Adding Data Using T-SQL Statements

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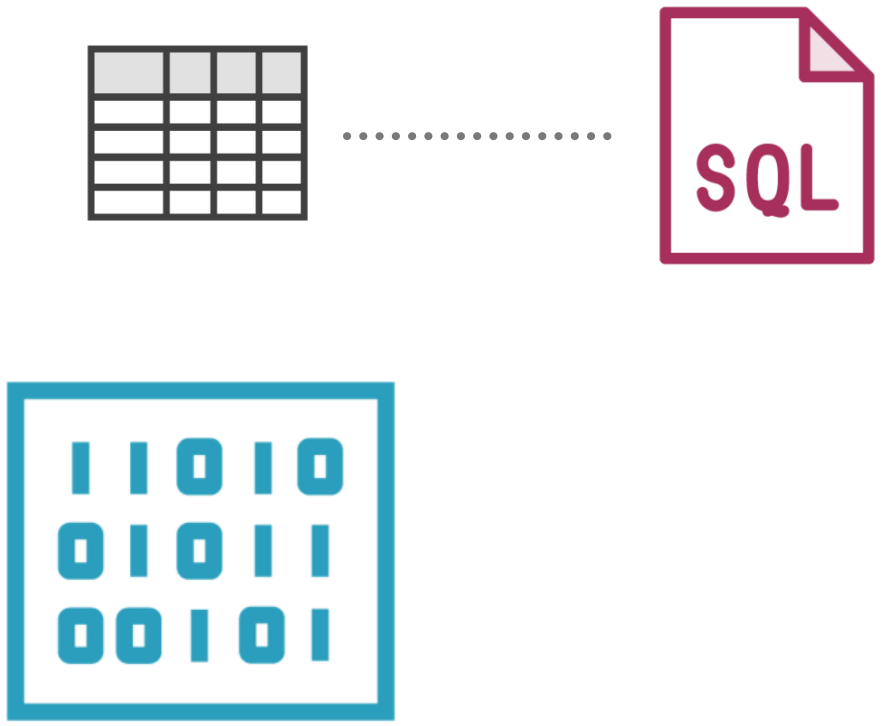

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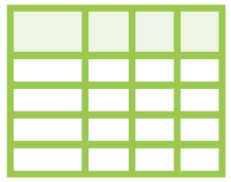
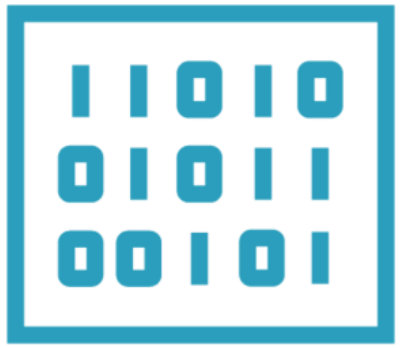
CREATE





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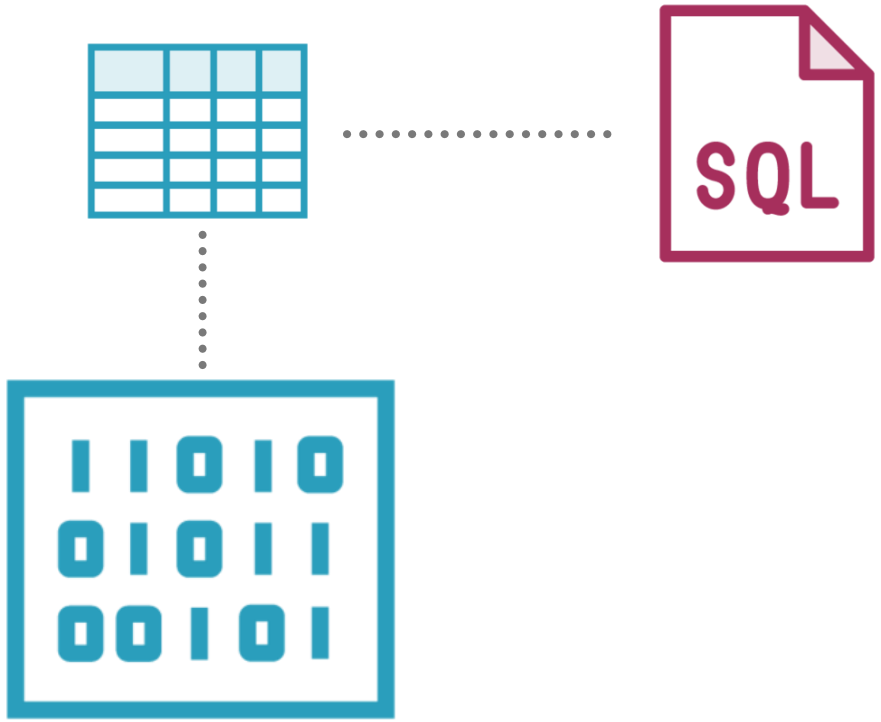

