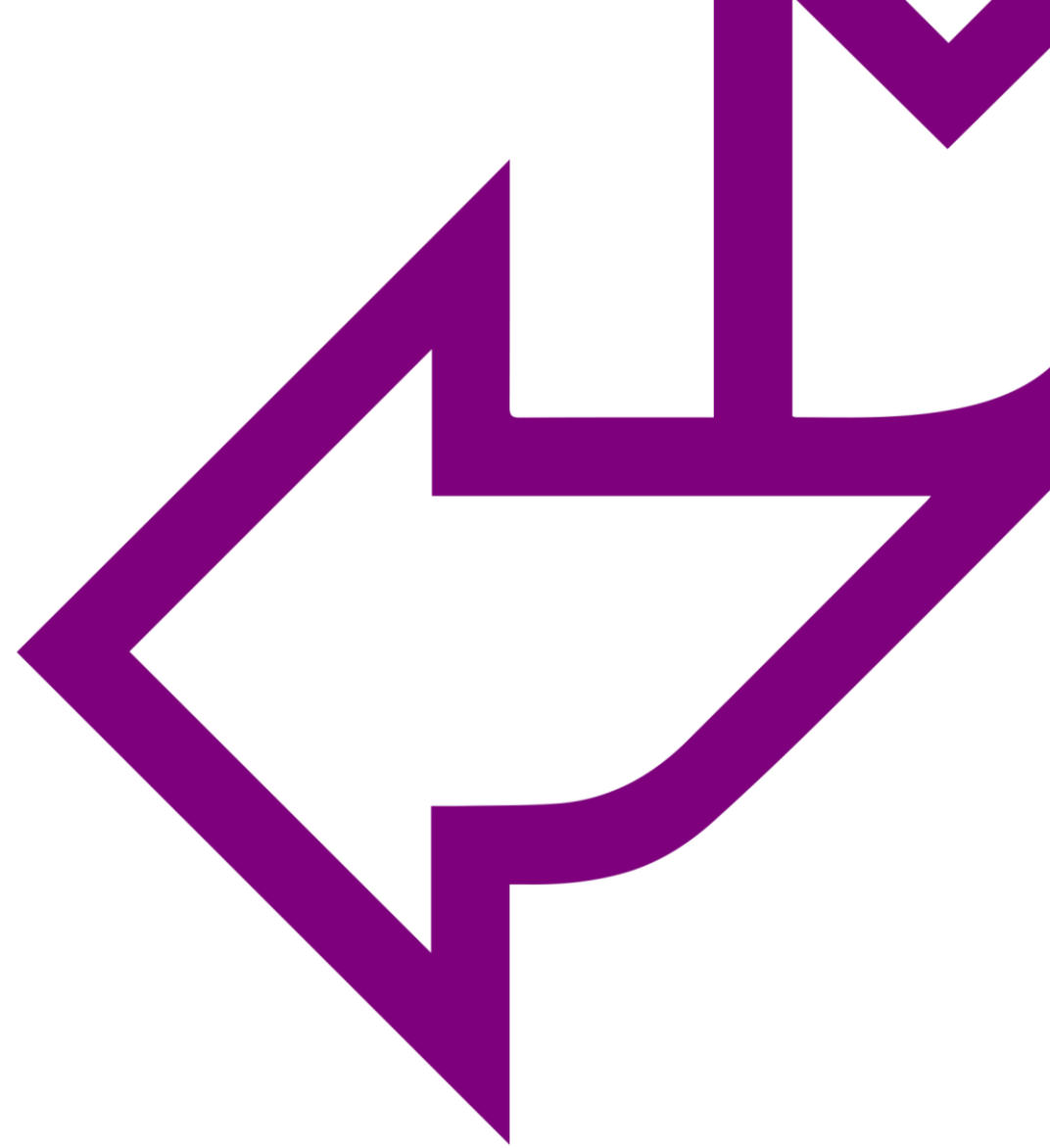




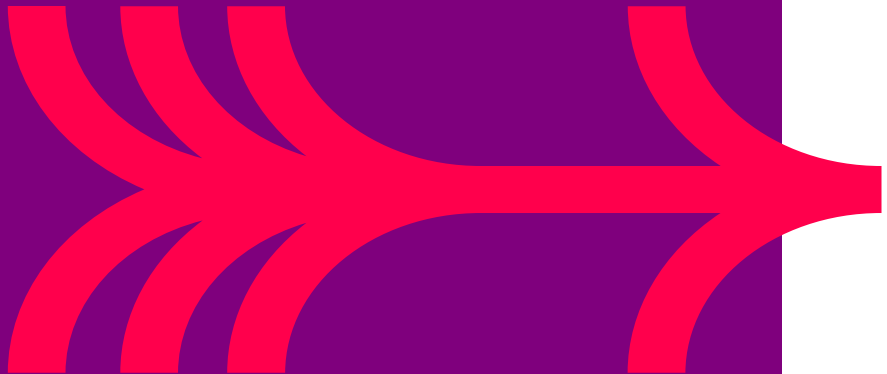
Retrieving Data





OVERVIEW

- SELECT statement
- Select lists
- Expressions
- Changing column names
- Best practices
- Hands-on lab

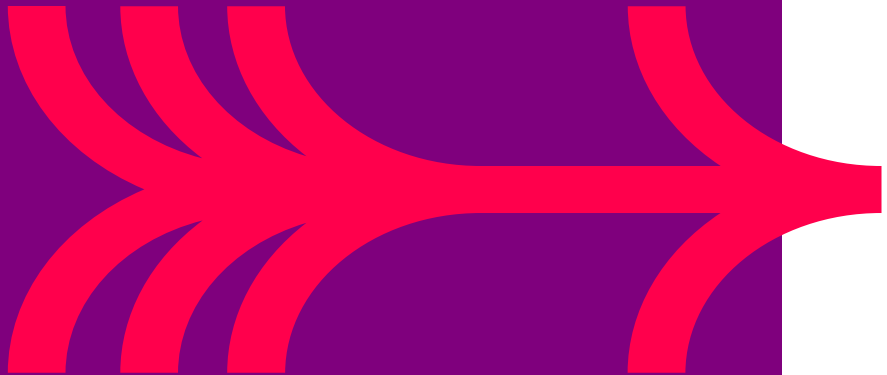




OBJECTIVES

