Natural SQL Statements - Syntactical Items

The following common syntactical items are either DB2-specific and do not conform to the standard SQL syntax definitions (that is, to the Common Set of Natural SQL syntax) or impose restrictions when used with DB2 (see also SQL Statements in the Natural Statements documentation).

This section covers the following topics:

- atom
- comparison
- factor
- scalar-function
- column-function
- scalar-operator
- special-register
- units
- case-expression

---

atom

An atom can be either a parameter (that is, a Natural program variable or host variable) or a constant. When running dynamically, however, the use of host variables is restricted by DB2. For further details, refer to the relevant DB2 literature by IBM.

comparison

The comparison operators specific to DB2 belong to the Natural Extended Set. For a description, refer to Comparison Predicate in Search Conditions, Natural SQL Statements (Statements Grouped by Functions, Natural Statements documentation).

factor

The following factors are specific to DB2 and belong to the Natural Extended Set:

special-register
scalar-function (*scalar-expression*`, ...`)
scalar-expression unit case-expression

scalar-function

A scalar function is a built-in function that can be used in the construction of scalar computational expressions. Scalar functions are specific to DB2 and belong to the Natural Extended Set.

The scalar functions NDB supports are listed below in alphabetical order:

A - H	I - R	S - Z
ABS	IDENTITY_VAL_LOCAL	SECOND
ABSVAL	IFNULL	SIGN
ACOS	INSERT	SIN
ADD_MONTHS	INTEGER	SINH
ASIN	JULIAN_DAY	SMALLINT
ATAN	LAST_DAY	SPACE
ATAN2	LCASE	SQRT
ATANH	LEFT	STRIP
BLOB	LENGTH	SUBSTR
CCSID_ENCODING	LN	SUBSTRING
CEIL	LOCATE	TAN
CEILING	LOG	TANH
CHAR	LOG10	TIME
CHARACTER_LENGTH	LOWER	TIMESTAMP
CLOB	LTRIM	TIMESTAMP_FORMAT
COALESCE	MAX	TO_CHAR
CONCAT	MICROSECOND	TO_DATE
COS	MIDNIGHT_SECONDS	TRANSLATE
COSH	MIN	TRUNC
DATE	MINUTE	TRUNC_TIMESTAMP
DAY	MOD	TRUNCATE
DAYOFMONTH	MONTH	UCASE
DAYOFWEEK	MQPUBLISH	UPPER
DAYOFWEEK_ISO	MQPUBLISHXML	VALUE
DAYOFYEAR	MQREAD	VARCHAR
DAYS	MQREADCLOB	VARCHAR_FORMAT
DBCLOB	MQREADXML	VARGRAPHIC
DEC	MQRECEIVE	WEEK
DECIMAL	MQRECEIVECLOB	WEEK_ISO
DECRYPT_BIT	MQRECEIVEXML	XMLATTRIBUTES
DECRYPT_CHAR	MQSEND	XMLCONCAT
DECRYPT_DB	MQSENDXML	XMLELEMENT
DEGREES	MQSENDXMLFILE	XMLFOREST
DIGITS	MQSENDXMLFILECLOB	XMLNAMESPACES
DOUBLE	MQSUBSCRIBE	XML2CLOB
DOUBLE_PRECISION	MQUNSUBSCRIBE	YEAR
ENCRYPT_TDES	MULTIPLY_ALT	
ENCRYPT	NEXT_DAY	
EXP	NULLIF	
FLOAT	POSSTR	
FLOOR	POWER	
GRAPHIC	QUARTER	
GENERATE_UNIQUE	RADIANS	
GETHINT	RAISE_ERROR	
GETVARIABLE	RAND	
HEX	REAL	
HOUR	REPEAT	
	REPLACE	
	RIGHT	
	ROUND	
	ROUND_TIMESTAMP	
	ROWID	
	RTRIM	

Each scalar function is followed by one or more scalar expressions in parentheses. The number of scalar expressions depends upon the scalar function. Multiple scalar expressions must be separated from one another by commas.