Adding Data Using T-SQL Statements

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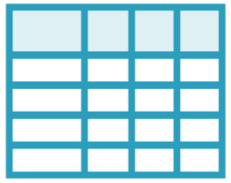
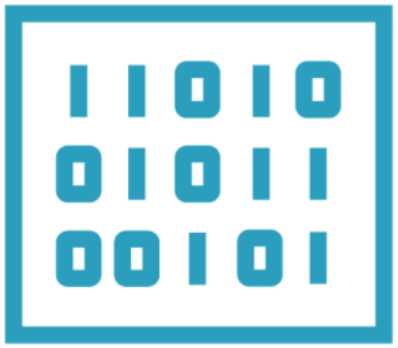
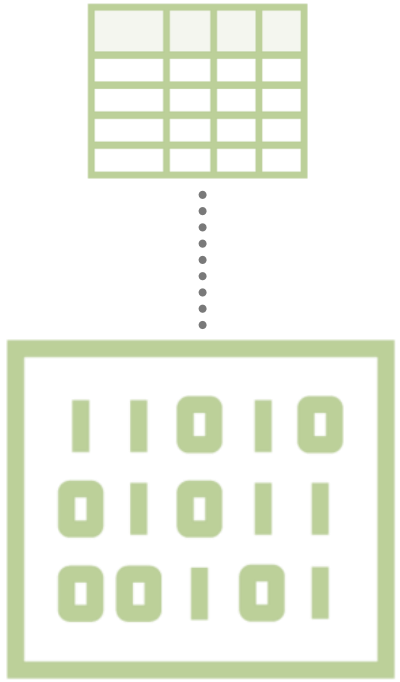
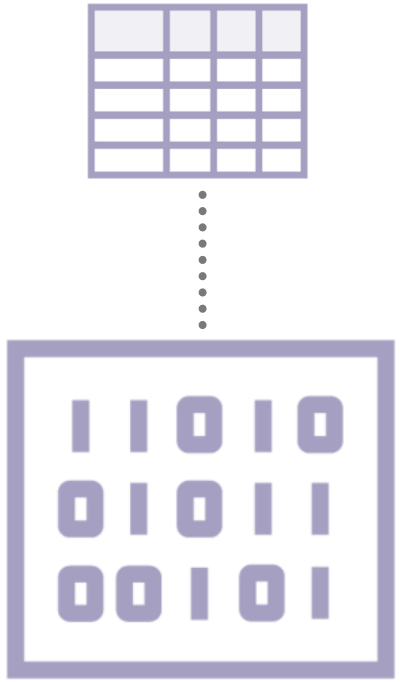




Adding Data Using T-SQL Statements



Adding **Data** Using T-SQL Statements



INSERT

Add Data

UPDATE

Modify Data

DELETE

Remove Data

BULK INSERT

UPDATE

DELETE

Add Data

Modify Data

Remove Data

INSERT

UPDATE

DELETE

Add Data

Modify Data

Remove Data

SQL Server 2017

Filter by title

Language elements
Queries
Statements
Statements
General
BULK INSERT
DELETE
DISABLE TRIGGER
ENABLE TRIGGER
INSERT
INSERT (SQL Graph)
UPDATE
MERGE
TRUNCATE TABLE
UPDATE STATISTICS
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INSERT (Transact-SQL)

08/09/2017 • 34 minutes to read • +6

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Adds one or more rows to a table or a view in SQL Server. For examples, see Examples.

