****Question 1. What Is Postgresql?****

****Answer :****

This is regarded as one of the most successful open source database in the world. This is also used to create advanced applications. This relies on Object relational database management system. Familiarity with UNIX and Linux can be an added advantage while using PostgreSQL.

****Question 2. State Some Of The Advanced Features Of Postgresql?****

****Answer :****

These are the following features which are present in PostgreSQL they are

1) Object relational database  
2) Extensibility and support for SQL  
3) Database validation and flexible API  
4) Procedural languages and MVCC  
5) Client server and WAL.

****Question 3. Explain About Write Ahead Logging?****

****Answer :****

This feature increases the reliability of the database by logging changes before any changes or updations to the data base. This provides log of database incase of a database crash. This helps to start the work from the point it was discontinued.

****Question 4. Explain About Multi Version Concurrency Control?****

****Answer :****

Multi version concurrency control or MVCC is used to avoid unnecessary locking of the database. This removes the time lag for the user to log into his database. This feature or time lag occurs when some one else is on the content. All the transactions are kept as a record.

****Question 5. How To Start The Database Server?****

****Answer :****

* 1. /usr/local/etc/rc.d/010.pgsql.sh start
  2. /usr/local/etc/rc.d/postgresql start

****Question 6. How To Stop The Database Server?****

****Answer :****

* 1. /usr/local/etc/rc.d/010.pgsql.sh stop
  2. /usr/local/etc/rc.d/postgresql stop

****Question 7. How To Check Whether Postgresql Server Is Up And Running?****

****Answer :****

* 1. /usr/local/etc/rc.d/010.pgsql.sh status
  2. /usr/local/etc/rc.d/postgresql status?

****Question 8. What Are The Languages Which Postgresql Supports?****

****Answer :****

****Some of the languages which PostgreSQL supports are as follows:****It supports a language of its own known as PL/pgSQL and it supports internal procedural languages. Pl/pgSQL can be compared to oracle, PL/SQL, etc. Languages such as Perl, Python, TCL can be used as embedded languages.

****Question 9. Explain About The Command Enable Debug?****

****Answer :****

This command is used for enabling compilation of all libraries and applications. This process generally slows down the system and it also increases the binary file size. Debugging symbols are present which can assist developers in noticing bugs and problems associated with their script.

****Question 10. Explain About Functions In Postgresql?****

****Answer :****

Functions are important because they help the code to be executed on the server. Some of the languages which can program functions for efficient use are PL/pgSQL which is the native language of PostgreSQL. Scripting languages are supported by many languages such as PHP, Perl, Python, etc. PL/R a statistical language can also be used.

****Question 11. Explain About Indices Of Postgresql?****

****Answer :****

There are built in functions such as B-tree, hash table, and GIST indices can be used or users can define their own indices. PostgreSQL can scan the index backwards. Expression index could be created with the result of an expression. Partial index created with addition of WHERE clause.

****Question 12. Explain About Triggers?****

****Answer :****

By SQL query you can trigger an event. Triggers can be activated with the help of INSERT and UPDATE queries. These can be attached to tables. Triggers more than one can be triggered alphabetically. These triggers have the capability to invoke functions from other languages.

****Question 13. What Are The Different Data Types Supported By Postgresql?****

****Answer :****

****There are different data types which are supported they are:****

1) Arbitrary precision numeric’s  
2) Geometric primitives  
3) Arrays  
4) XML etc  
Users can create their own indexes and make them indexed.

****Question 14. Explain About Database Administration Tools?****

****Answer :****

There are various data administration tools they are

1) Psql  
2) Pgadmin  
3) Phppgadmin

Most of these tools are front end administration tools and web based interfaces. Out of these phppgadmin is the most popular one.

****Question 15. Explain About Pgadmin?****

****Answer :****

Pgadmin forms a graphical front end administration tool. This feature is available under free software released under Artistic License. Pgadmin iii is the new database administration tool released under artistic license.

****Question 16. How Do You Create A Data Base With Postgresql?****

****Answer :****

Creating a database is the primary step in creating a database. A command $createdb newdatabasedb

****CREATE DATABASE****

This creates a new database and a message displays ****CREATE DATABASE**** which indicates that the creation of the database was successful.

****Question 17. What Are The Various Enhancements To The Straight Relational Data Model By Postgresql?****

****Answer :****

There are various enhancements provided to the straight relational data model by postgre SQl they are support for arrays which includes multiple values, inheritance, functions and extensibility. Jargon differs because of its object oriented nature where tables are called as classes.

****Question 18. Explain About Tokens?****

****Answer :****

Tokens are also known to contain several special character symbols. It can be considered as keyword, constant, identifier and quoted identifier. Keywords include pre defined SQL meanings and SQL commands. Variable names such as tables, columns, etc are represented by identifiers.

****Question 19. Explain About String Constants?****

****Answer :****

String constant contains a sequence of characters bound by single quotes. This feature is used during insertion of a character or passing character to database objects. PostgreSQL allows the usage of single quotes but embedded by a C style backslash. This feature is important in parsing data.

****Question 20. What Is Write Ahead Log?****

****Answer :****

write-ahead log (WAL),  means it always writes the transactions to the log following with writing the modified pages to the disk to maintain the transaction ACID properties.

****Question 21. How To Created A Database?****

****Answer :****

/usr/local/bin/createdb mydatabase

****Question 22. How To List The Number Of Database?****

****Answer :****

su -l pgsql  
psql -l

****Question 23. How To Take Backup Of Database?****

****Answer :****

/usr/local/bin/pg\_dump mydatabase > mydatabase.pgdump

****Question 24. How To Create A Postgresql User?****

****Answer :****

CREATE USER user WITH password ‘password’;

****Question 25. What Is A Sequence?****

****Answer :****

A sequence is a special kind of database object designed for generating unique numeric identifiers. It is typically used to generate artificial primary keys.  
Sequences are similar, but not identical, to the AUTO\_INCREMENT concept in MySQL.

****Question 26. What Is A Ctid?****

****Answer :****

CTIDs identify specific physical rows by their block and offset positions within a table. They are used by index entries to point to physical rows. A logical row's CTID changes when it is updated, so the CTID cannot be used as a long-term row identifier. But it is sometimes useful to identify a row within a transaction when no competing update is expected.

****Question 27. Why Do I Get The Error "error: Memory Exhausted In Allocsetalloc()"?****

****Answer :****

You probably have run out of virtual memory on your system, or your kernel has a low limit for certain resources. Try this before starting the server:

ulimit -d 262144  
limit datasize 256m

****Question 28. How Do I Tell What Postgresql Version I Am Running?****

****Answer :****

Run this query: SELECT version();

****Question 29. How Do I Create A Column That Will Default To The Current Time?****

****Answer :****

Use CURRENT\_TIMESTAMP:  
CREATE TABLE test (x int, modtime TIMESTAMP DEFAULT CURRENT\_TIMESTAMP );

****Question 30. How Do I Perform An Outer Join?****

****Answer :****

PostgreSQL supports outer joins using the SQL standard syntax. Here are two examples:

SELECT \* FROM t1 LEFT OUTER JOIN t2 ON (t1.col = t2.col);  
or  
SELECT \* FROM t1 LEFT OUTER JOIN t2 USING (col);

****Question 31. How Do I Perform Queries Using Multiple Databases?****

****Answer :****

There is no way to query a database other than the current one. Because PostgreSQL loads database-specific system catalogs, it is uncertain how a cross-database query should even behave.  
contrib/dblink allows cross-database queries using function calls. Of course, a client can also make simultaneous connections to different databases and merge the results on the client side.

****Question 32. Is Possible To Create A Shared-storage Postgresql Server Cluster?****

****Answer :****

PostgreSQL does not support clustering using shared storage on a SAN, SCSI backplane, iSCSI volume, or other shared media. Such "RAC-style" clustering isn't supported. Only replication-based clustering is currently supported.

****Question 33. Does Postgresql Have Stored Procedures?****

****Answer :****

PostgreSQL doesn't.

****Question 34. How To Pronounce Postgresql?****

****Answer :****

post-GRES-que-ell, per this audio file. Many people, however, just say “post-GRES”.

****Question 35. What Are New Features Postgre 9.1?****

****Answer :****

As always, we can’t be certain what will go in and what won’t; the project has strict quality standards that not all patches can make before deadline. All we can tell you is what’s being worked on, which includes: synchronous replication, JSON support, security labels, nearest-neighbor geographic searches, SQL/MED external data connections, column-level collations, and index-only access. By the time 9.1 is released, though, this feature list will have changed considerably.

****Question 36. Does Postgresql Run On The Cloud?****

****Answer :****

Yes. Like other open source databases, PostgreSQL is easy to run in virtual containers and is highly portable. Several companies have support for PostgreSQL in cloud hosting environments, including Heroku, GoGrid and Joyent.

****Question 37. How Does Postgresql Compare To “nosql”?****

****Answer :****

The term “NoSQL” covers such a diverse array of non-relational database implementations … from tiny embedded databases like TokyoCabinet to massive clustered data processing platforms like Hadoop … that it’s impossible to comment on them as a general class. Non-relational databases preceded relational databases and have existed alongside them for forty years, so choosing between relational and nonrelational databases is nothing new. Users should choose the database whose features, implementation, and community support their current application needs. Further, using multiple different databases for large projects is fast becoming the norm, and PostgreSQL users are no exception.

****Question 38. How Does Postgresql Compare To Oracle/db2/ms Sql Server/informix?****

****Answer :****

Our feature set is generally considered to be very competitive with other leading SQL RDBMSes. Certainly there are features some of them have which we don’t, and the reverse is also true. To date, only a few benchmarks have been published showing PostgreSQL to be within 10-30% of proprietary competitors. However, we have had many users migrate from other database systems ï¿½ primarily Oracle and Informix ï¿½ and they are completely satisfied with the performance of their PostgreSQL systems.

