



# SQL Server 2012 – Database Development

Lesson 2: Introduction to  
SQL Server 2012

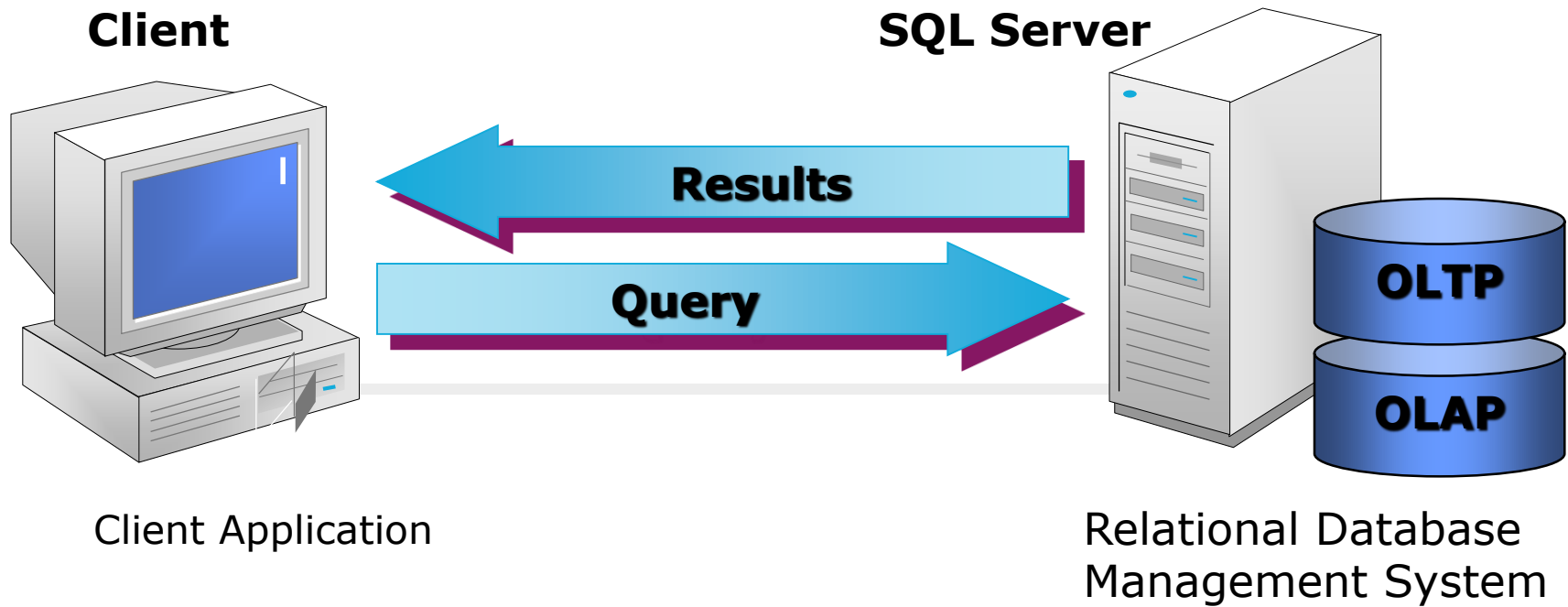


# Lesson Objectives

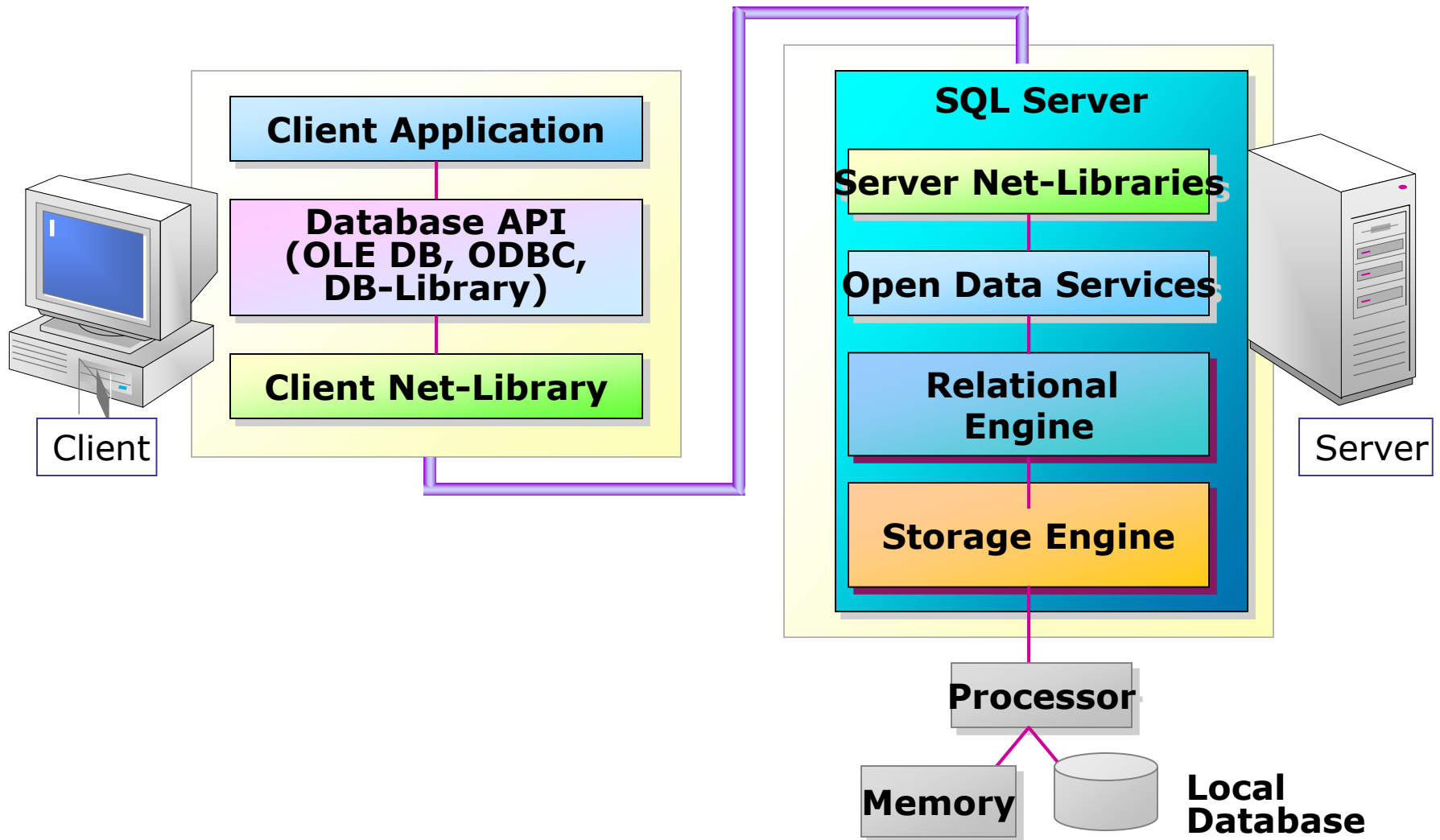
- In this lesson, you will learn:
  - What Is SQL Server?
  - SQL Server Components
  - SQL Server Versions, Editions and Tools
  - SQL Server Databases
  - Features of SQL Server



