PL/SQL

The PL/SQL language is a procedural programming language which allows data manipulation and sql query to be included in blocks.

PL/SQL can be used to group multiple instructions in a single block and sending the entire block to the server in a single call.

# PL/SQL Data Types

The Oracle PL/SQL Data Types are: Scalar Types (number, character, date, boolean), Composite Types (Collections and Records), Reference Types (Cursor Variables), LOB Types (BFILE, BLOB, CLOB, NCLOB).

## PL/SQL Number Types

BINARY\_DOUBLE, BINARY\_FLOAT, BINARY\_INTEGER, DEC, DECIMAL, DOUBLE PRECISION, FLOAT, INT, INTEGER, NATURAL, NATURALN, NUMBER, NUMERIC, PLS\_INTEGER, POSITIVE, POSITIVEN, REAL, SIGNTYPE, SMALLINT

## PL/SQL Character and String Types

CHAR, CHARACTER, LONG, LONG RAW, NCHAR, NVARCHAR2, RAW, ROWID, STRING, UROWID, VARCHAR, VARCHAR2

## PL/SQL Date, Time and Interval Types

DATE, TIMESTAMP, TIMESTAMP WITH TIMEZONE, TIMESTAMP WITH LOCAL TIMEZONE, INTERVAL YEAR TO MONTH, INTERVAL DAY TO SECOND

## PL/SQL Boolean Types

BOOLEAN

# Table with datatypes

BINARY\_INTEGER

BOOLEAN

CHAR

CHARACTER

DATE

DEC

DECIMAL

DOUBLE PRECISION

FLOAT

INT

INTEGER

INTERVAL DAY TO SECOND

INTERVAL YEAR TO MONTH

LONG

LONG RAW

NATURAL

NATURALN

NCHAR

NUMBER

NUMERIC

NVARCHAR2

PLS\_INTEGER

POSITIVE

POSITIVEN

RAW

REAL

ROWID

SIGNTYPE

SMALLINT

STRING

TIMESTAMP

TIMESTAMP WITH LOCAL TIME ZONE

TIMESTAMP WITH TIME ZONE

UROWID

VARCHAR

VARCHAR2

# DML Statements

## Data Manipulation Language

In this page we have a list of PL/SQL Data Manipulation Language (DML) statements that you can use as a small introduction to dml statements.

**Select**

**Syntax:**

select \* from table;

select column\_name1, column\_name2 from table\_name;

select column\_name1, column\_name2 from table\_name where condition;

**Examples:**

select \* from employees;

select \* from employees where dep\_id=10;

select name, salary from employees where dep\_id=10;

**Insert**

PL/SQL Insert

The Insert statement is part of Data Manipulation Language and allows the user to insert a single record or multiple records into a table.

**Syntax:**

INSERT INTO table VALUES (value1, value2, value3, ...);

INSERT INTO table (column1, column2, column3, ...) VALUES (value1, value2, value3, ...);

INSERT INTO table1 (column1, column2) SELECT column1, column2 FROM table2;

**Example 1:**

INSERT INTO employees VALUES ('Steve', 20, 250);

INSERT INTO employees (name, dep\_id, salary) VALUES ('David', 10, 300);

**Example 2:**

INSERT ALL

 INTO employees (name, dept\_id, salary) VALUES ('Anne', 20, 250)

 INTO employees (name, dept\_id, salary) VALUES ('George', 10, 200)

 INTO employees (name, dept\_id, salary) VALUES ('Olivia', 40, 400)

SELECT \* FROM dual;

**Example 3:**

INSERT INTO products(id, name, price) SELECT id, name, price FROM old\_products;

**Update**

**PL/SQL Update**

The Update statement is part of Data Manipulation Language and allows the user to update a single record or multiple records in a table.

**Syntax:**

UPDATE table SET column1 = new\_value1;

UPDATE table SET

 column1 = value1,

 column2 = value2,

 column3 = value3, ...

WHERE condition;

Example 1:

UPDATE employees SET salary = 100;

UPDATE employees

SET salary = 2000,

 city\_name='London'

WHERE dept\_id=10;

Example 2:

UPDATE employees e

 SET e.city\_id = (SELECT c.city\_id

 FROM cities c

 WHERE c.city\_name='London')

 WHERE EXISTS (SELECT d.dept\_id

 FROM departments d

 WHERE d.dept\_id=e.dept\_id

 AND d.dept\_id=10);

**Delete**

**PL/SQL Delete**

The Delete statement is part of Data Manipulation Language and allows the user to delete a single record or multiple records in a table.

**Syntax:**

DELETE FROM table; -- delete all records

DELETE FROM table WHERE condition; -- delete single or multiple records;

**Example 1:**

DELETE FROM employees; -- delete all records

DELETE FROM employees WHERE name='Olivia' and id=7900 ; -- delete single record;

DELETE FROM employees WHERE dept\_id=10; -- delete single or multiple records;

**Example 2:**

DELETE FROM employees e

 WHERE e.city\_id = (SELECT c.city\_id FROM cities c WHERE c.city\_name='London')

 AND EXISTS (SELECT d.dept\_id FROM departments d WHERE d.dept\_id=e.dept\_id and d.dept\_id=10);

**Left off here:**

[**https://www.plsql.co/**](https://www.plsql.co/)

**“Select Query” is next…**