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**Practical 13: PL/SQL**

**Objective:**  Study & Implementation of PL/SQL.

1. **PL/SQL**

PL/SQL is a block structured language that enables developers to combine the power of SQL with procedural statements.All the statements of a block are passed to oracle engine all at once which increases processing speed and decreases the traffic.

**Disadvantages of SQL:**

1. SQL doesn’t provide the programmers with a technique of condition checking, looping and branching.
2. SQL statements are passed to Oracle engine one at a time which increases traffic and decreases speed.
3. SQL has no facility of error checking during manipulation of data.

**Features of PL/SQL:**

1. PL/SQL is basically a procedural language, which provides the functionality of decision making, iteration and many more features of procedural programming languages.
2. PL/SQL can execute a number of queries in one block using single command.

One can create a PL/SQL unit such as procedures, functions, packages, triggers, and types, which are stored in the database for reuse by applications.

1. PL/SQL provides a feature to handle the exception which occurs in PL/SQL block known as exception handling block.
2. Applications written in PL/SQL are portable to computer hardware or operating system where Oracle is operational.

PL/SQL Offers extensive error checking.

**PL/SQL identifiers**

There are several PL/SQL identifiers such as variables, constants, procedures, cursors, triggers etc.

**Variables:**

Like several other programming languages, variables in PL/SQL must be declared prior to its use. They should have a valid name and data type as well.

**Syntax for declaration of variables:**

variable\_name datatype [NOT NULL := value ];

SQL> SET SERVEROUTPUT ON;

SQL> DECLARE

var1 INTEGER;

var2 REAL;

var3 varchar2(20) ;

BEGIN

null;

END;

/

Output:

PL/SQL procedure successfully completed.

**1.1) INITIALISING VARIABLES:**

The variables can also be initialised just like in other programming languages.

SQL> SET SERVEROUTPUT ON;

SQL> DECLARE

var1 INTEGER := 2 ;

var3 varchar2(20) := 'I Love Hello World' ;

BEGIN

null;

END;

/

Output:

PL/SQL procedure successfully completed.

**Displaying Output:**

The outputs are displayed by using DBMS\_OUTPUT which is a built-in package that enables the user to display output, debugging information, and send messages from PL/SQL blocks, subprograms, packages, and triggers.

SQL> SET SERVEROUTPUT ON;

SQL> DECLARE

var varchar2(40) := 'I love Hello World' ;

BEGIN

dbms\_output.put\_line(var);

END;

/

Output:

I love Hello World

PL/SQL procedure successfully completed.

SQL> SET SERVEROUTPUT ON;

SQL> DECLARE

-- taking input for variable a

a number := &a;

-- taking input for variable b

b varchar2(30) := &b;

BEGIN

null;

END;

/

**Output:**

Enter value for a: 24

old 2: a number := &a;

new 2: a number := 24;

Enter value for b: 'Hello World'

old 3: b varchar2(30) := &b;

new 3: b varchar2(30) := 'Hello World';

PL/SQL procedure successfully completed.

--PL/SQL code to print sum of two numbers taken from the user.

SQL> SET SERVEROUTPUT ON;

SQL> DECLARE

-- taking input for variable a

a integer := &a ;

-- taking input for variable b

b integer := &b ;

c integer ;

BEGIN

c := a + b ;

dbms\_output.put\_line('Sum of '||a||' and '||b||' is = '||c);

END;

/

Enter value for a: 2

Enter value for b: 3

Sum of 2 and 3 is = 5

PL/SQL procedure successfully completed.