At the end of this module you will be able to:

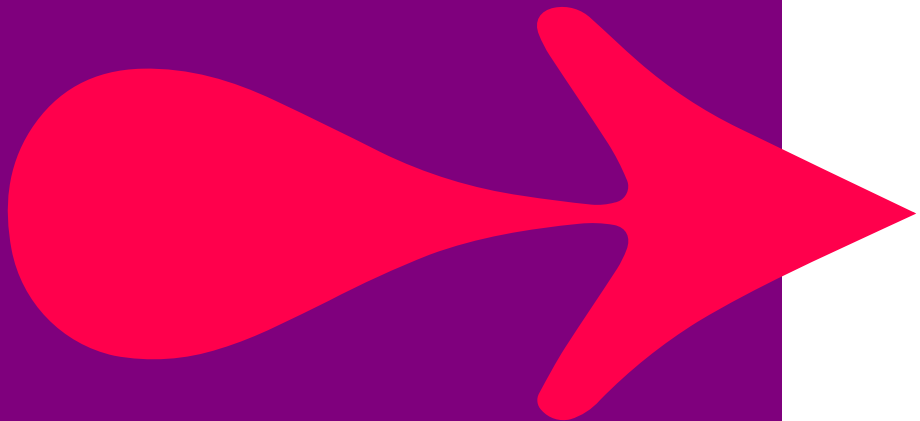
- write a query that retrieves every column of every row in a table.
- write a query that retrieves only some columns from a table.
- write a query that calculates some of its column values.





