GENERAL ASSEMBLY

FUNCTIONS(String, Date,Numeric)

Functions

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GENERAL ASSEMBLY

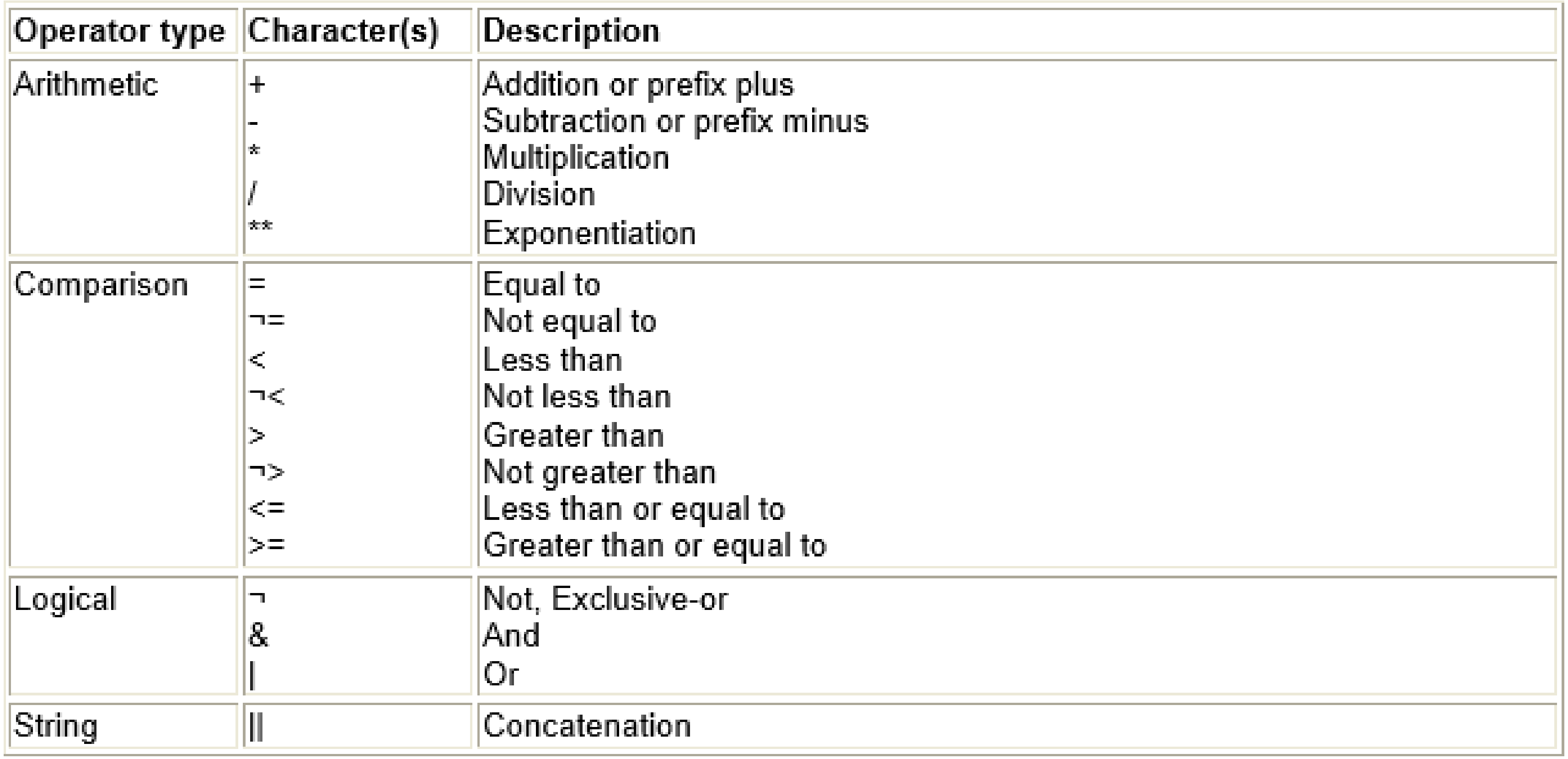
Previously in Data Analytics

CASE STATEMENTS
And 3 VALUE LOGIC

String Math Date functions