****Question 39. How Does Postgresql Compare To Mysql?****

****Answer :****

This is a topic that can start several hours of discussion. As a quick summary, MySQL is the “easy-to-use, web developer” database, and PostgreSQL is the “feature-rich, standards-compliant” database. PostgreSQL is liberally licensed and owned by its community; MySQL is GPL-licensed and owned by Oracle. Beyond that, each database user should make his own evaluation; open source software makes doing comparisons very easy.

****Question 40. Explain About Concurrency With The Help Of Mvcc?****

****Answer :****

Multi version concurrency control is used to manage concurrency. This feature is very useful because changes made in the database will not be visible to other users until the transaction is completed. This removes the need for read locks. ACID principles are given a further boost by this feature and can be implemented in general.

1. What is PostgreSQL and why it is used for?

#### **Answer**

It’s a general purposed and advance object-relational [database management system](https://www.bestinterviewquestion.com/dbms-interview-questions) used to add custom functions developed using a various programming language such as C, C++, Java, etc. Designed to be extensible, PostgreSQL implements MVCC or multi-version concurrency control.

2. How to select first 10 records in PostgreSQL?

#### **Answer**

To get the first 10 records from a database in PostgreSQL, use the LIMIT command.

Here is an example of picking the first 10 records from a database called Example:

#### **Example**

select \* from users order by name desc LIMIT 0, 10

3. What is base directory in PostgreSQL?

#### **Answer**

The base directory in PostgreSQL (data\_dir/base) is the folder is where PostgreSQL stores all the data you have inserted in your databases. It contains all the sub-directories which are used by a [database](https://www.bestinterviewquestion.com/database-interview-questions) in your clusters.

4. How to change the datatype of a column in PostgreSQL?

#### **Answer**

To change the records type of a column, you use the ALTER TABLE assertion as follows:

#### **Example**

ALTER TABLE users  
ALTER COLUMN username[SET DATA] TYPE new\_data\_type;

5. What is the Maximum size for a table in PostgreSQL?

#### **Answer**

Even though PostgreSQL has unlimited database size for users, but it has a limit for maximum table size. The maximum table size is set to 32 TB.

**Note**: This is very essential **PostgreSQL interview questions**.

6. What are the features of PostgreSQL?

#### **Answer**

PostgreSQL has many exciting features added to it. Here are a few of them:

* By protecting data integrity, users can build a fault-tolerant environment.
* Easy compatibility with significant platforms, languages, and middleware.
* Multi-version concurrency control is supported.
* The client-server network architecture is supported.
* Trigger-based and log-based replication SSL
* High availability and standby server

7. What is pgAdmin and how do you set up pgAdmin?

#### **Answer**

PgAdmin is a free, open-source PostgreSQL database administration GUI that is used in Microsoft Windows, Mac OS X, and Linux systems. PgAdmin is used for database server information retrieval, development process, Quality testing, and other ongoing maintenance.

##### **Follow these steps to install PgAdmin:**

* Launch pgAdmin 4.
* Go to the “Dashboard” tab, click on the “Quick Link” section and then click on “Add new Server”
* Now, select the “Connection” tab in the “Create-Server” window.
* Now, configure the connection as follows:
* Enter your server's IP address in the “Hostname/Address” field.
* Specify the “Port” as “5432”.

8. What does GEQO stands for in PostgreSQL?

#### **Answer**

In PostgreSQL, GEQO stands for **G**enetic **Q**uery **O**ptimization. It allows the PostgreSQL search query optimizer to support large joined queries in an effective manner using a non-exhaustive search technique.

9. What is the Maximum size for a database in PostgreSQL?

#### **Answer**

PostgreSQL has no maximum database size, so users can put unlimited data into it. But, the table, row, and field size are limited. The row and indexes are also universal for its users.

PostgreSQL usually stores its desk facts in chunks of 8KB. The quantity of these blocks is confined to a 32-bit signed integer, giving the most desk dimension of 16TB.

10. Which is better MySQL or PostgreSQL?

#### **Answer**

In terms of learning databases, [MySQL](https://www.bestinterviewquestion.com/mysql-interview-questions) is perfect. It is the first choice for web-based projects merely requiring a database for transactions and nothing else. But, PostgreSQL is better in terms of functionalities and performance. It is more used in the execution of complex queries, data warehousing, and data analysis.

11. What is Multi Version Concurrency Control in PostgreSQL?

#### **Answer**

Multi-Version Concurrency Control (MVCC) is an advanced method used in PostgreSQL for improving the performance of a database in a multi-user environment. Unlike lock models in other databases, PostgreSQL uses a multi-version environment in which locks that are acquired for reading data don’t conflict with locks acquired for writing the data. Hence, making the process more compartmentalized and a lot faster.

12. Explain PostgreSQL vs. MongoDB?

#### **Answer**

| **S.no** | **PostgreSQL** | **MongoDB** |
| --- | --- | --- |
| 1. | It’s an object-relational database management system. | It uses JSON-like documents to store schema-free data. |
| 2. | uses tables, triggers, constraints, roles, stored procedures and views as the core components | Uses Key, Collection, Document, and Value. |

13. What are the difference between PostgreSQL and Oracle?

#### **Answer**

| **S.no** | **Oracle** | **PostgreSQL** |
| --- | --- | --- |
| 1. | Mostly aid object-relational database management system | open source object-relational database management system |
| 2. | The implementation language is C. | Implementation language is C and C++. |
| 3. | Server operating systems here are OS X, Linux, Windows, z/OS, AIX, and HP-UX. | Server operating systems here are HP-UX, NetBSD, Solaris, Windows, Unix, Linux, and FreeBSD. |
| 4. | More database productivity | Less database productivity |
| 5. | Advance security options | Good security support but less compared to Oracle |

14. How to install PostgreSQL on windows?

#### **Answer**

* Download Windows PostgreSQL one-click the installer and run it.
* Choose to install PostgreSQL as a Windows Service.
* If needed, change the installation directory and click next
* Choose the components you want to install & click next
* If needed, change the data location
* Enter the user password and if necessary make a note of it.
* Let the port number by the default
* Once the installation is complete, uncheck the Stack Builder prompt and click finish
* Now go to start menu, search and start pgAdmin 4
* Click on servers present on the pgAdmin homepage and choose Postgre SQL 10
* Enter the superuser password, and the dashboard will begin for your use

15. How to install PostgreSQL on Ubuntu?

#### **Answer**

As the default repositories of Ubuntu contain Postgres packages, we can install it easily using the **apt**packaging system. Refresh the local package index and then install the Postgres packages and a -**contrib**package which adds additional functionality and utilities. The PostgreSQL software installation process is finished now.

16. List data type in PostgreSQL?

#### **Answer**

#### ****PostgreSQL supports various data types, which includes:****

* Boolean
* Numeric types
* Character types
* Temporal types
* Array
* UUID
* JSON
* store
* Special types such as geometric data and particular types

17. What is a child in PostgreSQL?

#### **Answer**

The ctid field exists in every **PostgreSQL table**. It is unique for every record in a table and denotes the turple location. It can be used to delete records. The thing to remember, we should only use ctid if we have absolutely no other unique identifier to use.

18. What is table partitioning in PostgreSQL?

#### **Answer**

In PostgreSQL, table partitioning refers to splitting a large table into smaller sections. PostgreSQL supports list and range partitioning via table heritance. Users have to create each partition as a child table of the master table.

19. How to stats update in PostgreSQL?

#### **Answer**

An explicit **'vacuum**' call is made to update statistics in PostgreSQL. Users can also use the Analyze to perform so.

20. What is indexes in PostgreSQL?

#### **Answer**

In PostgreSQL, the index is a common way for database performance enhancement. It allows the database server to find the retrieve specific rows faster compared to without index. It also adds overhead to the database system as a whole, so users have to implement them sensibly.

Indexes are special lookup tables that are used by the database search engine to speed up data retrieval. Simply defining, an index is a pointer to a specific data in a table.

21. What types of indexes are supported in PostgreSQL?

#### **Answer**

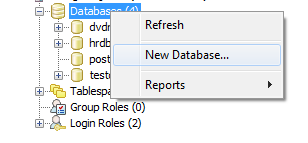
PostgreSQL provides several index types like Hash, B-tree, SP-GiST, BRIN, and GIN. All these types uses a separate algorithm that is best suited to queries.

22. How to create a database in PostgreSQL pgAdmin?

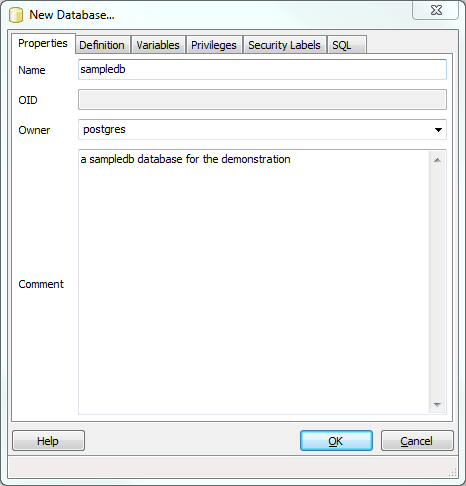
#### **Answer**

Follow these steps to successfully create a database in PostgreSQL using PgAdmin:

* Log into PostgreSQL using pgAdmin
* Now, go to the Databases section and right-click on it



* Now, enter the database name, owner and configure parameters and press OK after it is done.



23. What are tokens in PostgreSQL?

#### **Answer**

A token can be a keyword, an identifier, a quoted identifier, a literal (or constant), or a distinctive personality symbol. Tokens are generally separated with the aid of whitespace (space, tab, newline), however, need not be if there is no ambiguity (which is usually only the case if an exceptional persona is adjoining to some other token type).

24. What is reserved words in PostgreSQL?

#### **Answer**

Reserved words in PostgreSQL are actually SQL keywords and other symbols having some sort of special meaning when being processed by the Relational Engine.