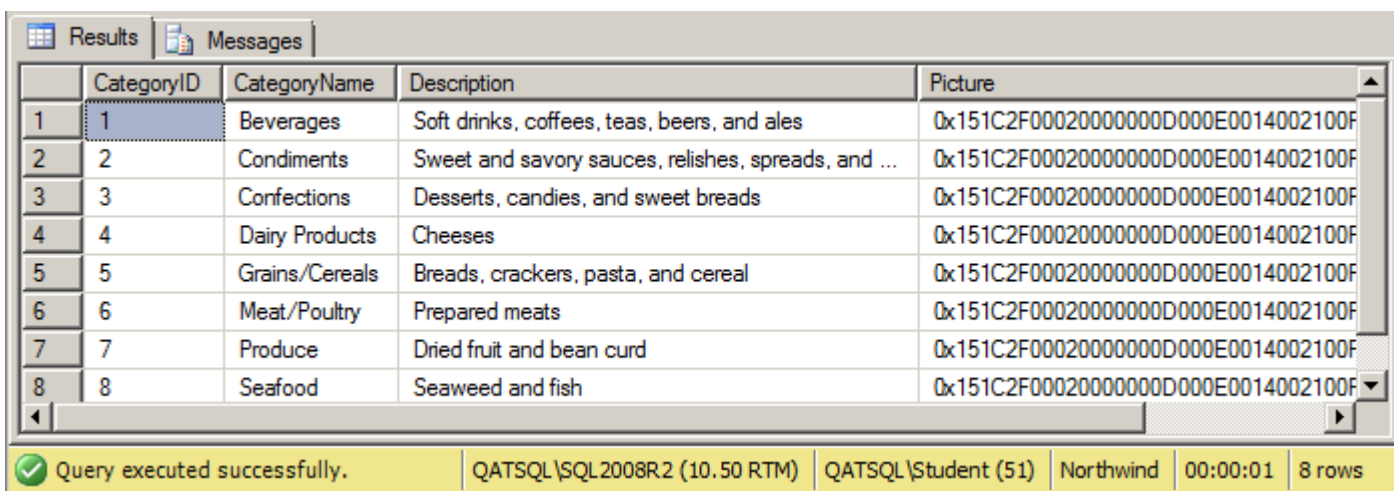
SELECT STATEMENT

- **SELECT** <<field(s)>>
- **FROM** <<table(s)>>
- WHERE <<condition(s)>>
- GROUP BY <<field(s)>>
- HAVING <<condition(s)>>
- ORDER BY <<field(s)>>



QA SELECT *

- **SELECT * FROM** *tablename*
- Example:
- **SELECT * FROM Categories**

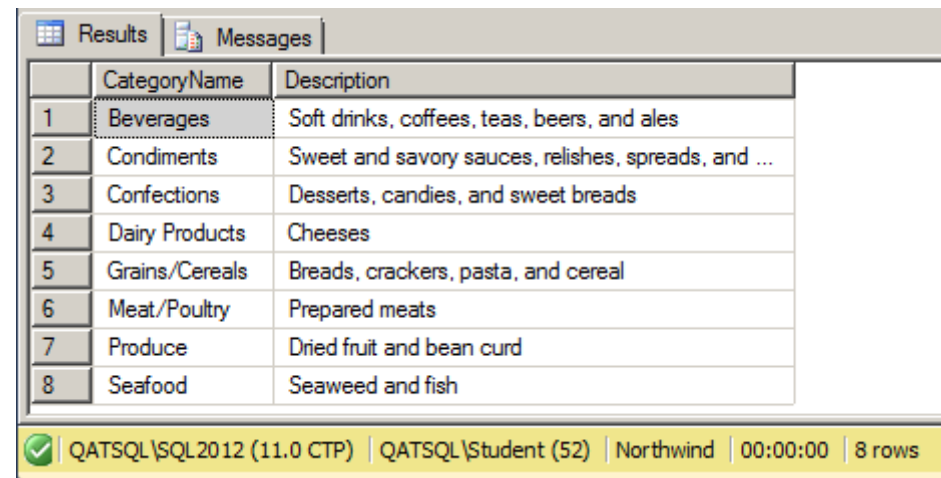


	CategoryID	CategoryName	Description	Picture
1	1	Beverages	Soft drinks, coffees, teas, beers, and ales	0x151C2F00020000000D000E0014002100F
2	2	Condiments	Sweet and savory sauces, relishes, spreads, and ...	0x151C2F00020000000D000E0014002100F
3	3	Confections	Desserts, candies, and sweet breads	0x151C2F00020000000D000E0014002100F
4	4	Dairy Products	Cheeses	0x151C2F00020000000D000E0014002100F
5	5	Grains/Cereals	Breads, crackers, pasta, and cereal	0x151C2F00020000000D000E0014002100F
6	6	Meat/Poultry	Prepared meats	0x151C2F00020000000D000E0014002100F
7	7	Produce	Dried fruit and bean curd	0x151C2F00020000000D000E0014002100F
8	8	Seafood	Seaweed and fish	0x151C2F00020000000D000E0014002100F

Query executed successfully. QATSQL\SQL2008R2 (10.50 RTM) QATSQL\Student (51) Northwind 00:00:01 8 rows

QA Select lists

- **SELECT** col1, ..., coln **FROM** tablename
- Example:
- **SELECT** *CategoryName*, *Description*
- **FROM** *Categories*



The screenshot shows a SQL Server Enterprise Manager window with the 'Results' tab selected. It displays the output of a query that selects 'CategoryName' and 'Description' from the 'Categories' table. The results are shown in a table with 8 rows. The status bar at the bottom indicates the query was executed successfully on the 'Northwind' database, returning 8 rows in 00:00:00 seconds.