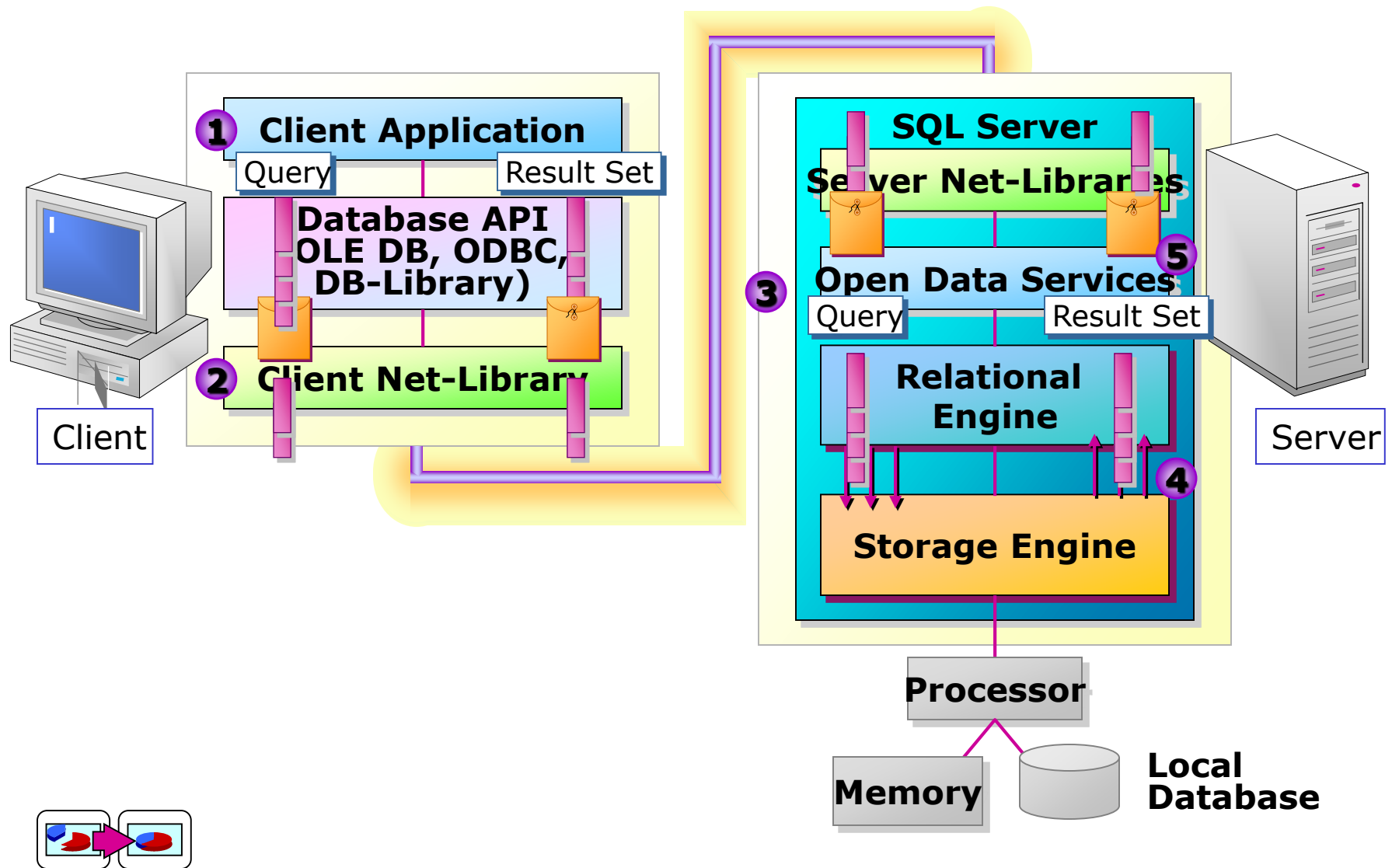
# Introduction to SQL Server 2012



# Client-Server Components

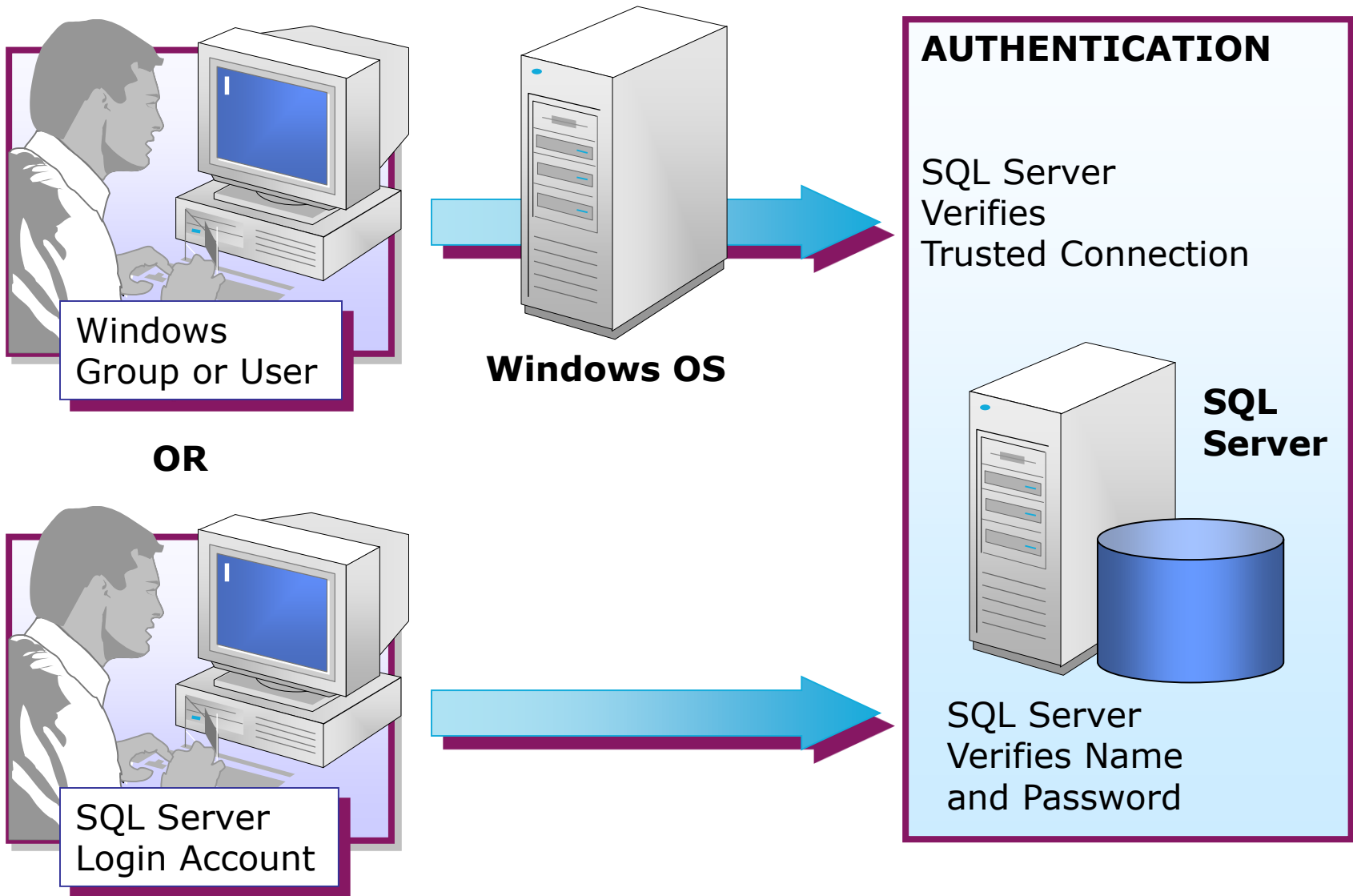


# Client-Server Communication Process





# Login Authentication





# SQL Server Versions

SQL Server 1.0 (1989)	Developed by Microsoft, Sybase and Ashton-Tate for OS/2
SQL Server 4.2 (1992)	Developed for Windows NT 3.1
SQL Server 6.0 (1995)	First version designed specifically for Windows NT
SQL Server 7.0 (1999)	Total rewrite of code base resulted in performance and scalability improvements
SQL Server 2000	Further improvements in performance, scalability and reliability
SQL Server 2005	New and improved features: Integration Services, Analysis Services, Notification Services, Reporting Services, and XML support
SQL Server 2008	Microsoft SQL Server 2008 is a powerful and reliable data management system that delivers a rich set of features, data protection, and performance for embedded application clients, light Web applications, and local data stores. Designed for easy deployment and rapid prototyping,
SQL Server 2012	SQL Server Database Engine introduces new features and enhancements that increase the power and productivity of architects, developers, and administrators who design, develop, and maintain data storage systems.



