

SQL INTERVIEW QUESTIONS & ANSWERS

MOST FREQUENTLY ASKED SQL INTERVIEW QUESTIONS

1. What is the difference between "Stored Procedure" and "Function"?
1. A procedure can have both input and output parameters, but a function can only have input parameters. 2. Inside a procedure we can use DML (INSERT/UPDATE/DELETE) statements. But inside a function we can't use DML statements.
3. We can't utilize a Stored Procedure in a Select statement. But we can use a function in a Select statement
4. We can use a Try-Catch Block in a Stored Procedure but inside a function we can't use a Try-Catch block.
5. We can use transaction management in a procedure but we can't in a function.
6. We can't join a Stored Procedure but we can join functions.
7. Stored Procedures cannot be used in the SQL statements anywhere in the WHERE/HAVING/SELECT section. But we can use a function anywhere.
8. A procedure can return 0 or a values (max 1024). But a function can return only 1 value that is mandatory.
9. A procedure can't be called from a function but we can call a function from a procedure.

2. What is difference between "Clustered Index" and "Non Clustered Index?"

1. A Clustered index physically stores the data of the table in the order of the keys values and the data is resorted every time whenever a new value is inserted or a value is updated in the column on which it is defined, whereas a non-clustered index creates a separate list of key values (or creates a table of pointers) that points towards the location of the data in the data pages.
2. A Clustered Index requires no separate storage than the table storage. It forces the rows to be stored sorted on the index key whereas a non-clustered index requires separate storage than the table storage to store the index information. 3. A table with a Clustered Index is called a Clustered Table. Its rows are stored in a B-Tree structure sorted whereas a table without any clustered indexes is called a non-clustered table. Its rows are stored in a heap structure unsorted.
4. The default index is created as part of the primary key column as a Clustered Index.

5. In a Clustered Index, the leaf node contains the actual data whereas in a non-clustered index, the leaf node contains the pointer to the data rows of the table.
6. A Clustered Index always has an Index Id of 1 whereas non-clustered indexes have Index Ids > 1.
7. A Table can have only 1 Clustered Index whereas prior to SQL Server 2008 only 249 non-clustered indexes can be created. With SQL Server 2008 and above 999 non-clustered Indexes can be created.
8. A Primary Key constraint creates a Clustered Index by default whereas A Unique Key constraint creates a non-clustered index by default

3.What is the difference between the "DELETE" and "TRUNCATE commands?

1. The DELETE command is used to remove rows from a table based on a WHERE condition whereas TRUNCATE removes all rows from a table.
2. So we can use a where clause with DELETE to filter and delete specific records whereas we cannot use a Where clause with TRUNCATE.
3. DELETE is executed using a row lock, each row in the table is locked for deletion whereas TRUNCATE is executed using a table lock and the entire table is locked for removal of all records.
4. DELETE is a DML command whereas TRUNCATE is a DDL command.
5. DELETE retains the identity of the column value whereas in TRUNCATE, the Identify column is reset to its seed value if the table contains any identity column.
6. To use Delete you need DELETE permission on the table whereas to use Truncate on a table you need at least ALTER permission on the table.
7. DELETE uses more transaction space than the TRUNCATE statement whereas Truncate uses less transaction space than DELETE statement.
8. DELETE can be used with indexed views whereas TRUNCATE cannot be used with indexed views.
9. The DELETE statement removes rows one at a time and records an entry in the transaction log for each deleted row whereas TRUNCATE TABLE removes the data by deallocating the data pages used to store the table data and records only the page deallocations in the transaction log.
10. Delete activates a trigger because the operation is logged individually whereas TRUNCATE TABLE can't activate a trigger because the operation does not log Individual row deletions.

4. What is the difference between the "WHERE" clause and the "HAVING clause?

1. WHERE clause can be used with a Select, Update and Delete Statement Clause but the HAVING clause can be used only with a Select statement.

2. We can't use an aggregate functions in the WHERE clause unless it is in a sub-query contained in a HAVING clause whereas we can use an aggregate function in the HAVING clause. We can use a column name in the HAVING clause but the column must be contained in the group by clause.
3. WHERE is used before the GROUP BY clause whereas a HAVING clause is used to Impose a condition on the GROUP Function and is used after the GROUP BY clause in the query.
4. A WHERE clause applies to each and every row whereas a HAVING clause applies to summarized rows (summarized with GROUP BY).
5. In the WHERE clause the data that is fetched from memory depending on a condition whereas in HAVING the completed data is first fetched and then separated depending on the condition,

What is the difference between "Primary Key" and "Unique Key"

1. 2. We can have only one Primary Key in a table whereas we can have more than one Unique Key in a table.
The Primary Key cannot have a NULL value whereas a Unique Key may have only one null value.
3. By default, a Primary Key is a Clustered Index whereas by default, a Unique Key is a unique non-clustered index.
4. A Primary Key supports an Auto Increment value whereas a Unique Key doesn't support an Auto Increment value.
6. What is the difference between a "Local Temporary Table" and "Global Temporary Table"?
1. A Local Temporary Table is created by giving it a prefix of it whereas a Global Temporary Table is created by giving it a prefix of ntt.
2. A Local Temporary Table cannot be shared among multiple users whereas a Global Temporary Table can be shared among multiple users.
3. A Local Temporary Table is only available to the current DB connection for the current user and are cleared when the connection is closed whereas a Global Temporary Table is available to any connection once created. They are cleared when the last connection is closed.

7.What are super, primary, candidate and foreign keys?

Ans: A super key is a set of attributes of a relation schema upon which all attributes of the schema are functionally dependent. No two rows can have the same value of super key attributes.

A Candidate key is minimal super key, i.e., no proper subset of Candidate key attributes can be a super key.

A Primary Key is one of the candidate keys. One of the candidate keys is selected as most Important and becomes the primary key. There cannot be more than one primary keys in a table.

Foreign key is a field (or collection of fields) in one table that uniquely identifies a row of another table

8. What is the difference between primary key and unique constraints? Ans: Primary key cannot have NULL value, the unique constraints can have NULL values. There is only one primary key in a table, but there can be multiple unique constraints.

9. What is database normalization?

Ans: It is a process of analyzing the given relation schemas based on their functional dependencies and primary keys to achieve the following desirable properties

1) Minimizing Redundancy

2) Minimizing the Insertion, Deletion, And Update Anomalies

Relation schemas that do not meet the properties are decomposed into smaller relation schemas that could meet desirable properties.

10. What is SQL?

SQL is Structured Query Language designed for inserting and modifying in a relational database management system.

11. What are the differences between DDL, DML and DCL in SQL?

Ans: Following are some details of three.

DDL stands for Data Definition Language. SQL queries like CREATE, ALTER, DROP and RENAME come under this.

DML stands for Data Manipulation Language. SQL queries like SELECT, INSERT and UPDATE come under this.

DCL stands for Data Control Language. SQL queries like GRANT and REVOKE come under this

12. What is the difference between having and where clause?

Ans: HAVING is used to specify a condition for a group or an aggregate function used in select statement. The WHERE clause selects before grouping. The HAVING clause