	CategoryName	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales
2	Condiments	Sweet and savory sauces, relishes, spreads, and ...
3	Confections	Desserts, candies, and sweet breads
4	Dairy Products	Cheeses
5	Grains/Cereals	Breads, crackers, pasta, and cereal
6	Meat/Poultry	Prepared meats
7	Produce	Dried fruit and bean curd
8	Seafood	Seaweed and fish

QATSQL\SQL2012 (11.0 CTP) | QATSQL\Student (52) | Northwind | 00:00:00 | 8 rows

QA Expressions in select lists

- “Calculated” values
- Expression types:

Type	Operators
• Arithmetic operators	$+$, $-$, $*$, $/$, $\%$ e.g. <i>UnitsInStock + UnitsOnOrder</i>
• String concatenation operator	$+$ e.g. <i>FirstName + ' ' + LastName</i>

QA Expressions examples (1)

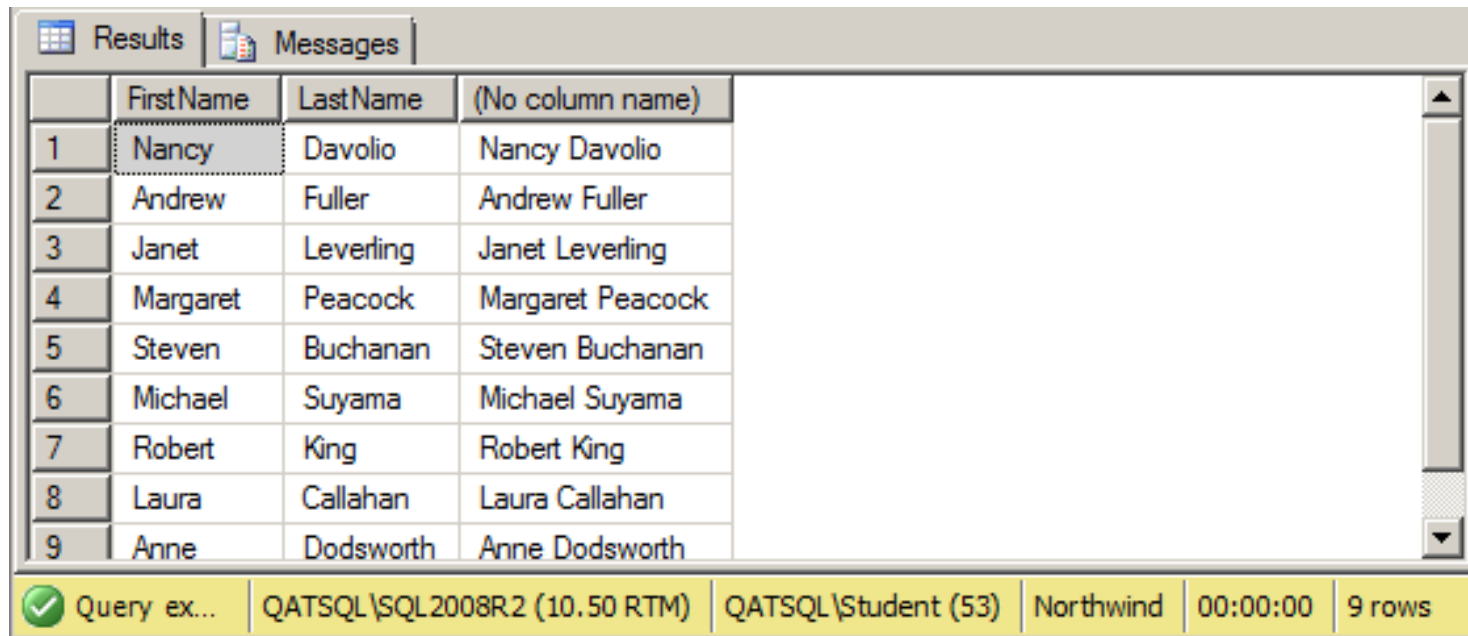
```
→ SELECT ProductID, ProductName,  
        UnitsInStock, UnitsOnOrder,  
        UnitsInStock + UnitsOnOrder  
FROM Products
```