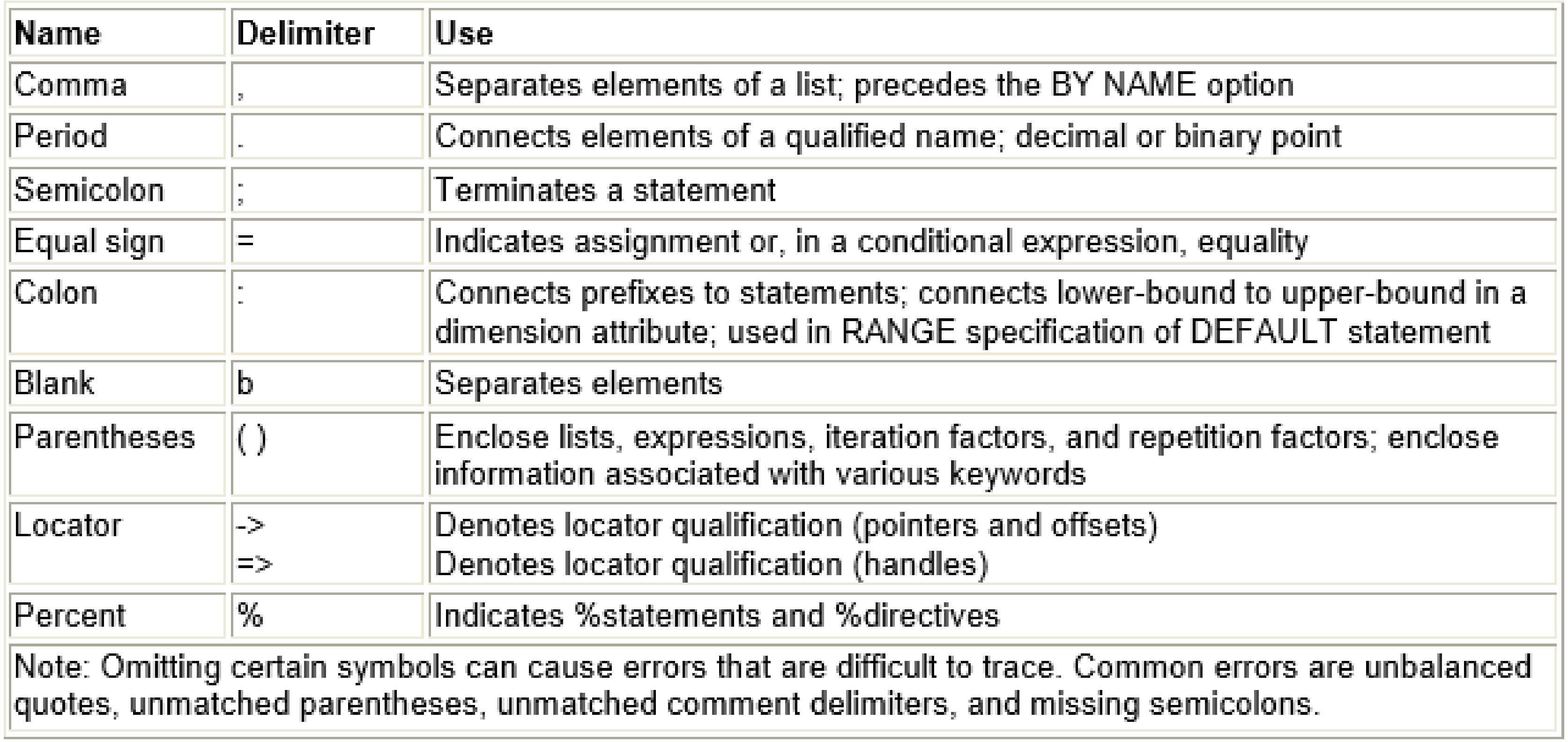
- String Functions
- Numeric Functions
- Time and Date Functions
- Set Functions
- Distinct Set Functions
- Join Operators
- Predicate Operators
- Expression Operators
- Boolean Operators
- Data Type Conversion Operators
- Value Expressions