Example:

```
SELECT NAME
  INTO NAME
  FROM SQL-PERSONNEL
  WHERE SUBSTR ( NAME, 1, 3 ) = 'Fri'
       ...
```

column-function

A column function returns a single-value result for the argument it receives. The argument is a set of like values, such as the values of a column. Column functions are also called aggregating functions.

The following column functions conform to standard SQL. They are not specific to DB2:

AVG
COUNT
MAX
MIN
SUM

The following column functions do not conform to standard SQL. They are specific to DB2 and belong to the Natural Extended Set.

COUNT_BIG
STDDEV
STDDEV_POP
STDDEV_SAMP
VAR
VAR_POP
VAR_SAMP
VARIANCE
VARIANCE_SAMP
XMLAGG

scalar-operator

The concatenation operator (CONCAT or "||") does not conform to standard SQL. It is specific to DB2 and belongs to the Natural Extended Set.

special-register

The following special registers do not conform to standard SQL. They are specific to DB2 and belong to the Natural Extended Set:

CURRENT APPLICATION ENCODING SCHEME
CURRENT CLIENT_ACCNTG
CURRENT CLIENT_APPLNAME
CURRENT CLIENT_USERID
CURRENT CLIENT_WRKSTNNAME
CURRENT DATE
CURRENT_DATE
CURRENT DEGREE
CURRENT FUNCTION PATH
CURRENT_LC_CTYPE
CURRENT LC_CTYPE
CURRENT LOCALE LC_CTYPE
CURRENT OPTIMIZATION HINT
CURRENT PACKAGESET
CURRENT_PATH
CURRENT PRECISION
CURRENT MAINTAINED TABLE TYPES FOR OPTIMIZATION
CURRENT_MEMBER
CURRENT PACKAGE PATH
CURRENT REFRESH AGE
CURRENT SCHEMA
CURRENT RULES
CURRENT SQLID
CURRENT SERVER
CURRENT TIME
CURRENT_TIME
CURRENT TIMESTAMP
CURRENT TIMEZONE
CURRENT_TIMEZONE USER

A reference to a special register returns a scalar value.

Using the command SET CURRENT SQLID, the creator name of a table can be substituted by the current SQLID. This enables you to access identical tables with the same table name but with different creator names.

units

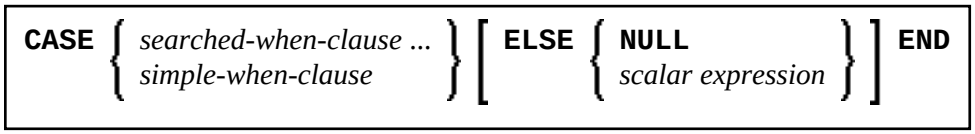
Units, also called durations, are specific to DB2 and belong to the Natural Extended Set.

The following units are supported:

DAY
DAYS
HOUR
HOURS
MICROSECOND
MICROSECONDS
MINUTE
MINUTES
MONTH

MONTHS
SECOND
SECONDS
YEAR
YEARS

case-expression



Case-expressions do not conform to standard SQL and are therefore supported by the Natural SQL Extended Set only.

Example:

```
DEFINE DATA LOCAL
   01 #EMP
   02 #EMPNO (A10)
   02 #FIRSTNME (A15)
   02 #MIDINIT  (A5)
   02 #LASTNAME (A15)
   02 #EDLEVEL   (A13)
   02 #INCOME (P7)
   END-DEFINE
  SELECT EMPNO, FIRSTNME, MIDINIT, LASTNAME,
         (CASE WHEN EDLEVEL < 15 THEN 'SECONDARY'
               WHEN EDLEVEL < 19 THEN 'COLLEGE'
               ELSE             'POST GRADUATE'
          END ) AS EDUCATION, SALARY + COMM AS INCOME
         INTO
         #EMPNO, #FIRSTNME, #MIDINIT, #LASTNAME,
         #EDLEVEL, #INCOME
           FROM DSN8510-EMP
           WHERE (CASE WHEN SALARY = 0 THEN NULL
                                       ELSE SALARY / COMM
                                       END ) > 0.25
  DISPLAY #EMP
  END-SELECT
  END
```