	ProductID	ProductName	UnitsInStock	UnitsOnOrder	(No column name)
1	1	Chai	39	0	39
2	2	Chang	17	40	57
3	3	Aniseed Syrup	13	70	83
4	4	Chef Anton's Cajun Seasoning	53	0	53
5	5	Chef Anton's Gumbo Mix	0	0	0
6	6	Grandma's Boysenberry Spread	120	0	120
7	7	Uncle Bob's Organic Dried Pears	15	0	15
8	8	Northwoods Cranberry Sauce	6	0	6
9	9	Mishi Kobe Niku	29	0	29

Query e... | QATSQL\SQL2008R2 (10.50 RTM) | QATSQL\Student (53) | Northwind | 00:00:00 | 77 rows

QA Expressions examples (2)

→ SELECT FirstName, LastName,
 FirstName + ' ' + LastName
FROM Employees



The screenshot shows a SQL Server Enterprise Manager window with the 'Results' tab selected. It displays the output of a query that selects the first and last names of employees, concatenated with a space. The results are shown in a table with 9 rows. The status bar at the bottom indicates that the query was executed successfully on the 'Northwind' database, returning 9 rows in 00:00:00 seconds.

	FirstName	LastName	(No column name)
1	Nancy	Davolio	Nancy Davolio
2	Andrew	Fuller	Andrew Fuller
3	Janet	Leverling	Janet Leverling
4	Margaret	Peacock	Margaret Peacock
5	Steven	Buchanan	Steven Buchanan
6	Michael	Suyama	Michael Suyama
7	Robert	King	Robert King
8	Laura	Callahan	Laura Callahan
9	Anne	Dodsworth	Anne Dodsworth

Query ex... | QATSQL\SQL2008R2 (10.50 RTM) | QATSQL\Student (53) | Northwind | 00:00:00 | 9 rows

QA Changing column names

Results		Messages			
	ProductID	ProductName	UnitsInStock	UnitsOnOrder	FutureStock
1	1	Chai	39	0	39
2	2	Chang	17	40	57
3	3	Aniseed Syrup	13	70	83
4	4	Chef Anton's Cajun Seasoning	53	0	53
5	5	Chef Anton's Gumbo Mix	0	0	0
6	6	Grandma's Boysenberry Spread			
7	7	Uncle Bob's Organic Dried Pear			
8	8	Northwoods Cranberry Sauce			

Query e... | QATSQL\SQL2012 (11.0 CTP) | QAT

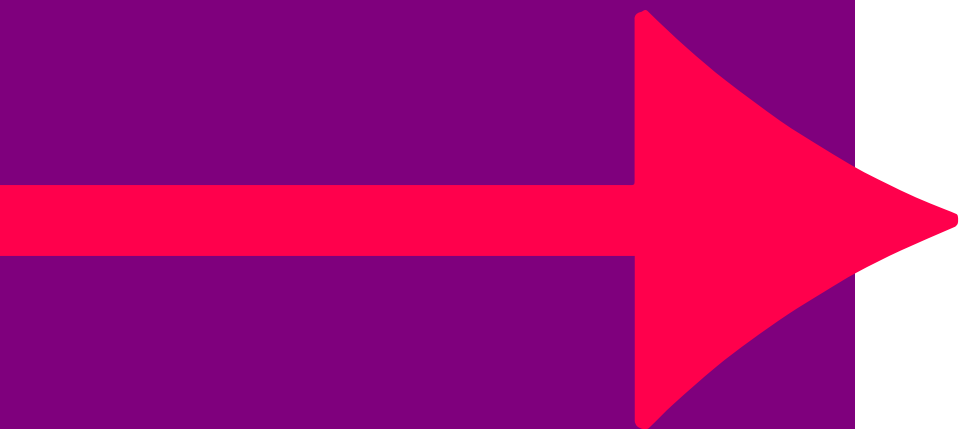
Results		Messages	
	GivenName	FamilyName	FullName
1	Nancy	Davolio	Nancy Davolio
2	Andrew	Fuller	Andrew Fuller
3	Janet	Leverling	Janet Leverling
4	Margaret	Peacock	Margaret Peacock
5	Steven	Buchanan	Steven Buchanan
6	Michael	Suyama	Michael Suyama
7	Robert	King	Robert King
8	Laura	Callahan	Laura Callahan

