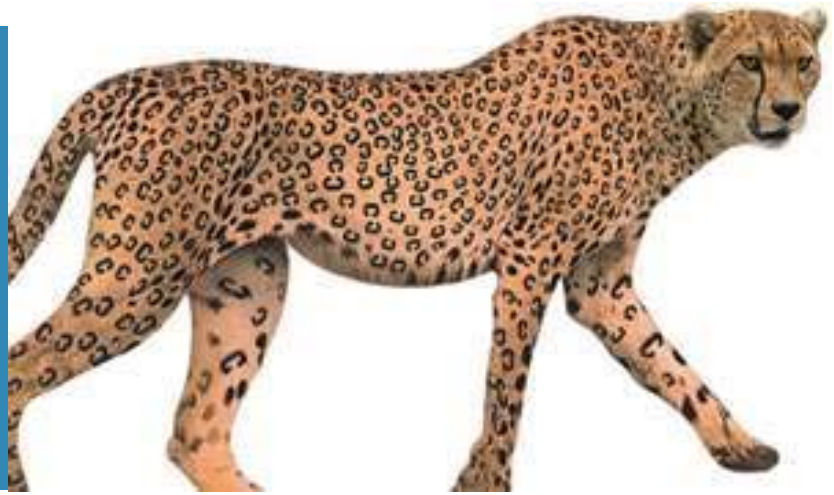
Cognizant | Academy
Passion for making a difference

SQL Server 2005

Targeted at: Entry Level Trainees



Session 15: Database and Data Files

Academy

About the Author

Created By:	Shashidharamurthy R L (124294)
Credential Information:	Senior Instructor, Cognizant Academy MCP, MCTS, SCJP, SCWCD
Version and Date:	SQLSERVER2005/PPT/0408/1.0

Cognizant Certified Official Curriculum

Icons Used

Questions

Tools

Hands on Exercise

Coding Standards

Test Your Understanding

Reference

Demonstration

A Welcome Break

Contacts

SQL Server 2005 Session 15: Overview

- **Introduction:**

  This session explains about creating database in SQL Server and also about types of database files and log file for physical data storage.

SQL Server 2005 Session 15: Objective

- **Objective:**

After completing this session, you will be able to:

- Identify the types of database files
- Explain the database filegroups
- List the different ways of creating databases

Types of Database Files

- SQL Server 2005 databases have three types of files:
  - » Primary data files
  - » Secondary data files
  - » Log files

Primary Data Files

- The primary data file is the starting point of the database and points to the other files in the database.
- Every database has one primary data file
- The recommended file name extension for primary data files is .mdf.

Secondary data files

- Secondary data files make up all the data files, other than the primary data file.
- The recommended file name extension for secondary data files is .ndf.

Log files

- Log files hold all the log information that is applied to recover the database
- There must be at least one log file for each database.
- The recommended file name extension for log files is .ldf.

Logical and Physical File Names

- SQL Server 2005 files have two names as follows:
  - **logical_file_name:** The *logical_file_name* is the name used to refer to the physical file in all Transact-SQL statements.
  - **os_file_name:** The *os_file_name* is the name of the physical file including the directory path.

Database Filegroups

- A filegroup is a logical collection of data files that enables administrators to manage all files within the filegroup as single item.
- There are two types of filegroups:
  - **Primary:** The primary filegroup contains the primary data file with the system tables.
  - **User-defined:** The user-defined filegroup contains the secondary data files.

Create Database

- Creating Database (Using Transact SQL command)
  - » Create Database Syntax:

```
CREATE DATABASE database_name
    [ ON  [ PRIMARY ] [ <filespec> [ ,...n ]
          [ , <filegroup> [ ,...n ] ]
       [ LOG ON { <filespec> [ ,...n ] }]
    ]
    [ COLLATE collation_name ]
    [ WITH <external_access_option> ]
 ]
[;]
```

Create Database (Contd.)