25. How to change user's password in PostgreSQL?

#### **Answer**

##### **Follow these steps to carefully change the user password Postgres in Laravel:**

* **Step 1**: Make yourself the “Postgres” system user (through the root user, sudo or via SSH public key verification)
* **Step 2**: Connect to the local server using “PSQL”
* **Step 3**: Type this meta-command of PSQL \password

It should look something like this:



26. What is sequence in PostgreSQL?

#### **Answer**

A sequence in PostgreSQL is a special form of data that is created to generate multiple numeric identifiers in the PostgreSQL database. It is most often used to create sequences and artificial primary keys similar to Auto\_Increment in MySQL. The basic role of sequences in PostgreSQL is to create unique identifiers between multiple rows inside a table.

27. What is purpose of overlay function in PostgreSQL?

#### **Answer**

In PostgreSQL, the Overlay function allows users to replace a substring, which is starting at a specific position and having a specified length.

Here is the syntax for the Overlay Function:

#### **Example**

overlay(<main\_string> placing <replaced\_string> <br>  
from <starting\_position> [ for <number\_of\_characters>] )

28. How to calculate cube root in PostgreSQL?

#### **Answer**

To find the cube root of ant given number in PostgreSQL, you can use the CBRT() function.

#### **Example**

SELECT cbrt(729) AS "Cube Root";  
Output - 9

29. What is the operator that is used for case-insensitive regular expression searches in PostgreSQL?

#### **Answer**

To match a regular expression that is case insensitive, you can use the POSIX regular expression (~\*) from the pattern matching operators.

#### **Example**

'umesh' ~\* '.\*Umesh.\*'

30. What is inverted file in PostgreSQL?

#### **Answer**

In PostgreSQL, an Inverted file is basically an index data structure used for mapping content to its location to a database file, within a document, or in sets of documents.

It is usually composed of all the distinct words found in a text and a list containing the occurrences of a word in the text.

The inverted file is widely used in a data structure for document retrieval systems in supporting a full-text search.

31. How many byte Unique integers does OIDs in PostgreSQL?

#### **Answer**

In PostgreSQL, there are 4 bytes of unique integers by default.

32. What is the command that can be used to allocate memory in postgreSQL?

#### **Answer**

The PostgreSQL functions palloc and malloc are used for allocating memory.

33. What are the ODBC drivers that are available for PostgreSQL?

#### **Answer**

plsqlODBC is the official PostgreSQL driver. Besides that, there are other third-party ODBC drivers such as Devart, which shall cost you some money.

34. How to check status of PostgreSQL server running or not?

#### **Answer**

The simplest way to check whether your server in PostgreSQL is running or not:

ps auxwww | grep postgres

In versions other than 8.3 you need to run this command

/Library/PostgreSQL/8.3/bin/postgres -D /Library/PostgreSQL/8.3/data

35. How to enable debug mode in PostgreSQL?

#### **Answer**

PgAdmin comes with built-in support to debug your Pl/PgSQL codes. However, in order to enable this, you need to compile and install a separate plug-in for PostgreSQL

Now, once you have set up a proper environment for debugging, go to edit /etc/postgresql/9.4/main/postgresql.conf and enable the debugger plugin.

36. How to take the backup of PostgreSQL?

#### **Answer**

Here are the steps to back up a single database in PostgreSQL. We shall be using the pg\_dump tool as it dumps out the content of all the objects in the database to a single file.

**Step 1**: First of all, navigate to the PostgreSQL BIN folder:

C:\>cd C:\Program Files\PostgreSQL\9.2\bin

**Step 2**: Now, we shall execute the pg\_dump program and use the following method to back up the examples database to the example.tar file to the c:\pgbackup\ folder.

pg\_dump -U postgres -W -F t examples > c:\pgbackup\examples.tar

**Step 3**: Here is your backed up database

c:\pgbackup\dvdrental.tar

37. What is a CTID of PostgreSQL?

#### **Answer**

In PostgreSQL, the CTID field is one that exists in each and every PostgreSQL table, and it is unique for all records inside a table, which is used to denote the location of the tuples.

38. What are string constants in PostgreSQL?

#### **Answer**

In PostgreSQL, a string constant is an arbitrary sequence of multiple characters that are bounded by single quotes (').

#### **Example**

SELECT 'This' 'is' 'an' 'example'

Is equivalent to

SELECT 'This is an example'

Note that this is not the same as using double quotes (").

#### **Benefits of PostgreSQL**

* Enterprise-class functions and performance with an open-source database management system with unlimited development possibilities.
* Superior development possibility with diverse community purposed modules.
* Store Procedure functions can be used for a server environment.
* It offers diverse indexing techniques.
* Availability of full-text search
* Diverse extension functions and replications

#### **Q1. What are the main features of PostgreSQL?**

****Answer:****  
Following are some of the features of PostgreSQL

* Object-relational database.
* Support and extensibility for SQL.
* Flexible API and database validation.
* MVCC and procedural languages,
* WAL and Client-Server.

#### **Q2. What is Cube Root Operator (||/) in PostgreSQL?**

****Answer:****  
Returns Cube Root of a number  
e.g., Select ||/ 16 “Cube Root of 16.”

#### **Q3. Provide a brief explanation of the functions in PostgreSQL.**

****Answer:****  
Functions are essential because they help execute the code on the server. Some of the languages to program functions are PL/pgSQL, a native language of PostgreSQL, and other scripting languages like Perl, Python, PHP, etc. The statistical language PL/R can also be used to increase the efficiency of the functions.

Let us move to the following PostgreSQL Interview Questions.

#### **Q4. Can you explain Pgadmin?**

****Answer:****  
Pgadmin is a feature known to form a graphical front-end administration tool. This feature is available under free software released under an Artistic License. Pgadmin iii is the new database administration tool released under artistic license.

#### **Q5. What is Multi-version control?**

****Answer:****  
Multi-version concurrency control or MVCC is used to avoid unnecessary database locking. This removes the time lag for the user to log into his database. This feature or time lag occurs when someone else is accessing the content. All transactions are kept as a record.

#### **Q6. What will be the new characteristics of PostgreSQL 9.1?**

****Answer:****  
During updating the project, one can never be sure which features will go in and which ones won’t make the cut. The project has precise and stringent standards for quality, and some patches may or may not match them before the set deadline. Currently, the 9.1 version is working on some essential features, including JSON support, synchronous replication, nearest-neighbor geographic searches, collation at the column level, SQL/MED external data connections, security labels, and index-only access. However, this list is highly likely to change completely by the time Postgre 9.1 is released.

### **Part 2 – PostgreSQL Interview Questions (Advanced)**

Let us now have a look at the advanced PostgreSQL Interview Questions.

#### **Q7. What is command enable-debug?**

****Answer:****  
The command enable-debug is used to enable the compilation of all the applications and libraries. The execution of this procedure usually impedes the system, but it also amplifies the binary file size. [Debugging](https://www.educba.com/what-is-debugging/) symbols that are present generally assist the developers in spotting the bugs and other problems which may arise associated with their script.

#### **Q8. What are the indices of PostgreSQL?**

****Answer:****  
These are inbuilt functions or methods like GIST Indices, hash table, and B-tree, which the user can use to scan the index backwardly. Users can also define their indices of PostgreSQL.

#### **Q9. What is the option in PostgreSQL to check rows affected in a previous part of the transaction?**

****Answer:****  
The SQL standard is defined by four transaction isolation levels regarding three phenomena. The three phenomena must be prevented between concurrent transactions. The unwanted phenomenon is

* ****Phantom read****: a transaction that re-executes a query, returning a set of rows that satisfy a search condition and then finds that the location of rows that have been helping the situation has changed due to another recently committed transaction.
* ****Non-repeatable read****: a transaction that re-reads the data that it has previously read and then finds that another transaction has already modified data.
* ****Dirty reads****: a transaction that reads data written by a concurrent uncommitted transaction is the dirty read.

Let us move to the following PostgreSQL Interview Questions.

#### **Q10. What is A CTID?**

****Answer:****  
CTIDs are a field[in every PostgreSQL table](https://www.educba.com/postgresql-table/) and are known to identify specific physical rows according to their block and offset positions within a particular table. They are used by index entries to point to physical rows. It is unique for each record in the table and quickly denotes the location of a tuple. A logical row’s CTID changes when updated, so the CTID cannot be used as a long-term row identifier. However, it is sometimes helpful to identify a row within a transaction when no competing update is expected.

#### **Q11. What are the tokens?**

****Answer:****  
Tokens are the building blocks of any source code. They are known to comprise many unique character symbols. These can be regarded as constant, quoted identifiers, other identifiers, and keywords. Tokens which are keywords consist of pre-defined [SQL commands](https://www.educba.com/sql-commands-update/) and meanings. Identifiers are used to represent variable names like columns, tables, etc.

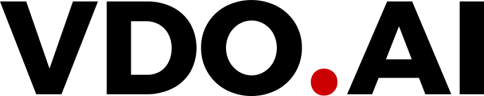
#### **Q12. What is the purpose of Array\_To\_String in PostgreSQL?**

****Answer:****  
The Array\_To\_String function concatenates array elements using a provided delimiter.

### **[1) What is PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled1)**

****Postgres**** or simply known as ****Postgresql**** in the SQL world is one of the widely and popularly used for Object-Relational Database Management System that is used mainly in large web applications. It is one of the open-source object-relational database systems which also powerful. It provides additional and substantial power by incorporating four basic concepts in such a way that the user can extend the system without any problem. It extends and uses the SQL language that is combined with various features to safely scale and store the intricate data workloads.