Transact-SQL Syntax Conventions

Syntax

Copy

```
-- Syntax for SQL Server and Azure SQL Database

[ WITH <common_table_expression> [ ,...n ] ]
INSERT
{
        [ TOP ( expression ) [ PERCENT ] ]
        [ INTO ]
        { <object> | rowset_function_limited
          [ WITH ( <Table_Hint_Limited> [ ...n ] ) ]
        }
    {
        [ ( column_list ) ]
        [ <OUTPUT Clause> ]
        { VALUES ( { DEFAULT | NULL | expression } [ ,...n ] ) [ ,...n     ]
        | derived_table
        | execute_statement
        | <dml_table_source>
        | DEFAULT VALUES
        }
    }
}
[;]
```

In this article

Syntax
Arguments
Remarks
Best Practices
Data Types
Error Handling
Interoperability
Limitations and Restrictions
Logging Behavior
Security
Examples
See Also

SQL Server 2017

Filter by title

SUBSCRIPTION
KILL STATS JOB
RECONFIGURE
SHUTDOWN
Reserved Keywords
Syntax Conventions
-- (Comment)
Slash Star (Block Comment)
NULL & UNKNOWN
USE
Backslash (Line Continuation)
GO
Control-of-Flow
Cursors
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Transact-SQL Syntax Conventions (Transact-SQL)

03/08/2018 • 4 minutes to read • +8

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The following table lists and describes conventions that are used in the syntax diagrams in the Transact-SQL Reference.

Convention	Used for
UPPERCASE	Transact-SQL keywords.
italic	User-supplied parameters of Transact-SQL syntax.
bold	Type database names, table names, column names, index names, stored procedures, utilities, data type names, and text exactly as shown.
underline	Indicates the default value applied when the clause that contains the underlined value is omitted from the statement.
| (vertical bar)	Separates syntax items enclosed in brackets or braces. You can use only one of the items.
[ ] (brackets)	Optional syntax items. Don't type the brackets.
{ } (braces)	Required syntax items. Don't type the braces.
[,...*n*]	Indicates the preceding item can be repeated *n* number of times. The occurrences are separated by commas.

In this article

Multipart Names
Code Example Conventions
"Applies to" References
See Also

INSERT Syntax

```
INSERT INTO table_name   (column_one, column_two, ..., column n)
VALUES ( {default | NULL | expression} )
```

INSERT Syntax

Specify destination table

Which columns are going to be inserted

```
INSERT INTO table_name    (column_one, column_two, ..., column n)
VALUES ( {default | NULL | expression} )
```

Specify search condition for a group or an aggregate.

