1. What is PL/SQL?

* [**PL/SQL is a database programming language**](https://www.oracle.com/ca-en/database/technologies/appdev/plsql.html) that stands for Procedural Language extensions to Structured Query Language. It is an extension of Oracle’s SQL database language. Developers can use this programming language to update information in relational database management systems

1. Compare SQL and PL/SQL.

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| --- | --- | --- |
| **Criteria** | **SQL** | **PL/SQL** |
| What is it? | A single query or command execution | A full programming language |
| What does it comprise? | A data source for reports, web pages, etc. | An application language to build, format, and display reports, web pages, etc. |
| Characteristic | Declarative in nature | Procedural in nature |
| Used for | Manipulating data | Creating applications |

1. Do you know the basic structure of PL/SQL?

Declaration section

Execution section

Exception-Handling section

Syntax:

DECLARE

BEGIN

Execution Section only mandatory

END;

PL/SQL blocks are of mainly two types.

1. Anonymous blocks
2. Named Blocks
3. **The SELECT INTO Clause**

The SELECT INTO clause of SQL is used to retrieve one row or set of columns from the Oracle database

1. TYPE: An anchored type defines a data type based on another SQL object such as a column, global variable, SQL variable, SQL parameter, or the row of a table or view. Anchored data types are those data type which you assign to a variable based on a database object

DECLARE

v\_name EMPLOYEES.first\_name%TYPE;

BEGIN

SELECT FIRST\_NAME INTO v\_name from EMPLOYEES WHERE EMPLOYEE\_ID = 1;

DBMS\_OUTPUT.PUT\_LINE(v\_name);

END;

Syntax:

**DECLAREv\_fname students.first\_name%TYPE**

1. What is a trigger? How do you use it?

A trigger is a database object that automatically executes in response to some events on the tables or views. It is used to apply the integrity constraint to database objects.

A PL/SQL program unit associated with a particular database table is called a database trigger. It is used for:

1. Audit data modifications
2. Log events transparently
3. Enforce complex business rules
4. Maintain replica tables
5. Derive column values
6. Implement complex security authorizations

event occurs.

Which Events :

1. A DML Statement(insert, update, delete, lock, call)

2. A DDL Statement (CREATE, DROP, ALTER, TRUNCATE, and RENAME)

3. A System event

4. A User event

Types :

1. DML Triggers

2. DDL Triggers

3. System/Database Event Triggers

4. Instead of Triggers

5.Compound Triggers

Syntax:

CREATE [ OR REPLACE ] TRIGGER trigger\_name

{BEFORE | AFTER } Triggering\_event ON table\_name

[FOR EACH ROW] [FOLLOWS another\_trigger\_name ]

[ENABLE/DISABLE] [WHEN condition]

DECLARE

declaration statements

BEGIN

executable statements

END

Uses :

1. Enforce Business rules

2. gain strong Control over the security

3. collect statistical information

4. automatically generate values

5. prevent invalid transactions

5. What data types does PL/SQL have?