PL/SQL

Introductie



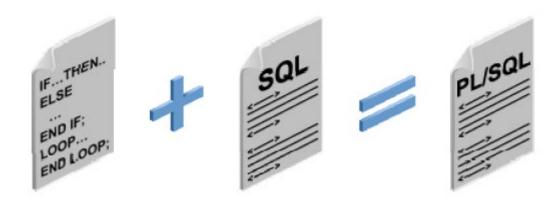
Elfde-Liniestraat 24, 3500 Hasselt, www.pxl.be



About PL/SQL

PL/SQL:

- Stands for "Procedural Language extension to SQL"
- Is Oracle Corporation's standard data access language for relational databases
- Seamlessly integrates procedural constructs with SQL



About PL/SQL

PL/SQL:

PL/SQL

- Provides a block structure for executable units of code.
 Maintenance of code is made easier with such a well-defined structure.
- Provides procedural constructs such as:
 - Variables, constants, and data types
 - Control structures such as conditional statements and loops
 - Reusable program units that are written once and executed many times

Modularizing Development with PL/SQL Blocks

- PL/SQL is a block-structured language. The PL/SQL code block helps modularize code by using:
 - Anonymous blocks
 - Procedures and functions
 - Packages
 - Database triggers
- The benefits of using modular program constructs are:
 - Easy maintenance
 - Improved data security and integrity
 - Improved performance
 - Improved code clarity

PL/SQL Block Structure

- DECLARE (optional)
 - Variables, cursors, user-defined exceptions
- BEGIN (mandatory)
 - SQL statements
 - PL/SQL statements
- EXCEPTION (optional)
 - Actions to perform when errors occur
- END; (mandatory)



Block Types

Function Anonymous Procedure [DECLARE] PROCEDURE name FUNCTION name RETURN datatype IS IS BEGIN BEGIN BEGIN --statements --statements --statements RETURN value; [EXCEPTION] [EXCEPTION] [EXCEPTION] END; END; END;

Anonymous Blocks: Overview

Anonymous blocks:

- Form the basic PL/SQL block structure
- Initiate PL/SQL processing tasks from applications
- Can be nested within the executable section of any PL/SQL block

```
[DECLARE -- Declaration Section (Optional)
  variable declarations; ... ]

BEGIN -- Executable Section (Mandatory)
  SQL or PL/SQL statements;
[EXCEPTION -- Exception Section (Optional)
  WHEN exception THEN statements; ]
END; -- End of Block (Mandatory)
```

Voorbeeld anoniem block

```
DECLARE
       v_dept NUMBER(2);
BEGIN
       SELECT department id
       INTO v_dept
       FROM employees
       WHERE employee id = 101;
       DBMS_OUTPUT_LINE('Het departement is ' || v_dept);
END;
```

- Afdrukken op scherm:
 DBMS_OUTPUT: ingebouwde package met procedures, o.a.

 PUT_LINE
- in SQL*Plus SET SERVEROUTPUT
 ON FORMAT WRAPPED opnemen
 → best in LOGIN.SQL
- LOGIN.SQL is een script dat telkens bij het opstarten van SQL*Plus wordt uitgevoerd en waar bepaalde settings kunnen opgenomen worden

SQL*Plus

- Vooraf Oracle XE installeren volgens installatieprocedure op BB
- Human Resources (HR) schema

