\* Tóm Tắt:

-Properties of a Database:

A database is a collection of interrelated data items that are managed as a single unit. This definition is deliberately broad because so much variety exists across the various software vendors that provide database systems.

Oracle Corporation defines its database as a collection of physical files that are managed by an instance of its database software product.

A database object is a named data structure that is stored in a database. The specific types of database objects supported in a database vary from vendor to vendor and from one database model to another. Database model refers to the way in which a database organizes its data to pattern the real world. The most common database models are presented in the “Prevalent Database Models” section later in this chapter.

A file is a collection of related records that are stored as a single unit by an operating system.

-Prevalent Database Models:

A database model is essentially the architecture that the DBMS uses to store objects within the database and relate them to one another.

The most prevalent of these models are presented here in the order of their evolution.

A brief history of relational databases appears in the next section to help put things in a chronological perspective.

-A Brief History of Databases

Space exploration projects led to many significant developments in the science and technology industries, including information technology. As part of the NASA Apollo moon project, North American Aviation (NAA) built a hierarchical file system named Generalized Update Access Method (GUAM) in 1964. IBM joined NAA to develop GUAM into the first commercially available hierarchical model database, called Information Management System (IMS), released in 1966. Also in the mid 1960s, General Electric internally developed the first database based on the network model, under the direction of prominent computer scientist Charles W. Bachman, and named it Integrated Data Store (IDS). In 1967, the Conference on Data Systems Languages (CODASYL), an industry group, formed the Database Task Group (DBTG) and began work on a set of standards for the network model. In response to criticism of the “single-parent” restriction in the hierarchical model, IBM introduced a version of IMS that circumvented the problem by allowing records to have one “physical” parent and multiple “logical” parents. In June 1970, E. F. (Ted) Codd, an IBM researcher (later an IBM fellow), published a research paper titled “A Relational Model of Data for Large Shared Data Banks” in Communications of the ACM, the Journal of the Association for Computing Machinery, Inc. (The publication can be easily found on the Internet.) In 1971, the CODASYL DBTG published its standards, which were more than three years in the making. This began five years of heated debate over which model was the best.

The remainder of this book focuses on the relational model, with some coverage of the OO and object-relational models. Aside from the relational model being the most prevalent of all the database models in modern business systems, other important reasons

warrant this focus, especially for those of you who are learning about databases for the first time:

● Definition, maintenance, and manipulation of data storage structures is easy.

● Data is retrieved through simple ad hoc queries.

● Data is well protected.

● Well-established ANSI (American National Standards Institute) and ISO (International Organization for Standardization) standards exist.

● Many vendors offer a plethora of products.

● Conversion between vendor implementations is relatively easy.

● RDBMSs are mature and stable products.

* Trả lời câu hỏi:

1. A
2. C
3. D
4. Logical
5. External
6. In the application programs
7. D
8. C
9. D
10. B
11. C
12. B
13. A
14. Logical data independence
15. Views of the data

* Từ khóa quan trọng:

Database

Database Models

Physical data

Logical data

Layers of data