

Difference Between Temp table and Temp Variable

Feature	Table Variables	Temporary Tables
Scope	Current batch	Current session, nested stored procedures. Global: all sessions.
Usage	UDFs, Stored Procedures, Triggers, Batches.	Stored Procedures, Triggers, Batches.
Creation	DECLARE statement only.	CREATE TABLE statement. SELECT INTO statement.
Table name	Maximum 128 characters.	Maximum 116 characters.
Column data types	Can use user-defined data types. Can use XML collections.	User-defined data types and XML collections must be in tempdb to use.
Collation	String columns inherit collation from current database.	String columns inherit collation from tempdb database.
Indexes	Can only have indexes that are automatically created with PRIMARY KEY & UNIQUE constraints as part of the DECLARE statement.	Indexes can be added after the table has been created.
Constraints	PRIMARY KEY, UNIQUE, NULL, CHECK, but they must be incorporated with the creation of the table in the DECLARE statement. FOREIGN KEY not allowed.	PRIMARY KEY, UNIQUE, NULL, CHECK. Can be part of the CREATE TABLE statement, or can be added after the table has been created. FOREIGN KEY not allowed.
Post-creation DDL (indexes, columns)	Statements are not allowed.	Statements are allowed.
Data insertion	INSERT statement (SQL 2000: cannot use INSERT/EXEC).	INSERT statement, including INSERT/EXEC. SELECT INTO statement.
Insert explicit values into identity columns (SET IDENTITY_INSERT).	The SET IDENTITY_INSERT statement is not supported.	The SET IDENTITY_INSERT statement is supported.
Truncate table	Not allowed.	Allowed.

Destruction	Automatically at the end of the batch.	Explicitly with DROP TABLE statement. Automatically when session ends. (Global: also when other sessions have no statements using table.)
Transactions	Last only for length of update against the table variable. Uses less than temporary tables.	Last for the length of the transaction. Uses more than table variables.
Stored procedure recompilations	Not applicable.	Creating temp table and data inserts cause procedure recompilations.
Rollbacks	Not affected (Data not rolled back).	Affected (Data is rolled back).
Statistics	Optimizer cannot create any statistics on columns, so it treats table variable as having 1 record when creating execution plans.	Optimizer can create statistics on columns. Uses actual row count for generation execution plan.
Pass to stored procedures	SQL 2008 only, with predefined user-defined table type.	Not allowed to pass, but they are still in scope to nested procedures.
Explicitly named objects (indexes, constraints).	Not allowed.	Allowed, but be aware of multi-user issues.
Dynamic SQL	Must declare table variable inside the dynamic SQL.	Can use temporary tables created prior to calling the dynamic sql.