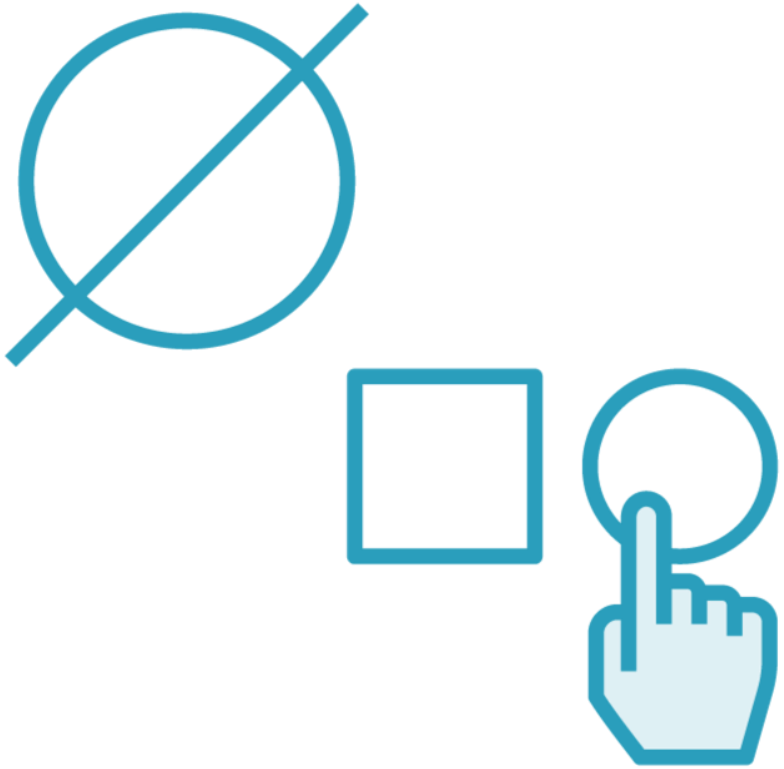
INSERT With Columns and Values

Columns	Values
[Reputation]	1
[CreationDate]	CAST(N'2016-06-22T17:35:14.680' AS DateTime)
[DisplayName]	N'xavier-morera'
[LastAccessDate]	CAST(N'2016-06-22T17:35:14.680' AS DateTime)
[WebsiteUrl]	NULL
[Location]	N'Costa Rica'
[AboutMe]	NULL
...	..

Demo

An INSERT Statement

With Columns and Values



Optional to provide all columns with values

- Default values or NULL

Providing columns argument is optional

- Not needed if all values provided
- And in order

Demo

An INSERT Statement

With All Values

NOT NULL and NULL

Id
Reputation
CreationDate
DisplayName
LastAccessDate
Views
UpVotes
DownVotes

NOT NULL

Fields that are required
when inserting records

WebsiteUrl
Location
AboutMe
ProfileImageUrl
AccountId

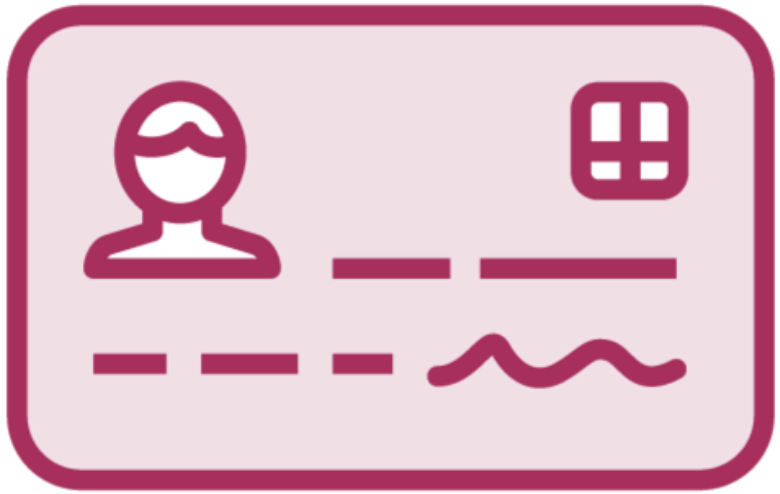
NULL

If missing they are inserted
as NULL or a default value

Demo

An INSERT Statement

With Some NULL and Default Values



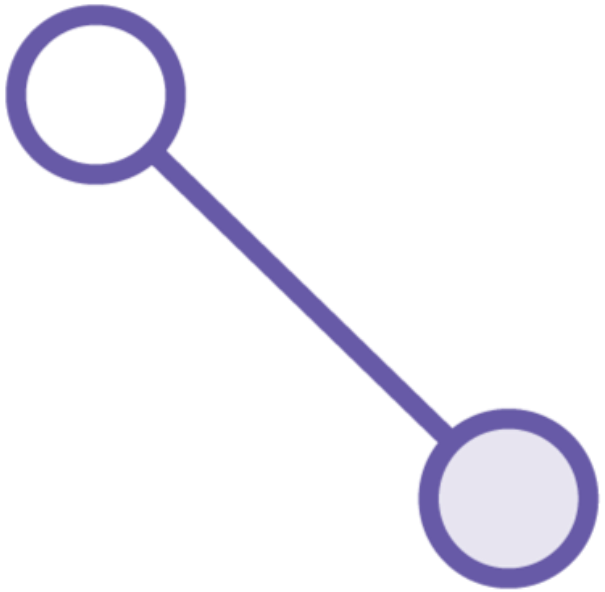
Identity column is inserted automatically

