**PL/SQL Questions**

**1. Compare between SQL and PL/SQL.**

|  |  |  |
| --- | --- | --- |
| **Criteria** | **SQL** | **PL/SQL** |
| What is it? | A single query or command execution | A full programming language |
| What does it comprise? | The 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 |

**2. What is PL/SQL?**

**Oracle PL/SQL** is a procedural language that has both interactive SQL and procedural programming language constructs such as iteration and conditional branching.

***Go through this***[***PL/SQL Tutorial***](https://intellipaat.com/blog/tutorial/oracle-plsql-tutorial/overview-of-plsql/)***to learn ‘What is PL/SQL?’***

**3. What is the basic structure of PL/SQL?**

PL/SQL uses a block structure as its basic structure. Anonymous blocks or nested blocks can be used in PL/SQL.

**4. Explain the uses of a database trigger.**

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

* Audit data modifications
* Log events transparently
* Enforce complex business rules
* Maintain replica tables
* Derive column values
* Implement Complex security authorizations

Any constant, variable, or parameter has a data type depending on which the storage constraints, format, and the range of values and operations are determined.

**5. How is a process of PL/SQL compiled?**

The compilation process includes syntax check, bind, and p-code generation processes. Syntax checking checks the PL/SQL codes for compilation errors. When all errors are corrected, a storage address is assigned to the variables that hold data. It is called Binding. P-code is a list of instructions for the PL/SQL engine. P-code is stored in the database for named blocks and is used the next time it is executed.

***Go through the***[***Handling PL/SQL Errors***](https://intellipaat.com/blog/tutorial/oracle-plsql-tutorial/handling-plsql-errors/)***tutorial page to know how error handling is done in PL/SQL!***

**6. What does a PL/SQL package consist of?**

A PL/SQL package consists of:

* PL/SQL table and record TYPE statements
* Procedures and functions
* Cursors
* Variables ( tables, scalars, records, etc.) and constants
* Exception names and pragmas for relating an error number with an exception
* Cursors

***Check out the insightful PL/SQL tutorial to learn more***[***about Pl/SQL Packages***](https://intellipaat.com/tutorial/oracle-plsql-tutorial/plsql-packages/)***!***

**7. What are the benefits of PL/SQL packages?**

PL/SQL packages provide several benefits as follows:

* **Enforced information hiding:** It offers the liberty to choose whether to keep data private or public.
* **Top-down design:** We can design the interface to the code hidden in the package before we actually implemented the modules.
* **Object persistence:** Objects declared in a package specification behave like global data for all PL/SQL objects in the application. We can modify the package in one module and then reference those changes to another module.
* **Object-oriented design:**The package gives developers stronghold over how the modules and data structures inside the package can be used.
* **Guaranteeing transaction integrity:**It provides a level of transaction integrity.
* **Performance improvement:**The RDBMS automatically tracks the validity of all program objects stored in the database and enhance the performance of packages.

***Master PL/SQL from this top-rated***[***PL/SQL Certification Training***](https://intellipaat.com/pl-sql-online-training/)***!***

**8. What are different methods to trace the PL/SQL code?**

Tracing the code is a crucial technique to measure its performance during the runtime. Different methods for tracing the code includes:

* DBMS\_APPLICATION\_INFO
* DBMS\_TRACE
* DBMS\_SESSION and DBMS\_MONITOR
* trcsess and tkprof utilities

**9. What is the difference between functions, procedures, and packages in PL/SQL?**

* **Function**: The main purpose of a PL/SQL function is to compute and return a single value. A function has a return type in its specification and must return a value specified in that type.
* **Procedure**: A procedure does not have a return type and should not return any value, but it can have a return statement that simply stops its execution and returns to the caller. A procedure is used to return multiple values; otherwise, it is generally similar to a function.
* **Package**: A package is a schema object which groups logically related PL/SQL types, items, and subprograms. You can also say that it is a group of functions, procedures, variables, and record TYPE statement. It provides modularity, due to which it aids application development. It is used to hide information from unauthorized users.

**10. What is a stored procedure?**

A **stored procedure** is a sequence of statements or a named PL/SQL block that performs one or more specific functions. It is similar to a procedure in other programming languages. It is stored in the database and can be repeatedly executed. It is stored as a schema object. It can be nested, invoked, and parameterized.

***Wish to learn more? Visit the***[***PL/SQL Collections and Records***](https://intellipaat.com/blog/tutorial/oracle-plsql-tutorial/plsql-collections-and-records/)***tutorial page!***

**11. What is a cursor? Why is it required?**

A **cursor** is a temporary work area created in system memory when a SQL statement is executed. A cursor contains information on a select statement and the row of data accessed by it. This temporary work area stores the data, retrieved from the database, to manipulate it. A cursor can hold more than one row but can process only one row at a time. A cursor is required to process rows individually for queries.

**12. Explain the Day-to-day activities in PL/SQL.**

1. Create database objects—tables, synonyms, sequences, etc.
2. To implement business rules, create procedures, functions, etc.
3. To impose business rules, create constraints, triggers, etc.
4. For data manipulation, create cursors

**13. How to display records having the maximum salary from an employee table?**

Select \* from emp where sal= (select max(sal) from emp)

***If you have any doubts or queries related to PL/SQL, get them clarified from our PL/SQL experts on our***[***SQL Community***](https://intellipaat.com/community/questions/sql)***!***

**14. How to display the highest salary from an employee table?**

Use the following code for displaying the highest salary from an employee table:

Select max(sal) from emp;

**15. How to display the second highest salary from an employee table?**

Select max(sal) from emp where sal not in ( select max(sal) from emp

**16. What is a Join?**

**Join** is a keyword used to query data from multiple tables based on the relationship between the fields of tables. Keys play a major role in Joins.

**17. what is a View?**

* A **View** is a virtual table consisting of data contained in a table.
* Views do not need any memory space.
* Views can be created on multiple tables.

**18. What is a subquery? What are its types?**

A **subquery** is a query within another query. The outer query is known as the main query and the inner query is called the subquery. A subquery is executed first, and the result of the subquery is passed to the main query.

There are two types of subqueries: correlated and non-correlated

**19. what is a trigger?**

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 the database objects.