1. PL/SQL stands for procedural language which is an extension of sql.
2. PL/SQL was introduced in oracle 6.0 version.
3. SQL is a non-procedural language whereas PL/SQL is a procedural language.
4. SQL supports a single line statement (query) execution process whereas PL/SQL supports multi lines statements(program) execution process.
5. In SQL every query statement is compiling and executing individually.so that no. of compilations are increased and reduce performance of database.



In pl/sql all sql queries are grouped into a single block and which will compile and execute only one time.so that it will reduce no. Of compilations and improve performance of database.

**FEATURES OF PL/SQL:**

1. To improves performance.

2. Supporting conditional & looping statements.

3. Supporting reusability.

4. Providing security because all programs are saved in database and authorized user can only access the

Programs.

5. Supporting portability i.e PL/SQL programs can be moved from one Platform to another platform without any changes.

6. Supporting exception handling mechanism.

7. Supporting modular programming i.e in a PL/SQL a big program can be divided into small modules which are called as stored procedure and stored functions.

**PL/SQL ARCHITECTURE:**

* PL/SQLis block-structure programming language which is having the following two engines those are

1. SQL ENGINE

2. PL/SQL ENGINE

* Whenever we are submitting a PL/SQLblock into oracle server then all SQL statements(queries) are separated and executing by SQL query executor with in SQL engine.
* whereas all PL/SQL statements(code) are separated and executing by PL/SQLcode executor with in PL/SQLengine.

**WHAT IS BLOCK:**

* A block is a set of statements which are compile & executed by oracle as a single unit. PL/SQLsupporting the following two types of blocks those are,

1. Anonymous block

2. Sub block

|  |  |
| --- | --- |
| **Anonymous block** | **Sub block** |
| 1. Unnamed block | 1. Named block |
| 2. This block code is not saved in db. | 2. This block code is saved in db automatically. |
| 3. It cannot reusable. | 3. It can be reusable. |
| 4. Every time compilation of code. | 4. Pre - compiled code (First time compilation only) |
| 5.Used in "DB testing". | 5. Used in application |

**DIFF. B/W ANONYMOUS & SUB BLOCK:**

DEVELOPMENT LIKE "JAVA",

".NET" & "DB APPLICATIONS ".

**ANONYMOUS BLOCKS:**

**THESE ARE UNNAMED BLOCKS IN PL/SQL.WHICH CONTAINS THREE MORE BLOCKS THOSE ARE,**

I) DECLARATION BLOCK

II) EXECUTION BLOCK

III) EXCEPTION BLOCK

**I) DECLARATION BLOCK:**

> THIS BLOCK STARTS WITH " DECLARE " STATEMENT.

**> DECLARING VARIABLES, CURSORS, USER DEFINE EXCEPTIONS.**

> IT IS OPTIONAL BLOCK.

**II) EXECUTION BLOCK:**

**> THIS BLOCK STARTS WITH " BEGIN " STATEMENT & ENDS WITH "END” STATEMENT.**

**> IMPLEMENTING SQL STATEMENTS(SQL) & LOGICAL CODE OF A PROGRAM (PL/SQL).**

> IT IS MANDATORY BLOCK.

**III) EXCEPTION BLOCK:**

> THIS BLOCK STARTS WITH "EXCEPTION" STATEMENT.

> HANDLING EXCEPTIONS.

**> IT IS An OPTIONAL BLOCK.**