Operators



Operator type	Character(s)	Description
Arithmetic	+ - * / **	Addition or prefix plus Subtraction or prefix minus Multiplication Division Exponentiation
Comparison	= ¬= < ¬< > ¬> <= >=	Equal to Not equal to Less than Not less than Greater than Not greater than Less than or equal to Greater than or equal to
Logical	¬ & |	Not, Exclusive-or And Or
String	||	Concatenation

Delimeters



Name	Delimiter	Use
Comma	,	Separates elements of a list; precedes the BY NAME option
Period	.	Connects elements of a qualified name; decimal or binary point
Semicolon	;	Terminates a statement
Equal sign	=	Indicates assignment or, in a conditional expression, equality
Colon	:	Connects prefixes to statements; connects lower-bound to upper-bound in a dimension attribute; used in RANGE specification of DEFAULT statement
Blank	b	Separates elements
Parentheses	( )	Enclose lists, expressions, iteration factors, and repetition factors; enclose information associated with various keywords
Locator	-> =>	Denotes locator qualification (pointers and offsets) Denotes locator qualification (handles)
Percent	%	Indicates %statements and %directives
Note: Omitting certain symbols can cause errors that are difficult to trace. Common errors are unbalanced quotes, unmatched parentheses, unmatched comment delimiters, and missing semicolons.		

Expressions and Arguments.

- Expression operators create an expression, used to change or modify values returned.
  - Expressions in SQL generally fall into one of four categories including: Boolean, Numeric, Character, and/or Date Expressions.
- An argument can be a literal value, a variable, or an expression in a SQL statement.

String Math Date functions

- CONCAT: Combines two fields or expressions together.
  - SYNTAX
    - CONCAT(field1, field2, field3…)
  - EXAMPLE
    - SELECT CONCAT(item,' - ',description)
    - FROM sales
- LIMIT 100

Learning Objectives

- LOWER: Converts a field or expression to lowercase
  - SYNTAX
    - LOWER(field1)
  - EXAMPLE
    - SELECT LOWER(CONCAT(item,' - ',description))
    - FROM sales
- LIMIT 100

String Math Date functions

- UPPER: Converts a field or expression to uppercase.
  - SYNTAX
    - UPPER(field1)
  - EXAMPLE
    - SELECT UPPER(LOWER(CONCAT(item,' - ',description)))
    - FROM sales
- LIMIT 100

String Math Date functions

- LEFT: Trims number of characters from left side as indicated in the length portion of syntax.
  - SYNTAX
    - LEFT(field1, length)
  - EXAMPLE
    - SELECT CONCAT(item,' - ',description), LEFT(UPPER(LOWER(CONCAT(item,' - ',description))),5)
    - FROM sales
    - LIMIT 100

String Math Date functions

- RIGHT: Trims number of characters from left side as indicated in the length portion of syntax.
  - SYNTAX
    - RIGHT(field1, length)
  - EXAMPLE
    - SELECT CONCAT(item,' - ',description), RIGHT(UPPER(LOWER(CONCAT(item,' - ',description))),5)
    - FROM sales
    - LIMIT 100

String Math Date functions

- LTRIM: Trims all blanks from the left side.
  - SYNTAX
    - LTRIM(field1)
  - EXAMPLE
    - SELECT CONCAT(item,' - ',description), LTRIM(RIGHT(UPPER(LOWER(CONCAT(item,' - ',description))),5))
    - FROM sales
    - LIMIT 100