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### **[2) List some of the features of Postgresql ?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled2)**

 Following are some of the major features of Postgresql :

1. Object-relational database
2. Supports major Operating systems
3. Support Extensibility for SQL and Complex SQL queries
4. Nested transactions
5. Flexible API and Database validation
6. Multi-version concurrency control (MVCC) and Procedural languages
7. WAL and Client server
8. Table inheritance & Asynchronous replication

### **[3) List different datatypes of Postgresql?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled3)**

 There are new, different data-types supported by Postgresql. Following are those data-types:

* UUID
* Numeric types
* Boolean
* Character types
* Temporal types
* Geometric primitives
* Arbitrary precision numeric
* XML
* Arrays etc.

Users can also create their indexes and get them indexed.

### **[4) List different advantages of Postgresql?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled4)**

Following are some of the advantages of PostgreSQL :

* Stable
* Reliable
* Extensible
* Easy to learn
* Open source
* Designed for High Volume Environments
* Cross Platform
* Better Support
* Flexible

### **[5) What are string constants in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled5)**

A ****string constant**** in PostgreSQL is a sequence of some character that is bounded by single quotes (').

****Example****

'This is a string Constant'

### **[6) What is multi-version control in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled6)**

****Multi-version concurrency control**** or MVCC in PostgreSQL is used to avoid unnecessary locking of the database. This removes the time lag for the user to log into his database. This feature or time lag occurs when someone else is accessing the content. All the transactions are kept as a record.

### **[7) What are the Indices of PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled7)**

****Indices of PostgreSQL**** are inbuilt functions or methods like****GIST Indices****, ****hash table**** and ****B-tree (Binary tree)**** which can be used by the user to scan the index in a backward manner. Users can also define their indices of PostgreSQL.

### **[8) What are tokens in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled8)**

****Tokens in PostgreSQL**** are the building blocks of any source code. They are known to comprise many of the special character symbols. These can be regarded as constants, quoted identifiers, other identifiers, and keywords. Tokens which are keywords consist of pre-defined SQL commands and meanings. Identifiers are used to represent variable names like columns, tables, etc.

### **[9) What is table partitioning in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled9)**

****Table partitioning in PostgreSQL**** is the process of splitting a large table into smaller pieces. A partitioned table is a logical structure used to divide a large table into smaller pieces called partitions.

### **[10) How to start database server in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled10)**

Before you can have access to the database, you must be able to start the database server. The server program of the database is called Postgres. The Postgres program must know where to find the data it is supposed to use. This is done with the -D option. Thus, the simplest way to start the server is:

1. /usr/local/etc/rc.d/010.pgsql.sh start
2. /usr/local/etc/rc.d/PostgreSQL start

### **[11) What is use of pgadmin in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled11)**

It is a free open source GUI tool PostgreSQL database administration tool for Windows, Mac OS X, and Linux system. It is used for information retrieval, development, testing, and ongoing maintenance of Databases.

### **[12) What is Cube Root Operator (||/) in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled12)**

PostgreSQL Cube Root Operator ****(||/)**** is used to get the cube root of a number.

Example

SELECT ||/40 AS "Cube Root of 40";

### **[13) How can we change the columns datatype in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled13)**

Use ****change column type statement**** with ALTER TABLE command to change a column type in PostgreSQL.

****Example****

ALTER TABLE table\_name

ALTER COLUMN column\_name [SET DATA] TYPE new\_data\_type;

### **[14) How are the stats updated in Postgresql?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled14)**

It is not that hard as it seems. To get your statistics updated in PostgreSQL a special function called explicit ‘vacuum’ call is made. The method to do is to create a Vacuum where the option of Analyze is used to update statistics in Postgresql

VACUUM ANALYZE;

is the syntax.

### **[15) Compare ‘PostgreSQL’ with ‘NoSQL’](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled15)**

The expression ‘NoSQL’ encompasses a wide collection of implementations which are part of the non-relational database. This includes tiny embedded databases such as TokyoCabinet, massive bunched data processing platforms such as Hadoop and everything in between. In short, it’s practically impossible to comment on the range comprised by NoSQL as a typical class.

Choosing between the non-relational and relational databases is also quite commonly debated as both have existed alongside each other for over forty years. In fact, users should opt for the features, community support and implementation of the database according to their current application needs. Additionally, use of multiple various databases for sizeable projects is becoming more of a norm than a trend. Moreover, the users of PostgreSQL are no exception.

### **[16)  What will be the new characteristics of Postgre 9.1?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled16)**

During the process of updating the project, one can never be certain what features will go in and which ones won’t make the cut. The project has precise and stringent standards for quality, and some patches may or may not match them before the set deadline. Currently, the 9.1 version is working on some important features which include JSON support, synchronous replication, nearest-neighbor geographic searches, collations at the column level, SQL/MED external data connections, security labels as well as index-only access. However, this list has a high chance of changing completely by the time Postgre 9.1 is released.

### **[17) Explain the history of PostgreSQL.](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled17)**

The ****origin of PostgreSQL**** dates back to 1986 as part of the POSTGRES project at the University of California at Berkeley and has more than 30 years of active development on the core platform. It runs on all the major operating systems and has been ACID-compliant since 2001. It also has add-on like PostGIS database extender. In MAC OS Postgresql is the default database. Michel Stonebraker is Father of Postgresql who has started the Post Ingres project for supporting Contemporary Database systems.PostgreSQL’s developers pronounce PostgreSQL as It is abbreviated as Postgres because of ubiquitous support for the SQL Standard among most relational databases.PostgreSQL, originally called Postgres, was created at UCB by a computer science professor named Michael Stonebraker, who went on to become the CTO of Informix Corporation.

****Stonebraker**** started Postgres in 1986 as a followup project to its predecessor, Ingres, now owned by Computer Associates. The name Postgres thus plays off of its predecessor (as in “after Ingres”). Ingres, developed from 1977 to 1985, had been an exercise in creating a database system according to classic RDBMS theory.  Postgres, developed in 1986-1994, was a project meant to break new ground in database concepts such as exploration of “object-relational” technologies. An enterprise-class database, PostgreSQL boasts sophisticated features such as Multi-Version Concurrency Control (MVCC), point in time recovery, tablespaces, asynchronous replication, nested transactions (savepoints), online/hot backups, a sophisticated query planner/optimizer, and write-ahead logging for fault tolerance.

### **[18)  What is the command enable-debug in PostgreSQL?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled18)**

The command enable-debug is used to enable the compilation of all the applications and libraries. The execution of this procedure usually impedes the system, but it also amplifies the binary file size. Debugging symbols which are present generally assist the developers for spotting the bugs and other problems which may arise associated with their script.

### **[19) What is the option that can be used in PostgreSQL to make transactions see rows affected in previous parts of the transaction?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled19)**

 The SQL standard is defined by four levels of transaction isolation basically regarding three phenomena. The three phenomenon must be prevented between concurrent transactions. The unwanted phenomena are:

* **Phantom read:** A transaction that re-executes a query, returning a set of rows that satisfy a search condition and then finds that the set of rows that have been satisfying the condition has changed due to another recently-committed transaction.
* **Non-repeatable read:** A transaction that re-reads the data that it has previously read and then finds that data has already been modified by another transaction (that committed since the initial read).
* **Dirty read :** A transaction when reads data that is written by a concurrent uncommitted transaction is the dirty read.

### **[20) Put some light on Multi-Version concurrency control?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled20)**

 MVCC or better known as Multi-version concurrency control is used to avoid unwanted locking of the database. The time lag for the user is removed so that one can easily log into his database. All the transactions are well- kept as a record. The time lag occurs when someone else is on the content.

### **[21) Provide a brief explanation of the functions in Postgresql.](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled21)**

 Anywhere, functions are an important part because they help in executing the code on the server. Some of the languages to program functions are PL/pgSQL, a native language of PostgreSQL, and other scripting languages like Perl, Python, PHP, etc. statistical language named PL/R can also be used to increase the efficiency of the functions.

### **[22) Which are different types of database administration tools used in Postgresql?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled22)**

There are the number of data administration tools, and they are

* Phppgadmin
* Psql
* Pgadmin

Out of these, phppgadmin is the most popular one. Most of these tools are front-end administration tools and web-based interfaces.

### **[23) Do provide an explanation for pgadmin? (100% asked Postgresql Interview Questions)](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled23)**

 Pgadmin is a feature that is known to form a graphical front-end administration tool. This feature is available under free software released under Artistic License. Pgadmin iii is the new database administration tool released under artistic license.

### **[24) What Is A Ctid?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled24)**

CTIDs is a field, which exists in every PostgreSQL table and is known to identify specific physical rows according to their block and offset positions within a particular table. They are used by index entries to point to physical rows. It is unique for each record in the table and easily denotes the location of a tuple. A logical row’s CTID changes when it is updated, so the CTID cannot be used as a long-term row identifier. However, it is sometimes useful to identify a row within a transaction when no competing update is expected.

### **[25) Provide an explanation About Write Ahead Logging?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled25)**

WAL or write-ahead logging is a standard method to ensure data integrity. It is a protocol or the correct rule to write both actions and changes into a transaction log. This feature is known to increase the reliability of the database by logging changes before any changes or updating to the database. This provides the log of the database in case of a database crash. This helps to start the work from the point it was discontinued.

### **[26) What is difference between clustered index and non clustered index?](https://www.onlineinterviewquestions.com/postgresql-interview-questions/" \l "collapseUnfiled26)**

Difference between clustered index and non clustered index

* ****Cluster index**** is an index type that is used to sort table data rows on the basis of their key values. In RDBMS primary key allows us to create a clustered index based on that specific column.
* A ****non-clustered index**** (or regular b-tree index) is an index where the order of the rows does not match the physical order of the actual data. It is instead ordered by the columns that make up the index.

## **1) What is PostgreSQL?**

****Ans:**** PostgreSQL is a popular Object-relational database management system. It is an open-source platform that is used to create advanced applications. Familiarity with Linux and UNIX can be an additional benefit when running PostgreSQL.

