**🔹 1. Database Objects**

These objects are directly stored inside a database.

✅ **Tables** – Store structured data in rows and columns.  
✅ **Views** – Virtual tables that present data from one or more tables.  
✅ **Indexes** – Improve query performance (Clustered, Non-Clustered, Unique, XML, Full-text, etc.).  
✅ **Stored Procedures (SPs)** – Precompiled SQL code stored for reuse.  
✅ **User-Defined Functions (UDFs)** – Functions that return a value or table.  
✅ **Triggers** – Automatically execute when a DML/DDL event occurs.  
✅ **Sequences** – Generate numeric values automatically (like identity columns but independent).  
✅ **Synonyms** – Aliases for database objects (tables, views, SPs, etc.).  
✅ **Schemas** – Logical grouping of database objects.  
✅ **User-Defined Data Types (UDDTs)** – Custom data types based on existing SQL types.  
✅ **XML Schema Collections** – Define structure and rules for XML data in SQL Server.

**🔹 2. Constraints (Enforce Data Integrity)**

These ensure valid data is entered in tables.

✅ **Primary Key** – Uniquely identifies each row.  
✅ **Foreign Key** – Enforces referential integrity between tables.  
✅ **Unique Key** – Ensures unique values in a column.  
✅ **Check Constraint** – Restricts values based on a condition.  
✅ **Default Constraint** – Assigns default values to columns.  
✅ **Not Null** – Ensures a column cannot have NULL values.

**🔹 3. Security Objects**

Control access and permissions.

✅ **Logins** – Authenticate users at the SQL Server level.  
✅ **Users** – Database-level security accounts.  
✅ **Roles** – Group users to manage permissions.  
✅ **Permissions** – Grant, Revoke, and Deny access to objects.  
✅ **Schemas** – Logical containers for database objects.  
✅ **Certificates & Keys** – Used for encryption and security.

**🔹 4. Transaction Management & Locking**

Handles concurrency and data consistency.

✅ **Transactions** – Group multiple SQL operations into a single unit (BEGIN TRANSACTION).  
✅ **Savepoints** – Allow partial rollback in a transaction.  
✅ **Locks** – Prevent data corruption (Shared, Exclusive, Update, Row, Table Locks, etc.).  
✅ **Deadlocks** – When two transactions block each other indefinitely.  
✅ **Isolation Levels** – Control concurrency issues (READ COMMITTED, SERIALIZABLE, etc.).

**🔹 5. Performance & Optimization Objects**

These improve efficiency and manage execution.

✅ **Execution Plans** – SQL Server's plan to execute a query efficiently.  
✅ **Query Store** – Captures and analyzes query performance over time.  
✅ **Statistics** – Help SQL Server optimize queries by tracking column data distribution.  
✅ **Indexing** – Improves read performance (Clustered, Non-clustered, Full-text, etc.).  
✅ **Partitioning** – Splitting large tables into smaller, manageable pieces.  
✅ **Fill Factor** – Defines how much space SQL Server leaves in index pages.

**🔹 6. Backup & Recovery Objects**

Ensure data safety and disaster recovery.

✅ **Database Backup** – Full, Differential, and Transaction Log backups.  
✅ **Database Restore** – Restore databases from backups.  
✅ **Recovery Models** – Full, Simple, and Bulk-Logged recovery models.  
✅ **Log Shipping** – Automatically copy transaction logs to a secondary server.  
✅ **Replication** – Copy and distribute database objects across servers.  
✅ **Always On Availability Groups** – High availability and disaster recovery.

**🔹 7. Advanced SQL Server Features**

Includes powerful tools for handling complex tasks.

✅ **Common Table Expressions (CTEs)** – Temporary named result sets.  
✅ **Dynamic SQL** – Construct and execute SQL statements dynamically.  
✅ **Hierarchical Data (Recursive CTEs)** – Handle tree-like structures (e.g., employee hierarchy).  
✅ **JSON Support** – Store and process JSON data inside SQL Server.  
✅ **Graph Tables** – Handle complex relationships using node and edge tables.  
✅ **Temporal Tables** – Keep historical data automatically (System-Versioned Tables).  
✅ **Full-Text Search (FTS)** – Search unstructured text efficiently.  
✅ **Spatial Data** – Handle geographic and geometric data (GEOGRAPHY, GEOMETRY).  
✅ **CLR Integration** – Execute .NET code inside SQL Server.

**🔹 8. MS SQL Server Agent & Automation**

Automate tasks and manage jobs.

✅ **SQL Server Agent** – Automate database tasks.  
✅ **Jobs** – Scheduled tasks inside SQL Server Agent.  
✅ **Alerts** – Notifications for specific database events.  
✅ **Operators** – Users who receive job alerts.  
✅ **Linked Servers** – Connect SQL Server to external data sources.

**🔹 9. Data Integration & ETL Tools**

Integrate data from multiple sources.

✅ **SQL Server Integration Services (SSIS)** – ETL tool for data movement.  
✅ **Bulk Insert** – Load large datasets quickly into SQL Server.  
✅ **OPENROWSET & OPENDATASOURCE** – Query external data sources directly.

**🔹 10. Monitoring & Logging**

Track database health and performance.

✅ **Database Audit** – Track changes and access (SQL Server Audit).  
✅ **Extended Events** – Lightweight monitoring and troubleshooting tool.  
✅ **SQL Profiler** – Tracks and logs SQL queries and performance.  
✅ **DMVs (Dynamic Management Views)** – System views that monitor performance.