



# Python

## Interview Questions

1. What kinds of variables should you declare when using integers in range functions like BETWEEN etc.?

When using range functions like BETWEEN in PL/SQL, you should declare two variables: one for the lower bound of the range and another for the upper bound. Both variables should be declared as integers. For example:

```
DECLARE
```

```
lower_bound INTEGER;
```

```
upper_bound INTEGER;
```

```
BEGIN
```

```
SELECT * FROM customers WHERE customer_number BETWEEN  
:lower_bound AND :upper_Bound; END;
```

2. How does equi join work when programming with cursors in PL/SQL?

When programming with cursors in PL/SQL, equi joins work by joining two or more tables on a column or set of columns with the same values. The syntax for an equi join includes specifying the names and conditions of each table involved as well as the common fields being used for comparison:

```
FOR cur1 IN (SELECT * FROM TableA A , TableB B WHERE A.fieldone =  
B.fieldtwo)
```

```
LOOP
```

```
-- do something with cur1
```

```
END LOOP;
```

3. How do you ensure that Initial values are correctly assigned when executing a PL/SQL program?

We can ensure initial values are correctly assigned when executing a PL/SQL program by defining default values for variables in the declaration section of the block and using an IF-THEN statement to execute the appropriate code based on whether or not an initial value is supplied. Additionally, we can use exception handling within our programs configured to trigger in cases where incorrect input is provided, providing information about how errors should be handled. Furthermore, we could incorporate data validation into our program logic to check that input parameter values meet certain criteria before being accepted as valid inputs.

4. What is the purpose of Triggers in PL/SQL, and explain the execution of triggers?

A trigger is a stored PL/SQL block fired automatically in response to an event (INSERT, UPDATE or DELETE) on a particular table. It can be used to check and modify the values of newly inserted rows or update existing records with new values. Triggers are generally executed when data changes occur inside specific tables, and they usually contain SQL statements that use much of the same syntax as normal SQL statements.

The execution process for triggers begins after an insert, delete, or update statement has been issued against the associated table(s). The following steps outline how this occurs:

Oracle reads through each row affected by insert, delete, or updates statement before any commit operation

Any constraints defined against rows being modified are checked

A list of all applicable triggers for those operations is assembled

For each such trigger found, its code is fetched

If specified via SET CONSTRAINTS mode (eager), then checks for possible triggering actions based on what occurred  
All other applicable validations take place  
Assembled sequence calls one firing procedure  
Each firing procedure executes according  
Lastly, once all these processes have been completed without error, then only it returns 'success' status

5. How does one handle different integer types within the scope of a PL/SQL program?

PL/SQL datatypes can be categorized into two types - numerical (NUMBER, BINARY\_INTEGER) and character (CHAR, VARCHAR2). To handle different integer types within the scope of a PL/SQL program, use an implicit data conversion function to convert one type to another. For example:

-- Conversion from NUMBER to BINARY\_INTEGER

BinaryIntegerVariable := To\_binaryInteger(NumberVariable);

-- Conversion from CHAR or VARCHAR2 to NUMBER

NumberVariable := To\_number(CharacterVariable);

-- Conversion from BINARY\_INTEGER to NUMBER

NumberVariable := To\_number(BinaryIntegerVariable);

6. In what situations will LOOP statements be necessary for developing complex logic in a PL/SQL program?

Loop statements can be used in a variety of situations when developing complex logic, such as:

Iterating through data stored in collections like arrays or records.

Generating test data for debugging and testing purposes.

Performing repetitive calculations or tasks on multiple items (e.g., calculating an average).

Executing a code block while certain conditions are met (looping until they no longer hold true).

Performing an action for each element in a list or table.

1. What are the various SQL subsets?

DDL, DML and DCL are the various subsets of SQL.

DDL (Data Definition Language) is the language used to define the structure of a database so that you may create, alter, and delete objects.

You can access the data and modify it in the Data Manipulation Language (DML). One can use Database Management Software for a variety of tasks.

Data Control Language (DCL) can restrict access to a database. Permissions can be granted or revoked.

#### 7. Why is String immutable in Java?

Security, synchronisation and concurrency, caching, and class loading make the String immutable in Java. It is necessary to make the string final to prevent others from extending the string's immutability. There is no way to modify a series cached in the String pool.

#### 8. Why are OOPs required?

OOPs enable you to simulate actual objects, decouple interfaces and implementation specifics, and persistently store object-oriented data in the database.

OOPs make it easier for consumers to grasp the software, even if they don't know how to implement it.

The code becomes much easier to read, comprehend, and maintain when written using OOPs.

Using OOPs, even the most complex software can be built and managed quickly and easily.

#### 9. What is the Graphical based interface in SQL?

A diagrammatic form that presents a schema to the user is included in a graphical user interface. By adjusting the diagram, the user poses a question. In these interfaces, the mouse is used as a pointing tool to select certain areas of the diagram.

The users of electronic devices like touch screens and mobile phones use these types of interfaces.

#### 10. Explain RDBMS?

IT professionals and others can use a relational database management system (RDBMS) to create, modify, administer, or interact with relational databases. Structured Query Language (SQL) is the query language most commonly used by commercial relational database management systems to access data contained in tables.

#### RDBMS

#### 11. What do you mean by self-join?

Self joins, also known as unary relationships, represent a method where a table is joined to itself, particularly when the table has a foreign key that refers to its own primary key. When a table is joined, each row is merged with every other row in the table as well as with itself.

#### 12. What is the SELECT statement?

A SELECT command can return zero or more rows in one or more database tables or views. SELECT is the most used command in data manipulation languages (DML). SELECT queries define a result set but do not specify how to calculate it, as SQL is a declarative programming language,

13. Explain PostgreSQL?

Postgres was built in 1986 by a group led by Professor of Computer Science Michael Stonebraker. By providing data integrity and fault tolerance in systems, it was designed to help developers develop enterprise-level applications. PostgreSQL is an open-source object-relational database management system designed for large organisations. The international developer community has always supported it.

14. Give a brief description of SQL comments?

To prevent SQL statements from being run, SQL Comments can be used to explain specific parts of the SQL statement. Many programming languages place a high value on comments. A Microsoft Access database does not back up the comments. Consequently, both Firefox and Edge demonstrate using the Microsoft Access database.

15. What is schema?

It is the visual depiction of the database that is logical. It creates and specifies the database's various relationships. It is a term used to describe the different SQL data types of database restrictions. Tables and views can benefit from this feature.



16. What are the types of databases?

Numerous types of databases exist, some of them are:

Hierarchical databases

Object-oriented databases

Relational databases

Network databases

Complex and extensive databases are constructed using the same design and modelling principles. Large databases are stored on computer clusters or in the cloud, unlike file systems, which are better suited for smaller databases.

17. Explain normalisation

Normalisation is a process to reduce data redundancy and dependency by arranging fields and tables in databases in a normalised manner. In this process, tables are built, and linkages between tables are established using rules. These principles make normalisation more flexible by removing redundant and inconsistent dependencies.

18. What is the primary key?

All records in a table can be uniquely identified using a primary key. It can't contain any NULL values and must have only one data set. A composite key can have single or numerous fields, but only one can exist in a given table.

19. Are there any programming language features supported by SQL? The Standard Query Language is referred to as SQL. As a result, while SQL is technically a language, it does not provide any programming assistance. This common language has no loops, conditional statements, or logical operations. It can only be used to manipulate data and nothing else.

20. What is the significance of the DDL language?

Data definition language is referred to as DDL. DDL commands in SQL are the part of a database that specifies the data structure of the database when it is first set up. – Tables can be added, removed, or modified using DDL commands.