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## **2) List some PostgreSQL features.**

****Ans:**** PostgreSQL offers a number of helpful features. Some of them are as follows:

* Data integrity protection helps users create a fault-tolerant environment.
* Easily compatible with important platforms, middleware and languages.
* It supports Multi-version concurrency control.
* It supports customer-server network architecture.
* Log-based and Trigger-based replication SSL.
* Highly available and standby server

### **3) List various data types in PostgreSQL.**

****Ans:****PostgreSQL supports various data types. Some of them are:

* UUID
* Numeric types
* Temporal types
* Geometric primitives
* Arbitrary precision numeric
* XML
* Boolean
* Character types
* Array
* JSON

#### **4) List some advantages and disadvantages of PostgreSQL.**

****Ans: Advantages of PostgreSQL:****

* Reliable
* Flexible
* Stable
* Easy to learn
* Extensible
* Cross-Platform
* Open-source
* Better Support
* Designed for High Volume Environments

****Disadvantages of PostgreSQL:****

* It is slower compared to MySQL in terms of performance.
* It does not have support for many open source applications in comparison with MySQL.
* With a greater focus on compatibility, modifications to enhance speed require additional work.

### **5) What are string Constants?**

****Ans:**** The string constant consists of a sequence of characters tied by single quotes('). It is used when inserting a character or passing a character to database objects. PostgreSQL enables the use of single quotes but is integrated by a C-style backslash. It is used in data parsing.

****Example:**** 'It is an example for a string constant'.

### **6) What is Multi-Version Control?**

****Ans:**** Multi-Version Concurrency Control in PostgreSQL is used to prevent unnecessary database locking. It eliminates the delay time for the user logging into their database. It occurs when some other people are accessing the content. All these transactions are captured.

### **7) What are the indices?**

****Ans:**** PostgreSQL offers a number of index types: Hash, B-tree, GiST, SP-GiST, BRIN and GIN. Each type of index will use a different algorithm which is most suitable for different types of queries. CREATE INDEX will create B-tree indexes by default that match the most popular situations. Users can set their PostgreSQL indexes as well.

### **8) What are tokens?**

****Ans:****PostgreSQL tokens are the building blocks for any source code. They include a lot of special character symbols. A token represents an identifier, a quoted identifier, a keyword, a special character symbol or a literal symbol.

### **9) What is table partitioning?**

****Ans:**** In PostgreSQL, table partitioning is a process in which a large table is divided into smaller pieces called partitions. PostgreSQL supports ranges and lists partitioning through table inheritance. Users must create every partition like a child table in the main table.

#### **10) How can we start and stop a database server on PostgreSQL? And how can we check whether PostgreSQL is up and running?**

****Ans:**** Prior to accessing the database, you should be able to start the database server. The database server program is referred to as Postgres. The Postgres program needs to know where to look for the data it should use. This is accomplished using the -D option. So the easiest way of starting the server is:

* usr/local/etc/rc.d/010.pgsql.sh start
* /usr/local/etc/rc.d/postgresql start

****We use the following way to stop the server:****

* /usr/local/etc/rc.d/010.pgsql.sh stop
* /usr/local/etc/rc.d/postgresql stop

****We can verify if the postgresql server is up and running by:****

* /usr/local/etc/rc.d/010.pgsql.sh status
* /usr/local/etc/rc.d/postgresql status?

#### **11) How is pgadmin used in PostgreSQL?**

****Ans:****Pgadmin is a well-known feature for forming a front-end graphic administration tool. This functionality is available as free software with an artistic license. The latest database administration tool available with an artistic license is Pgadmin iii. It is used to retrieve information, develop, test and continuous maintenance of databases.

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#### **12) Compare PostgreSQL with MySQL.**

****Ans:****MySQL is the "user-friendly, web developer" database, while PostgreSQL is the "feature-rich and standards-compliant" database. PostgreSQL is freely licensed and part of its community; MySQL is GPL licensed and belongs to Oracle. Beyond this, every user of the database should make their own assessment; free software facilitates comparisons.

#### **13) How can we change the column data type in PostgreSQL?**

****Ans:**** Using the ALTER TABLE command, we can change a column type.

For example:

ALTER TABLE name\_of\_the\_table

ALTER COLUMN name\_of\_the\_column [SET DATA] TYPE new\_data\_type;

#### **14) How are statistics updated within Postgresql?**

****Ans:**** In PostgreSQL, To update your statistics, a special function known as an explicit "vacuum" call is done. The way to do this is to create a Vacuum where the Analyze option is used to update the stats in Postgresql as shown:

VACUUM ANALYZE;

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#### **15) What is the enable-debug command in PostgreSQL?**

****Ans:**** The enable-debug command allows you to compile all apps and libraries. Executing this process usually prevents the system, but it also increases the size of the binary file. The debug symbols that are present usually help developers identify bugs and other issues that may occur related to their script.

#### **16) Which option can be used in PostgreSQL to view the affected rows in the earlier parts of the transaction?**

****Ans:**** The SQL standard is defined by four levels of isolating transactions concerning essentially three phenomena. The three phenomena should be avoided between concurrent transactions. Unwanted phenomena include:

****Non-repeatable read:**** A transaction that will read the data which is already read and then discovers that the data has already been altered by another transaction.

****Phantom read:**** A transaction that will execute a query again by returning a set of rows that meets the search condition and finds the set of rows which satisfied the requirements that have changed as a result of another recently initiated transaction.

****Dirty read:**** A transaction that reads the data which is written by a simultaneous uncommitted transaction is called the dirty read.

#### **17) Briefly describe the functions of Postgresql.**

****Ans:****Functions are an important part of running the code on the server everywhere. Some languages used for programming functions are PL/pgSQL, a native PostgreSQL language, as well as other scripting languages such as Perl, PHP, Python, etc. A statistical language called PL/R can also be used to make functions more efficient.

##### **18) What are the different improvements in the relational data model through PostgreSQL?**

****Ans:**** A number of improvements have been made to the simple relationship data model through PostgreSQL. They support arrays that include various values, functions, inheritance, and extensibility. Jargon is different in its object-oriented nature in which tables are known as classes.

##### **19) What kind of database administration tools do you use in Postgresql?**

****Ans:**** We have a variety of data administration tools. They are Pgadmin, Psql, Phppgadmin. Phppgadmin is the most popular among them. Most of these tools are web-based interfaces and front-end administration tools.

##### **20) What is Ctid?**

****Ans:**** CTIDs is a field that exists in all PostgreSQL tables and is known to recognize specific physical rows based on their block as well as offset positions in a particular table. They are used for index entries for specifying physical rows. It is unique for every record in the table and easily indicates the position of a tuple. The CTID of a logical row changes at the time of its update, such that the CTID will not be used as a long-term row identifier. However, it may be helpful to identify a line within a transaction where no concurrent updates are expected.

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#### **21) Explain about write-ahead logging.**

****Ans:**** Write-ahead logging is a standard way of ensuring data integrity. It is a correct rule or protocol for writing actions and modifications in a transaction log. This feature enhances the reliability of the database by saving modifications before any modification or update of the database. It provides the database log if the database crashes. It allows work to begin from the moment it was interrupted.

#### **22) When should PostgreSQL be avoided?**

****Ans:**** At the cost of speed, PostgreSQL was built to be expandable and compatible. PostgreSQL may not suit you if your project needs the fastest read operations possible.

Due to its wide range of features and its high adherence to the SQL standard, Postgres may be excessive for simple database configurations. MySQL is the practical choice for operations like read-heavy where we need speed.

While PostgreSQL provides solid support for replication, it is always a relatively new functionality, and certain configurations like primary architecture are only possible with expansions. Replication is an advanced feature of MySQL. Most users feel that replicating MySQL is easier to implement, especially for those without the required experience in administering databases and systems.

#### **23) What do you mean by Full-Text search in PostgreSQL?**

****Ans:**** This refers to the technique or method of searching for a single or a collection of documents stored on a computer in a full-text database. It may be simply distinguished from searches according to metadata or portions of the original texts depicted in the databases. While PostgreSQL is not as advanced as SOLR and Elasticsearch, these two tools are specific to full-text search. While in PostgreSQL, the full-text search is just a feature, and it's quite good.

#### **24) What are BRIN indices?**

****Ans:**Once the BRIN index has been installed, PostgreSQL will be able to select the minimum and maximum values by reading the selected column for each 8k page of data saved. After that, PostgreSQL will store the page number, the maximum and minimum values of the selected column in the BRIN indexes.**

#### **25) What is a Parallel Query?**

****Ans:**** A parallel query is a PostgreSQL feature in which it can design query plans that can leverage a number of CPUs to respond more quickly to queries.

##### **26) What are GiST indexes in PostgreSQL?**

****Ans:****The giST is an extensible data structure which enables users to develop indexes on all data types. It is also responsible for all lookups on this data. The giST is capable of doing so by inserting an API into the Postgres index system.

#### **27) What is the Atomicity property's function in PostgreSQL?**

****Ans:****The Atomicity property guarantees the success of all operations within one work unit.

#### **28) Does Postgresql be executed on Cloud?**

****Ans:**** Yes. Like the other open source databases, PostgreSQL can be easily executed in virtual containers and is very portable. Many companies like GoGrid, Heroku and Joyent have PostgreSQL support within Cloud hosting environments.

#### **29) How can we perform queries through multiple databases?**

****Ans:**** There is no better way to query a database other than the present one. As PostgreSQL loads database-specific system catalogs, we don't know how a cross-database query should behave. contrib/dblink enables cross-database queries with function calls. Of course, a customer can also establish concurrent connections to various databases and merge client-side results.

#### **30) Can we create a shared storage PostgreSQL server cluster?**

****Ans:**** PostgreSQL will not support clustering by using shared storage on SCSI, SAN, iSCSI volume, or other shared media. Such "RAC-style" clustering is not supported. Only the replicated clustering is supported at present.