String Math Date functions

- RTRIM: Trims all blanks for the right side.
  - SYNTAX
    - RTRIM(field1)
  - EXAMPLE
    - SELECT CONCAT(item,' - ',description), RTRIM(RIGHT(UPPER(LOWER(CONCAT(item,' - ',description))),5))
    - FROM sales
    - LIMIT 100

String Math Date functions

- LENGTH: Counts the length of characters in a field.
  - SYNTAX
    - LENGTH(field1)
  - EXAMPLE
    - SELECT LENGTH(CONCAT(item,' - ',description))
    - FROM sales
- LIMIT 100

String Math Date functions

- REPLACE: Similar to the Excel function substitute. It allows you to replace a value in a field with another value.
  - SYNTAX
    - REPLACE(field1, field2, field3)
      - Field1 is the field you want to change
      - Field2 is what you want to change in field1
      - Field3 is what you want to change the value in Field2 into
  - EXAMPLE
    - SELECT REPLACE((CONCAT(item,' - ',description)),'Absolut', 'Grey Goose')
    - FROM sales
    - LIMIT 100

String Math Date functions

•SUBSTRING this function allows you to isolate a section of characters within a field to retrieve.

- SYNTAX
  - SUBSTRING(field1, start, length)
  - SUBSTRING(field1, starting position, number of characters to retrieve from starting positions)
- EXAMPLE
  - SELECT SUBSTRING(REPLACE((CONCAT(item,' - ',description)),'Absolut', 'Grey Goose'),9,35)
  - FROM sales
  - LIMIT 100

String Math Date functions

- TRIM: Removes characters from start of field, ending part of field or both that are indicated in the formula.
  - SYNTAX
    - TRIM(leading ‘characters’, from field1)
    - TRIM(trailing ‘characters’, from field1)
    - TRIM(both ‘characters’, from field1)
  - EXAMPLE
    - SELECT description, TRIM(Leading 'A' from description), TRIM (TRAILING 'a' from description), TRIM(BOTH 'A' FROM description)
    - FROM sales
- LIMIT 100

String Math Date functions

- ROUND: This function returns the specified number rounded to the specified integer; the number rounded to the specified places to the right of the decimal point. If the integer is negative, the number is rounded to the specified places to the left of the decimal point.
    - SYNTAX
        - ROUND(numeric_expression, integer_expresssion)
    - EXAMPLE
        - ROUND(177.3589,2) would return 177.3600
        - ROUND(177.3589,-2) would return 200

String Math Date functions

- CURRRENT_ DATE brings back the current date from the system.
  - SYNTAX
    - CURRENT_DATE
  - EXAMPLE
    - SELECT item, total, date, CURRENT_DATE
    - FROM sales
    - LIMIT 100

String Math Date functions

- AGE this function brings back the difference between two dates.
  - SYNTAX
    - Age(date1, date2)
  - EXAMPLE
    - SELECT item, total, date, current_date, age(date, current_date)
    - FROM sales
    - LIMIT 100

String Math Date functions

- **INDEPENDENT PRACTICE: DATE FUNCTIONS** 15 mins
- CALCULATE AGE
- Find the age of all the stores and summarize their sales.

CREATE SPECIAL DAYS

- Using Dates and basic math Make 1 Select statement that holds a field for each one of these Special days
- TODAY
- TODAY LAST YEAR
- YESTERDAY
- YESTERDAY LAST YEAR
- LAST WEEK
- LAST WEEK LAST YEAR

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String Math Date functions

Categorize all of the items based on list date and ranges of 0-10 years, 11-20 year, 21-30 years, 31-40 years and 41+ years, then bring in the total sales.

Q & A

An approximate answer to the right problem is worth a good deal more than an exact answer to an approximate problem.

-John Tukey, Mathematician

EXIT TICKET

CLASS : Functions

QUESTION:

List 3 different string functions