# SQL Server – Editions

Enterprise	For large-scale, business-critical applications
Standard	For small to medium departmental applications
Workgroup	For small-scale branch applications
Web	For low-cost, large-scale Web applications
Express	For entry-level and learning applications
Compact	For embedded databases
Developer	For development and testing





# Tools & Utilities

- SQL Server management Studio
  - Tool for developing and managing the SQL Server database objects.
- Business Intelligence Development Studio
  - Tool for developing business intelligence solutions, data analysis, reports, and SQL Server 2012 Integration Services (SSIS) packages.



# Tools & Utilities

## ➤ SQL Server Configuration manager

- Helps the database administrators to manage the services associated with the SQL Server.
- Administrators can start, pause, resume or stop the services by using this tool.
- Used to manage the network connectivity configuration from the SQL Server client computers.



# Tools & Utilities

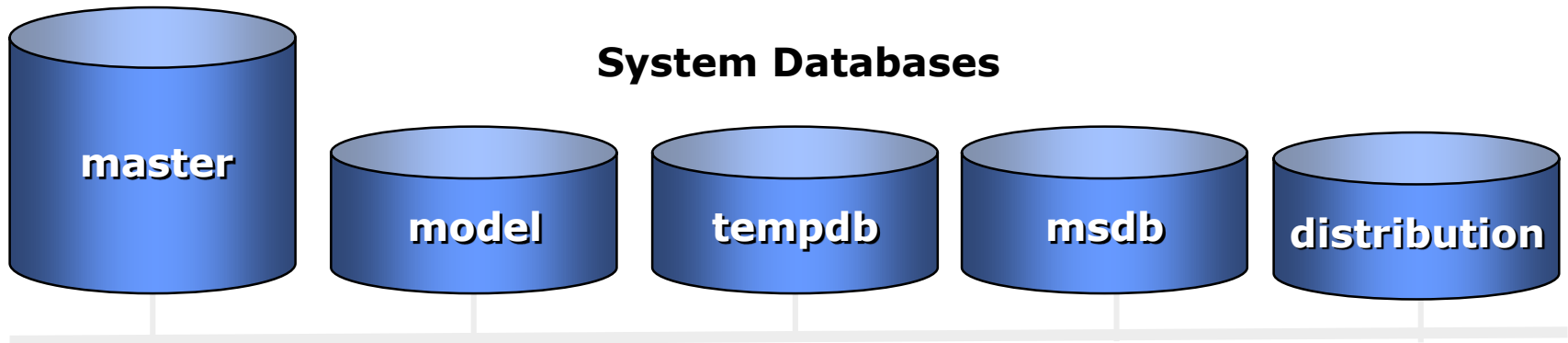
## ➤ Database Engine Tuning Advisor

- GUI tool used to provide tuning recommendations.
- Acts as a tuning advisory.
- Tuning information is stored in the msdb database

## ➤ SQL Server Profiler

- Graphical user interface to SQL Trace for monitoring an instance of the SQL Server Database Engine or Analysis Services.
- Used to capture and save data about each event to a file or table to analyze later.

# SQL Server 2012 – System Databases





# Database Objects

➤ Some major database objects are as follows

- Tables
- Views,
- Indexes,
- Triggers,
- Procedures / functions ,
- Constraints
- Rules

And so on...



# System Tables

- System Tables Store Information (Metadata) about the System and Database Objects
- Database Catalog Stores Metadata about a specific database
- System Catalog Stores Metadata about the entire system and all other databases
  - SYS.DATABASES
  - SYS.OBJECTS
  - SYS.TABLES
  - SYS.PROCEDURES
  - SYS.INDEXES



# Metadata Retrieval

## ➤ System Stored Procedures

```
EXEC sp_help Employees
```

## ➤ System and Metadata Functions

```
SELECT USER_NAME(10)
```

## ➤ Information Schema Views

```
SELECT * FROM INFORMATION_SCHEMA.TABLES
```



# Summary

- In this lesson, you have learnt:
- SQL Server 2012 database follows the relational model of data management system
  - SQL Server databases are categorized as:
    - System databases.
    - User-defined databases
  - SQL Server offers various Tools and Utilities to work with







# Review Question

- Question 1: List the two authentication modes available in MS SQL Server.
- Question 2: List the System Databases in SQL Server.