#### **31. Describe the various advantages of PostgreSQL.**

**Ans.** The major benefits of the PostgreSQL database include an open-source database management system, diverse indexing techniques, full-text search flexibility, community support, different types of duplication methods, highly expandable functions, and many more.

#### **32. What is meant by the Partitioned table in PostgreSQL?**

**Ans.** In PostgreSQL, the partitioned table is a logical structure and a special table divided into parts. It allows the splitting of large size tables into smaller ones, known as partitions.

#### **33. Define the purpose of pgAdmin in the PostgreSQL server.**

**Ans.** In PostgreSQL, pgAdmin is a data administration tool that helps to manage and observe many PostgreSQL and EDB advanced server database servers. It is useful for recovering, testing, managing, and developing databases.

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#### **34. Name the process of dividing a large table into smaller sizes in PostgreSQL.**

**Ans.** The process is known as “table partitioning”.

#### **35. How to avoid needless database locking in PostgreSQL?**

**Ans.** To avoid the needless or unnecessary locking of a database, we can use MVCC (Multi-version concurrency control).

#### **36. What is meant by PL/Python?**

**Ans.** It’s a procedural language to which PostgreSQL offers support and it allows us to write PostgreSQL functions in the Python language.

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#### **37. Define the process of deleting a database in PostgreSQL.**

**Ans.** We can remove the database by using the below commands:-

* We can use an SQL command- DROP DATABASE
* Also, we can use”dropdb” which is a feasible command-line

#### **38. What we can find in the Schema?**

**Ans**. A schema in PostgreSQL includes the following- views, indexes, operators, sequences, data types, tables, and functions.

#### **39. Define the methods that PostgreSQL provides to build a new database.**

**Ans**. To build a new database, PostgreSQL offers the below approaches:-

* Using an SQL command - CREATE DATABASE to create a database
* Also, we can use ‘created’ which is an executable command-line

#### **40. Name the different types of operators in PostgreSQL.**

Ans. Arithmetic operators, Logical operators, Comparison operators, Bitwise operators

#### **41. What is another name for database callback functions? What is their purpose in PostgreSQL?**

Ans. The PostgreSQL Triggers are also known as database callback functions. When a defined database event takes place, the PostgreSQL Triggers are automatically executed or cited.

#### **42. For what do we use indexes in PostgreSQL?**

**Ans.** To speed up data recovery in PostgreSQL, the search engine uses indexes.

#### **43. Define the use of the Cluster Index.**

**Ans**. The Cluster index classifies the table data rows on the basis of their key values.  Here, the order of the data rows within data pages communicates with the data rows' order in the index.

#### **44. Define the benefits of specifying data types in columns when you create a table.**

**Ans.** The advantages of specifying data types in columns include consistency, conciseness, validation/confirmation, and performance.

#### **45. Explain how to update statistics in PostgreSQL.**

**Ans**. We have to use a special function “vacuum” in order to update statistics in the PostgreSQL database.

#### **46. Define the method to remove complete data from an existing table.**

**Ans.**We can completely remove data from the current table through the PostgreSQL TRUNCATE TABLE command.

#### **47. Name the various properties of a transaction in PostgreSQL and their Acronym.**

**Ans**. The transaction properties in PostgreSQL consist of Atomicity, Consistency, Isolation, and Durability and they are collectively called ACID properties.

#### **48. What is the use of the CTIDs field?**

**Ans.** The CTIDs field helps to locate certain physical rows within a table as per their block and balances the positions in that table.

#### **49. Name the commands to control transactions in PostgreSQL.**

**Ans.** The commands for Transaction Control in PostgreSQL include the following- BEGIN, COMMIT, TRANSACTION, and ROLLBACK.

#### **50. Distinguish between SQL and PostgreSQL?**

**Ans.** PostgreSQL is an extension or advanced version of SQL (Structured Query Language).  The following differences you can see between these two:-

* We cannot update the views in the PostgreSQL database like in SQL.
* In PostgreSQL, there is no need to create a DLL  (dynamic link library) to see the code’s activity like in the SQL database.
* Moreover, SQL offers computed columns but PostgreSQL doesn’t offer any.
* SQL doesn’t support dynamic actions but PostgreSQL supports them.

#### **51. Define the security measures in Postgre**

**Ans**. PostgreSQL database uses SSL connections that help to encrypt client or server reports to ensure security services.

#### **52. Explain the function of the Atomicity property in the PostgreSQL database.**

**Ans.** This property in PostgreSQL makes sure that all the operations in a work unit are successfully completed.

**Final Words:**

In this blog, we have provided the most frequently asked PostgreSQL Interview questions by the top companies. These are not the mandatory questions to be asked in your interview, but they have more chances to be asked and learning them may help you to clear your PostgreSQL interview. We have provided you with these questions to help you to understand the pattern and how to answer them correctly. Having a better approach and the right way to answer questions may help you clear your interview. You could go through them and advance your career.

### 1) What is PostgreSQL?

PostgreSQL is an open-source object-relational database management system known as ORDBMS. It is known as Postgres or Postgresql. In the SQL world, it is one of the most widely and popularly used for Object-Relational Database Management System mainly used in large web applications. It is a powerful database management system that provides additional and substantial power by incorporating four basic concepts so that the users can extend the system without any problem.

It uses the SQL language and extends its features to store the data securely. It supports the best practices and allows users to retrieve the data when the request is processed.

### 2) What are the most important features of PostgreSQL?

The most important features of PostgreSQL are as follows:

PostgreSQL is open-source software and free to download. We can easily download it from the official website of PostgreSQL.

****Area of Compatibility****

* PostgreSQL is compatible with several operating systems such as Microsoft Windows, Linux, MacOS X, UNIX (AIX, BSD, HP-UX, SGI IRIX, Solaris, and Tru64), etc.
* It is compatible with various programming languages such as C/C++, Java, Python, Perl, Ruby, Tcl, and ODBC (Open Database Connectivity).

****PostgreSQL is compatible with multiple data types such as****

* Structured data types, i.e., Array, Date and Time, UUID (Universally Unique Identifier), Array, Range, etc.
* Primitive data types, i.e., String, Integer, Boolean, Numeric, etc.
* Customizations data types, i.e., Custom Types, Composite, etc.
* Geometry data types, i.e., Polygon, Circle, Line, Point, etc.
* Document data types i.e. XML, JSON/JSONB, Key-value, etc.

****Extensibility****

* PostgreSQL is highly extensible as it supports procedural languages such as Perl, PL/PGSQL, Python, etc.
* It is compatible with foreign data wrappers, which connect to further databases with a standard SQL interface.
* It supports JSON/SQL path expressions, stored procedures, and functions.
* It supports a customizable storage interface for a table.

****Secure and Highly Reliable****

PostgreSQL is safe and secure because of the following security aspects:

* PostgreSQL provides a robust access control system and several authentications such as Lightweight Directory Access Protocol (LDAP), Generic Security Service Application Program Interface (GSSAPI), SCRAM-SHA-256, Security Support Provider Interface (SSPI), Certificate, etc.
* It also supports column and row-level security.
* It is highly reliable as it provides disaster recovery such as active standbys and PITR (Point in time recovery).
* It supports WAL (Write-ahead Logging)
* It supports different types of Replication like Synchronous, Asynchronous, and Logical.
* It supports Internationalization, which includes ICU collations, accent-insensitive and case-sensitive collations, and full-text searches.
* It is compatible with ANSI-SQL2008.
* It can improve the functionality of Server-Side programming.

### 3) What are the key advantages and disadvantages of PostgreSQL?

****Advantages of PostgreSQL****

Following is a list of the biggest advantages of PostgreSQL:

* PostgreSQL is available as an open-source license, so we can easily get the source code of PostgreSQL, immediately implement it, and change it according to our requirements.
* It is one of the easiest relational database management systems to learn, so users do not require much training before using it.
* It can execute dynamic web-application and websites as the LAMP stack option.
* PostgreSQL is a highly risk-tolerant database, widely used in large web applications.
* It requires easy and low maintenance management for enterprise and embedded usage.
* PostgreSQL is robust and powerful. That's why it is preferred for large-scale web applications.

****Disadvantages of PostgreSQL****

Following is a list of the key disadvantages of PostgreSQL:

* PostgreSQL does not support many open-source applications compared to the MySQL database.
* In PostgreSQL, creating replication is a bit complex which reduces its popularity.
* The speed and performance of PostgreSQL are not as good as compared to some other databases and tools.
* PostgreSQL is not maintained by one company. This may be one of its drawbacks.
* It is slower as compared to the MySQL database.
* It is not popular as MySQL, so the installation process is sometimes not easy for beginners.

### 4) What are the different data types used in PostgreSQL?

Following is a list of the different data types supported by and used in PostgreSQL?

* Numeric types
* Character types
* Temporal types
* Boolean
* UUID
* Geometric primitives
* Arbitrary precision numeric
* XML
* Arrays etc.

### 5) What is the name of the process of splitting a large table into smaller pieces in PostgreSQL?

The name of the process of splitting a large table into smaller pieces in PostgreSQL is known as table partitioning.

### 6) What do you understand by a base directory in PostgreSQL?

The base directory in PostgreSQL is data\_dir/base. It is a folder in PostgreSQL which contains all the sub-directories used by a database in clusters and stores all the data you have inserted in your databases.

### 7) What do you understand by string constants in PostgreSQL?

In the PostgreSQL database, a string constant is a sequence of some character bounded by single quotes ('). For example: 'This is an example of string Constant'.

### 8) What is the maximum size for a table in PostgreSQL?

PostgreSQL provides unlimited user database size, but it doesn't provide an unlimited size for tables. In PostgreSQL, the maximum size for a table is set to 32 TB.

### 9) What do you understand by a partitioned table in PostgreSQL?

In PostgreSQL, a partitioned table is a logical structure used to split a large table into smaller pieces. These small pieces of the tables are called partitions.