- For example:

```
CREATE DATABASE CognizantSales
ON
( NAME = Sales_dat,
    FILENAME = 'D:\Cognizant\saledat.mdf',
    SIZE = 10,
    MAXSIZE = 50,
    FILEGROWTH = 5 )
LOG ON
( NAME = Sales_log,
    FILENAME = 'D:\Cognizant\salelog.ldf',
    SIZE = 5MB,
    MAXSIZE = 25MB,
    FILEGROWTH = 5MB )
```

Create Database (Contd.)

- Creating Database (Using using SQL Server Management Studio)
- Steps to Create Database:
  1. In Object Explorer, connect to an instance of the SQL Server 2005 Database Engine and then expand that instance.
  2. Right-click Databases and then click **New Database**.
  3. In **New Database**, enter a database name.

Create Database (Contd.)

4. To create the database by accepting all default values, click **OK**,

   otherwise, continue with the following optional steps.

5. To change the default values of the primary data and transaction log files, in the **Database files** grid, click the appropriate cell and enter the new value

6. To add a new filegroup, click the **Filegroups** page. Click **Add** and then enter the values for the filegroup.

7. To create the database, click **OK**.

Q & A

- Allow time for questions from participants

Try it Out

Problem Statement:

- Create a database by Name MotorSales that has 10-MB data file to store sales data and one 5-MB transaction log file to store transactional log information.

Try it Out (Contd.)

Code:

```
-- execute the CREATE DATABASE statement create MotorSales

CREATE DATABASE MotorSales
ON
( NAME = MotorSales_dat,
    FILENAME = 'E:\MotorSales.mdf',
    SIZE = 10,
    MAXSIZE = 50,
    FILEGROWTH = 5 )
LOG ON
( NAME = MotorSales_log,
    FILENAME = 'E:\MotorSales.ldf',
    SIZE = 5MB,
    MAXSIZE = 25MB,
    FILEGROWTH = 5MB )
GO
```

Refer file Session_15_SQL_Server_2005_Presentation.sql for the soft copy of the code

Try it Out (Contd.)

How it Works:

- When SQL script is executed it creates a database by name MotorSales that has 10-MB data file to store sales data and one 5-MB transaction log file to store transactional log information.

Q & A

- Allow time for questions from participants

Test Your Understanding

1. SQL Server allows to create database less than the size of model database.

   State true or false

1. Which will be the extension of Primary datafiles in SQL Server?

   a. .ldf

   b. .mdf

   c. .ndf

   d. .rdf

SQL Server 2005 Session 15: Summary

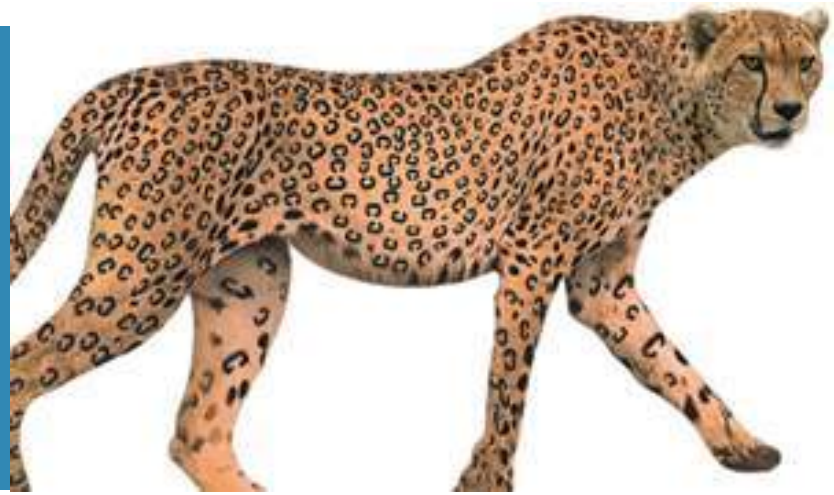
- SQL Server 2005 databases have three types of files:
  - » Primary data files
  - » Secondary data files
  - » Log files
- Filegroup is a logical collection of data files that enables administrators to manage all files within the filegroup as single item.

SQL Server 2005 Session 15: Source

- SQL Server Books Online
- Microsoft Official Curriculum:
  - 2779A Implementing a Microsoft SQL Server 2005 Database

Cognizant | Academy
Passion for making a difference

You have completed the Session 15 of SQL Server 2005.



Academy