

# Manipulating Data with T-SQL

*DML, not DHL*



# Overview

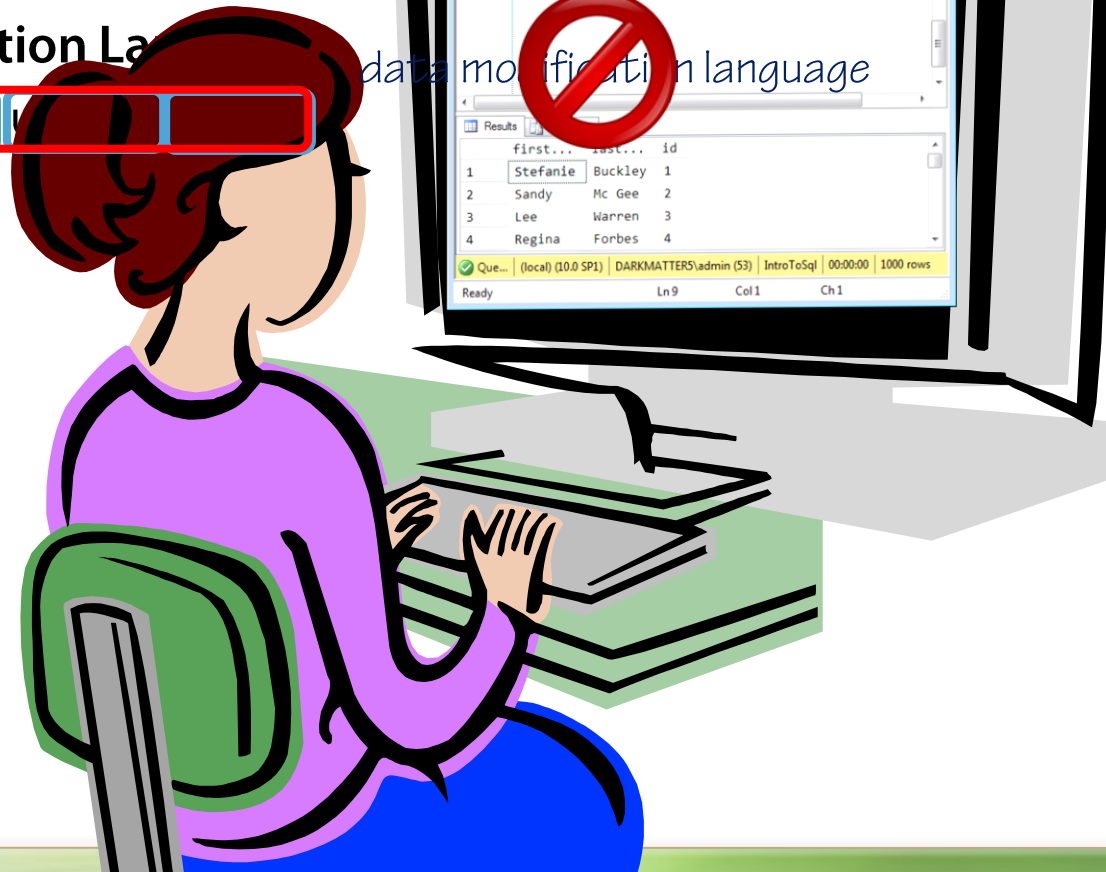
## ➔ SSMS

- text based access to SQL Server

## ➔ Data Manipulation Language

- `select`, `insert`, `update`

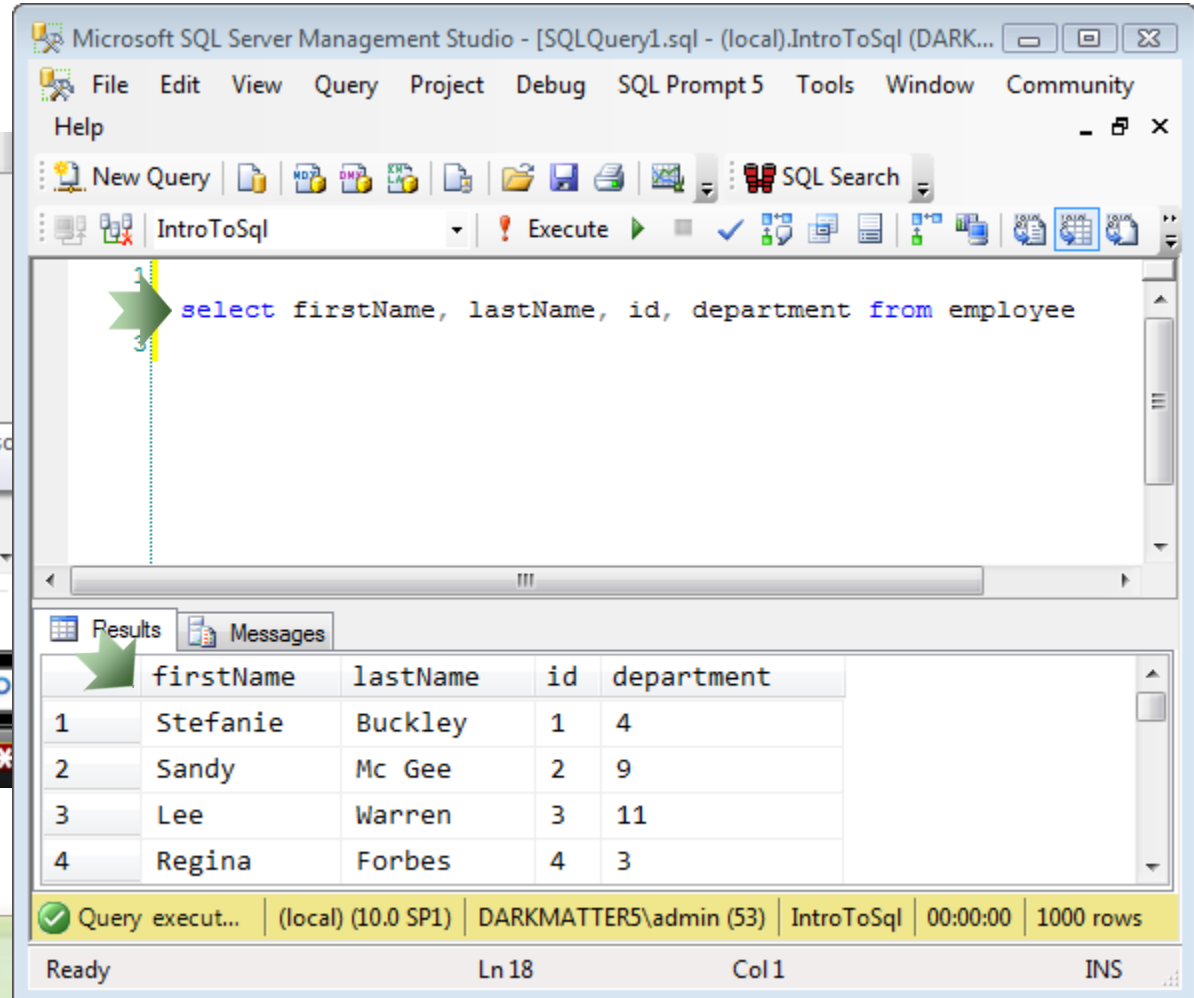
data manipulation language



# SSMS

## ➔ SQL Server Management Studio

- GUI for SQL Server



The screenshot displays the Microsoft SQL Server Management Studio (SSMS) interface. The title bar reads "Microsoft SQL Server Management Studio - [SQLQuery1.sql - (local).IntroToSql (DARK...". The menu bar includes File, Edit, View, Query, Project, Debug, SQL Prompt 5, Tools, Window, and Community. The toolbar contains icons for New Query, Open, Save, Print, and SQL Search. The main query editor shows the following SQL query:

```
1 select firstName, lastName, id, department from employee
```

The query is executed, and the Results pane displays the following data:

	firstName	lastName	id	department
1	Stefanie	Buckley	1	4
2	Sandy	Mc Gee	2	9
3	Lee	Warren	3	11
4	Regina	Forbes	4	3

The status bar at the bottom indicates "Query execut...", "(local) (10.0 SP1)", "DARKMATTER5\admin (53)", "IntroToSql", "00:00:00", and "1000 rows". The bottom status bar shows "Ready", "Ln 18", "Col 1", and "INS".