### 10) What is Multi-Version Concurrency Control in PostgreSQL? Why is it used?

Multi-Version Concurrency Control or MVCC is an advanced technique in PostgreSQL that improves database performance in a multi-user environment. It is mainly used to avoid unnecessary locking of the database by removing the time lag for the user to log into his database. This time lag occurs when someone else is accessing the content. In Multi-Version Concurrency Control or MVCC, all the transactions are kept as records. That's why PostgreSQL maintains data consistency, unlike most other database systems which use locks for concurrency control.

### 11) What is the key difference between multi-version and lock models?

The key difference between Multi-Version Concurrency Control and lock models is that in MVCC, the locks acquired for querying or reading the data doesn't conflict with locks acquired for writing data. In this case, reading never blocks writing, and writing never blocks reading. So, Multi-Version Concurrency Control has the upper hand compared to other lock models.

### 12) What is pgAdmin in the PostgreSQL server? Why is it used?

In the PostgreSQL server, PgAdmin is a free, open-source PostgreSQL database administration GUI or tool used in Microsoft Windows, Mac OS X, and Linux systems. PgAdmin is used to retrieve, develop, conduct quality testing, and maintain databases or other ongoing maintenances.

### 13) How can you set up pgAdmin in PostgreSQL?

To set up pgAdmin in PostgreSQL, we should follow the steps given below:

* First, start and launch pgAdmin 4.
* Then, go to the "Dashboard" tab, click on the "Quick Link" section and then click on "Add new Server."
* After clicking on the "Add new Server", you have to select the "Connection" tab in the "Create-Server" window.
* Now, configure the connection by entering your server's IP address in the "Hostname/Address" field.
* At last, you have to specify the "Port" as "5432," which is the by default port for the PostgreSQL server.

### 14) What do you understand by PL/Python?

PostgreSQL provides support to a procedural language known as PL/Python.

### 15) What are the Indices of PostgreSQL?

Indices of PostgreSQL are inbuilt functions or methods such as GIST Indices, hash table, and B-tree (Binary tree). The user uses these to scan the index in a backward manner. PostgreSQL also facilitates their users to define their indices of PostgreSQL.

### 16) What is the way to avoid unnecessary locking of a database?

The best way to avoid unnecessary database locking is to use MVCC (Multi-version concurrency control). It is an advanced technique used in PostgreSQL for improving database performances.

### 17) What are the different types of operators used in PostgreSQL?

There are mainly four types of operators used in PostgreSQL:

* Arithmetic operators
* Comparison operators
* Logical operators
* Bitwise operators

### 18) What are the tokens in PostgreSQL?

In PostgreSQL, tokens are the building blocks of any source code. Tokens contain several types of special character symbols like constants, quoted identifiers, other identifiers, and keywords. The keywords tokens contain pre-defined SQL commands and meanings. On the other hand, identifiers specify variable names like columns, tables, etc.

### 19) What does a schema contain in PostgreSQL?

In PostgreSQL, a schema contains tables and data types, views, indexes, operators, sequences, and functions.

### 20) What are some new characteristics introduced in Postgre 9.1?

The new PostgreSQL 9.1 version is working on important features such as JSON support, synchronous replication, nearest-neighbor geographic searches, SQL/MED external data connections, security labels, and index-only access.

Following is a list of some newly added characteristics in PostgreSQL 9.1:

* Added support for foreign tables.
* Added support for per-column collation.
* Added some extensions to simplify packaging of additions to PostgreSQL.
* Added a true serializable isolation level.
* Added nearest-neighbor (order-by-operator) searching to GiST indexes.
* Added a SECURITY LABEL command and support for SELinux permissions control.
* Along with the above features, PostgreSQL 9.1 has allowed other features such as allowing synchronous replication, allowing data-modification commands (INSERT/UPDATE/DELETE) in WITH clauses, providing support for unlogged tables using the UNLOGGED option in CREATE TABLE, and updating the PL/Python server-side language.

### 21) What is the use of indexes in PostgreSQL?

In PostgreSQL, indexes are used by the search engine to enhance the speed of data retrieval.

### 22) What do you know about the history of PostgreSQL?

The POSTGRES project was started and led by Professor Michael Stonebraker in 1986 and was sponsored by the Defense Advanced Research Projects Agency (DARPA), the Army Research Office (ARO), the National Science Foundation (NSF), and ESL, Inc. It has completed more than 30 years of active development on the core platform. It has been ACID-compliant since 2001 and runs on all the major operating systems. It also has an add-on like PostGIS database extender.

Michel Stonebraker is known as the father of PostgreSQL. He started and led the development of this database in 1986 as a follow-up project to its predecessor, Ingres, now owned by Computer Associates. PostgreSQL was originally called Postgres. It is pronounced PostgreSQL because of its ubiquitous support for the SQL standards among most relational databases. PostgreSQL is used as a by default database in MAC OS.

Postgres was started by Michael Stonebraker in 1986 as a follow-up project to its predecessor, Ingres, which Computer Associates now own. The name Postgres was derived from its predecessor Ingres. Here, Postgres means "after Ingres". The first project of Postgres was developed between 1986 - 1994. It has provided many sophisticated features such as Multi-Version Concurrency Control (MVCC), point in time recovery, tablespaces, asynchronous replication, nested transactions (savepoints), online/hot backups, a sophisticated query planner/optimizer, and write-ahead logging for fault tolerance.

### 23) What do we call database callback functions? What is its purpose?

The database callback functions are known as PostgreSQL Triggers. The PostgreSQL Triggers are performed or invoked automatically whenever a specified database event occurs.

### 24) How can you start, stop, and restart the PostgreSQL server on Windows?

To start, stop, and restart the PostgreSQL server on Windows, first, we have to find the PostgreSQL database directory. It would look something like this: C:\Program Files\PostgreSQL\10.4\data. Now, open the Command Prompt and execute the following commands:

****To start the PostgreSQL server of Windows:****

1. pg\_ctl -D "C:\Program Files\PostgreSQL\9.6\data" start

****To stop the PostgreSQL server of Windows:****

1. pg\_ctl -D "C:\Program Files\PostgreSQL\9.6\data" stop

****To restart the PostgreSQL server of Windows:****

1. pg\_ctl -D "C:\Program Files\PostgreSQL\9.6\data" restart

****Another way to start, stop and restart the PostgreSQL server on Windows.****

There is also another way to start, stop, and restart the PostgreSQL server on Windows. Follow the steps given below:

* First, open the Run Window by pressing the Windows key + R simultaneously.
* Then, type services.msc to find out the PostgreSQL services.
* Search Postgres service based on the version installed.
* Click the stop, start or restart option to do the same.

### 25) What does a Cluster index do?

A Cluster index is used to sort table data rows according to their key values.

### 26) Which command is used to create a database in PostgreSQL?

In PostgreSQL, the CREATE DATABASE command is used to create a new database.

### 27) How can you delete a database in PostgreSQL?

In PostgreSQL, you can delete a database using the DROP DATABASE command in the psql command-line tool.

### 28) How do you update the stats or statistics in PostgreSQL?

To update stats or statistics in PostgreSQL, we have to call a special function called explicit 'vacuum'. This function creates a Vacuum where the option of Analyze is used to update statistics in PostgreSQL.

****Syntax:****

1. VACUUM ANALYZE;

### 29) What is the difference between clustered index and non clustered index in PostgreSQL?

The main difference between clustered index and non clustered index in PostgreSQL is that the clustered index is an index type used to sort table data rows according to their key values. In RDBMS, a user can create a clustered index based on that column using the primary key. On the other hand, a non-clustered index is an index where the order of the rows does not match the physical order of the actual data. The non-clustered index is ordered by the columns that make up the index.

### 30) What are the advantages of specifying data types in columns while creating a table?

The key advantages of specifying data types in columns while creating a table are consistency, compactness, validation, and optimum performance.

### 31) What are the different types of database administration tools used in PostgreSQL?

Following are the different types of database administration tools used in PostgreSQL:

* Phppgadmin
* Psql
* Pgadmin

### 32) What is the way to delete complete data from an existing table in PostgreSQL?

The best way to delete complete data from an existing table in PostgreSQL is to use the TRUNCATE TABLE command.

### 33) What are the disadvantages of the DROP TABLE command in deleting complete data from an existing table?

In PostgreSQL, the DROP TABLE command can be used to delete complete data from an existing table, but the biggest disadvantage of using the DROP TABLE command is that it removes complete table structure from the database. If you use the DROP TABLE command to delete the table, you must re-create a table to store data.

### 34) What are the different properties of a transaction in PostgreSQL?

Like other RDBMS, PostgreSQL also supports ACID properties. This is commonly referred to by the acronym named ACID. It means the properties of a transaction in PostgreSQL include Atomicity, Consistency, Isolation, and Durability.

### 35) What is the difference between PostgreSQL and MongoDB databases?

Following are the key differences between PostgreSQL and MongoDB databases:

|  |  |
| --- | --- |
| **PostgreSQL** | **MongoDB** |
| PostgreSQL is a classical, relational database server that supports most SQL standards. MongoDB is a NoSQL database. |  |
| PostgreSQL is a traditional relational database management system (RDBMS) or SQL-based databases like Oracle and MySQL. It is open-source and free to use. MongoDB is a no-schema, NoSQL, JSON format database. It also provides a free version, but its enterprise-paid versions are more popular. |  |
| PostgreSQL database is written in C language. | MongoDB is written in C++. |
| PostgreSQL is a Relational Database Management System. | MongoDB is a Non-Relational Database Management System. |
| PostgreSQL is an Object-Oriented Database. | MongoDB is Document Oriented Database. |
| PostgreSQL is available in multiple languages. | MongoDB is only available in the English language. |
| PostgreSQL is 4 to 10 times faster than MongoDB on some parameters. | MongoDB is slower than PostgreSQL. It is best suited for big data. |

### 36) Which commands are used to control transactions in PostgreSQL?

The following commands are used to control transactions in PostgreSQL:

* BEGIN TRANSACTION
* COMMIT
* ROLLBACK

### 37) What do you understand by parallel query in PostgreSQL? How does it work?

Parallel query is an advanced feature of PostgreSQL in which query plans are arranged so that they are assigned to multiple CPUs, and the user gets the answer to the queries faster.

