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Database Basics in SAP

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All enterprise applications like SAP are essentially made up of programs along with the data that are both used by and created by those programs. In the case of an SAP component or product like ECC, the programs and data reside together in the same database. Given its fundamental station in the life of an SAP system, it is important to therefore understand the overall role of the database. This hour explores the different features and structures in a database.

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All enterprise applications like SAP are essentially made up of programs along with the data that are both used by and created by those programs. The data are organized in a meaningful way within a database, making it easy for the programs to access and find the data necessary to do something useful like run a financial report or create a sales order. In the case of an SAP component or product like ECC, the programs and data reside *together* in the same database. Each component generally has its own database (although exceptions exist)—a production system landscape composed of SAP ECC, SAP Business Warehouse (BW), and SAP Customer Relationship Management (CRM) consists of three production databases. Given its fundamental station in the life of an SAP system, it is important to therefore understand the overall role of the database. This hour, I explore the different features and structures in a database, including the various industry-standard database vendors/brands supported by SAP.

Highlights of this hour comprise

- Exploring the concepts and structures of an RDBMS
- Discovering which databases are supported by SAP
- Learning the difference between a primary and foreign key
- Discovering why indexes speed up data retrieval

Database Structure

A **database** is essentially an electronic filing system that houses a collection of information organized in such a way that allows a computer program to quickly find desired pieces of data.

In the simplest form, a database is composed of tables, columns (called *fields*), and rows (called *records* or *data*). A classic example of a database is a telephone book, which is organized alphabetically so as to make it possible to quickly find a desired piece of data. The telephone book can be considered a table, a storage container for information (see [Figure 3.1](#)). Within this table is typically found three columns (or fields)—name, address, and telephone number. Within each of these fields exists rows (or records), the simplest form of data in the database.



Figure 3.1 One common use of a database program is to store names, addresses, and phone numbers—essentially an electronic version of a telephone book, which itself is a simple type of database.

The basic structure of a database is quite similar to a Microsoft Excel spreadsheet wherein columns (fields) store row after row of records (data). The biggest difference between a database and a spreadsheet is simply that databases can contain multiple tables that are connected to one another through relationships. Thus, a database can be thought of as a much more complex, and ultimately much more useful, spreadsheet.

The database plays a key role in each SAP system, as it houses all the data that are used by that particular SAP component or product. Many brands of databases exist, making it easy for an IT shop to select a database vendor with which they are probably already familiar. Currently, SAP can use a variety of different brand name database releases ranging from very expensive and imminently flexible to very inexpensive and yet quite capable. A list of supported databases appears in [Table 3.1](#).

Table 3.1 SAP-Supported Databases

Partner	Website
Microsoft SQL Server	http://www.microsoft.com

MySQL MaxDB	http://www.mysql.com
IBM DB2 (various versions)	http://www.ibm.com
Oracle	http://www.oracle.com

It is important to note that not *all* database vendors and versions are supported by SAP. SAP tends to stick with the market leaders, over the years adding and removing support for certain vendors. In this way they not only limit the amount of database-specific customization they must perform, but they provide IT shops with flexibility and choices, keys to success both for SAP and the IT organizations tasked with deploying and supporting SAP solutions.

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