Possible to specify identity explicitly

- Must set IDENTITY_INSERT to allow this
- Else an error is raised

Demo

INSERT with Identity



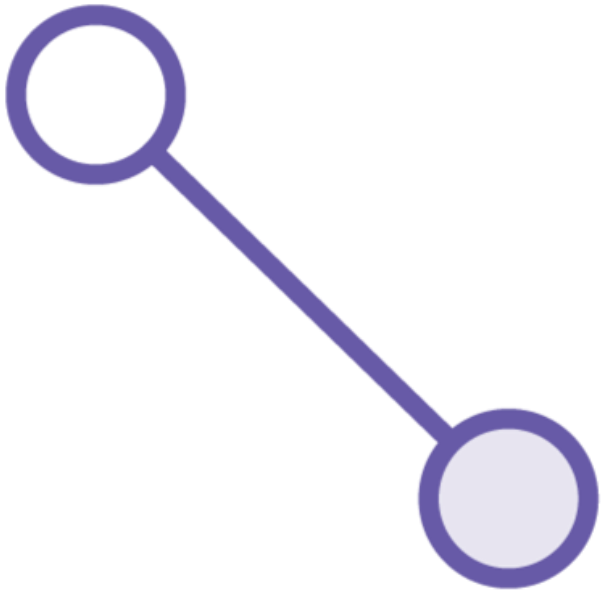
Constraints are used to specify rules

- For the data in the table

For example limit type or value of the data

- Operation aborted on constraint violation

Constraints at table or column level



Typical constraints include

- NOT NULL
- UNIQUE
- PRIMARY KEY
- FOREIGN KEY
- DEFAULT

Demo

INSERT with Constraints

INSERT more than 1 record

- Large file with structured data
  - CSV

"Import" the file all at once

- Instead of one row at a time

BULK INSERT

SQL Server 2017

Filter by title

XML
DBCC
Functions
Language elements
Queries
Statements
Statements
General
BULK INSERT
DELETE
DISABLE TRIGGER
ENABLE TRIGGER
INSERT
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MERGE
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BULK INSERT (Transact-SQL)

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Imports a data file into a database table or view in a user-specified format in SQL Server

Transact-SQL Syntax Conventions

Syntax

Copy

```
BULK INSERT
   { database_name.schema_name.table_or_view_name | schema_name.table_or_view_name | table_or_view_nam
      FROM 'data_file'
     [ WITH
    (
   [ [ , ] BATCHSIZE = batch_size ]
   [ [ , ] CHECK_CONSTRAINTS ]
   [ [ , ] CODEPAGE = { 'ACP' | 'OEM' | 'RAW' | 'code_page' } ]
   [ [ , ] DATAFILETYPE =
      { 'char' | 'native'| 'widechar' | 'widenative' } ]
   [ [ , ] DATASOURCE = 'data_source_name' ]
   [ [ , ] ERRORFILE = 'file_name' ]
   [ [ , ] ERRORFILE_DATA_SOURCE = 'data_source_name' ]
   [ [ , ] FIRSTROW = first_row ]
   [ [ , ] FIRE_TRIGGERS ]
   [ [ , ] FORMATFILE_DATASOURCE = 'data_source_name' ]
   [ [ , ] KEEPIDENTITY ]
   [ [ , ] KEEPNULLS ]
   [ [ , ] KILOBYTES_PER_BATCH = kilobytes_per_batch ]
   [ [ , ] LASTROW = last_row ]
   [ [ , ] MAXERRORS = max_errors ]
   [ [ , ] ORDER ( { column [ ASC | DESC ] } [ ,...n ] ) ]
```

Thank you.

In this article

Syntax
Arguments
Compatibility
Data Types
General Remarks
Interoperability
Logging Behavior
Restrictions
Performance Considerations
Security
Examples
See Also

Demo

Adding Multiple Rows with BULK INSERT

Takeaway

SELECT is potentially the most common statement

- But to query data, you **need** data

Add data to your tables using INSERT

Multiple scenarios that you need to consider

Takeaway

INSERT with

- All columns and all values
- All values
- NULL and default values
- Explicitly set identity
- With constraints
- Insert multiple rows at once with BULK INSERT