SQL

Last Updated 2016-07-09

SELECT

```
SELECT [ ALL | DISTINCT ]
  [ [ * ] | [ expression [ AS output_name ] ] ] [, ...]
[ INTO TABLE new_table ]
[ FROM [ [ [ ONLY ] table_name ] |
         [ ( select ) [ AS ] alias ] |
         [ join_table ]
       ] [, ...]
[ WHERE condition ]
[ GROUP BY expression [, ...] ]
[ HAVING condition [, ...] ]
[  UNION | INTERSECT | EXCEPT  [ ALL ] select ]
[ ORDER BY expression [ ASC | DESC | USING operator ] [, ...] ]
[ LIMIT  count | ALL  ]
[ OFFSET start ]
```

INSERT

```
INSERT INTO table [ ( column [, ...] ) ]
   [ VALUES ( expression [, ...] ) |
     SELECT query
   ]
```

JOIN

Join clauses may only appear in a FROM section. Logically, join clauses take two tables, or expressions returning tables, and combines them into one table.

Syntax:

```
   from_item
     [ NATURAL ] join_type
   from_item
   [ ON join_condition | USING ( join_column_list ) ]
```

join_type is one of:

- [INNER] JOIN — Rows matching criteria
- LEFT [OUTER] JOIN — INNER+all on left
- RIGHT [OUTER] JOIN — INNER+all on right
- FULL [OUTER] JOIN — all on left or right
- CROSS JOIN. — Rows in the cross product

Exactly one of NATURAL, ON join_condition, or USING (join_column_list) must appear for INNER and OUTER join types. For CROSS JOIN, none of these items may appear.

CREATE TABLE

```
CREATE
TABLE table_name ( [ column_name
                     data_type
                     [ DEFAULT default_expr ]
                     [ column_constraint [, ... ] ] |
                     table_constraint
                   ] [, ... ] )

column_constraint is:
[ CONSTRAINT constraint_name ]
   [ NOT NULL |
     NULL |
     UNIQUE |
     PRIMARY KEY |
     CHECK (expression) |
     REFERENCES reftable [ ( refcolumn ) ]
       [ ON DELETE action ]
       [ ON UPDATE action ]
   ]


table_constraint is:
[ CONSTRAINT constraint_name ]
    UNIQUE ( column_name [, ... ] ) |
     PRIMARY KEY ( column_name [, ... ] ) |
     CHECK ( expression ) |
     FOREIGN KEY ( column_name [, ... ] )
       REFERENCES reftable [ ( refcolumn [, ... ] ) ]
       [ ON DELETE action ]
       [ ON UPDATE action ]
```

CREATE VIEW

```
CREATE [ OR REPLACE ]
VIEW view [ ( column name list ) ] AS SELECT query
```

Types

- NUMERIC(precesion [,scale])
- character varing(n) _or_ varchar(n)
- character(n) _or_ char(n)
- date
- time
- timestamp
- text (PostgreSQL)

Expression Functions & Operators

NOTE: n,m=integer, s,s1,s2=string

- abs(n)
- ceil(n)
- floor(n)
- lower(s)
- upper(s)
- random(n)
- sign(n)
- sqrt(n)
- substr(n, n)
- length(s)
- round(n [,m])
- trunc(n [,m])
- char_length(s)
- position(s1, s2)
- repeat(s, m)
- strpos(s1, s2)
- replace(s FROM s1 TO s2)
- substring(s [FROM m] [FOR n])
- trim([LEADING | TRAILING | BOTH] [s] FROM s)
- Arithmatic: +, -, /, *, ^, % (mod)
- String Concatenation: ||

TO_CHAR

General use: to_char(<thing_to_format>, <format_string>)

For numbers:

- 9 -- Digits
- . -- decimal point
- , -- group seporater
- PR -- negative with <>
- MI -- minus sign
- L -- currency symbol
- 0 -- Leading zeros
- D -- decimal point
- G -- group seporator
- S -- negative with -
- PL -- plus sign

For dates:

- Month|month -- Month name
- MON|Mon|mon -- month abrv
- MM -- month of year
- DAY|Day|day -- Day abrv
- DY|Dy|dy -- Day abrv
- DDD -- day of year
- DD -- day of month
- TZ|tz -- Time zone
- D -- day of week (SUN=1)
- W -- week of month
- WW -- week of year
- IW -- ISO week number
- CC -- century
- J -- Julian day
- Q -- quarter

CASE

Case is an EXPRESSION, so it can be used lots of places

Syntax:

```
CASE WHEN condition THEN result
     [WHEN ...]
     [ELSE result]
END
```

Condition Operators

- Logic: and, or, not
- Comparison: <, >, <=, >=, =, <>, !=
- *expression* IS NULL
- *expression* IS NOT NULL
- *expression* IN (value[, ...])
- *expression* IN (*subquery*)
- *expression* NOT IN (value[, ...])
- *expression* NOT IN (*subquery*)
- *expression operator* ANY (*subquery*)
- *expression operator* SOME (*subquery*)
- *expression operator* ALL (*subquery*)
- *expression* BETWEEN *expression* AND *expression*
- *expression* NOT BETWEEN *expression* AND *expression*
- EXISTS(*subquery*)

Agregrate Functions

- avg
- count
- max
- min
- sum
- std-dev
- variance

Oracle Data Dictionary

- [user_|all_|dba_]tables
  owner, table_name, tablespace_name, cluster_name, num_rows, avg_row_len
- all_tab_columns
  owner, table_name, column_name, data_type, data_type_mod, data_type_owner, data_length, data_precision, data_scale, nullable, column_id, default_length, data_default, num_distinct, low_value, high_value, density, num_nulls
- all_cons_columns
  owner, constraint_name, table_name, column_name
- all_indexes
  owner, index_name, index_type, table_owner, table_name, table_type, uniqueness, tablespace_name

Oracle SQLPlus

- Quit exit
- Run commands from a file: <file_name>
- sp[ool] {filename | off | out } -- Spool output to file
- set auto[commit] {on|off|immediate|<statement_count>}
- set echo {on|off}
- set feed[back] {on|off}
- set hea[ding] {on|off}
- set mark[up] entmap {on|off} -- do the right HTML thing for <, >, etc
- set mark[up] pre[format] {on|off} -- use /pre tags in HTML
- set NULL text -- what to display for nulls
- set numf[ormat] text -- format for numbers
- set linesize NNN
- set pagesize NNN
- set pau[se] {on|off} -- pause for pages or not
- set recsepchar text -- what to use for record seporator
- set space NNN -- number of spaces between columns
- set tab {on|off} -- use tabs or spaces
- set term[out] {on|off} -- display results from script fiels on display
- set timi[ng] {on|off} -- display time for commands
- set trim[out] {on|off} -- trim trailing spaces from lines
- set trims[pool] {on|off} -- trim trailing spaces from spooled output
- set tru[ncate] {on|off} -- truncate long lines
- set wra[p] {on|off} -- wrap or trim long lines
- describe <foo> -- print info about the object <foo>

PostgreSQL psql

- \l List tables
- \i *file* Run commands from given file
- \H Toggle HTML output
- \q Quit
- \d *name* Describe table, index, sequence, or view
- \a Toggle between aligned and unaligned output mode
- \f *string* Show/set field separator
- \h *name* Get help for SQL commands
- \o *file* Send query results to file
- \o */pipe* Send query results to pipe