Amanda Williamson

Mr. Jeffries

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Types of Databases

Every database is based on a specific data model.[[1]](#footnote-1) A data model defines how users view the organization of the data; it does not define how the operating system actually arranges the data on the storage media. Three popular data models in use today are relational, object-oriented, and multidimensional.

A relational database is a database that stores data in tables that consist of rows and columns. In addition to storing data, a relational database also stores data relationships. A relationship is a link within the data. Applications best suited for relational databases are those whose data can be organized into a two-dimensional table, that is, tables with rows and columns. Many organizations use relational databases for payroll, accounts receivable, accounts payable, general ledger, inventory, order entry, invoicing, and other business-related functions.

An object-oriented database (OODB) stores data in objects. An object is an item that contains data, as well as the actions that read or process the data. Examples of applications appropriate for an object-oriented database include media databases that store images, audio clips, and/or video clips; groupware databases that store documents, such as schedules, calendars, manuals, memos, and reports; and CAD (computer-aided design) databases that store data about engineering, architectural, and scientific designs (Mendez, 2017).

A multidimensional database stores data in dimensions. Whereas a relational database is a two-dimensional table, a multidimensional database can store more than two dimensions of data. These multiple dimensions allow users to access and analyze any view of the database data. One application that uses multidimensional databases is a data warehouse. The database in a data warehouse often is distributed. The data in a distributed database exists in many separate locations throughout a network or the Internet. Although the data is accessible through a single server, the physical location of the server on which it is stored is transparent, and often unknown, to the user (Wang & Patel, 2017).

A database typically is based on one data model. Popular data models include relational, object-oriented, and multidimensional.

Works Cited

Mendez, A. R. (2017, Aug.). Relational and Object Databases. *Technology Today*, p. n. pag. Retrieved Sept. 15, 2017

Schwimmer, K. A. (2017). *Database Models.* Boston: Harbor Press.

Wang, G. H., & Patel, M. B. (2017, Sept.). *Data Warehouses and Distributed Databases*. (Course Technology) Retrieved Sept. 17, 2017, from Cybercrime Headquarters.

1. According to Schwimmer, a data model consists of rules and standards that define how a database organizes data (2017, p. 15). [↑](#footnote-ref-1)