Query ex... | QATSQL\SQL2012 (11.0 CTP) | QATSQL\Stu



BEST PRACTICES

- **Script formatting**
- **Comments**
- **Four-part names**



QA Script formatting

- SQL is not case-sensitive
- SQL ignores whitespace

```
SELECT ProductID, ProductName, UnitsInStock, UnitsOnOrder FROM Products
```

- **Best practice: BE CONSISTENT!**

```
select productid, productname, unitsinstock, unitsonorder from products
```

```
SELECT
ProductID, ProductName, UnitsInStock, UnitsOnOrder
FROM
Products
```

```
SELECT
ProductID,
ProductName,
UnitsInStock,
UnitsOnOrder
FROM
Products
```

```
SELECT
    ProductID,
    ProductName,
    UnitsInStock,
    UnitsOnOrder
FROM
    Products
```



Comments



- **Ignored by SQL**
 - Add documentation to your scripts
- **Two styles:**
 - ```
SELECT
 UnitsInStock + UnitsOnOrder AS
 FutureStock -- calculate FS
FROM
 Products

and

/*
This query gets a list of employees
with their full names
*/
SELECT FirstName + ' ' + LastName AS Name
FROM Employees
```
- **Best practice: comment your scripts**

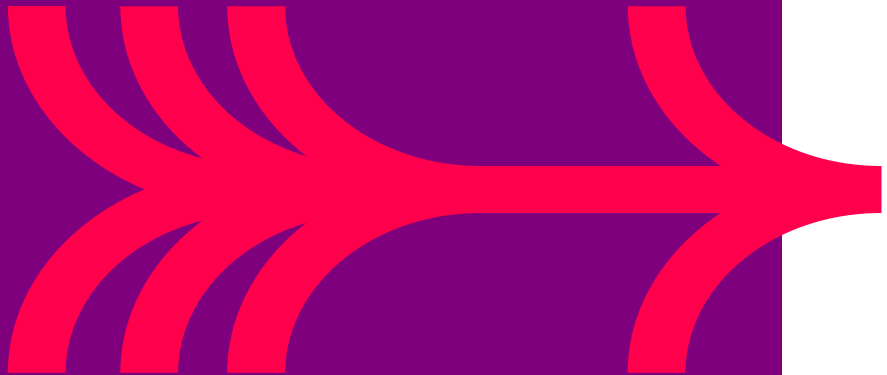


# FOUR-PART NAMES

## Referring to tables in queries:

- FROM Employees
- FROM dbo.Employees
- FROM Northwind.dbo.Employees
- FROM QATSQL.Northwind.dbo.Employees

**Best Practice: Use at least two-part names**



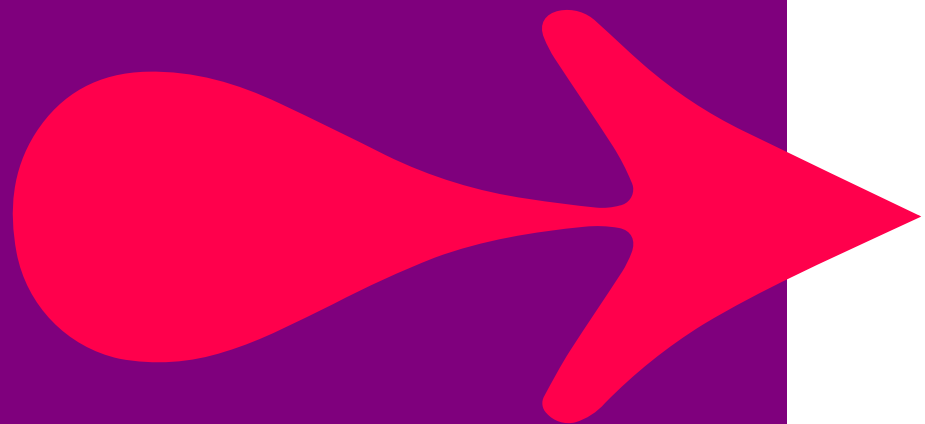


**Hands-on lab**



# HANDS-ON LAB

- **Basic SELECT statements**
- **Expressions in select lists**







# Review

- **SELECT \* FROM ...**
- **SELECT *columns* FROM ...**
- **SELECT *calculatedColumns* FROM ...**
- **Comments**
- **Four-part names**

