Comparisons Between SQL Server Objects

1. Trigger and Stored Procedure

Feature	Trigger	Stored Procedure
Execution	Automatic (on DML events)	Manual (via EXEC)
Parameters	No	Yes (Input/Output)
Return Values	No	Yes (via OUTPUT or RETURN)
Use Case	Auditing, cascading actions	Business logic, encapsulated queries
Associated With	Table or View	Standalone object

2. Stored Procedure and Functions

Feature	Stored Procedure	Function
Return Value	Optional	Mandatory
SELECT Usage	Not directly usable	Usable in SELECT
Data Modification	Allowed	Limited or not allowed
Parameters	Input/Output	Input only
Error Handling	Supports TRY…CATCH	Limited

3. DROP and DELETE Statement

Feature	DROP	DELETE
Target	Schema objects (table, view, etc.)	Rows in a table
Rollback	Not possible (except inside transaction)	Possible if within a transaction
Impact	Removes entire object	Removes data only
Usage	Schema maintenance	Data management

4. SELECT and SELECT INTO Statement

Feature	SELECT	SELECT INTO
Purpose	Retrieve data	Retrieve and store in a new table
Creates Table	No	Yes
Common Use	Read existing data	Backups, temp copies
Limitation	Only reads	Can't define constraints

5. DDL, DML, DCL and DQL

Category	DDL	DML	DCL	DQL
Name	Data Definition Language	Data Manipulation Language	Data Control Language	Data Query Language
Description	Defines/modifies schema	Modify Data	Control permissions	Retrieve data
Example	CREATE, ALTER, DROP	INSERT, UPDATE, DELETE	GRANT, REVOKE	SELECT

6. Table Valued and Multi Statement Function

Feature	Table Valued Function	Multi Statement Function
Body	Single SELECT	Multiple statements
Performance	High (query inlined)	Slower (compiled)
Flexibility	Low	High
Return Type	Table	Table

7. VARCHAR(50) and VARCHAR(MAX)

Feature	VARCHAR(50)	VARCHAR(MAX)
Max Size	Up to 50 characters	Up to ~2GB
Storage	In-row	Off-row (if > 8KB)
Performance	Better for small text	Slight overhead for large text
Use Case	Names, short fields	Descriptions, documents

8. SQL and Windows Authentication

Feature	SQL Authentication	Windows Authentication
Identity Type	SQL login (username/password)	Windows user/group
Password Storage	Stored in SQL Server	Not stored in SQL Server
Integration	Manual	Integrated (SSO with AD)
Use Case	External apps, cross-platform	Internal Windows apps

9. Inline Function and View

Feature	Inline Function	View
Accepts Parameters	Yes	No
Return Type	Table	Table
Reusability	More dynamic	Static query result
Use in Joins	Yes	Yes

10. Identity and Unique Constraint

Feature	Identity Constraint	Unique Constraint
Auto Increment	Yes	No
Enforces Uniqueness	No (unless also unique)	Yes
Purpose	Generate surrogate keys	Enforce business logic rules
Customization	Limited	Flexible