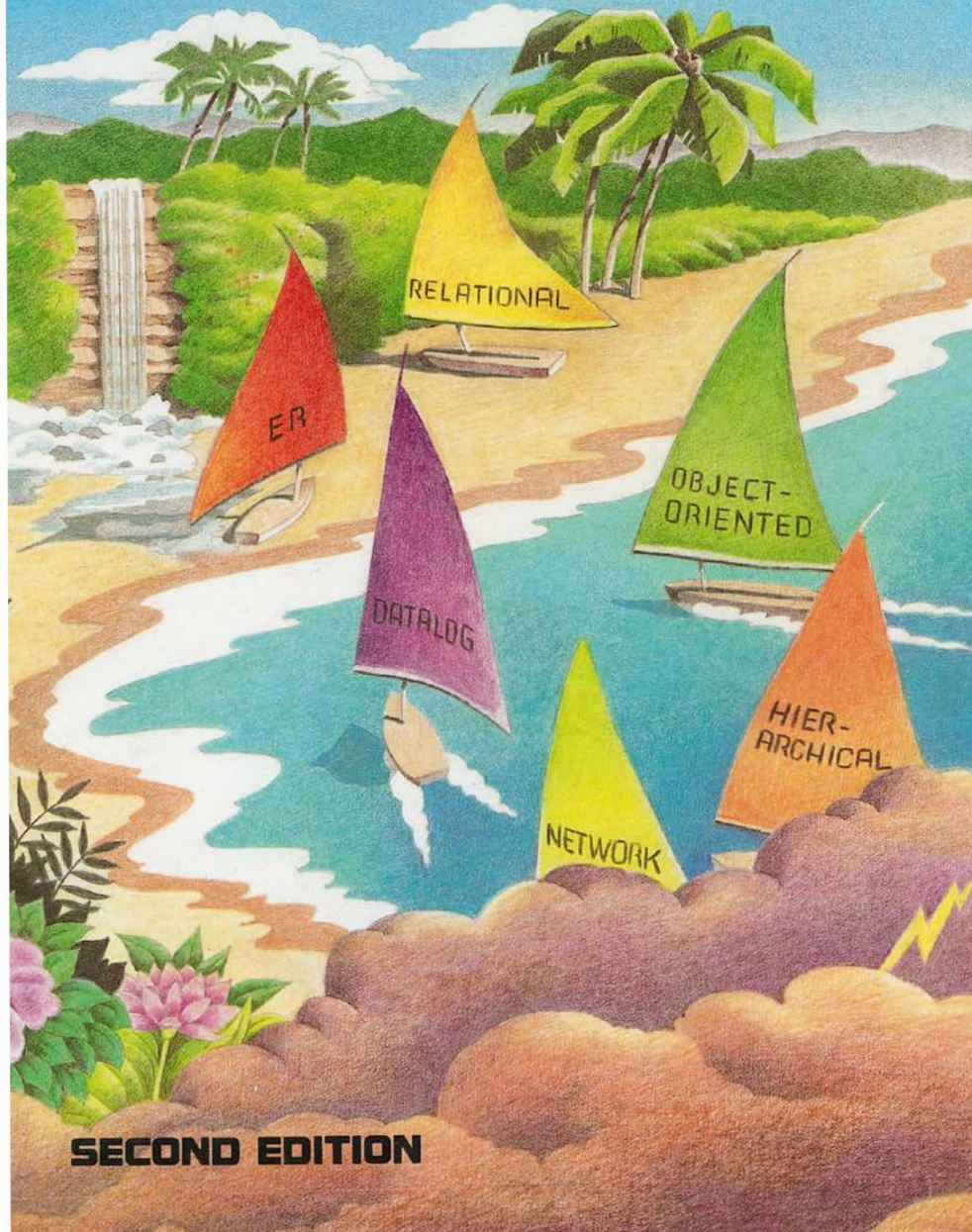
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DATABASE SYSTEM CONCEPTS

1

Introduction

A *database management system* (DBMS) consists of a collection of interrelated data and a set of programs to access that data. The collection of data, usually referred to as the *database*, contains information about one particular enterprise. The primary goal of a DBMS is to provide an environment that is both *convenient* and *efficient* to use in retrieving and storing database information.

Database systems are designed to manage large bodies of information. The management of data involves both the definition of structures for the storage of information and the provision of mechanisms for the manipulation of information. In addition, the database system must provide for the safety of the information stored, despite system crashes or attempts at unauthorized access. If data is to be shared among several users, the system must avoid possible anomalous results.

The importance of information in most organizations, and hence the value of the database, has led to the development of a large body of concepts and techniques for the efficient management of data. In this chapter, we present a brief introduction to the principles of database systems.

1.1 Purpose of Database Systems

Consider part of a savings bank enterprise that keeps information about all customers and savings accounts in permanent system files at the bank. In addition, the system has a number of application programs that allow the user to manipulate the files, including:

- A program to debit or credit an account.
- A program to add a new account.
- A program to find the balance of an account.
- A program to generate monthly statements.

These application programs have been written by system programmers in response to the needs of the bank organization.

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