

D D L

CREATE

ALTER

DROP

RENAME

TRUNCATE

~~GRANT~~

DML

~~SE~~ INSERT

DELETE

UPDATE

MERGE

DCL

GRANT

REVOKE

TCL

COMMIT

ROLLBACK

SAVE POINT

PL/SQL

→ Procedural extension language for SQL

↳ ADA & Pascal

→ supports both static and dynamic SQL

static → ~~DDL~~ DML & transaction ctrl

dynamic → DDL

→ Send an entire block to DB, reduces
N/w traffic & ~~per~~ ↑ Performance :

→ Fully portable ; exception handling,
encapsulation, data hiding & OOP.

"sqlplus" as sysdba ⇒ starts DB

in Oracle env, the starting index of
Variable is always 1

block structure.

Declare (optional)
L >

BEGIN

L >

Exception (optional)
L >

END;

Ex:-

DECLARE

message varchar(32) := 'Hello world';

BEGIN

dbms_output.put_line(message);

END;

/

Comments

Singline \Rightarrow -- Sentence.

Multi line \Rightarrow /*

*/

variables

Constants.

literals \rightarrow explicit.

operators !

\rightarrow Arithmetic $+, -, /, *, **$

\rightarrow Relational $=, !=, >, <$

\rightarrow Comparison Like, b/w, IN, IS NULL

\rightarrow Logical : AND, OR, NOT.

Conditions:

\rightarrow IF ~~ELSE~~ THEN

\rightarrow IF THEN ELSE

\rightarrow IF THEN ELIF

\rightarrow Case statements

\rightarrow Nested IF THEN ELSE

Looping: → Control Statements

→ Basic * ~~END~~ EXIT

→ while * continue

→ for * GOTO

→ nested

Strings

By default ~~the~~ if we leave off the length constraint, the DB will automatically uses a max. length req.

ASCII (n)

~~ASCII~~ NVL (n, v)

CONCAT (n)

NVL (v1, v2)

INITCAP (n)

SUBSTR (n, start [, length])

LENGTH (n)

TRIM (n)

LTRIM (n)

RTTRIM (n)

LOWER (n)

UPPER (n)

VARRAY (one dim)

Create or Replace TYPE

VARRAY-type_name IS VARRAY(n)
of element types

Type VARRAY-type_name is VARRAY

Procedures

Program unit/module that performs a particular task.

→ Can be created at schema lvl

Package Subprogram ← Inside a package
" " PL/SQL

* At schema lvl, subprograms is a standalone subprogram.

PL/SQL → two types of subprograms

Functions → which returns a value, mainly used to compute & return a value.

Procedure → do not return a value directly, mainly used to perform an action.

Example :-

```
CREATE OR REPLACE PROCEDURE  
greetings
```

```
AS
```

```
BEGIN
```

```
dbms_output.put_line ('Hello world');
```

```
END;
```

```
/
```

Executing a standalone Procedure

```
EXECUTE greetings;
```

or.

Deleting
a Procedure

```
BEGIN
```

```
greetings;
```

```
END;
```

```
/
```

DROP PROCEDURE
greetings;

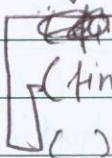
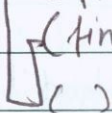
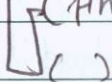
Parameters in Procedure

IN input n IN Numbers

OUT output n OUT numbers

IN OUT n IN OUT Numbers.

Methods of Passing Parameters.

- Positional  ~~findm~~ (findm(a, b, c))
 - Named  (findm(x=a, y=b, z=x))
 - Mixed  ()
-

Function

Create or Replace function fun_Name

Return return_datatype

BEGIN

 < >

END [function name];

CURSOR

is a pointer to this content area.
Ctrl the content area through cursor
cursor holds rows that returned
by SQL statement.

ACTIVE SET :- The set of rows the
cursor holds.

IMPLICIT

→ Auto created
whenever SQL is
Executed.

→ ^{Whenever} DML Commands
are used

EXPLICIT

→ User-defined
to gain more Ctrl.
on Content area.

→ CURSOR cursor_name
IS select_statement;

→ Declaring for
init the memory

→ opening for ^{allocating} ~~releasing~~
the data

→ Fetching → retrieving
→ closing → to release.

Exception:-

WHEN exception THEN

exception handling statements;

NO_data_found

CASE_NOT_FOUND

INVALID_NUMBER

INVALID_CURSOR

TRIGGER

are stored programs, which are automatically executed or fired when some events occurred.

DDL \rightarrow DML

Package

Is a schema that groups logically related PL/SQL types, variables & subprograms

Package specification

Package body

Collection:

It is a ordered group of elements having the same datatype.

each element is identified by unique subscript that represents its position in the collection.

\rightarrow Inden by tables or Associative array

\rightarrow Nested table

\rightarrow variable size array or varray