EXPERIMENT 7

**Aim**: To study the PL/SQL Database Management language

**Theory**:

**PL/SQL** is a combination of SQL along with the procedural features of programming languages. It was developed by Oracle Corporation in the early 90's to enhance the capabilities of SQL. PL/SQL is one of three key programming languages embedded in the Oracle Database, along with SQL itself and Java.

**Features of PL/SQL**

* completely portable, high-performance transaction-processing language
* provides a built-in, interpreted and OS independent programming environment
* direct call can also be made from external programming language calls to database
* available in TimesTen in-memory database and IBM DB2

**Advantages of PL/SQL**

* PL/SQL provides high security level
* PL/SQL provides access to predefined SQL packages
* PL/SQL provides support for Object-Oriented Programming
* PL/SQL provides support for developing Web Applications and Server Pages.

**PL/SQL Identifiers**

PL/SQL identifiers are constants, variables, exceptions, procedures, cursors, and reserved words. The identifiers consist of a letter optionally followed by more letters, numerals, dollar signs, underscores, and number signs and should not exceed 30 characters.

By default, identifiers are not case-sensitive.

**PL/SQL Delimiters**

A delimiter is a symbol with a special meaning. Following is the list of delimiters in PL/SQL −

|  |  |
| --- | --- |
| +, -, \*, / | Addition, subtraction/negation, multiplication, division |
| % | Attribute indicator |
| ' | Character string delimiter |
| . | Component selector |
| (,) | Expression or list delimiter |
| : | Host variable indicator |
| , | Item separator |
| " | Quoted identifier delimiter |
| = | Relational operator |
| @ | Remote access indicator |
| ; | Statement terminator |
| := | Assignment operator |
| => | Association operator |
| || | Concatenation operator |
| \*\* | Exponentiation operator |
| <<, >> | Label delimiter (begin and end) |
| /\*, \*/ | Multi-line comment delimiter (begin and end) |
| -- | Single-line comment indicator |
| .. | Range operator |
| <, >, <=, >= | Relational operators |
| <>, '=, ~=, ^= | Different versions of NOT EQUAL |

**PL/SQL SCALAR DATA TYPES**

PL/SQL Scalar Data Types and Subtypes come under the following categories −

|  |  |
| --- | --- |
| **S.No** | **Date Type & Description** |
| 1 | Numeric  Numeric values on which arithmetic operations are performed. |
| 2 | Character  Alphanumeric values that represent single characters or strings of characters. |
| 3 | Boolean  Logical values on which logical operations are performed. |
| 4 | Datetime  Dates and times. |

**PL/SQL Code**

**DECLARE**

**num1 INTEGER;**

**num2 REAL;**

**num3 DOUBLE PRECISION;**

**BEGIN**

**null;**

**END;**

**/**

**Output**

**PL/SQL procedure successfully completed**