iNeuron

Python

Interview Questions

Q1. What is the primary key?
The primary key is the combination of fields based on implicit NOT NULL constraint that is used to specify a row uniquely. A table can have only one primary key that can never be the NULL.

Q2. What is a unique key?
The unique key is the group of one or more fields or columns that uniquely identifies the database record. The unique key is the same as a primary key but it accepts the null value.

Q3. What is a foreign key?
The foreign key is used to link two tables together and it is a field that refers to the primary key of another table.

Q4. What is a join?
As the name indicates, join is the name of combining columns from one or several tables by using common values to each. Whenever the joins are used, the keys play a vital role.

Q5. What are the types of join and explain each?

Depending on the relationship between tables, join has the following types:

Inner Join
It returns rows when there is at least one match of rows between the tables.

Right Join
It returns the common rows between the tables and all rows of the Right-hand side table. In other words, it returns all the rows from the

right-hand side table even there is no matches in the left-hand side table.

Left Join
It returns the common rows between the tables and all rows of the left-hand side table. In other words, it returns all the rows from the left-hand side table even there are no matches in the right-hand side table.

Full Join
As the name indicates, full join returns rows when there are matching rows in any one of the tables. It combines the results of both left and right table records and it can return very large result-sets.

Q6. What is normalization?
Normalization is the process of organizing fields into a related table for increasing integrity and removing redundancy in order to improve the performance of the query. The main aim of the normalization is to add, delete, or modify the fields that can be made in a single table.

Q7. What is Denormalization.
It is a technique in which data from higher to lower normal forms accessed and it also used to add redundant data to one or more tables.

Q8. What are all the different normalizations?
Following are the different normalization forms:

First Normal Form (1NF):
It is the process of removing all the duplicate columns from the table and ensuring that each cell contains only one piece of information. In the first normal form, there are only atomic values without any repeating groups.

Second Normal Form (2NF):
A relation is in 2NF if it satisfies the first normal form and does not contain any partial dependency. Moreover, make sure the non-key attributes are fully functional dependent on the primary key.

Third Normal Form (3NF):
Remove the columns that are not dependent on primary key constraints and make sure it meets all the requirements of the second normal form.

Fourth Normal Form (4NF):
It should not have multi-valued dependencies and meet all the requirements of the third normal form.

It depends on the interviewers, they can only ask a single form of normalization or all in their SQL interview questions.

9. What is a View?
The view is a virtual table that consists of the subset of data contained in a table and takes less space to store. It can have data from multiple tables depending on the relationship.

10. What is an Index?

The index is the method of creating an entry for each value in order to retrieve the records from the table faster. It is a valuable performance tuning method used for faster retrievals.

11. What are all the different types of indexes?
There are three types of indexes:

Unique Index
The unique index ensures the index key column has unique values and it applies automatically if the primary key is defined. In case, the unique index has multiple columns then the combination of values in these columns should be unique.

Clustered Index
Clustered index reorders the physical order of a table and searches based on its key values. Keep in mind, each table can have only one clustered index.

Non-Clustered Index
Non-Clustered Index does not alter the physical order but maintains a logical order of table data. Each table in the non-clustered index can have 999 indexes.

12. What is a Cursor?
Cursor is known as the control of the database that enables traversal over the rows in the table. It is very useful tool for different operations such as retrieval, addition, and removal of database records. You can view the cursor as a pointer to one row in a set of rows.

13. What is a database relationship and what are they?
The database relationship is the connection between the tables of any particular database. Following are the main types of relationships:

One to One Relationship
One to Many Relationship
Many to One Relationship
Self-Referencing Relationship

14. What is a query?
The database query is the name of getting information back from the database with the help of coding. We can get expected results from the database without wasting our valuable time because the query gives us output within a short-time period.

15. What is subquery?
As the name indicates, it is also a query but used in another query. The outer query is known as the main query and the inner query is called a subquery. The subquery will be executed first and pass the results to the main query then the output of both queries will be displayed.

16. What are the types of subquery?
Correlated and non-correlated are the types of subquery where the non-correlated query is considered an independent query and correlated is treated as a dependent query.

17. Enlist the name of different subsets of SQL?
There are four subsets of SQL:

DDL (Data Definition Language)
DML (Data Manipulation Language)
DCL (Data Control Language)
TCL (Transaction Control Language)

18. Explain DDL with its examples?
As the name indicates, Data Definition Language (DDL) is used to define the structure of data, table, schema, and modify it. For example:

CREATE: is used to create tables, databases, schema, etc.
DROP: is used to drop/remove tables and other database objects.
ALTER: is used to alter or change the definition of database objects.
TRUNCATE: is used to remove tables, procedures, and other database objects.
ADD COLUMN: is used to add any column to table schema.
DROP COLUMN: is used to drop a column from any database table structure.

19. Explain DML with its examples?
DML (Data Manipulation Language) is a computer programming language is used for the addition (insertion), deletion and modification of data in the database. For example:

SELECT INTO: is used to select data from one table and insert into another table.

INSERT: is used to insert data or records into a table.
DELETE: is used to delete records from any database table.
UPDATE: is used to update the values of different records in the database.

20. Explain DCL with its examples?
DCL (Data Control Language) deals with the access rights and permission control of the database.

GRANT command is used to grant access rights to database objects.
REVOKE is used to withdraw permission from database objects.