# Select

➔ Gets data from SQL Server

- declare not steps

```
select  
lastName  
from employee  
where department = 3
```

**WolframAlpha**™ computational knowledge engine

get countries with a population greater than 100 million

	lastName	firstName	id	department
1	Forbes	Juckley	1	4
2	Nunez	C. Gee	2	9
3	Hughes	arren	3	11
4	Gamble	orbes	4	3
5	Richardson	im	5	7
6	Ross	unez	6	3
7	Hoover	ina   India	7	Indonesia   Japan
8	Powers	niga   Russia	8	United States (total: 11)
9	Rich	angram	9	12
Medina	arson			5

Show mesh

Satellite image >

# Insert

## ➔ Add data to a table

- table is a set of entities

## ➔ Missing data

## ➔ Default data

```
insert into people values (Herman, Adkins, Aggie, Dark$1806, NULL)
```

People Table

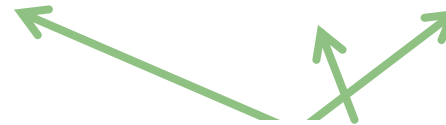
	first name	last name	favorite color
1	Sara	Abbott	WhiteSmoke
2	Lance	Acevedo	SeaShell
3	Tiffany	Acosta	Bisque
4	Ruby	Adams	PaleGreen

← null value  
← default favorite color

# Update

- ➔ Update is applied to set
- ➔ Need to be able to find it to update it
  - primary key

```
update  
where [favorite_color] = 'orange' and [last name] = 'Abbott'
```



*replace this color everywhere*

# Delete

- ➔ Delete is applied to a set
- ➔ Need to be able to find entity to delete it
  - primary key

```
delete  
where [first name] = 'John' and [last name] = 'Abbott'
```

remove these entities  
primary key

# JOIN



## Combines two sets of data

- used to answer questions that involve more than one table

first name	last name	favorite color	brand	model	color	vin	price
Herman	Adkins	DarkSlateGrey	Buick	sports	DarkSlateGrey	0I2LZ2J02BDZGWYMX	717.6994
Herman	Adkins	DarkSlateGrey	Fairlane	muscle	DarkSlateGrey	190HH9S762WF0BS74	1493.5998
Herman	Adkins	DarkSlateGrey	Toyota	muscle	DarkSlateGrey	3V3QYZJP5Q21I6Q00	840.5828
Herman	Adkins	DarkSlateGrey	Hyundai	sports	DarkSlateGrey	46533U9FN3I2J1ROK	1396.2827
Herman	Adkins	DarkSlateGrey	Buick	station wagon	DarkSlateGrey	4B3XP48HX2XWMBI4I	939.9062
Herman	Adkins	DarkSlateGrey	Toyota	cabriolet	DarkSlateGrey	4U6QCQPJS4NT19K33	1358.936
Herman	Adkins	DarkSlateGrey	Hyundai	suv	DarkSlateGrey	SED6SK6DXQ100UPQA	1147.2572
Herman	Adkins	DarkSlateGrey	Toyota	muscle	DarkSlateGrey	1R9LH11FOA1115N	76.0011
Kristie	Anderson	Gold	Buick	sports	Gold	08S112Z111E9	76.6
Kristie	Anderson	Gold	Hyundai	sedan	Gold	LYDXG3UVPXDV8HJG1	910.9316
Kristie	Anderson	Gold	Fairlane	sports	Gold	HREN5NZZXX8EANWSC	760.4061
Kristie	Anderson	Gold	Fairlane	station wagon	Gold	I2CZBPVVSZS3P5YP73	1258.2411
Kristie	Anderson	Gold	Buick	suv	Gold	ICD6ZDON47K7FDIRN	1460.7933
Kristie	Anderson	Gold	Cheverolet	sports	Gold	J3BF9F6AN2KL1E59U	1442.3852
Kristie	Anderson	Gold	Jaguar	cabriolet	Gold	FE08TLH1SWYG94G51	1045.2486
Kristie	Anderson	Gold	Buick	sedan	Gold	1T8LE11NI3K11XEO	739.0019



# Summary

- SSMS
- Select
- Insert
- Update
- Delete

# References

- <http://www.wolframalpha.com>