### 38) What is the use of the CTIDs field in PostgreSQL?

The CTIDs field identifies the specific physical rows in a table according to their block and offsets positions in that table.

### 39) What is the use of command enable-debug in PostgreSQL?

In PostgreSQL, the command enable-debug is used to compile all applications and libraries. It provides some debugging symbols that facilitate developers to spot the bugs and other problems which may occur while the execution of the script. When we execute this procedure, it can delay or obstruct the system, amplifying the binary file size.

### 40) What are the reserved words in PostgreSQL?

The reserved words in PostgreSQL are SQL keywords and other symbols having some special meaning when the Relational Engine processes them. According to the SQL standard, the reserved keywords are the only real keywords, and they cannot be allowed as identifiers. On the other hand, the non-reserved keywords have a special meaning in particular contexts and can be used as identifiers in other contexts.

### 41) What do you understand by WAL or Write-Ahead Logging in PostgreSQL?

In PostgreSQL, Write-Ahead Logging or WAL is a standard method to ensure data integrity. It is a protocol or syntax to write actions and changes into a transaction log.

The Write-Ahead Logging feature is used to enhance the reliability of the database by logging changes before any changes or updating to the database. It provides the database log in case of a database failure and ensures to start the work again from the point it was crashed or discontinued.

### 42) What is tablespace in PostgreSQL? What is its usage?

In PostgreSQL, the tablespace is a location in the disk used to store the data files containing indices and tables.

### 43) What are the three phenomena that must be prevented between concurrent transactions in PostgreSQL?

There are four levels of transaction isolation used in SQL standard regarding three phenomena that must be prevented between concurrent transactions in PostgreSQL. These three unwanted phenomena are as follows:

* ****Dirty read:**** A transaction is called a dirty read when it reads data written by a concurrent uncommitted transaction.
* ****Non-repeatable read:**** It specifies a transaction that re-reads the data it has previously read and then finds another transaction that has already modified it.
* ****Phantom read:**** It specifies a transaction that re-executes a query, returning a set of rows that satisfy a search condition and then finds that the set of rows satisfying the condition has changed due to another recently-committed transaction.

### 44) What are the key differences between Oracle and PostgreSQL?

|  |  |
| --- | --- |
| **Oracle** | **PostgreSQL** |
| Oracle is mostly an aid object-relational database management system. It is the first database management system designed for grid computing. | PostgreSQL is a free, open-source object-relational database management system that follows SQL standards and extensibility. |
| Oracle is written and implemented in C, C++, and assembly language. | PostgreSQL is written and implemented in C language. |
| Oracle is a comparatively old database. It was developed by Larry Ellison and Bob on 16 June 1977. | PostgreSQL is comparatively a new database. It was developed by the PostgreSQL Global Development group on 8 July 1996. |
| One must require a license to use Oracle. | PostgreSQL is open-source and free to use. |
| In Oracle, server operating systems are OS X, Linux, Windows, z/OS, AIX, HP-UX, etc. | In PostgreSQL, server operating systems are HP-UX, NetBSD, Solaris, Windows, Unix, Linux, FreeBSD, etc. |
| Oracle provides advanced security options. | PostgreSQL also provides good security support but less compared to Oracle. |
| Oracle provides support for the programming languages such as C, C++, JAVA, PERL, .NET, JavaScript, PHP, etc. | PostgreSQL provides support for the programming languages such as C, C++, JAVA, PERL, SCALA, PHP, C#, COBOL, JavaScript, etc. |

### 45) What do you understand by a sequence in PostgreSQL?

In PostgreSQL, a sequence is a special form of data created to generate multiple numeric identifiers in the database. It creates unique identifiers between multiple rows inside a table. It is mainly used to create sequences and artificial primary keys similar to Auto\_Increment in MySQL.

### 46) What does a token represent in an SQL Statement?

A token represents an identifier, keyword, quoted identifier, special character symbol, or a constant in a SQL Statement.

### 47) What do you understand by inverted file in PostgreSQL?

In PostgreSQL, an inverted file is an index data structure used to map content to its location to a database file, within a document, or in sets of documents. It generally includes the distinct words found in a text and a list containing the occurrences of a word in the text. It is used in a data structure for document retrieval systems to provide a full-text search.

### 48) What is the way to store the binary data in PostgreSQL?

There are two ways to store the binary data in PostgreSQL, either by using bytes or the large object feature.

### **1. What is the process of splitting a large table into smaller pieces called in PostgreSQL?**

It is called table partitioning.

|  |
| --- |
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### **2. What is a partitioned table in PostgreSQL?**

The partitioned table is a logical structure. It is used to split a large table into smaller pieces, which are called partitions.

### **3. What purpose does pgAdmin in PostgreSQL server?**

The pgAdmin in PostgreSQL is a data administration tool. It serves the purpose of retrieving, developing, testing, and maintaining databases.

### **4. How can you avoid unnecessary locking of a database?**

We can use MVCC (Multi-version concurrency control) to avoid unnecessary locking of a database.

### **5. What is PL/Python?**

PL/Python is a procedural language to which PostgreSQL provides support.

### **6. Which are the methods PostgreSQL provides to create a new database?**

PostgreSQL provides the following methods to create a new database:

* Using CREATE DATABASE, an SQL command
* Using created a command-line executable

### **7. How do you delete the database in PostgreSQL?**

We can delete the database by using any one of the below options:

* Using DROP DATABASE, an SQL command
* Using dropdb a command-line executable

### **8. What does a schema contain?**

A schema contains tables along with data types, views, indexes, operators, sequences, and functions.

### **9. What are the different operators in PostgreSQL?**

The PostgreSQL operators include - Arithmetic operators, Comparison operators, Logical operators, and Bitwise operators.

### **10. What are database callback functions called? What is its purpose?**

The database callback functions are called PostgreSQL Triggers. When a specified database event occurs, the PostgreSQL Triggers are performed or invoked automatically.

### **11. What indexes are used?**

Indexes are used by the search engine to speed up data retrieval.

### **12. What does a Cluster index do?**

Cluster index sorts table data rows based on their key values.

### **13. What are the benefits of specifying data types in columns while creating a table?**

Some of these benefits include consistency, compactness, validation, and performance.

### **14. What do you need to do to update statistics in PostgreSQL?**

To update statistics in PostgreSQL, we need to use a special function called a vacuum.

### **15. What is the disadvantage of the DROP TABLE command in deleting complete data from an existing table?**

Though the DROP TABLE command has the ability to delete complete data from an existing table, the disadvantage with it is - it removes complete table structure from the database. Due to this, we need to re-create a table to store data.

### **16. How can you delete complete data from an existing table?**

We can delete complete data from an existing table using the PostgreSQL TRUNCATE TABLE command.

### **17. What are the different properties of a transaction in PostgreSQL? Which acronym is used to refer to them?**

The properties of a transaction in PostgreSQL include Atomicity, Consistency, Isolation, and Durability. These are referred to by the acronym, namely ACID.

### **18. What purpose does the CTIDs field serve?**

The CTIDs field identifies the specific physical rows in a table according to their block and offsets positions in that table.

### **19. Which are the commands used to control transactions in PostgreSQL?**

The commands used to control transactions in PostgreSQL are BEGIN TRANSACTION, COMMIT, and ROLLBACK.

### **20. What are the main differences between SQL and PostgreSQL?**

PostgreSQL is an advanced version of SQL.  Some of the differences between these two include the following:

* Unlike SQL, views in PostgreSQL are not updatable.
* Another difference is whereas SQL provides computed columns; the same cannot be expected from PostgreSQL.
* Unlike SQL, in PostgreSQL, you don’t need to create a DLL to see the code what it is doing.
* PostgreSQL supports dynamic actions whereas SQL doesn’t support them.

### **21. How is security ensured in PostgreSQL?**

PostgreSQL uses SSL connections to encrypt client or server communications so that security will be ensured.

### **22. What is the function of the Atomicity property in PostgreSQL?**

 Atomicity property ensures the successful completion of all the operations in a work unit.

### **23. What are the advantages of PostgreSQL?**

Some of the advantages of PostgreSQL are open-source DBMS, community support, ACID compliance, diverse indexing techniques, full-text search, a variety of replication methods, and diversified extension functions, etc.

### **24. What does Write-Ahead Logging do?**

The Write-Ahead Logging enhances database reliability by logging changes before any changes or updates are made to the database

### **25. What are some of the important data administration tools supported by PostgreSQL?**

Some of the important data administration tools supported by PostgreSQL are Psql,  Pgadmin, and Phppgadmin.

### **26. How can you store the binary data in PostgreSQL?**

We can store the binary data in PostgreSQL either by using bytes or by using the large object feature.

### **27. What is a non-clustered index?**

In a non-clustered index, the index rows order doesn’t match the order in actual data.

### **28. What is the purpose of table space in PostgreSQL?**

It is a location in the disk. In this, PostgreSQL stores the data files, which contain indices and tables, etc.

### **29. Are there any disadvantages with  PostgreSQL?**

Yes. There are a few disadvantages. Some of these include the following:

* It is slower than MySQL on the performance front.
* It doesn’t have the support of a good number of open source applications when compared to MySQL.
* Since it focuses more on compatibility, changes made to improve the speed need more work.

### **30. What does a token representation in a SQL Statement?**

In a SQL Statement, a token represents an identifier, keyword, quoted identifier, special character symbol, or a constant.